



Leonard Transportation Center

CAL STATE SAN BERNARDINO

Annual Report

FY 2008/2009

Decision Making and Management of
Transportation Systems





“The Leonard Transportation Center is one of the key lynchpins in the future of the University. It’s a model for the federal and private funding support that it’s received, for its potential in working on issues of vital regional importance, for its ability to offer service by creating and sharing a valuable regional databases, and for it’s connection to key areas for academic program development, including logistics and public policy analysis, among others.”

Albert Karnig, President of Cal State San Bernardino

William and Barbara Leonard University Transportation Center

Annual Report FY 2008/2009

Table of Contents

Table of Contents	
Message from the Director	6
Theme and Vision	8
Key Center Personnel	10
Management Structure	11
Advisory Board	12
Educational Program	14
Research Program	21
Technology Transfer Program	28
Funding Sources and Expenditures	30

The Leonard Transportation Center was founded in 2006 through a multi-year grant from the U.S. Department of Transportation and the California Department of Transportation. The Center's national and regional objectives are threefold: Research, Education, and Technology Transfer. The theme of the Center is "**Decision Making and Management of Transportation Systems**," with a particular focus on policies and practices that impact effective movements of people and goods within and through the Inland Empire.



Jack Brown Hall
On the campus of Cal State San Bernardino

Message from Director Haw-Jan “John” Wu

Like many other public agencies and private enterprises, we have been facing tough economic times and many budgetary challenges in the past year but our research program and educational reform continue to move forward steadily and strongly. We took new initiatives on both fronts and started to reap benefits from the research we funded in previous years. Through the new and reinforced connections with local government agencies, professional organizations and corporations, the Leonard Transportation Center has become a major source of information and a formidable force in shaping transportation policy that affects the Inland Empire and beyond.



Built on the solid foundation laid by the visionary Bill Leonard, the Center sets its mission on “Decision Making and Management in Transportation Systems” where the effectiveness of policy making, impacts of transportation planning, and decision making and implementation processes in both public and private sectors are studied. We continue to develop programs, organize meetings and conferences, fund research, and support professional organizations to advance the frontiers of research and education in transportation and logistics. I am proud to report a few highlights of what we have accomplished in 2008-9:

- We held the third annual transportation forum on SB375 and related issues on May 22nd. We assembled a full slate of nationally recognized speakers and regional experts to discuss this very important issue that would affect millions of residents in Southern California and nationwide. The well attended meeting drew over 100 policy makers, transportation planners, educators, and other professionals.
- Our speaker series on transportation and logistics entered the second year on campus. This series, featuring prominent scholars and decision makers in transportation and logistics, is intended to provide students and faculty policy and strategy aspects of current and future transportation and logistics issues. This year, we had Bob Wolf of Germania and Ted Honcharik of Pacific Tank Lines speak on transportation policy and private sector logistics.
- We continued to work with Cal Poly Pomona and Cal Poly San Luis Obispo faculty to further research in transportation and jointly explore funding opportunities. The collaborations help us focus on research projects that would be more relevant to practitioners and have more impact on local transportation systems. We also invited faculty from other CSU campuses to participate in our program; they include faculty from CSU Monterey Bay, CSULA, and CSU Northridge.
- We started to organize quarterly meetings for student and faculty in transportation and logistics. We invited business leaders to interact with students and to encourage them to pursue a major or minor in transportation and logistics. We also arranged field trips for students so they could see transportation and logistics operations first hand. Such activities help students learn about the business and heighten their interest in the field.
- We finished the first round of funding for the Needs Based Grants. Four outstanding research projects were selected from a very competitive double-blinded review process that involved CalTrans and many Advisory Board members. We also finished the second round of funding for the Seeds Grants; a total of 7 projects were selected. The awarded faculty have begun their research and will have one year to complete them. The list of awarded projects and their brief descriptions is on page 27
- Our relationships with local professional organizations expanded in 2008-9 with a few sponsored events and joint activities. We were the education partner for the Transportation

and Logistics Summit in April 2009, organized by the Distribution Management Association of Southern California. We also partnered in the annual I-10 Conference that targeted development along the I-10 corridor in Inland Empire.

Looking ahead, we still have a lot of challenges as we build this young and dynamic program. But with the achievements last year and the steadfast pace towards our missions, we are confident that we will turn many challenges into opportunities.

Future Outlook

Transportation has always been an integral part of overall regional planning and economic development. With the rising concerns for global warming, increasing energy costs, calls for greener renewable energy sources, and the persistent pursuit for a better living environment by residents, the transportation sector is faced with many challenges. Transportation decisions we make today have profound impact on the way we live and whether future generations can enjoy a comfortable and sustainable lifestyle. We at Leonard Transportation Center understand these challenges and are actively using the theme of the Center, the effectiveness and efficiency of decision making and management of transportation systems, to engage researchers, faculty, and students to build research and educational programs to address these concerns. We also engage local public transportation agencies and the private sector to develop an interdisciplinary approach to scrutinizing transportation policy and related issues. In the future, we plan to take initiatives for the following major programs to advance the decision making process in transportation planning:

Education:

We have completed a benchmarking study of transportation and logistics curricula in North America. The next step is to develop a model curriculum with faculty then propose the changes to department and college faculty for approval. We will host quarterly meetings and use the speaker series and field trips to attract qualified students to major or minor in transportation and logistics. We will continue to fund course development, visiting professor positions, and career planning to strengthen the program.

Research:

We will host the annual Research Conference in the fall that showcases faculty achievements and generated future research ideas. This annual event has been endowed by the Widmeyer family to advance the field of research in public transportation policy and planning. In addition to funding Seeds Grants and Needs Based Research, we will start funding Center-initiated research. The first such initiative is a collaborative effort with UC Irvine, SCAG, and SANBAG to study and eventually develop a scoping report on the regional planning process that deals with transportation, energy, environment, air quality, land use, and quality of life.

Outreach:

We are planning for the Transportation Summary Initiative that summarizes cutting edge transportation and logistics articles for decision makers. Each summary will be written in plain English in one page, and available in various Word, PowerPoint, PDF, and MP3 formats. The idea is to make research results easier to understand and more readily accessible to lay people. We will expand our relationships with local professional organizations to support and/or co-host more events in Southern California. . We will continue our efforts to digitize contents we produce, including posting conference presentations online and making speaker series available in podcasts. Eventually, we'd like to have an iTunes Store presence. We are planning to launch an academic journal for practitioners. Our relationships with local professional organizations expanded in 2008-9 with a few sponsored events and joint activities. We were the education partner for the Transportation and Logistics Summit in April 2009, organized by the Distribution Management Association of Southern California. We also partnered in the annual I-10 Conference that targeted development along the I-10 corridor in Inland Empire.

Theme and Vision

The theme of this center is Decision-Making and Management of Transportation Systems. It reflects the commitment to confer local, state, and federal transportation providers with increased capability for improved transportation decisions, while also imparting a methodology to better manage transportation systems and transportation investments through focused research and increased educational opportunities.

The Inland Empire is one of the fastest growing areas of the country, consisting primarily of Riverside and San Bernardino counties — the two largest counties in the country. With a combined population of 4 million people, the area is experiencing severe transportation challenges. In addition to



dealing with rapid population and job growth, Southern California and in particular the Inland Empire must deal with the rapidly expanding growth of port-related cargo that traverses the area. More than two thirds of the total volume of containers imported through the Ports of Los Angeles and Long Beach (40% of all container movements in the United States) leave Southern California to be consumed in other states. The air pollution, congestion, maintenance and capacity impacts on the area's transportation system are profound. On the positive side, the logistics industry is providing many new jobs in the Inland Empire and Southern California.

Considerable transportation infrastructure is under construction with project management provided by a combination of agencies, most particularly the California Department of Transportation (Caltrans) and in the Inland Empire Regional Transportation Agencies such as the San Bernardino Associated Governments (SANBAG) and the Riverside County Transportation Commission (RCTC). Funding for such projects comes from state and federal funding allocations (including portions of the state and federal gas tax) and increasingly from a local county ½ cent sales tax imposed by the voters in both counties. There are seven bus transit agencies operating in the Inland Empire and a commuter rail system (Metrolink) which is operated by a five county joint powers agency.

In this context the Inland Empire is an ideal laboratory for the Leonard Transportation Center to build upon its educational resources in transportation and to study and analyze the processes of decision-making and management of transportation systems.

Decision-making: The present mix of decision-making authority among the key institutions, including Caltrans, California Transportation Commission (CTC), Southern California Association of Governments (SCAG), the Metropolitan Planning Organization for all of Southern California, the Regional Authorities RCTC, SANBAG, Orange County Transportation Commission (OCTC) and the Los Angeles Metropolitan Transportation Commission (Metro) and the public transit agencies is not always clear. Resolution of goods movement issues is also evasive, because decisions made by private sector users (such as the shippers and railroads) have a critical impact on the efficiency of the public transportation system. There is not an adequate institution encompassing all relevant public and private interests that acts as a focal point for negotiation and decision-making. In addition, various state and federal planning, funding and operational regulations, and legislation add complexity and often confusion.

For all of these reasons a focus on transportation decision-making with emphasis on documenting present shortcomings and making suggestion for changes is a priority, not only for the Inland Empire, but in all likelihood for most other urban and urbanizing areas throughout the country.

Management: With declining transportation resources the efficient management of the

transportation system and transportation construction projects becomes even more critical. New wireless information sensors and systems such as GIS (Geographic Information Systems) and GPS (Global Positioning Systems) could be used to a greater extent to manage transportation facilities and operations. Accelerated design and construction concepts, such as design-sequencing and design-build, have often met resistance. Operational issues, such as security, routing, congestion and air pollution concerning the flow of goods after leaving the air and sea ports are becoming more critical. The role and impact of public transit merits attention as



a possible way to reduce congestion. Time-of-day priced toll lanes have shown promise to increase traffic through-put and other market-based management tools may be appropriate.

With transportation employment increasing in Southern California, developing more undergraduate and graduate educational opportunities is imperative. Research in various aspects of transportation decision-making and management is clearly needed, and equally an aggressive program to increase the ability of the stakeholder agencies and companies to make use of this information is essential.

Though the Inland Empire is our natural laboratory, the issues we address affect many other parts of the state and nation. The Leonard Transportation Center addresses (Decision-Making and Management of Transportation Systems) from a local, regional, state and national perspective.

**“What pleases me most is
that sustainable development
is on almost everybody’s agenda now.”
Maurice Strong**

Key Center Personnel



Dr. Haw-Jan “John” Wu joins CSU San Bernardino as Director of Leonard Transportation Center in 2008 from CSU Monterey Bay where he has been a tenured professor of Operations Management and Marketing since 2002. He had previously taught at Whittier College and Penn State for 12 years. Dr. Wu specializes in operational efficiency, supply chain integration, outsourcing, and Asian management styles. Dr. Wu has background and rich experiences in international business, including, most recently, a position as Resident Director in China for the CSU International Programs.

Rusty Thornton joined Cal State San Bernardino after serving 24 years at the California Department of Transportation (Caltrans), most recently as associate transportation planner with District 8 in San Bernardino. His experience at Caltrans includes highway maintenance, program and project management, State and Local highway funding programs, and transportation planning. He has worked for Caltrans Districts 5, 7, 8 and HQ in Sacramento.



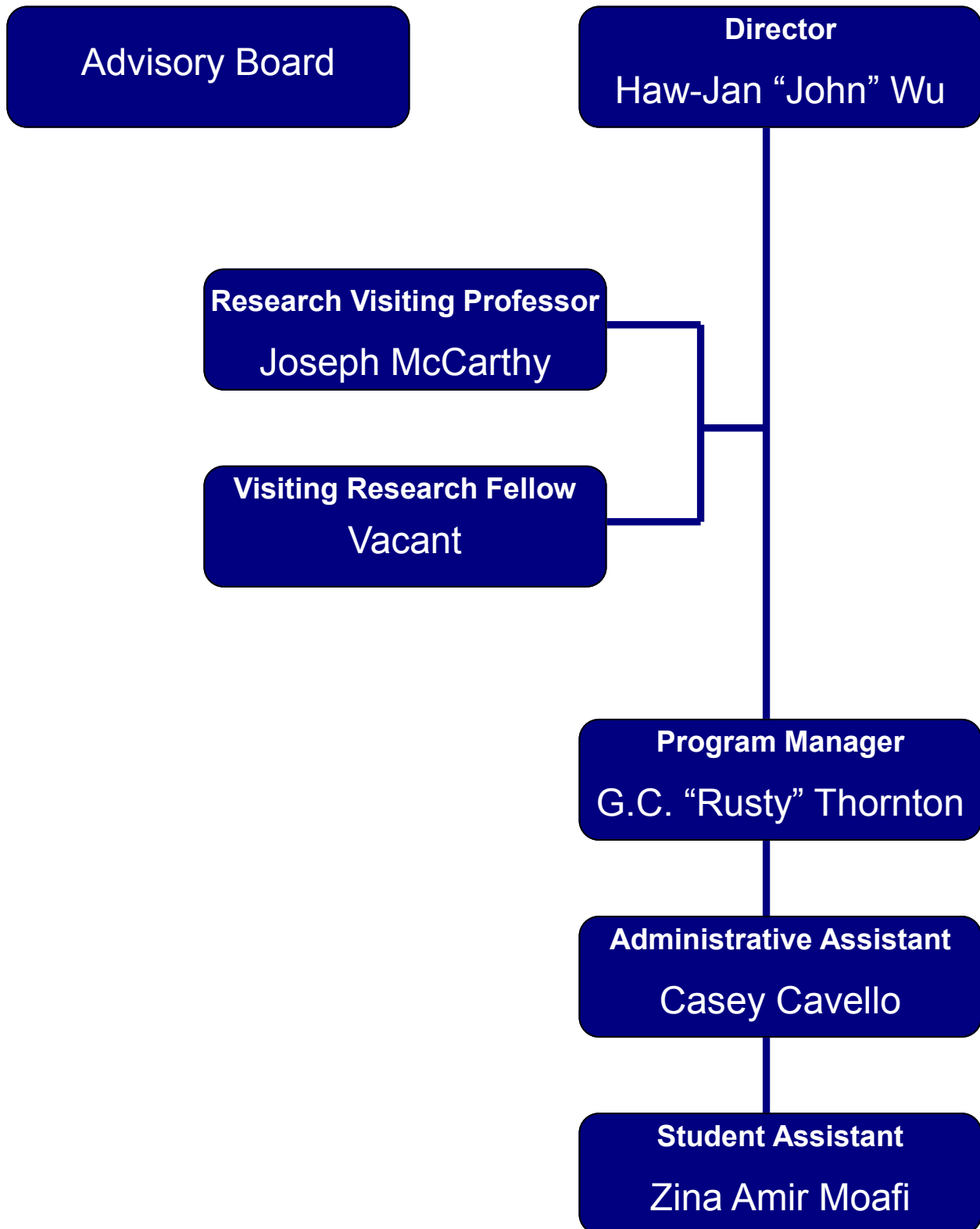
Casey Cavello, originally from northeastern Pennsylvania, moved to California to attend Cal State Long Beach. She received her BA in Journalism from CSULB in May 2008. Casey joined the Leonard Transportation Center in February 2009 as an Administrative Assistant.

Zina Amir Moafi is currently attending CSUSB in pursuit of an MBA in Supply Chain Management. She received her BA in Economics at Arak University in Iran. She hopes to pursue a job in the field of Supply Chain in either the US or Iran. As a student assistant, she is responsible for assisting in Research Coordination.



Joe McCarthy is currently a visiting professor with the Leonard Transportation Center, California State University, San Bernardino in the College of Business and Public Administration. Mr. McCarthy is also an attorney with the Los Angeles-based firm, McAdam & McCarthy. Before private practice, Mr. McCarthy worked with the Governor of Washington, Christine Gregoire, in the Washington Office of Executive Policy. Prior public service, Mr. McCarthy was employed as a consultant with several large, international consulting firms. Mr. McCarthy earned Masters Degree in Geological Engineering and a Juris Doctorate with honors.

Management Structure



Advisory Board

Judith Battey

*Advisory Board – Leonard Transportation Center
California State University, San Bernardino*

Dan Beal

*Advisory Board – American Automobile
Association (Retired)*

Robert Brendza

Director of Facility Development – BNSF Railway

Donald P. Coduto

*Chair/Professor – Department of Civil Engineering
California State Polytechnic University, Pomona*

Alypios Chatziianou

*Professor - Civil and Environmental Engineering
Department and Director of Liberal Arts and
Engineering Studies program -California State
Polytechnic University, San Luis Obispo*

Karen Dill-Bowerman

*Dean – College of Business and Public
Administration California State University, San
Bernardino*

Malcolm Driggs

Coordinator – Operating Engineers Training Trust

Steve Harrington

*Vice President – Economic and Workforce
Development Inland Empire Economic Partnership,
Riverside*

Frederick Hebein

*Professor – Department of Marketing, College of
Business and Public Administration California State
University, San Bernardino*

Hasan Ikhrata

*Director of Planning & Policy – Southern California
Association of Governments*

Albert K. Karnig

*President – California State University, San
Bernardino*

Anne Mayer

*Executive Director – Riverside County
Transportation Commission*

Michael Miles

*Deputy Directory – Maintenance and Operations,
State of California, Department of Transportation*

Henry A. Nejako, Jr.

*Program Management Officer
Federal Transit Administration, Office of
Technology*

Craig Neustaedter

*Principal Engineer – Transportation Engineering &
Planning, Inc.*

Mary Jane Olhasso

Economic Development Director – City of Ontario

Steve PonTell

Germania Corporation

Lisa Reece

Vice President – HDR Engineering, Inc.

Don Rogers

*Executive Director – Inland Valley Development
Agency*

William “Ty” Schuiling

*Director of Planning and Programming – San
Bernardino Associated Governments*

Larry Sharp

President and CEO – Arrowhead Credit Union

Cliff Simental

*Senior Vice President – David Evans and
Associates, Inc.*

Matthew Webb

President – Albert A. Webb Associates

Raymond Wolfe

*District Director– District 8, California Department
of Transportation*

Robert Wolf

President Emeritus - Germania Corporation



Advisory Board (from left to right): Rusty Thornton (Program Manager), Malcolm Driggs, Matt Webb, Craig Neustaedter, Bob Brendza, William "Ty" Schuiling, Don Coduto, Aypios Chatziianou, John Wu (Director), and Joseph McCarthy (Visiting Professor) - taken after Spring 2009 Meeting.

"The challenge we face with these biofuels is getting them out of the labs, out of the farms, and onto the wider commercial market."

Barack Obama

Education Program

The rapid increase of logistics employment in the Inland Empire requires the development of a transportation curriculum that is responsive to this increased demand for logistics and transportation skills from the public and private sectors. Reflecting the center's theme the courses emphasize a management approach to transportation. Such emphasis is in context to multidisciplinary course work, including economics, public finance, environmental analysis, urban planning and information systems.

A sample of degrees offered by CSUSB

College of Business and Public Administration

- B.A. in Administration with Transportation and Logistics Concentration
- B.A. in Administration with Public Administration Concentration
- B.A. in Administration with Environmental Management Concentration
- B.S. in Administration with Information Management Concentration
- M.P.A. Master of Public Administration
- M.B.A. Master of Business Administration

“The Leonard Transportation Center has been making “inroads” into decision making issues pertaining to transportation systems in the Inland Southern California region for three years. Speaker Series events sponsored by the Center are particularly valuable as a platform for communicating transportation data to assist the region in deriving policy alternatives. The Center also continues working to build a strong application –driven transportation curriculum in the College of Business and Public Administration, serving both graduate and undergraduate students who will be our future workforce leaders.”



Karen Dill Bowerman, Dean of CBPA, CSUSB

Requirements for a Bachelor of Arts (BA) Degree Supply Chain Management Concentration

1. SCM 205 Enterprise Systems (4)

Prerequisite: Info 101

2. SCM 350 Applied Decision Analysis (4)

Prerequisite: SCM 304

3. SCM 470 Supply Chain Management (4)

Prerequisite: SCM 304

4. SCM 480 Quality Management (4)

Prerequisite: SCM 304

5. SCM 490 Logistics Strategy (4)

Prerequisite: completion of all other courses in concentration program.

6. Four units chosen from:

Info 280 Information Mapping and Data Visualization (4)

Prerequisite: Info 101

SCM 405 Advanced Enterprise Systems (4)

Prerequisites: SCM205 and 304

SCM 575 Internship in Supply Chain Management (4)

Prerequisites: consent of the instructor and the department's internship coordinator.

SCM 595 Independent Study (2 or 4)

Prerequisites: a minimum overall grade point average of 3.0, consent of Instructor and approval by the department of a written project/proposal submitted to the appropriate department in the College of Business and Public Administration on a standard application filed in advance of the quarter in which the course is to be taken.

Requirements for a Bachelor of Arts (BA) Degree Transportation & Logistics Concentration

1. Mgmt 307 Introduction to Transportation Management (4)

Prerequisite: junior standing

2. Mgmt 450 Logistics Management and Regulation (4)

Prerequisite: Mgmt 307

3. SCM 440 Transportation Systems Management (4)

Prerequisite: SCM 304

4. SCM 470 Supply Chain Management (4)

Prerequisite: SCM 304

5. SCM 490 Logistics Strategy

Prerequisite: completion of all other courses in concentration program.

6. Four units chosen from:

Info 280 Information Mapping and Data Visualization (4)

Prerequisite: Info 101


SCM 205 Enterprise Systems

Prerequisite: Info 101

Leonard Transportation Center Speaker Series

Speaker Series

Bob Wolf
Germania Corporation



Presented by the **Leonard Transportation Center**

Robert A. Wolf has been a driving force in business, government and politics in Riverside County and Inland Southern California for more than 35 years.

As Germania Corporation's president emeritus, Mr. Wolf continues to use the knowledge and experience gained through the decades to help many of the company's client's work through their most complicated development and transportation challenges.

Mr. Wolf is a recognized expert in the fields of property development, transportation planning, and infrastructure development. Starting at Germania Construction in 1970, he has helped to develop the Inland area's economy and raise the region's profile around Southern California and the state.

Robert A. Wolf is an Advisory Board Member for the Leonard Transportation Center.

Obershaw Dining Room
Wednesday, October 1, 2008
9:00 am to 10:00 am
(continental breakfast included)

On October 1, 2008 Germania Corporation's President Emeritus Bob Wolf spoke at Cal State San Bernardino's Speaker Series. Mr. Robert Wolf has been a driving force in business, government, and politics in the Inland Empire for more than 35 years. He was the president of Germania, building the company into a diverse real estate firm, specializing in financing, development, building and sales. He is also instrumental in developing the Inland Empire's economy and raise the regions profile around Southern California and in the state.



Leonard Transportation Center Speaker Series



Leonard Transportation Center
Cal State San Bernardino

Speaker Series
Organized by the Leonard Transportation Center
in collaboration with the Entrepreneurship Program

Featuring:
Ted Honcharik
CEO of Pacific Tank Lines,
National Concrete Washout, and Fuel Relief Fund

Ted Honcharik is currently the CEO of three different companies.

Seven years ago he founded Pacific Tank Lines, a petroleum transportation and inventory management company, currently delivering an average of 2.8 million gallons of fuel daily. Customers include major oil companies such as Chevron, Shell, and Unocal. In 2007 Pacific Tank Lines was awarded "Carrier of the Year" for North America by Chevron and in 2008 the same honor was given by Shell. Ted Honcharik and Pacific Tank Lines have been featured in articles in the Press Enterprise. Ted is a member of California Independent Oil Marketers Association and the California Trucking Association.

Ted's second company, formed 5 years ago, is National Concrete Washout. This "green" business provides construction companies with an environmentally friendly and EPA approved method for cleaning out their cement trucks. The company contains and collects the wastewater and excess concrete and recycles these materials.

The third company, Fuel Relief Fund, is a nonprofit charity organization. Immediately following hurricane Katrina Ted collected donations from friends and business associates. Pacific Tank Lines provided a tanker truck. It was driven to Mississippi and Louisiana where 8800 gallons of fuel were donated in the aftermath of the devastation. This fuel proved incredibly valuable as it offered access to food, water, and shelter. This experience prompted the start-up of Fuel Relief Fund. The Fund donates prepaid gas cards to worthy causes and will be ready to immediately mobilize to distribute fuel to disaster areas.

6:00 pm to 8:00 pm
Wednesday, May 13
Sycamore Room (Lower Commons)
California State University San Bernardino
Free Admission and hors d'oeuvres

Leonard Transportation Center
<http://leonard.csusb.edu> Phone: (909) 537-5094
Located in Jack Brown Hall Room 283


The Leonard Transportation Center hosted a Speaker Series on May 13, 2009 at Cal State San Bernardino. The guest speaker was Ted Honcharik, CEO of Pacific Tank Lines, National Concrete Washout, and Fuel Relief Fund. Honcharik shared the story of how he got started and the trials and tribulations he faced while developing his businesses. A DVD of his presentation can be checked out in the Leonard Transportation Center's office located in room 283 of Jack Brown Hall. For more information on Pacific Tank Lines please visit the official website at www.pacifictanklines.com.



Leonard Transportation Center Forum

On May 22, 2009 the Leonard Transportation Center held its Annual Leonard Transportation Center Forum at the Doubletree Hotel in Ontario, California. The title of the Forum was Greener California: Impacts of Senate Bill 375 and Winning Strategies for Southern California and hosted an array of distinguished speakers including keynote speakers William Fulton, Robert A. Wolf, and William Hudnut. The conference was a success and highlighted all of the important aspects of SB375 and how the tactics mention could be put into use. It focused on how SB 375 will alter regional planning and transportation programs and how municipalities can adapt to the new law and emerge as winners in meeting and exceeding the goals set forth in SB 375. For more information or to view the PowerPoints presented at the Forum please visit <http://leonard.csusb.edu/outreach/May222009>


Leonard Transportation Center
 CAL STATE SAN BERNARDINO



Third Annual Leonard Transportation Center Forum

Greener California: Impacts of Senate Bill 375 and Winning Strategies for Southern California

- Winning adaptive strategies of California's newly adopted climate change legislation
- Transportation, land use, planning, and policy impacts
- How SB 375 will alter regional planning and transportation programs
- How municipalities can adapt to the new law and emerge as winners in meeting and exceeding the goals set forth in SB 375
- Tools for compliance, best practices and GIS tool demonstration
- Invited panelists include SANBAG, SCAG, VMP/COG, ESPI, and Cal Poly Pomona


Registration: ~~\$65.00~~

FREE!


(Made possible by grants from USDOT RITA & Caltrans)

Keynote Speakers


William Fulton




Bob Wolf



William Hudnut



Friday, May 22, 2009
 8:00 am to 5:00 pm
 Doubletree Hotel Ontario Airport
 222 North Vineyard Avenue, Ontario, CA 91764
 (I-10 Vineyard Exit South)






Leonard Transportation Center Quarterly Meeting

Transportation, Logistics and Supply Chain Management Faculty and Students Quarterly Meeting



All are welcome to attend!
Lower Commons, Panorama Room
Tuesday, March 10, 2009
5:30 pm – 7:00 pm

Certificates **Jobs**
Meet Executives **Company Tours** **Advanced Degrees**

Free Food & Drinks

Contact:
Leonard Transportation Center
California State University, San Bernardino
Jack Brown Hall, 283
5500 University Parkway
San Bernardino, CA 92407-2397
Phone: 909-537-5094
<http://leonard.csusb.edu>

The Leonard Transportation Center Quarterly Meeting of Faculty and Students are held to stimulate campus interests in Transportation, Logistics and Supply Chain Management.

On March 10, 2009 the Leonard Transportation Center hosted its Transportation, Logistics and Supply Chain Management Faculty and Students Quarterly Meeting. The meeting was held to discuss the curriculum at CSUSB and the advantages of being part of the Transportation, Logistics and Supply Chain Management programs. Time meeting was also used to announce future events such as the trip to the San Bernardino Airport, the types of certificates available to students and some jobs and internships that are out there.

Quarterly Meetings are held once every quarter. For more information on when the next meeting will be please visit the Leonard Transportation Center website at leonard.csusb.edu.



Leonard Transportation Center Names Student of the Year



Felix Zuniga, 30, has been named Student of the Year by the Leonard Transportation Center. Each year the U.S. Department of Transportation (USDOT) honors an outstanding student from each University Transportation Center (UTC) at a special ceremony held during the Transportation Research Board (TRB) Annual Meeting. Each student is recognized during the ceremony by a Departmental official. The TRB Annual Meeting is the largest transportation conference in the world with hundreds of presentations made over the course of four days. The student receives \$1,000 plus the cost of attendance at TRB from his/her Center, plus a certificate from USDOT. In addition, the Council of University Transportation Centers (CUTC) banquet features a key speaker from the transportation field and provides its own awards for university transportation research and education. Zuniga is an Information Technology Technician at CSUSB. He has a Bachelors Degree in accounting and computer information technology. Zuniga was also the winner of the TriTech/ Tech Coast Angels Fast Pitch Competition for his business plan which will help truckers with paperwork and regulations. His company is called Armada Business Services. www.armadabusiness.com

Scholarships Awarded

The Leonard Transportation Center in collaboration with the College of Business and Public Administration at Cal State San Bernardino is pleased to announce that Steven M. Staudenmayer and Fitri Yanti have each been awarded a \$500.00 scholarship for the Spring 2009 Quarter. Congratulations to Steven and Fitri.

Leonard Transportation Center's New Logo Introduced

The Leonard Transportation Center unveiled its new logo at the April 28, 2009 Board Meeting. The logo was designed by Angelia Gillespie, Graphic Designer at Cal State San Bernardino. The logo incorporates the spectrum of transportation by rail, highway, air, and water while including the university's primary color and name.



Research Program

The center's goal is to produce high quality research that is relevant and practical to solving real transportation problems and are understandable to a variety of user groups. Through the needs-based research program, we fund research projects which are responsive to the needs of the region's and state's public and private transportation and transit agencies, USDOT, businesses, and practitioners. Through the smaller seeds grants, we encourage faculty to innovate and explore certain areas of interest in transportation and logistics to advance the knowledge frontiers. Currently, only researchers who are affiliated with CSU are eligible to apply.

LTC Completed Research Projects

Assessment & Development of Biodiesel Instructional Techniques

2007-SGP-1002 CSUSB

06/07 AMT/Total: 5000

Melchiorre, Erik | emelch@csusb.edu

In this study, it is proposed to: 1) quantify the clarity and color contrast of biodiesel and glycerin products of the biodiesel chemical reaction using different types of vegetable oil, and 2) take video and photographs of small-batch biodiesel production steps, and industrial-scale biodiesel operations in order to produce new and original PowerPoint presentations and lectures for both student courses and general public education.

Degradation Process In Hydrogen Fuel Cells

2007-SGP-1003 CSUSB

06/07 AMT/Total: 5000

Usher, Timothy D. | tusher@csusb.edu

In this study, the basic chemistry and physical processes involved in degradation mechanisms within proton exchange membrane (PEM) fuel cells will be researched and studied.

Tertiary Disaster Response in the Inland Empire: Operationalizing Supply Chain Restoration, Phase 1

2007-SGP-1004 CSUSB

06/07 AMT/Total: 5000

McInturff, Pat | mcinturff@csusb.edu

This study focuses on the aftermath of catastrophic events that may be of natural or human origin.

Paving the Way for Best Management Practices of Fugitive Water on Pavement Surfaces

2007-SGP-1005 CSUSB

06/07 AMT/Total: 5000

Mulvihill, Jim | slongvil@csusb.edu

This study will review the current state-of-the-art on Best Management Practices (BMP) and catalog these for potential impacts.

Inland Empire Logistics GIS Mapping Project

2007-SGP-1007 CSUSB

06/07 AMT/Total: 5000

Rohm, Tapie C.E. | trohm@csusb.edu

This project will gather information from 41 cities (from Victor Valley, Coachella Valley and Riverside to the San Bernardino areas) to determine if identification and location of warehousing and distribution facilities in the area can be used by strategic decision makers at the commercial, governmental and military level.

Applicability of Adaptive Traffic Signal Control Systems to Arterials in the Inland Empire

2007-SGP-1009 Cal Poly Pomona/CSUSB

06/07 AMT/Total: 5000

Shenoda, Michael | shenoda@csupomona.edu

This project is intended to study the ability to apply adaptive traffic signal control systems, i.e. those which analyze and respond to shifts in traffic patterns in “real-time”, on arterials in the Inland Empire.

California’s 2050 Transportation Context: A Response to Global Warming and Executive Order #S-3-05

2007-SGP-1010 Cal Poly Pomona/CSUSB

06/07 SMT/Total: 5000

Willson, Richard | rwillson@csupomona.edu

The project will examine trends in (i) transportation economics (e.g., carbon based fuel costs, vehicle technology, congestion impacts, trade), (ii) technological innovation that affect the vehicle fleet and travel demand, and (iii) the evolving Federal and international regulatory framework (e.g., possible carbon based fuel taxes, transportation pricing, investment strategies, etc).

Performance Metrics Used by Freight Transport Providers

2007-SGP-1011 Cal Poly Pomona/CSUSB

06/07 AMT/Total: 4893

Cottrell, Wayne D. | wdcottrell@csupomona.edu

This project will explore current performance measurement practice in the freight transport private sector.

Use of GIS Technology to Facilitate the Transportation Project Programming Process

2007-SGP-1013 Cal Poly Pomona/CSUSB

06/07 AMT/Total: 5000

Jia, Xudong | xjia@csupomona.edu

This project is aimed at assessing the potential use of geographic information system (GIS) technology to facilitate the transportation project programming activities within the Inland Empire transportation agencies.

Electrification of the Freight Train Network from the Ports of Los Angeles and Long Beach to the Inland Empire

2007-SGP-1014 Cal Poly Pomona/CSUSB

06/07 AMT/Total: 5000

Jia, Xudong | xjia@csupomona.edu

Jawaharlal, Mariappan | jmariappan@csupomona.edu

Smith, Frank | rfsmith@csupomona.edu

The project evaluates the benefits of electrifying the freight railroads connecting the Ports of Los Angeles and Long Beach with the Inland Empire.

Caltrans TMC Coordination

2007-SGP-1017 Cal Poly San Luis Obispo/CSUSB

06/07 AMT/Total: 5000

Gerfen, Jeff B. | jgerfen@calpoly.edu

This project will identify these critical transportation corridors, key traffic management personnel within them, and data/video that could be shared across boundaries to effect improvements in traffic management.

Enhancing Road Traffic Safety in Inland Empire: A GIS Based Methodology to Identify Potential Areas of Improvement

2007-SGP-1018 Cal Poly San Luis Obispo/CSUSB

06/07 AMT/Total: 5000

Mitra, Sudeshna | smitra@calpoly.edu

This project will gather crash information, land use and socioeconomic data from local agencies and develop GIS databases for further and in depth analysis of traffic safety in the Inland Empire.

Transportation and Logistics Technology Integration

2009-SGP-1044 CSUSB

06/07 AMT/Total: 48

Coulson, Tony | tcoulson1@csusb.edu

The objective of this project was to develop course materials and technology as a common thread for the transportation curriculum.



“Science has not yet mastered prophecy. We predict too much for the next year and yet far too little for the next ten.”

Neil Armstrong

Research Program

LTC Approved Research Proposals

Providing Senior Citizen Mobility at Minimum Public Cost

2008-NBG-1021 Cal Poly Pomona

07/08 AMT/Total: 64,315

Nuworsoo, Cornelius | cnuworso@calpoly.edu

Demographics trends in the US indicate significant increases in the number of people aged 65 years and over (seniors) and underscore the need to expand senior services. These services will include assisted transportation for older citizens who would no longer drive. Increases in senior demand for demand-responsive services, which tend to be very expensive to provide, will aggravate the financial situation of transit agencies, which already must rely on subsidies to maintain operations. There is the need therefore to devise and adopt innovative mobility services as well as methods of payment to meet the inevitable increase in the needs of seniors.

GIS Best Practices for Transportation Agencies in the Inland Empire of Southern California

2008-NBG-1024 Cal Poly Pomona

07/08 AMT/Total: 73,609

Reibel, Michael | mreibel@csupomona.edu

The project has the straightforward goal of adding value to the use of Geographic Information Systems (hereafter GIS) by public and quasi-public transportation agencies in the Inland Empire region, defined for these purposes as San Bernardino and Riverside Counties. Despite evidence of dramatic improvements from the application of GIS in both the operations and efficiency of transportation agencies, the transportation community nationwide has been a late (and as yet partial) adopter of GIS technology. Moreover, there have been no systematic studies of actual transportation agency uses of GIS, or of best practices in transportation agency use of GIS. The project is thus simultaneously extremely practical, and a broadly valuable contribution to the state of knowledge regarding transportation GIS in practice.

Interdisciplinary Study of Fuel Cell Technologies

2008-NBG-1026 CSUSB

07/08 AMT/Total: 80,000

Stanley, Brett | bstanley@csusb.edu

Degradation mechanisms in proton exchange membrane fuel cells (PEMFC) will be identified and products quantified using an interdisciplinary approach involving a range of experimental techniques including ion chromatography (IC), gas chromatography/mass spectrometry (GC/MS), electron paramagnetic resonance (EPR), nuclear magnetic resonance (NMR), x-ray diffraction (XRD), polarization curves, and cyclic voltammetry. Increasing the lifetime and performance of fuel cells is a critical research area for alternative energy sources. Two components are of importance in these considerations: the polyelectrolyte membrane and the catalyst. Degradation of membranes is known to limit fuel cell lifetimes; however the mechanism(s) of this degradation isn't known exactly. We propose to study these mechanisms by quantifying the degradation products obtained from ordinary, variable-load operation in a durability test; the products obtained from accelerated degradation using Fenton's reagent; and that obtained from exposure to ionizing radiation such as X-rays. IC will be used to measure fluoride and sulfate in Nafion-type perfluorinated polymers, GC/MS and NMR will be used to identify organic products, and EPR will be utilized to identify radical intermediates. The performance of the fuel cells will be checked with polarization curves. In addition, platinum-based catalyst material will be synthesized and incorporated into fuel cells to observe the effect of catalysis on the degradation products.

Foundation for Efficient and Effective Decision Making on Environmental and Logistical Concerns: The Development of a GIS Database and Web Portal

2008-NBG-1027 CSUSB

07/08 AMT/Total: 79,080

Rohm, Tapie C.E. | trohm@csusb.edu

Approximately 40% of the goods that come into the United States come through the ports of Los Angeles and Long Beach. Given a dearth of available building sites close to the harbors, the Inland Empire with its cheap (Schrader, 2007; Sadovi, 2008), available land has become a major inland global port. The result has been an exponential expansion over the last decade of warehouses and distribution centers (Mongelluzzo, 2007). Though this growth has had positive economic impacts for the region, it has also generated negative externalities by way of environmental degradation and pollution as well as traffic congestion (Dixon, 2006). In order for decision makers, policy analysts, and other stake holders to begin the process of implementing curative strategies, there needs to be available accessible databases that provide the foundational information necessary for the process to move forward.



“Achieving sustainable development is perhaps one of the most difficult and one of the most pressing goals we face. It requires on the part of all of us commitment, action, partnerships and, sometimes, sacrifices of our traditional life patterns and personal interests.”

Mostafa Tolba

Research Program

LTC Pending 09/10 Proposals FY 08/09

Improving Goods Movement in a Metropolitan Area Adjacent to a Port

2009-SGP-1040 CSU Dominguez Hills

08/09 AMT/Total: 4,999

Pourmohammadi, Hamid | hamid@csudh.edu

Southern California and specially Los Angeles faces enormous congestion associated with increase in cargo movement from/to the regional Ports. The region has started to drown in a sea of trucks and trains. This growing congestion has elevated the costs of freight transport. Also, it resulted in greater concerns regarding environmental impacts on local communities. Considering the predicted tripling of cargo movement through the ports in the next two decades, it is crucial to develop immediate alternative arrangements for freight management. More efficient operational management of intermodal transport provides effective cargo movement and maintains environmental justice. In this study, analytical tools, such as mathematical programming, are employed to develop a new strategy for cargo movement in order to lesser congestion and environmental impact.

Building Hydrogen Economy One Block at the Time

2009-SGP-1041 CSULA

08/09 AMT/Total: 5000

Blekhman, David | blekhman@calstatela.edu

The Governor's S-7-04 executive order states "BE IT FURTHER ORDERED that California's 21 interstate freeways shall be designated as the California Hydrogen Highway Network and . . . Shall work with . . . Local and regional government organizations, educators, energy providers, automakers, fuel cell products suppliers . . ." Governor Schwarzenegger's order has foreseen the United States struggling with the socio-economic aftershocks of the dependence on foreign oil. Hydrogen economy is a likely long-term solution to the dependence on oil, global warming, and clean air concerns associated with the transportation sector. Production of hydrogen from domestic fossil resources, while a short-term alternative, is inferior to electrolysis utilizing renewable energy as a comprehensive solution to clean transportation.

Effective Decision Making Started with a Effective Curriculum

2009-SGP-1042 CSULA

08/09 AMT/Total: 5000

Blekhman, David | blekhman@calstatela.edu

Effective Decision Making and Management of Transportation Systems is based on well prepared decision makers and managers, who should possess knowledge and experience related to the technologies that are the subject of their decision making. Greater Los Angeles and the surrounding areas are amongst the most congested and polluted in the country. Fortunately, newer less polluting technologies are being developed and implemented. Among them are hybrid and fuel cell vehicles meeting SULEV and zero emission standards. These technologies exist in a multitude of choices and possibilities which require high level of technical expertise in making effective transportation management decisions. For example, LA Metro has recently acquired six hybrid buses for fleet testing. The agency also hired an engineer with appropriate experience in heavy-duty hybrid systems to aid in the service and evaluation process. A decision will be made upon completing the test period whether to extend the hybrid bus program in Los Angeles. With the advent of new electric, hybrid and fuel cell vehicles, the growing need for engineers and technology managers with related knowledge is anticipated.

Evaluation of Waste Recycled Materials Application in Highway Pavement in California an Overview of Research

2009-SGP-1043 Cal Poly San Luis Obispo

08/09 AMT/Total: 5000

Rahim, Ashraf | sponprog@calpoly.edu

The generation, handling, and safe disposal of solid wastes have become a major concern in the United States. Many disposal facilities are approaching capacity and environmental regulations have become increasingly wide-spread and restrictive. Also, there is a growing public awareness of the importance of conserving and preserving our valuable natural resources. This expanding awareness has given rise to a definite trend towards recycling or use of a variety of solid waste materials.

The construction of pavements requires large volumes of expensive materials. As the volume of waste and by-product materials generated and the cost of disposal continue to increase, there is an increasing need to recover and recycle these materials for use in both primary and secondary applications of highway projects. Waste and by-product materials, differ vastly in their types and properties. This will be reflected in the pavement applications for which they may be suited. Also, experience and knowledge regarding the use of these materials vary. The objective of this research is to review the applications of different waste and by-product materials in the construction and rehabilitation of the asphalt pavements in California. An extensive literature search will be conducted and summarized in a final report which will be submitted to LTC at the end of study. The focus of this overview research will be on the use of Recycled Asphalt Pavement (RAP), the use of Crumb Rubber (CR) and Recycled Concrete Aggregate (RCA) in asphalt pavement construction/rehabilitation in California. The finding of this research is expected to pave the road for an extensive laboratory investigation.

Feasibility of Linear Synchronous Motor Truck Lanes to Reduce Pollution and Traffic Congestion on Inland Empire Freeways

2009-NBG-1045 CSULB

08/09 AMT/Total: 50,000

James, Kenneth | james@csulb.edu

The recent interest in “clean” movement of containers along Southern California freeways has prompted the South Coast Air Quality Management District (SCAQMD) and the California Department of Transportation (CALTRANS) to develop requirements for zero-emission container transport. This proposal (1) describes a realistic approach to reduction of goods movement pollution—the LSM/HA propulsion system, (2) proposes a detailed study of both the implementation and operational plans for such a system, and (3) provides a preliminary estimate of the pollution reduction capability of such a system.

Technology Transfer Program

The Leonard Transportation Center held its First Annual Transportation Research Conference Friday February 6th, 2009 at California State University, San Bernardino's Santos Manuel Student Union.

The conference was themed "Decision Making" and hosted a panel of guest speakers from the transportation community; including the conference's Keynote Speaker Larry Orcutt the Caltrans Division Chief of Research of Innovation.

The Leonard Transportation Center is also funding a handful of research projects and the individuals responsible for the research attended the conference and presented their findings.

Dr. Cornelius Nuworsoo of Cal Poly San Luis Obispo is researching "The State of Affairs with Senior Mobility in the US Today."

His findings will examine the number of seniors on the road and how those numbers effect other drivers.

Also there to present his findings was Dr. Xudong Jia of Cal Poly Pomona to share his research ideas on the topic of the "Use of GIS Technologies to Facilitate the Transportation Project Programming Process." Jia's results will help integrate the use of the GIS Technology with transportation project programming activities within the Inland Empire transportation agencies.



First Annual Leonard Transportation Center Research Conference

Agenda

Panel One: Local Transportation Agency Research Needs

- Steve Smith - Planning & Programming, San Bernardino Associated Governments (SANBAG)
- Brent Felker - Senior Vice President and West Region Transportation Director, HDR Engineering, Inc.
- Peter Liu - Intelligent Transportation Systems, METRO / Los Angeles County Metropolitan Transportation Authority

Panel Two: Grant Funding Requirements

- Lydia Mercado, University Programs Specialist, U.S. Department of Transportation, Research & Innovative Technology Administration (RITA)
- Charles "Stan" Stanley - Sponsored Programs Administration Director, Foundation Sponsored Programs, Cal State San Bernardino

Session I: Center Funded Research

- Alex Clayton - Cal Poly Pomona - "California Green House Gas Emissions Legislation Overview: AB32 & SB375"
- Dr. Mike Reibel & Kelly Chan - Cal Poly Pomona - "Regional Planning and Geospatial Data Issues Relating to California's New Climate Change Prevention Laws"
- Dr. Sudeshna Mitra - Cal Poly San Luis Obispo - "Spatial Autocorrelation and Bayesian Spatial Statistical Method for Analyzing Fatal and Injury Crash Prone Intersection"
- Dr. Cornelius Nuworsoo - Cal Poly San Luis Obispo - "The State of Affairs with Senior Mobility in the US Today"

Keynote Speaker

- Larry Orcutt - Caltrans, Division Chief, Division of Research and Innovation

Session II: Center Funded Research Continued

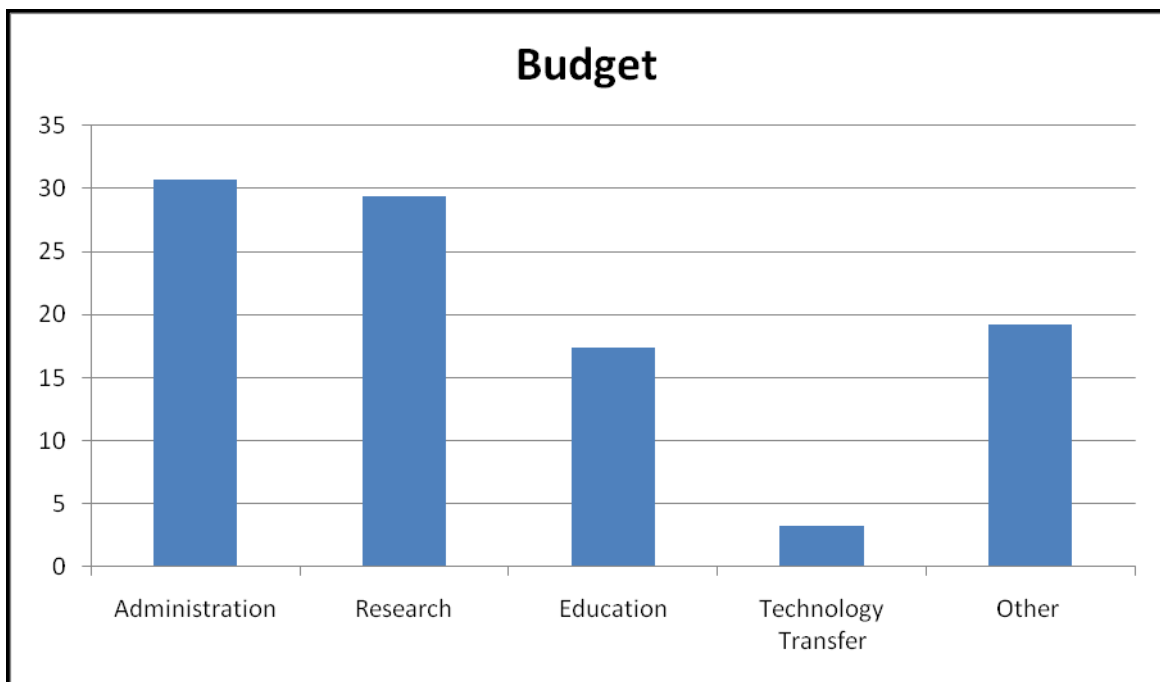
- Dr. Xudong Jia - Cal Poly Pomona - "Use of GIS Technologies to Facilitate the Transportation Project Programming Process"
- Dr. Tony Coulson - Cal State San Bernardino - Transportation & Logistics "Technology Integration Online"
- Tania Parmar - Cal State San Bernardino - "Punta Colonet: Multimodal Project in Baja California"
- Jose Garcia - Cal State San Bernardino - "Transportation and Distribution Systems in the Inland Empire: The Impact of the Port Ensenada Proposals"

Session III: Student Research Presentations

- Benjamin Chan - Cal Poly Pomona - "Performance Evaluation of the LATOT's Adaptive Control System on an Arterial Corridor"
- Patrick Son - Cal Poly Pomona - "Development of a Policy for Maintaining Traffic Signal Coordination"
- Vicky Yang - Cal Poly Pomona - "Applying MATLAB to the Highway Capacity Manual"
- Shawn Barker - Cal State San Bernardino - "Automated Multimedia Distribution: A Lecture Delivery System"

Funding Sources and Expenditures

In 2008-09 the Leonard Transportation Center received \$457,000 from Caltrans and \$457,000 from the U.S. Department of Transportation bringing the total to \$914,000.

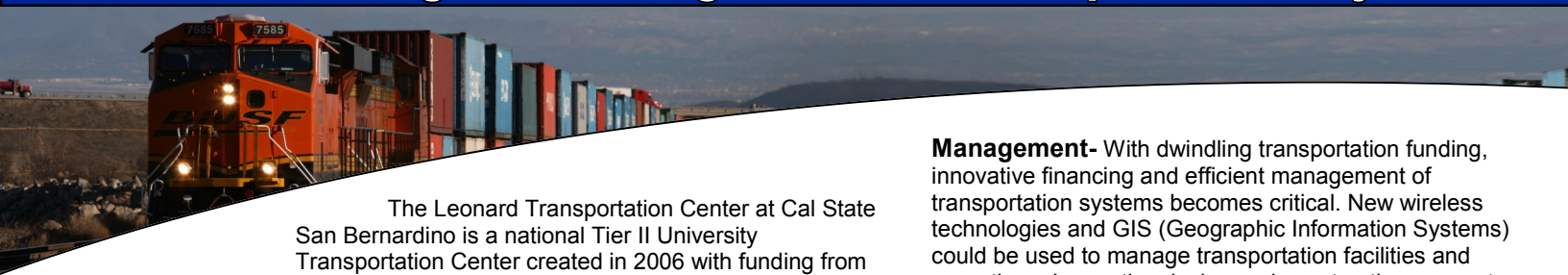




Leonard Transportation Center

CAL STATE SAN BERNARDINO

Decision Making and Management of Transportation Systems



The Leonard Transportation Center at Cal State San Bernardino is a national Tier II University Transportation Center created in 2006 with funding from the federal Department of Transportation and Caltrans. The theme of the Center is decision making and management of transportation systems. It reflects the commitment to confer local, state and federal transportation providers with increased capability for quality transportation decisions, while also imparting tools to better manage transportation systems and transportation investments.

Decision Making- Various local, regional, state and federal planning, funding and managing authorities operate under an array of regulations and legislation. Policy analysis and formulation, decision making under uncertainty, and lack of consensus among transportation providers and users often add confusion to sometimes conflicting goals among constituencies. An emphasis on documenting present shortcomings and making suggestions for changes in transportation decision making is a priority, not only for the Inland Empire, but also for most other urbanized areas throughout the country.

Management- With dwindling transportation funding, innovative financing and efficient management of transportation systems becomes critical. New wireless technologies and GIS (Geographic Information Systems) could be used to manage transportation facilities and operations. Innovative design and construction concepts may also help improve timely construction within budget, safety for users, additional security, more efficient routing, and less congestion and air pollution. New financing schemes including public-private partnerships may help improve the nation's aging transportation infrastructure. The Center is committed to studying and disseminating research information to continually improve the management of transportation systems.

By working closely with multiple CSU campuses, the Center advances interdisciplinary research and enhances broad-based curricula to draw more talented researchers and students into transportation. The Center is committed to reaching across public, private, and academic communities to assimilate best practices methodology for transportation leadership and decision making. The Leonard Transportation Center is a leader in advocating efficient and environmentally sustainable resource allocation to move people and goods from a local, regional, state and national perspective.

<http://leonard.csusb.edu>

Education

Building a strong application-driven, multidisciplinary transportation curriculum that connects community college and professional programs in California to meet the demands of public and private sectors in Inland Empire:

- Benchmarking for graduate and undergraduate programs in transportation
- Additional course offerings in transportation
- Smooth transfer from community colleges
- Quarterly meetings for transportation and logistics faculty and students
- Field trips to local transportation organizations

Human Resources

Training and developing students and professionals into tomorrow's leaders and managers in transportation with collaborations with professional organizations and increased faculty involvement from CSU system-wide campuses:

- Certificates in transportation and logistics
- Workshops in transportation
- Survey of local employers on needs for transportation professionals
- Transportation entrepreneurship

Research

Funding research that explores LTC's strategic theme and meets the needs of public and private sectors in California and beyond:

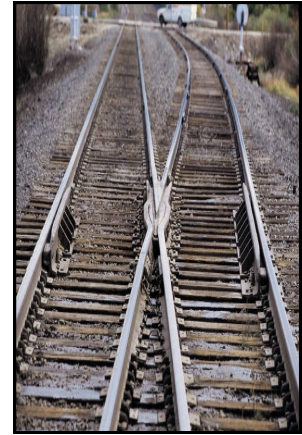
- Senior mobility issues
- Transportation strategies under AB 32 and SB 375
- Inland port
- International trade and goods movement
- Smart growth
- Climate change

Technology Transfer

Creating multiple platforms for dissemination of innovations, cutting edge research, and new technologies in transportation.

- Annual Forum on transportation policy issues
- Annual Research Conference for knowledge dissemination
- Quarterly speaker series on transportation issues
- Technical assistance to municipalities
- Periodic Academic publications for knowledge dissemination

California State University San Bernardino
Jack Brown Hall 283
5500 University Parkway, San Bernardino, CA 92407
Phone: 909.537.5094



FY 2008-2009 Annual Report
Leonard Transportation Center

California State University , San Bernardino
Jack Brown Hall, Room 283
5500 University Parkway,
San Bernardino, CA 92407-2397
Phone | 909.537.5094
Fax | 909.537.5087
<http://leonard.csusb.edu>



* <http://www.ecoopinion.com>