MICHAEL WILLIAMS

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WORK HISTORY

Michael Williams Company ***2017–***

I am a consultant working in the planning and design of active transportation projects and public works construction management. My areas of specialization are rural environments, edge lane roads/advisory bike lanes, and the feasibility of roundabout-based corridors. With regards to the edge lane road treatment, I conduct and publish research on the treatment while advocating for its acceptance in the transportation field. I am the national expert on this treatment; I have consulted and presented on this treatment around the country. My website is widely known to be the authoritative resource on this treatment. I have conducted safety research on the use of this treatment in the U.S. and have created design guidance that is currently lacking. I have published a number of peer-reviewed articles on this treatment.

California SB1 grant to study edge lane road treatment - 2019

NCUTCD Technical Member since 2020

2020-2024 California State Highway Safety Plan Participant

Alta Planning + Design ***Portland, OR*** ***2016–2017***

Originally hired as the Institute for Bicycle and Pedestrian Innovation honoree, I became an independent contractor and planner/engineer at Alta. I was the primary author of a white paper on Advisory Bike Lanes. I created guidelines for low stress bicycle networks in roundabout corridors. I contributed to various transportation plans as needed. I authored construction specifications for CV/Link project. I was the sole engineer in the Portland headquarters and provided input on foreign and domestic projects. I was a contributor to the FHWA Small Town and Rural Multimodal Network Guide.

Research Assistant, Portland State University ***Portland, OR*** ***2015-2016***

I evaluated software for automated extraction of surrogate safety measures from traffic video. First place poster at the Transportation and Communities Summit, 2016. I researched and recommended surrogate safety measures to be used for evaluation of signal strategies for reducing right hook collisions.

Student, M.S. Civil Engineering, Portland State University ***Portland, OR*** ***2015-2017***

I obtained my M.S. in Civil Engineering and Urban Planning with an emphasis on active transportation.

General Contractor, Owner-Consultant, TMW ***Mt Shasta, CA*** ***2001-2015***

Licensed as a General Contractor in California, I supported other general contractors that lacked public works bidding, estimating, and project management capacity. I specialized in Caltrans work. During the construction season, I managed multiple projects, some worth more than $2 million.
For my primary client, I was responsible for increasing annual volume from $3 million to $10 million within a 5-year period. For this client, I initiated and moved the company from an emphasis on buildings to one on roads and bridges as the recession hit and ARRA funds became available.

Time Off for Birth of Twin Daughters ***1999-2000***

I devoted approximately one year to my twin daughters upon their birth.

Private Engineering Consultant, TMW ***Mt. Shasta, CA*** ***1995-1999***

After moving to Mt. Shasta, I continued work with defibrillators and expanded to other medical devices. I authored requirements and specifications for features in next-generation defibrillators. I pursued patents on innovative features. I evaluated and recommended microprocessor architectures and development tools for use in future defibrillator systems. I conducted research on microprocessors, detection algorithms, and software development tools for implantable neural stimulators used to treat epilepsy.

Manager Defibrillator Software Development, Ventritex ***Sunnyvale, CA*** ***1988-1995***

I had two primary roles at Ventritex. The first was as an embedded systems programmer. From this position, I graduated to roles that included system design, algorithm development, and management of the defibrillator software department. My programming work required intimate knowledge of the custom hardware, knowledge of cardiac arrhythmias, and creation of custom testing tools. The product consisted of a PC-based platform and an implantable device using a 6502-based custom chip. The languages used were C, C++, and assembly language. Debugging work involved use of custom designed equipment, oscilloscopes, logic analyzers, in-circuit emulators, and more.

My work on new arrhythmia detection algorithms required research into existing approaches, adaptation of compute-intensive algorithms to a low-power 8-bit CPU, and creation of specialized equipment and protocols for human and animal testing. Results of this development were incorporated into future products. I created specialized tools for our defibrillator testing and development environment. I was responsible for evaluating competing patents affecting algorithm development.

As department manager I had other responsibilities. In product development, I was a key contributor to system and device specification, took a lead role in system design for programmer/defibrillator partitioning, contributed to regulatory submissions, and oversaw major software development projects. I led the move within the company from an ad hoc software development environment to an executable object-oriented design methodology suitable for life-critical products. I grew my group from 2 to 14 people plus consultants.

Worldwide Travel ***1986-1988***

I spent over one year traveling the world.

Lead Software Engineer, Harmon Electronics ***Foster City CA*** ***1982-1986***

My main responsibility at Harmon was embedded systems programming on a real-time product used in the railroad industry. This product was an 8051 microcontroller-based design. The languages used were PLM-51 and assembly language. Debugging required use of oscilloscopes, logic analyzers, in-circuit emulators, and more. My duties as a working manager included scheduling and supervision of 3 engineers.

PRESENTATIONS AND PUBLICATIONS

All publications and links available at www.edgelaneroads.com

Towards A Siting Criteria for Edge Lane Roads and Shared Streets ***2024***
Transportation Research Board, National Academy of Sciences, approved for presentation

A Simulation of Edge Lane Roads and the Impacts of Traffic on Road User Interactions ***2023***
Road Safety on Five Continents Conference, presentation of findings by Dr. Pande

Manual for Edge Lane Roads for Federal Land Management Agencies ***2023***
FHWA Innovation and Research Council grant, ongoing

Safety Performance of Edge Lane Roads ***2022***
November, 2022 ASCE Journal of Transportation Engineering Article

Design Symposium ***2022***
2022 California Bike Summit Workshop

On the Edge—New Applications and Safety Outcomes of Edge Lane Roads ***2022***
Transportation Research Board, National Academy of Sciences webinar

Guest, Active Towns Podcast titled "Demystifying Edge Lane Roads" ***2021***
October, 2021 Episode, 13K+ views

Sight Distance for Edge Lane Roads ***2021***
August, 2021 ITE Journal Article

Safety Performance and New Uses of Edge Lane Roads ***2021***
Organized and Co-Presented Panel at 2021 ITE International Conference

Novel Uses of Edge Lane Roads ***2021***
Organized and Co-Presented Panel at 2021 Walk/Bike/Places Conference

Safety Performance of Edge Lane Roads ***2021***
Jan 18, 2021 Poster Presentation of safety data at Transportation Research Board Annual Meeting

Safety Considerations for all Road Users on Edge Lane Roads ***2020***
California State research report on edge lane roads investigating safety, interactions, and use on rural, high-speed roads.

Edge Lane Roads – Introduction and New Uses ***2020***
Oct. 2, 2020 Presentation to Caltrans Design Think Tank Meeting
Aug 20, 2020 Presentation to the Streets & Freeways subcommittee of the Los Angeles Metro MPO
Aug 6, 2020 Presentation to the Humboldt County Transportation Technical Advisory Committee

Edge Lane Roads – A New Type of Shared Road for All Vulnerable Road Users ***2020***
May 29, 2020 Presentation at UC Davis Institute of Transportation Studies

Edge Lane Roads – A New Shared Road for All Vulnerable Road Users ***2020***
March 11, 2020 Presentation at Community Transportation Association Northwest Summit

Advisory Bike Lanes and Shoulders: Current Status and Future Possibilities ***2019***
December 2019 ITE Journal Article

Edge Lane Roads – Beyond the Guidance ***2019***
August 26, 2019 APBP 2019 Conference Presentation

Advisory Bike Lanes May Improve Safety on Rural, High-Speed Roads ***2019***
August 26, 2019 APBP 2019 Conference Poster

Edge Lane Roads Research Needs Statement ***2019***
August 16, 2019 AASHTO Joint Technical Committee on Non-Motorized Transportation

Advisory Bike Lanes Overview ***2019***
January 10, 2019 National Committee on Uniform Traffic Control Devices (NCUTCD) Meeting

Advisory Bike Lanes - A Detailed Discussion ***2018***
October 25, 2018 Institute of Transportation Engineers (ITE) Webinar

ABLS - What are They? Why Should You Care? How To Use Them? ***2018***
September 19, 2018, Presentation at 2018 Walk/Bike/Places Conference

Slow Streets Workshop ***2018***
September 14, 2018, Transportation and Communities Summit Workshop on Slow Street Treatments

A New Type of Road for North America: Solving the Challenge of Non-Motorized Infrastructure with Advisory Bike Lanes ***2018***
September 2018, ITE Journal Article

Designing for Rural Bicyclist Safety ***2018***
August 16, 2018, National Center for Rural Road Safety Webinar

Moving Beyond the Centerline - Advisory Bicycle Lanes, Best Kept Secret ***2018***
August 15, 2018, Association of Pedestrian and Bicycle Professionals (APBP) Webinar

A Review of the Oregon State Vehicle Code for ABL-Related Issues ***2018***
Self-published at https://www.advisorybikelanes.com/uploads/1/0/5/7/105743465/review_of_oregon_state_vehicle_code_for_abl_relevant_passages.pdf

Advisory Bicycle Lanes ***2018***
May 30, 2018, Presentation to LiveMove

Advisory Bicycle Lanes ***2018***
May 30, 2018, Presentation to City of Eugene with advice on current projects

Advisory Bike Lanes: Current Status and a Way Forward ***2018***
April 5, 2018, Presentation to California DOT and California Bicycle Advisory Committee

Advisory Bicycle Lanes - Guidance and Case Studies ***2018***
March 27, 2018, Presentation to Oregon DOT

Advisory Bicycle Lanes Research Needs Statement ***2018***
January 20, 2018, Adopted by Transportation Research Board

Overview of Advisory Bike Lanes in North America ***2017***
Presentation for Transportation and Research and Education Center at Portland State University

Advisory Bike Lanes Workshop ***2017***
Workshop at 2017 California Bike Summit

Road Diet V2.0: 5 Lanes to 2 Lanes ***2017***
Presentation to Oregon DOT on corridor transformation using roundabouts and road diets.

Advisory Bike Lanes ***2017***
Pecha Kucha presentation, 2017 Transportation and Communities Summit

Lessons Learned: Advisory Bike Lanes in North America ***2017***
White paper on ABLs in North America, published by Alta Planning + Design.

Feasibility Guide for Road Diet V2.0 - A 5/4 Lane to 2 Lane Road Diet ***2017***
Self-published at www.advisorybikelanes.com/road-diet.html.

Advisory Bicycle Lanes – Reality versus Design Guidance ***2017***
Self-published at www.advisorybikelanes.com

PATENTS

- "Medical Device with Morphology Discrimination", U.S. Patent No. 5,240,009, sole author, European patent issued
- "Method and Apparatus for Interrogating an Implanted Cardiac Device", U.S. Patent No. 5,413,594, sole author, European patent issued
- "Implantable Defibrillator Output Stage Test Circuit and Method", U.S. Patent No. 5,431,684, co-author, European patent issued
- "A Method and System for Testing an Implantable Defibrillator Output Stage and High Voltage Lead Integrity", U.S. Patent No. 5,453,698, co-author
- "Apparatus and Method for Presenting Patient Electrocardiogram and Implantable Device Status Information", U.S. Patent No. 5,669,391, sole author
- "Method for Storing EGM and Diagnostic Data in a Read/Write Memory of an Implantable Cardiac Therapy Device", U.S. Patent No. 5,732,708, co-author
- "System and Method for Waveform Morphology Comparison", U.S. Patent No. 5,779,645, co-author
- "System and Method for Optimal Sensing of Cardiac Events", U.S. Patent No. 5,941,830, sole author
- "Methods For Sensing Arrhythmias in a Pacemaker/Defibrillator and a Pacemaker/Defibrillator Programmed to Implement the Same", U.S. Patent No. 6,484,058,co-author
- "Methods For Sensing Arrhythmias In A Pacemaker/Defibrillator And A Pacemaker/Defibrillator Programmed To Implement The Same", U.S. Patent No. 6,324,422, co-author
- "Methods For Sensing Arrhythmias In A Pacemaker/Defibrillator And A Pacemaker/Defibrillator Programmed To Implement The Same", U.S. Patent No. 6,564,097, co-author

PROFESSIONAL ORGANIZATIONS AND AWARDS

IBPI Scholar ***2016***
The Initiative for Bicycle and Pedestrian Innovation awards $2,500 and an Alta internship to a promising student focusing on bicycling and walking as mainstream forms of transportation.

NITC Scholar ***2016***
The National Institute for Transportation and Communities recognizes outstanding students working on transportation projects.

Citizen of the Year, City of Mt. Shasta ***2000***
Because of my work on fundraising and construction of the Siskiyou Ice Rink and the establishment of the Mt. Shasta Summit Century, I was selected Mt. Shasta's Citizen of the Year in 2000.

Institute of Electrical and Electronics Engineers (IEEE) EMBS Chapter Chairman **1990 - 1992**
Awarded Outstanding Chapter of the Nation by IEEE in 1992

Member of ITE, APBP, ASCE, NCUTCD

EDUCATION

M.S. Civil Engineering	**Portland State University**	**2015 – 2017**
M.S. Electrical Engineering	**UC Santa Barbara**	**1984 – 1986**
B.S. Computer Engineering, Math/Physics minor	**CSU Chico**	**1977 – 1982**

COLLABORATION AND LEADERSHIP

Action Item Lead ***California State Highway Safety Plan*** ***2020-2024***
Member of the Pedestrian and Bicycle Challenge Areas. Lead for action items in the Pedestrian, Bicycle, and Lane Departure Challenge Areas.

Technical Member ***NCUTCD Bicycle Technical Committee*** ***2020-***
Member of Advisory Bike Lane Task Force

Research Needs Statements ***2018-***
Authored research needs statements for AASHTO, TRB, NCHRP.

Advisory Bike Lanes Listserve ***2018-***
Established and curate an email listserve for those interested in edge lane roads, AKA advisory bike lanes

Active Transportation Advocate ***Siskiyou County, CA*** ***2006-2015***
For the City of Mt. Shasta: I fundraised and guided creation of the City's AT master plan in 2007. I chaired the City's AT committee for most of its life, won 4 grants worth over $250K to build bike lanes and trails, worked with City Police to reverse a six-fold decrease in collision reporting, I managed a traffic safety assessment for City, and I led the effort for a detailed design document for our primary AT facility.

For our Regional Trail: I established the concept, gathered County stakeholders, held support-raising and informational meetings, performed route finding, conducted ROW acquisition negotiations, developed a plan for funding ROW acquisition, developed a design document for the trail showing current conditions and preferred treatments for each segment.

For the County: I submitted a grant application for a countywide Active Transportation Plan and advocated for greater transparency at the Regional Transportation Planning Agency. Advised City of Weed on their Active Transportation Plan.

Outside the County: I am a member of the Policy Advisory Council for the California Bicycle Coalition, the state's premier lobbying organization on cycling issues. I am a former Boardmember of Shasta Living Streets in Redding, CA which is a successful active transportation advocacy organization.

Self Education: In the ten years prior to entering PSU, I self-educated myself on AT facility design, street design, industry standards, road geometrics, transportation funding programs/processes and grant preparation/submittals.

Chair, Planning Commission ***1997-2000***
I was appointed to the Planning Commission for the City of Mt. Shasta in 1997 and became its Chair soon thereafter.

Leader & Project Manager, Siskiyou Ice Rink ***1998-2007***
In 1998, I initiated a project to build an ice skating rink in Mt. Shasta. I spearheaded the most successful fundraising effort in County history and oversaw rink construction. I remained involved for years after construction helping with fundraising and operations. We raised over $700,000 to fund the project.

Co-Founder, Mt. Shasta Summit Century and Mountain Wheelers ***1997-2014***
A friend and I founded the Mt. Shasta Summit Century and a cycling group to support it. This event is a supported bicycle ride which ranks as one of the most difficult in the nation and grew to over 600 riders. All profits from the ride ($10,000 - $20,000 per year) went to trails, public projects, and youth sports groups.

Founder and Chair of ACROSS (Associated Charitable Resource of South Siskiyou) ***2000-2016***
I established a 501(c)3 nonprofit organization whose purpose is to incubate and umbrella charitable community projects for which the burden of establishing a dedicated nonprofit corporation is excessive. Our biggest successes were a 13,000 square foot skateboard park and the Siskiyou Ice Rink.

Chair, Computer Science Honor Society (Upsilon Pi Epsilon) ***1982***
Chair, Association of Computing Machinery (ACM) ***1982***
I held these positions while an undergraduate student at the California State University in Chico, CA.