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Intersection: Orientation and Mobility as Interdisciplinary Conversation

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Intersection: Orientation & Mobility as Interdisciplinary Dialogue

Portland State UNIVERSITY

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Thought Questions:

What do you imagine when you think of individuals who have visual impairments?

What do you know about Orientation and Mobility?

What do you know about participatory design?

What if environments that were designed to include individuals with visual impairments were better environments for all people in terms of access and transportation?

Perspective on Dialogues- Design & O&M

As an individual with visual impairments and an engineer, I’m here to share a perspective on design on mass usage. Today we have the power to create and share knowledge that empower people with real time information and access. In my job each day, I consider factors that will touch the lives of millions of people. As a person who happens to be blind, I also experience the world as a minority.

An image of Prateek on a forest hike holding two hiking poles above his head and smiling.

Perspectives on Dialogues- Design & O&M

I’m a Coordinator of a new Orientation and Mobility Program and an Assistant Professor at PSU.

I happen to be the sister of an individual with visual impairment and multiple disabilities. I grew up in the time when people with disabilities, particularly those with multiple disabilities, were first being allowed to go to school.

An image of a special needs bus.

Image credit: purplewave.com

What is O&M?

Orientation is the awareness of one’s position in space and mobility is how one moves through that space (Wiener, Welsh, & Blasch, 2010).

(Image description: an elementary-school aged blind girl with light brown skin and black hair is traveling on a rural dirt path next to a grass filled meadow. She is using her long cane on the journey. Image credit: Public Radio International)

What is O&M?

Orientation and mobility (O&M) is a set of concepts, skills, and techniques for safe, efficient travel by individuals with visual impairments, including deafblindness, in all environments and under all conditions (Jacobson, 2013).

A young boy holds a cane and a device called the DeafBlind Pocket Communicator near a bus. He is preparing to board the bus with his COMS and to communicate with the driver.

O&M tools and devices

“Independent travel often involves the use of orientation and mobility devices and tools (e.g., long canes and dog guides) and orientation technology (e.g., global positioning systems [GPS] and mobile apps)” (Kaiser, Cmar, Rosen & Anderson, 2018).

O&M Specialists

Guided by a Code of Ethics

Practice based on a set of knowledge and skills related to teaching individuals in their natural environments

Recognized in statute and regulation in the United States within the Individuals with Disabilities Education (IDEA) and the Rehabilitation Act of 1973.

(Kaiser, Cmar, Rosen & Anderson, 2018)

An image of two women traveling on the sidewalk negotiating street furniture.

Certifying Bodies

Academy for Certification of Vision Rehabilitation & Education Professionals

The Academy is an independent and autonomous legal certification body governed by a volunteer Board of Directors dedicated to meeting the needs of the vision services.

acvrep.org

The National Blindness Professional Certification Board (NBPCB) was created to certify qualified specialists in work with the blind.

At present, the Certification Board oversees four certifications including the National Orientation and Mobility Certification (NOMC).

nbpcb.org

Project COMET

Certified Orientation and Mobility Educators in Training at Portland State University

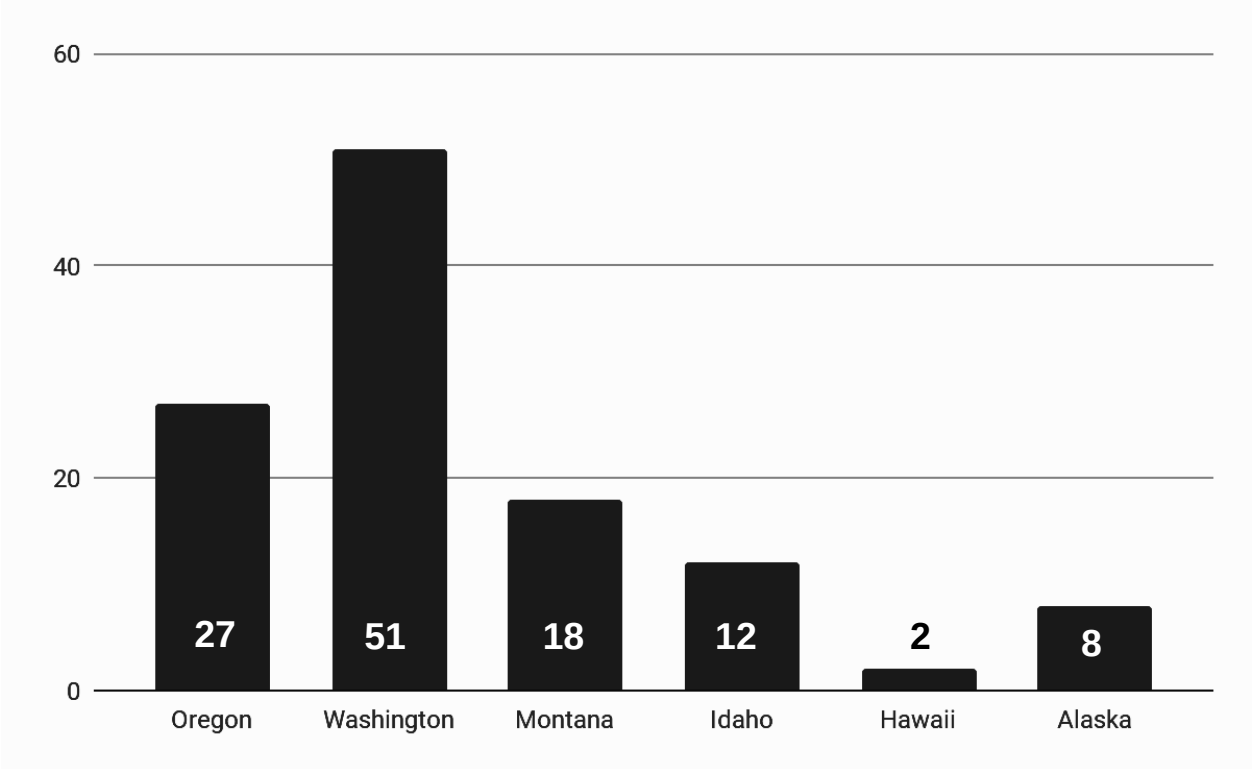
Orientation and Mobility through Equity and Inclusion Lens

Research and advocacy in areas of:

- Accessible environmental design both indoor and outdoor
- Accessible technology & universal design related to travel
- Affordable transportation
- Available transportation in rural areas

Number of Certified O&M Instructors in the Pacific Northwest

Data gathered from partners in the Pacific Northwest in 2015 to support the need for an O&M program at Portland State University.



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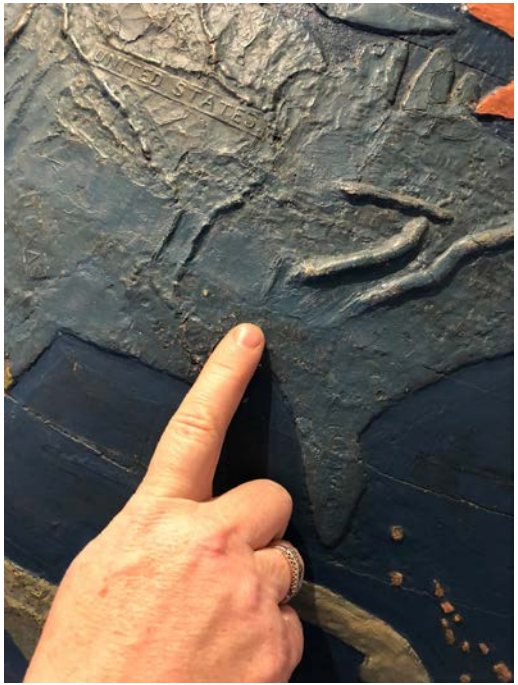
Project COMET Objectives

1) Train 38 orientation and mobility (O&M) instructors in the Pacific Northwest, Alaska, and Hawaii
2) Through a regionalized, innovative hybrid training program, the four major objectives are to:
    a) offer research-based course content related to O&M for individuals with visual impairment (VI) and additional disabilities, particularly those with deaf-blindness;
    b) provide evidence-based instruction critical to developing culturally and family responsive O&M services; and
    c) prepare O&Ms to acquire competencies in distance mentorship and consultation (DMC) as a service delivery model during practicum and student teaching experiences.

Instructional Design for Online Courses



Use of:

Multimedia Use: Readings, Video Clips, Case Studies Podcasts

Quizzes, Discussion Boards, Assignments, Community Observations with Clinical Partners

An image of a old globe housed at Perkins School for the Blind and Helen Keller in her 70s reading.

Instructional Design for Face-to-Face Experiences

Work on the structure and framework for teaching this summer

Travel through a sequence of environments learning to demonstrate, teach, observe, and synthesize information

An image of our O&M team who will be working with PSU's Advanced O&M class and practicum

White Cane Day
Oct. 15th

Creating community across the distance!

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Diverse Areas of Instruction for Diverse Populations

Enrichment experiences:

Guide Dogs

Wayfinding Apps & Technology

Wheelchair Mobility

An image of O&M instruction on a street in Portland with 4 people

Natural Dialogues in O&M, Transportation & Design

An image of the SW 6th & College Max Line Crossing- Green and Yellow Lines Northbound

Person in natural and built environment

The use of one's senses.

The use of space.

The interaction of the person in the environment to achieve a purpose.

Equity in travel and access.

Participatory Design

Participatory designs sound simple, but this type of design involves engagement with diverse members of a community.

Engagement can be expensive in terms of the time that it takes to listen to each other.

Lack of engagement is also expensive.

An image of two women communicating sitting at a table- using print-on-palm.

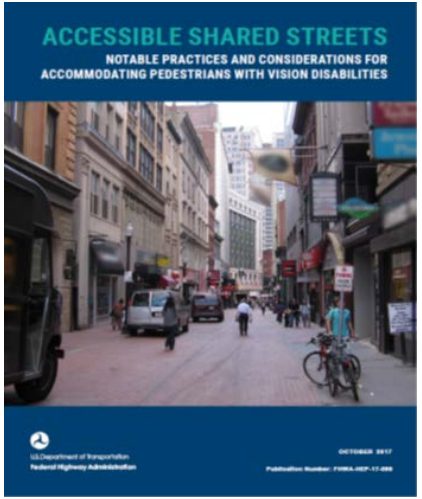
One woman with white hair is smiling as a younger woman uses her index finger to trace a letter on her palm.

Image credit: Deaf Services Queensland

A Recent Example of a Participatory Project

Participatory design engages members of a community in creating solutions.

One recent example of a product that was created through participatory design is the creation of the Accessible Shared Street Guide, which engaged transportation engineers, federal and state agencies, community participants with visual impairments and deafblindness, and O&M specialists.



Accessible Street Guide Webinar

Elliott, Jim; Barlow, Janet; and Goodman, Dan, "Webinar: An Accessible Approach to Shared Streets" (2018). *TREC Webinar Series*. 25. https://pdxscholar.library.pdx.edu/trec_webinar/25

Participatory Design

Principles of participatory action research involve valuing the knowledge and experiences of a community.

Asking people not only to respond to our questions but providing ways to unlock their knowledge in defining and solving shared challenges.

Kim, D. S., Emerson, R. W., & Gaves, E. (2016). Travel in Adverse Winter Weather Conditions by Blind Pedestrians: Effect of Cane Tip Design on Travel on Snow. *Journal of Visual Impairment & Blindness*, *110*(1), 53–58.

Local Partnerships Transportation, O&M and Community Members

- David Miller, a COMS who is fluent in American Sign Language at the Seattle Lighthouse for the Blind partners with the Seattle DOT and members of the DeafBlind and blind communities to create solutions
- A paper map with tactile markings used to engage community members with city planners. This is a region of Seattle around Jimi Hendrix park and a particularly challenging section of 23rd Avenue S. and Rainier Avenue

DeafBlind Pocket Communicator

DeafBlind Pocket Communicator from APH

APH Tactile Graphic Library

3-D Printing as a Mechanism for File Sharing, Rapid Prototyping and Community Conversation

Accessible Transportation Research

Universal design, leveraging of existing technologies and research in the following areas:

· Smart Wayfinding and Navigation Systems
· Pre-Trip Concierge and Virtualization
· Shared Use, Automation and Robotics

·Safe Intersection Crossing

New technologies and realities
· Lack of or inaccessible signage, maps, announcements or landmark identifiers
·Inconsistent/inaccessible pathway infrastructure

Affordability

Accessible Transportation Technologies Research Initiative. Retrieved from http://www.its.dot.gov/research_archives/attri/index.htm

Participatory Action Research

From the White House in June, 2009 a group of young adults who are deaf-blind co-designed a leadership class about access.

Three of the young adults have yellow labs as dog guides in the Oval Office.

Parker, A.T., Bruce, S., Spiers, E. Ressa, S. & Davidson, R. (2010). Deaf-blind young adults in action: a participatory action research study. *AER Journal: Research and Practice in Visual Impairments and Blindness. 3* (4), 124-131.

Intersections and Opportunities

Though the field of O&M is comprised of practices and research to benefit a low-incidence population of students, the content in the field is relevant to a broad range of disciplines including transportation and urban designers.

Tandem biking- a woman and a teen ride a tandem bike on a path

Image credit: Northwest Blind Athletes Association

How the Small Benefits All

Increased uniformity in design

Improved Access Across Multiple Modalities

Improved Communication

Improved Signage- Contrast and Modalities

https://myblindspot.org/2017/01/transforming-transportation-for-the-worlds-aging-population-and-people-with-disabilities/

Think of Local Community. Think Inclusion

Use what you have in the ecology right around you. This is a value in the Pacific Northwest Region and a principle of sustainability.

You have access to people with visual impairments and other disabilities in your community. Chances are you have some access to Orientation and Mobility Specialists in your communities who can both be linkages to interested youth and adults but can also be a part of finding solutions.

Develop an inclusive mindset.

Questions?

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