Fall 2018

Visual Impairment and Deafblind Education Quarterly

Volume 63, Issue 4

The Voice and Vision of Special Education

Council for Exceptional Children
The voice and vision of special education

Fall 2018 Special Issue: Orientation and Mobility Perspectives

Cover Photo Description:

Four Portland State University Orientation & Mobility (O&M) students walk on a rural path on Sauvie Island as a part of learning to travel in rural environments in their O&M Advanced Techniques summer course. The women are wearing outdoor casual clothing and carrying long canes. The woman leading is wearing a sleep shade and using her cane to navigate while her 3 companions follow behind her on the path.

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Table of Contents

Volume 63, Issue 4

Page

Nominations for Awards!
It is time to be thinking about the taking time to honor the wonderful people of our field that do so much to ensure our students are receiving access to the education they deserve as well as the services they need. Please take time to honor an amazing person in your life.
We have 5 awards that we like to give out each year. Nominations are easy.

DVIDB Distinguished Service Award:
The DVIDB Distinguished Service Award is to recognize exemplary leadership and commitment to the field of education and rehabilitation of students with visual impairments and deafblindness.

Exemplary Advocate Award:
The DVIDB Exemplary Advocate Award is to recognize exemplary leadership and commitment to the field of education and rehabilitation of students with visual impairments and deafblindness.

Teacher of the year:
The DVIDB *Teacher of the Year Award* honors a person who is exceptionally dedicated, knowledgeable and a skilled certified Teacher of Students with Visual Impairments or Certified Orientation and Mobility Specialist in any state approved or accredited day or specialized school, who serves students who are visually impaired, ages birth through 21, with or without additional disabilities.

Virginia M. Sowell Student of the Year Award:
The DVIDB Virginia M. Sowell Student of the Year Award recognizes a student who demonstrates a commitment to the education and/or rehabilitation of individuals with visual impairments and deafblindness. The award was named after Dr. Virginia Sowell whose lifetime contributions to the profession impacted the lives of numerous educators and countless children and adults with visual impairments and deafblindness.

Outstanding Dissertation of the Year Award:
The DVIDB Dissertation of the Year Award is to recognize a DVIDB member who makes a significant contribution to the field through extensive study and research in their summative doctoral dissertation.

To Make a Nomination:

1. Fill out the Nomination Award
2. Provide *at least 1 letter of support* (no more than 2 pages) describing why you are nominating the person. Feel free to add any additional information that you feel will add to the description and qualifications of your nominee for the award.
3. * For Dissertation of the Year: Please provide an abbreviated (No more than 25 pages) version of the dissertation for the committee. One letter of support MUST come from the advisor of the student.

CEC DVIDB Award Nomination Form

I wish to make a nomination for the following award: (check one)

( ) Distinguished Service Award
( ) Exemplary Advocate Award
( ) Teacher of the Year Award
( ) Virginia M. Sowell Student of the Year Award
( ) Outstanding Dissertation of the Year Award

Name of Nominee _____
(Last) (First)

Job Title/Place of Employment_____

Address _____

E-Mail _____

Nomination Submitted by:

Name _____

JobTitle/Place of Employment _____

Address _____

E-mail _____

Phone _____

*Be sure to attach all documentation required for the award

Send materials to wild.13@osu.edu before October 1st, 2018.

Message from the Guest Editor

Tessa McCarthy, Ph.D., TVI, COMS

Assistant Professor

University of Pittsburgh

tessam@pitt.edu

Fall is always an exciting time, particularly for those of us who work in education because fall means it's time to head back to school. As an educator who recently celebrated my 35th first day of school, I always feel a sense of renewal in the fall. A new school year always means a new beginning—a chance to learn more and do better. In the spirit of learning more, this issue of the "Q" focuses not only on orientation and mobility (O&M) but on O&M from perspectives on which we may not necessarily focus. Two of the articles highlighted in this issue, "PedPal: Connecting Pedestrians with Disabilities to Adaptive Signal Control for Safe Intersection Crossing" and "pathVU: Paving the Way for Individuals with Disabilities," are from innovators here in Pittsburgh who are not COMS but are doing important work to improve conditions for both travelers who are visually impaired and their instructors. Sometimes I wonder how often important projects are going on that could directly impact the services we provide, but

we miss opportunities because these projects are being talked about in circles other than our own. The article, “Research Supported Framework for Developing Paraprofessional In-Service Trainings in O&M” does not come from outside our field but does encourage thinking about partnering with other professionals in an entirely new way. I wanted to highlight the article “Teaching Street Crossings in Our Modern World: Self-Study Guides and Software” because I thought readers might not be aware of these learning tools but also because prior to Dona Sauerburger’s detailed look at how the game has changed related to street crossings, few professionals were taking a serious look at the practice of crossing the street on “all-quiet”—a practice that has become increasingly problematic. To wrap things up, I thought it would be fun to hear the perspective of a couple of O&M interns, a voice we from which we do not always hear, with the articles, “Dog Days of Summer: An O&M Intern’s Perspective” and “Canes and Dogs: Interning at a Dog Guide School for Orientation and Mobility Certification.” I thought a reflection from students who just went through the intense experience of interning in a completely new place could be reassuring to future interns and nostalgic for more experienced readers. Finally, highlighting a new O&M program, like the new program at Portland State University, seemed like the perfect way to wrap up a special issue focusing on O&M from new and unique perspectives. I hope this issue brings something new to each person who reads it.

While fall is always a time of excitement for educators, this fall in particular is also a time when many of us are saddened by the loss of one of our colleagues and mentors, Dr. Deborah Hatton. In this issue, we also took some time to pay our respects to Dr. Hatton, who has given so much to DVIDB, CEC, our field as a whole, and to so

many of us as individuals. Although O&M was not a great love of Dr. Hatton who focused her expertise on issues related to early childhood and building up the research literature around evidence-based practices, Dr. Hatton was one of the hardest workers I knew with an unbridled love of learning. The body of work she created throughout her career truly exemplifies the progress that is possible when we look to learn from other professions and those with unique perspectives. I sincerely hope Deborah would have found the spirit of this issue a fitting tribute.

In Memoriam

Dr. Deborah Hatton

1952-2018

In Memoriam

Dr. Jan van Dijk

President's Message

Amy Parker, Ed.D. & COMS

Assistant Professor

Portland State University

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Dear DVIDB Community,

Welcome to Fall! The change in the season brings with it new schedules and with them fresh routes to learn. It also brings one of our special issues, Orientation and Mobility, led by our own Dr. Tessa McCarthy.

O&M is a relatively young field that has benefited from a nexus of knowledge in rehabilitation, special education, assistive technology, early intervention, social work, transportation, urban planning and even architecture. Recognized in statute and regulation as a related service in IDEA, as well as an accommodation in the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, O&M truly brings opportunities to explore what participation in community means for individuals with visual impairment or deafblindness. DVIDB is proud to be a professional home to researchers and practitioners who are passionate about O&M and who, as Tessa demonstrates in this special issue, bring innovations in design and technology and

share their knowledge for the benefit of our community. Through this nexus, we have the chance to explore new paths and influence the environmental design rather than simply supporting our students in adapting to travel environments.

Also, in this issue we honor the life and work of Dr. Deborah Hatton, one of our own leaders who had and continues to have a profound influence upon our standards for teachers, early intervention for children with visual impairments, and on the use of research for improving practice. We are so thankful for her selfless, quiet leadership, and we will miss her as our colleague and friend. In a recent correspondence with Deborah, I shared that her work was supporting the research projects of master's students, and she said that was the best compliment that she could have received. Please know, dear Deborah, that your efforts to raise the bar and to create knowledge that improves the lives of our students and their families will continue to be useful to each one of us.

Please join us in Indianapolis for our convention and pre-convention workshops to continue the cycle of learning and celebration. We look forward to seeing you there!

Amy T. Parker

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PedPal: Connecting Pedestrians with Disabilities to Adaptive Signal Control for Safe Intersection Crossing

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Research Professor

Robotics Institute, Carnegie Mellon University

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Transportation and mobility are crucial for living today. However, for people with disabilities (mobility, vision, hearing, and cognitive), inadequate transportation can hinder them from living a full life. The work described in this article is part of a larger nationwide effort that aims at improving the mobility of travelers with disabilities through research, development, and implementation of transformative technologies, applications, or systems for people of all abilities to effectively plan their personal and independent travel. This research agenda focuses on the needs of three stakeholder groups: persons with disabilities, older adults, and veterans with disabilities.

Background

The United States Department of Transportation (USDOT)'s Accessible Transportation Technologies Research Initiative (ATTRI) is a joint USDOT initiative, co-led by the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), and the Intelligent Transportation Systems Joint Program Office (ITS JPO), with support from the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR), and other federal partners. The ATTRI Program is investing in innovation efforts to develop and implement transformative applications that improve

mobility options for the nearly 20 percent of the U.S. population comprising individuals with disabilities, and other demographic trends such as the increasing number of older Americans. This program is trying to leverage recent advances in vehicle, infrastructure, and pedestrian-based technologies, as well as accessible data, mobile computing, robotics, artificial intelligence, object detection, and navigation. Technologies conceived, developed, and used by ATTRI should provide almost ubiquitous access to a wealth of real-time situational data sources, including data specific to transportation, municipalities, points of interest, crowd-sourced information, and, above all, accessibility data. Based on extensive research and information solicitation, USDOT has determined four priority areas for the development of ATTRI applications: (1) Smart Wayfinding and Navigation, (2) Pre-Trip Concierge and Virtualization, (3) Safe Intersection Crossing, and (4) Shared Use, Automation, and Robotics.

Safe Intersection Crossing

The project to be discussed below is focused on the safe intersection crossing application. This application area is concerned with providing safe crossing assistance at signalized intersections for all types of travelers, and key focus areas include enhancements to signal systems, connectivity with all types of vehicles, and assistive devices. It is imperative that technological solutions including design, focus on assistive tools for people with visual, cognitive, hearing and mobility disability. Assistive tools may be in the form of personal mobile devices, wearable technologies and kiosks on street corners to allow for ubiquitous access to connected services.

Applications in this area provide guidance, notifications and alerts in various communication formats that inform pedestrians of potential complications as they cross

signalized intersections. Applications should focus on providing precise and concise information when needed and at the right moment to enhance decision-making. These applications should minimally address the following issues: the pedestrian interface with traffic signals, vehicles, nomadic devices, and automated intersection crossing assistance, beacons or electronic tags to interact with the built and pedestrian environment, including support for multiple languages, and the sharing of real-time information. They should acquire and provide contextual information, including GIS and crowd sourced information on curb cuts, bus stop locations, side walk grade and slope, and disruptions to the built environment (e.g., damaged infrastructure, dead ends, potholes) to aid all travelers.

Basic *PedPal* Technology Concept

With funding provided by the FHWA through the USDOT's ATTRI program, researchers at Carnegie Mellon University are developing a mobile smartphone app, called *PedPal,* that will allow pedestrians with disabilities to communicate directly with the intersection and actively influence traffic control decisions to ensure safe and efficient crossing. Most basically, the *PedPal* app allows pedestrians to issue crossing requests and communicate their crossing constraints (direction, travel speed) to the traffic signal system, so that adequate time is allocated to safely cross the street when the appropriate signal phase becomes active. As the pedestrian moves through the intersection the app also monitors crossing progress and will issue a request to dynamically extend the green time when progress is slower than expected. The app will also issue an alert if the pedestrian inadvertently moves outside of the cross walk. More advanced capabilities under development aimed at enhancing mobility include use of

pedestrian route information to allow the signal system to anticipate pedestrian arrival at the intersection and reduce pedestrian wait time. Finally, the app will use real-time information of approaching buses being communicated to the signal system to facilitate the pedestrian's timely arrival at the bus stop to meet the bus that the pedestrian is trying to catch.

Technical Approach

The technical approach taken to provide these capabilities combines emerging connected vehicle technology, specifically the use of Dedicated Short Range Communication (DSRC) radios, with recent advances in real-time, adaptive traffic signal control, embodied in the surtrac traffic signal control system. The basic components of the PedPal solution are illustrated in Figure 1 below.

DSRC communication technology, the first element of our approach, has been projected as the future basis for vehicle-to-infrastructure (V2I) communication, and DSRC radios are already available in selected 2018 production models of vehicles sold in the US. It promises to provide much greater visibility of approaching vehicles to the intersection than is possible with current vehicle detection technology. From the perspective of pedestrian travel, DSRC provides a uniform communication framework for gaining access to real-time vehicle information as well as a means for the pedestrian to interact directly with the intersection.

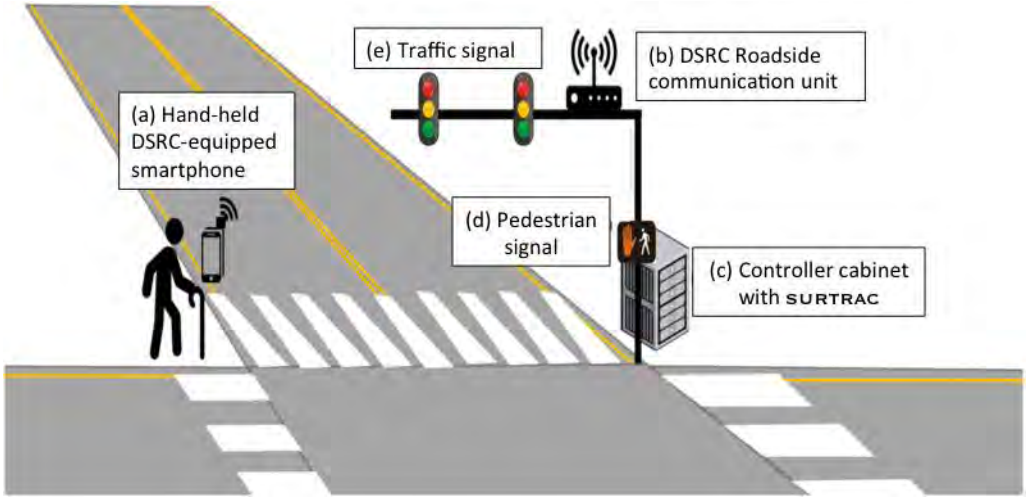


Fig. 1: Components of the PedPal Safe Intersection Crossing System

The second element of our approach builds on innovative new technology for real-time adaptive traffic signal control. The Surtrac system combines artificial intelligence with traffic theory to provide, for the first time, real-time optimization of traffic flows in complex urban road networks, where (in contrast to suburban corridors) there are multiple, competing dominant traffic flows that change through the day. Surtrac takes a decentralized, collaborative online planning approach to signal control. Each intersection independently senses its locally approaching traffic and generates in real-time a signal timing plan that moves sensed traffic through the intersection so as to minimize cumulative wait time. Intersections then share their plans with downstream neighbors to achieve coordinated behavior at the network level. In the field, Surtrac shows reductions of 25% in travel times, 30% in number of stops and 40% in wait times. In the current context, surtrac provides the ability to adjust signal timing plans on a second by second basis.

Current Development Status

An initial *PedPal* prototype app has been developed that provides the basic ability to orient the pedestrian at a given intersection and to communicate crossing direction and required crossing duration. The mobile app runs on an iPhone 8 that is attached to an Arada Locomate ME DSRC "sleeve" (shown in Figure 2)

The DSRC sleeve transmits and receives messages to/from a DSRC Road Side Unit (RSU) mounted at the intersection and communicates with the smartphone via Bluetooth. As the pedestrian approaches an equipped intersection, it first interprets the MAP message being broadcast by the RSU to obtain information about the geometry of the intersection, and then subsequently uses SPaT (Signal Phase and Timing) messages generated by surtrac to provide phase countdown information in different crossing directions to the pedestrian. The mobile app transmits a SRM (Signal Request Message) to surtrac specifying how much time is required to cross, once the pedestrian indicates which direction he/she would like to cross. surtrac replies with a SSM (Signal Status Message) indicating whether the extended crossing duration has been granted, or whether the pedestrian should wait for the next green cycle.

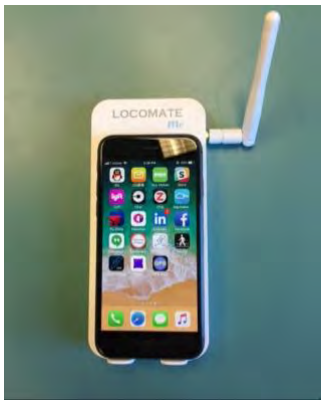
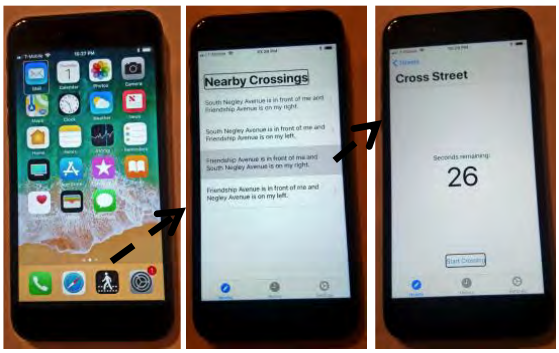


Fig. 2: Locomate ME sleeve with iPhone

The app's user interface reflects a universal design perspective (we are interested in addressing the needs of individuals with a range of different disabilities), and provides an accessible, multi-modal interaction framework. The current *PedPal* user interface is shown in Figure 3.



(a) start up (b) orient (c) cross

Research Team

We have configured a strong interdisciplinary team for developing the *PedPal* application. Carnegie Mellon University (CMU) is the overall technical lead of the project, with Professor Stephen Smith, Director of CMU's Intelligent Coordination and Logistics Laboratory in the Robotics Institute, serving as the Principal Investigator, and Dr. Zachary Rubinstein from the same lab serving as overall Project Manager. Booz Allen Hamilton (BAH) has been contracted to provide support in the development of user requirements and system design documents, and both BAH and InTec LLC (VOSB – Veteran Owned Small Business) also share in project management responsibilities.

To develop the *PedPal* app user interface, CMU has enlisted the support of Prime Access Consulting (DOBE - Disability Owned Business Enterprise) and Diyunu Consulting LLC (WOSB - Woman Owned Small Business). Prime Access Consulting specializes in the development of accessible user interfaces, and Sina Bahram (CEO) has been tapped to oversee user interface design and development. Bernardine Dias (founder of Diyunu Consulting) has considerable development experience with assistive technology, and is serving in an advisory UI development role. For backend work on extending and integrating surtrac to produce the target intersection crossing services,

CMU is collaborating with Rapid Flow Technologies, the commercial supplier of the surtrac technology.

The project plan includes field test experiments of the *PedPal* app by potential users from the local disability community at intersections within the current Pittsburgh surtrac deployment. Both BAH and Diyunu Consulting will assist in the experimental setup and evaluation of test results, and the City of Pittsburgh has agreed to allow access to relevant City intersections. The Port of Allegheny County has also pledged in-kind support aimed at equipping buses that move through the test bed area with DSRC onboard units, to enable future testing of the advanced capability to synchronize pedestrian and bus arrivals at nearside bus stops.

Conclusions and Future Work

Current work is expanding the *PedPal* prototype to enable real-time tracking of the user's progress during crossing and dynamic extension of the green time when circumstances warrant. In August 2018, a field test of the technology involving volunteers from the local Pittsburgh disability community is planned at one or more intersections within the current surtrac connected vehicle test bed in the Pittsburgh East End. In Year 2 of the project, the PedPal prototype will be refined based on feedback from this initial evaluation, and the app will be further expended to provide mobility enhancing capabilities.

References

- 1. http://www.surtrac.net
2. https://www.its.dot.gov/research_areas/attri/index.htm
3. http://icll.ri.cmu.edu/projects/traffic/

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pathVu: Paving the Way for Individuals with Disabilities

Eric Sinagra

CEO and Co-Founder

pathVu

eric.sinagra@pathvu.com

Introduction

In 2014, Eric Sinagra and his co-founders started a company called pathVu (pronounced path-view). pathVu's mission is to improve accessibility, walkability, and safety of all pedestrians – of all abilities. Eric started pathVu to help people with disabilities travel around the community more accessibly and independently. This passion to help people with disabilities originates from growing up with an older brother who uses a wheelchair. Eric's brother, Nick, has Spinal Muscular Atrophy and uses a wheelchair for mobility. Nick is now the sole software developer at pathVu and worked on the AccessPath app described below. Eric recalls times where he and his brother were unable to go to the "Boulevard" for ice cream because the sidewalks were broken and inaccessible, if there were even sidewalks at all. In addition to having a brother who uses a wheelchair, Eric's father-in-law is blind. It was because of these firsthand experiences that led Eric to the University of Pittsburgh where pathVu's journey began.

In 2011, Eric started his Master's research work at the University of Pittsburgh in the Department of Rehabilitation Science and Technology. During his time as a

Master's student, Eric conducted his research at the Human Engineering Research Laboratories (HERL) at Bakery Square in Pittsburgh. At HERL, Eric worked with Jon Duvall and Jon Pearlman to investigate how sidewalks affect people with disabilities, especially wheelchair users. Their research focused on developing a standard for sidewalk roughness (https://astm.org/Standards/E3028.htm). Both Jon Duvall and Jon Pearlman are co-founders of pathVu and have personal ties to disability as well. Jon Duvall sustained a spinal cord injury and uses a power wheelchair, and Jon Pearlman's father uses a wheelchair. These personal relationships are what drive this pathVu team every day to develop technology to help people with disabilities.

Background

People with disabilities face significant challenges to participate fully in their communities, often limiting their travel to familiar places. Among wheelchair users surveyed in the U.S., the wheelchair and the physical environment were the most significant factors limiting community participation. In this study, 47% of the wheelchair users stated that the physical environment limited their access to the community, which was just slightly less than the 53% who indicated the wheelchair limited their participation. Furthermore, one in three older adults fall each year, the majority of which occur outdoors, costing $34 million in direct medical costs. Tripping and falling is the leading cause of traumatic brain injury. The condition of sidewalks and pathways affect all pedestrians, but people with disabilities, older adults, and injured veterans are especially affected by them.

Reducing the barriers in the physical environment is extremely challenging because individual property owners are often responsible for making their sidewalks

accessible, and many are non-compliant. For example, every house, building, or park that a pedestrian travels in front of is likely owned by a different person or organization. Although the Americans with Disabilities Act (ADA) and the Architectural Barriers Act (ABA) require that pedestrian paths be accessible, the result is often slow-paced with the burden placed on people with disabilities, who have to struggle to travel along the unmaintained sidewalks, or find routes around impassable sections.

pathVu Technology

PathMeT

PathMeT (shown in Figure 1) (pronounced path-met) is a manually propelled, multi-sensor, stroller-type sidewalk profiling tool. PathMeT sensors include GPS, camera, and laser in order to collect data about the quality of sidewalks and other pedestrian pathways. PathMeT continuously identifies tripping hazards, roughness, pot holes, running slope, cross slope, and width of sidewalks. It also gathers images every 10 feet and geo-locates all of this data using GIS (Geographic Information Systems) mapping tools, such as Google Maps. PathMeT data has two primary purposes: 1) To help cities and communities prioritize improvements to the sidewalk infrastructure 2) To help pedestrians understand the most accessible routes to travel.

Figure 1: Image of PathMeT

Figure 2 below shows a screenshot of PathMeT data. A neighborhood map of sidewalk centerlines is shown. The centerlines are broken down into 10-foot segments which are color coordinated as green, yellow, and red based on the quality of the sidewalk segment: green is good, yellow is moderate, red is poor. Figure 3 shows a map with sidewalk segments in the background with a pop-up window the appears after selecting a particular 10-foot segment. The pop-up window shows an image and other data associated with that segment.

Figure 2: Screenshot of PathMeT data in a neighborhood

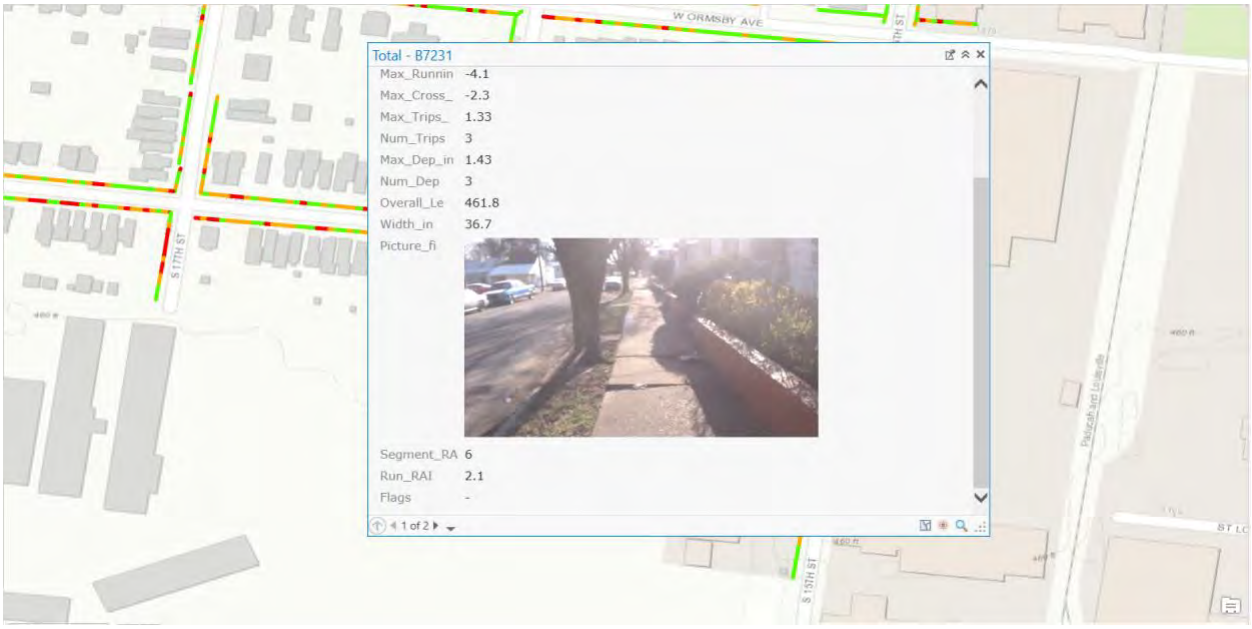

Figure 3: Screenshot of detailed PathMeT data shown in sidewalk segment pop-up window

AccessPath

pathVu's main mission as a company is to improve accessibility and walkability for all people. One way in which pathVu is working towards that mission is through the development of AccessPath. AccessPath is a federally-funded project with the Federal Highway Administration as part of ATTRI (Accessible Transportation Technologies Research Initiative) [https://www.its.dot.gov/research_areas/attri/index.htm]. The goal of AccessPath is to develop a pedestrian wayfinding tool tailored towards wheelchair users and individuals with visual impairments. AccessPath is being developed as an Android and iOS mobile app to assist pedestrians with real-time step-by-step navigation along accessible routes.

There are a few benefits to AccessPath compared with typical navigation apps. First, typical navigation apps use the centerline of the road when navigating users rather than the sidewalk and crosswalk network. This means that a user could be routed down a back alley without a sidewalk because it is assumed that a sidewalk exists on both sides of the road. AccessPath not only uses the pedestrian pathway network, but the location of curb ramps for those who require curb ramps for mobility as well.

Second, AccessPath considers the quality of the route combined with the user's customized route preferences. AccessPath routes are tailored based on the user's needs and desires set in the app, rather than weighing every path as equal. For example, if a user wants to avoid steep hills, the user specifies that in the settings menu and AccessPath will avoid steep hills if possible. Further, AccessPath alerts users to potential hazards along the route. This may be especially helpful for people with visual

impairments so that they can be aware of potential hazards prior to experiencing them. This will hopefully reduce trip and fall injuries and improve overall mobility.

AccessPath also has a crowdsourcing component that allows users to contribute data for improved navigation and alerts. Users can submit the type, location, image, and quality of their reports. Typical reports concern potential hazards along the pathway such as tripping hazards or construction. Figure 4 shows a dashboard of some data that pathVu has crowdsourced. On the left, there are three pie charts with a breakdown of report type, tripping hazard severity, and curb ramp quality. In the top right, there is a map showing sidewalk centerlines, tripping hazards represented as yellow triangles, and curb ramps represented as circles with the wheelchair user symbol. Underneath the map there are three counters showing: total number of reports in the neighborhood (265), number of tripping hazards (134), and number of missing curb ramps (19).

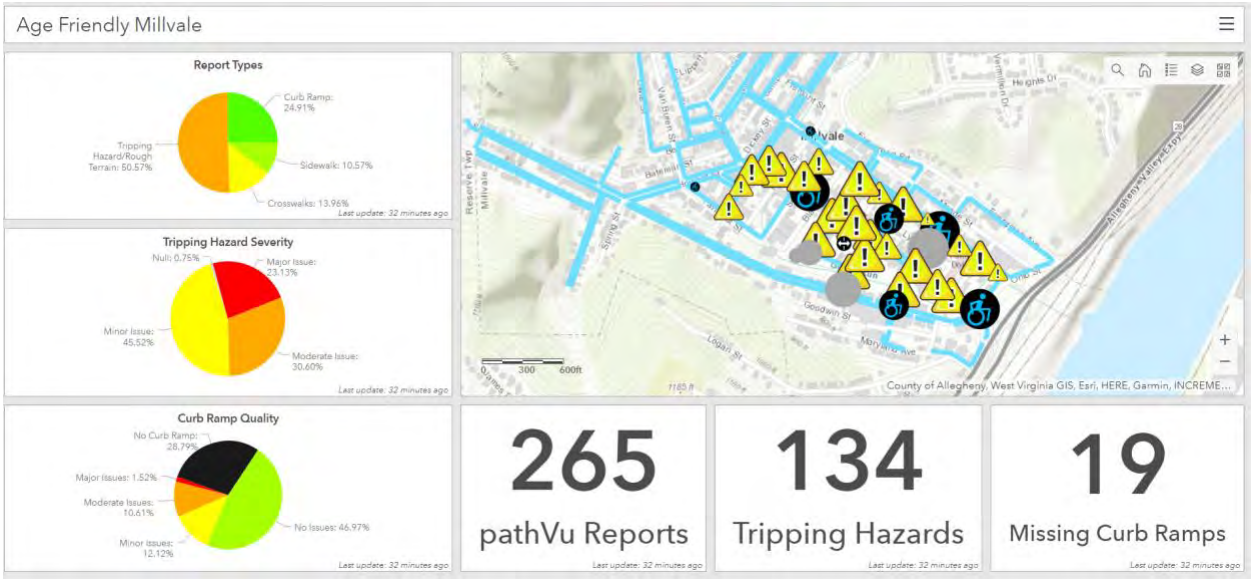

Figure 4: Dashboard showing crowdsourced data

AccessPath will be piloted in Pittsburgh in the Downtown and Oakland neighborhoods in Fall 2018. Below is a list of features in development for this pilot version.

- **Destination preview**: Users can preview the area around their destination, including virtual step-by-step directions and quality of the route.
- **Favorite places**: Users can set their favorite places for quick access. Users can also use this to be alerted as they pass by these points of interest.
- **Recent paths**: Users can select to travel a recent path. This is a convenience feature to improve the speed of selecting a path.
- **Set a new path**: Users can choose new starting and ending points for their trip. The suggested route will consider the user's custom route preferences.
- **Real-time navigation**: As users travel, real-time step-by-step directions will be read to the user.
- **Custom user preferences**: Users can set custom preferences to the types of routes they wish to travel. These preferences will be used to suggest the route that best meets their abilities.
- **Submit a report**: Users can submit reports about the type, quality, location, and image of hazards.
- **Siri**: Siri is integrated so that users can enter text using speech-to-text
- **Voice over**: Voice over will read text to users, including those without text labels.
- **Account creation/login**: Users can create an account with their custom route preferences. They can later log in for quick access/convenience.
- **Guest account**: Users who do not wish to have a login can remain anonymous through use of a guest account.
- **Preset preferences**: Users can select from preset settings if they do not wish to customize.
- **Alerts**: Users can choose to be alerted to hazards along the route.
- **Orientation**: An orientation feature is implemented for those with visual impairments to orient them to their surroundings.

- **Map layers**: Users can choose to show or not show map layers: pathways, curb ramps, transit stops.
- **Pathway heat maps**: Pathway quality appears on the map as a heat map of green, yellow, and red lines.
- **Clickable icons**: The pathway, curb ramp, and transit stop icons are clickable. By selecting an icon, data about the quality of the object will appear.
- **Weather**: The current weather of the user's location appears on the main page.
- **Current location**: The user's current location appears on the main page.

Screenshots of the AccessPath app are shown in Figure 5. The left screen shows the initial app screen. The middle screen shows a user preferences menu where the user sets his/her comfort level navigating tripping hazards. The right screen shows the map of sidewalk centerlines, curb ramps, and transit stops.

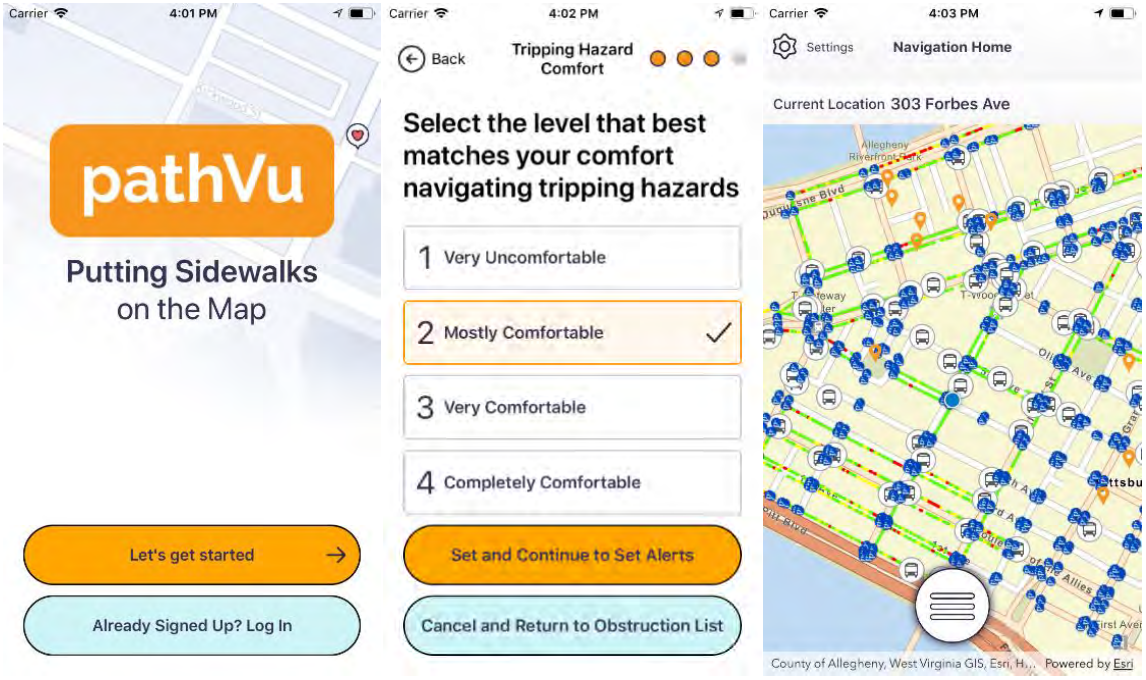

Figure 5: AccessPath app: (left) Welcome screen, (middle) User preferences, (right) Main map

Future Development

As pathVu continues to develop, they look to add additional features and improved routing algorithms. Additional features may include crowdsourcing accessibility of destinations, adding more transit data, the ability to share your route with a friend, or other important accessibility features. In addition, improved routing algorithms will allow pathVu to provide more accurate navigation and alerts. This would also allow for improved route-matching accuracy based on user preferences.

pathVu's vision is for AccessPath to be a global tool available in every city. pathVu believes in a world where people of all abilities have equal and safe access to all pedestrian paths and destinations. It is pathVu's goal that AccessPath will provide increased independence, mobility, safety, and quality of life to all, especially those with disabilities.

How you can help

If you would like to get involved, please download the AccessPath app when it is available (Fall 2018). (Note: The app name is not confirmed and may be called either AccessPath or pathVu). Use the app in your location to submit reports. Although this data may not be reported to your city officials, others can use this information to understand the quality of accessibility along their route. Also, if pathVu sees a lot of reports, your city may be next to include full pedestrian navigation.

If you have any comments or questions, feel free to reach out to Eric Sinagra via email: eric.sinagra@pathvu.com.

Research Supported Framework for Developing Paraprofessional In-Service Trainings in O&M

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Summary of the Study

This study examined in detail the roles and responsibilities of paraprofessionals who work with students with visual impairments in public schools as recommended by experts/practitioners (within the itinerant orientation and mobility [O&M] service delivery model) to influence and develop in-service training and supervision methods.

Methodology

A Delphi approach was used because it allowed for a canvas of experts in the field, thus explicating current and promising practices that might be different from those of established curricula. This process involved two rounds of Qualtrics surveys that were presented to practitioners/experts. The first survey consisted of three questions that allowed for textual responses. The data were reviewed and analyzed. The second survey consisted of the aggregated responses and asked the participants to rank the importance in each category. Participants were asked if they would be open to a follow-up telephone conversation to discuss research findings. Six participants were selected

and were interviewed postsurvey. The interviews were recorded, and the data were coded. Listening to each recording revealed a list of key themes.

Research Questions

The research questions designed for the study were as follows:

1. What do O&M specialists report are the roles and responsibilities of paraprofessionals who work with students who are visually impaired?
2. What do O&M specialists report are the training needs of these paraprofessionals?
3. What do O&M specialists report are the supervision needs of these paraprofessionals?

Population and Sample or Participants

The human participants for this study consisted of 11 O&M specialists (adult educators, 18 years of age or older) who supervise paraprofessionals who work with students with visual impairments in public schools (within the itinerant O&M service delivery model) in Southern California.

Major Findings

Round 1

In Round 1, the responses organized into two major categories for the roles and responsibilities of paraprofessionals, specifically, reinforcement of O&M skills and monitoring of O&M skills.

Monitoring was defined as involving only observation of the student by the paraprofessional and subsequent reporting to the O&M specialist about the student's progress. Effective monitoring of a skill by a paraprofessional would require the

paraprofessional to be knowledgeable about the appropriate skill; however, there would be no correction and/or redirection should the observed skill be inappropriate.

Reinforcing was defined as involving observation of the student by the paraprofessional, subsequent reporting to the O&M specialist about the student's progress, and could include correction and/or redirection should the observed skill be inappropriate. Effective reinforcing of a skill by a paraprofessional would require the paraprofessional to be knowledgeable about the appropriate skill and possess the ability to display the skill accurately.

In Round 1, the responses organized into two major categories for the training needs of paraprofessionals: O&M specific training needs and special-education-related (non-O&M) specific training needs. O&M specific training needs were defined as any subject matter that was unique to the field of O&M and would subsequently require a credentialed O&M to provide the training. These types of training needs would serve a paraprofessional specifically within the context of providing support to a student's O&M needs. Special-education-related (non-O&M) specific training needs were defined as subject matter that was more general and common across multiple disciplines of special education. These types of training needs could be addressed by both a credentialed O&M and/or other credentialed members in the special education field. These types of training needs would serve a paraprofessional in a variety of contexts when he or she is supporting a student.

In Round 1, the responses organized into two major categories for the supervision needs of paraprofessionals: supervision by O&M and/or supervision by other. Supervision by O&M was defined as the O&M being responsible for supervising

the paraprofessional in any matters related to O&M and/or specific O&M goals of student. Supervision by other was defined as another member of the IEP team being responsible for supervising the paraprofessional in all IEP goals of students and areas pertaining to the paraprofessional supporting the student.

Round 2

In Round 2, the panel ranked the three lists of 20 generated responses for each question in Round 1 from most important to least important. Each participant's responses were weighted 1–20. Total response scores were used to put items in priority order with a low score of 11 to a high of 220.

Additional Insights From the Interviews

Six respondents were interviewed postsurvey. The interviews were recorded, and the data were coded. The interviews were valuable in that they added a sense of understanding for the primary researcher regarding the surveyed O&M's interpretation of the language in the survey responses. The interviews emphasized/expanded and reiterated the major themes that had begun to take shape in Round 1 of the survey responses. Additional insights revolved around the shared experience among O&Ms of a need to advocate for their rehabilitative service model and to educate others about their rehabilitative service model. In-service trainings can and do serve as a functional vehicle for those specific needs.

Alignment of Current Research With the Literature Review

Based on the literature review conducted, the following key themes were identified: role release in O&M, O&M as both instructor and consultant, and O&M as

both family and community educator. The O&M specialist can role release many components (Hatton et al., 2003; McEwen, 2009) such as teaching others how to facilitate items that will add to later O&M instruction, develop strategies for adults to incorporate consistent terminology and routines, and monitor and provide feedback for the other adults as they provide intervention. Cmar et al. (2015) agreed that O&M specialists may role release some basic instructional duties (e.g., monitoring route travel) to individuals who interact with students daily.

A transdisciplinary approach becomes the most appropriate option for working with students with multiple disabilities because it allows different members of the team to perform specific functions associated with another member's traditional role. That role-release approach not only benefits the child but also enriches the professionals by incorporating and sharing information, skills, and perspectives of a variety of disciplines (Bailey & Head, 1993; Kelley et al., 1993). As a consultant, an O&M specialist may role release some basic instructional duties (e.g., monitor route travel) to a teacher, parent, or paraprofessional who interacts with a student daily (Griffin-Shirley et al., 2006).

The O&M specialist is responsible for designing and implementing ongoing in-service education activities in O&M for teachers, other professionals, paraprofessionals, administrators, parents, and consumers (i.e., individuals with visual impairments) (Griffin-Shirley et al., 2000). In-service activities should provide information about the role of the O&M specialist and the goals of the O&M program. O&M in-service activities should also focus on the roles of all appropriate school personnel in the development and reinforcement of concept development, sensory skills training, motor development, and formal O&M skills. To be effective, O&M training should be infused into school

curricula and activities, supported and reinforced by all individuals connected with the student (Griffin-Shirley et al., 2000).

This research aligned with or agreed with the literature in that part of an O&M roles and responsibilities are that of both instructor/consultant and family/community educator with an expected focus on providing training and supervision regarding role-released O&M skills to individuals who interact with students daily. This research added to the literature by providing the beginning of a framework or template for developing paraprofessional in-service models and trainings in O&M. Variations of the trainings framework and template are dependent on the clinical expertise of the O&M providing the training.

Students should receive direct instruction for any new skills from a certified O&M specialist. Paraprofessionals should receive direct instruction for supporting students from a certified O&M specialist. Two immediate variations of the framework uncovered differ in the inclusion of a focus on direct correction/intervention, which, in turn, intensifies the level of involvement of a paraprofessional support in the instruction (see Table 13).

Table 13

First Variation of the Framework

No direct correction	Direct correction
No direct correction/intervention provided by paraprofessional (monitoring) O&M skills on campus Proper cane mechanics on campus Report Concerns to O&M Progress to O&M	Direct correction/intervention provided by paraprofessional (reinforcement) O&M skills on campus Proper cane mechanics on campus Concept development Skills taught on campus Concepts and techniques after receiving training

Other Promote independence Minimal interaction as possible (shadow) Ensure Student safety Route travel consistency	Provide Human guide Feedback to student Opportunity to practice O&M goals Other Support O&M goals Assist student in classroom Demonstrate proper human guide Encourage mobility cane use

Further alternate variations of the framework uncovered would differ in the inclusion of a focus on O&M specific training needs coupled with special-education-related training needs (non-O&M specific), which, in turn, increases the volume of subject matter to cover in the training (see Table 14).

Table 14

Second Variation of the Framework

O&M specific training (only)	O&M specific training needs and special-education-related (non-O&M specific) training
Human guide	Encouraging independence
Basic cane skills	Levels of prompting
Basic orientation skills	Promoting problem solving
Basic visual skills	Basic multiple disabilities
Basic visual impairments	Basic concept development
Blindisms	Ways to step back
Descriptive language	Data collection
O&M IEP goals	
White cane knowledge	
Basic route travel	

Instructor positioning
Basic psychosocial implications of blindness and vision loss
Occlusion experience

Recommendations for Practitioners

The following are recommendations for practitioners:

- Practitioners should use the results of this study as a framework or template for developing and modifying their own in-service models and trainings.
- Practitioners should address the intensity of the role and level of responsibility placed on paraprofessionals (monitoring or reinforcing) in their own itinerant service model.
- Practitioners should address whether they will adopt a supervisory role or not of paraprofessionals in their own itinerant service model.

Recommendations for Universities

The following are recommendations for universities:

- Universities should use the results of this study to assist future practitioners with the development and modification of their own in-service and training models.
- Universities should further develop consensus or best practices for paraeducators based on their own research methodologies and studies.
- Universities should give thought to incorporate within their curriculum a “soft skills foundation” necessary to facilitate successful trainings alongside the standard theory and application of O&M.

Recommendations for Policy Makers

Currently the *Guidelines for Programs Serving Students With Visual Impairments 2014* (California Department of Education, 2014) and the California Education Code do not address the roles and responsibilities of paraprofessionals who work with students with visual impairments in public schools (within the itinerant O&M service delivery model). Training and supervision needs of paraprofessionals presently remain unaddressed as well. It is recommended that policy makers give attention to these specific areas of need through recommendations of surveyed expert practitioners in the field. Furthermore, if statewide policy and program is not an immediate plausible remediation, then each individual SELPA within California should give thought and attention to addressing the highlighted needs at a local regional level.

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Council for Exceptional Children Conference
Indianapolis, IN

January 29 – February 2, 2019

DVIDB Business Meeting and Social
Thursday, January 31st

The Rathskeller
6:30 to 9:30 PM

We are excited to let you know about a special opportunity to sponsor the DVIDB social event on Thursday, January 31st, from 6:30 to 9:30 pm. This annual event, immediately following the brief DVIDB business meeting, is a time to gather, mingle and celebrate with professionals in the fields of visual impairment and deafblindness from across the nation. This year, we will be honoring the work of Dr. Deborah Hatton who's leadership in the field of visual impairments and within DVIDB will be greatly missed.

Sponsors are encouraged to share information about their projects, advertise their programs or products, and connect with attendees in a relaxed and more intimate atmosphere.

New teachers and seasoned colleagues, alike, tell us that the DVIDB social is one place during the vast CEC convention where they engage with others in the field, despite our varied interests and responsibilities!

This year we are hosting the business meeting and social near the Indianapolis Convention Center at the Rathskeller, a quaint Bavarian themed restaurant in the historic 19th century Athenaeum building in downtown Indy.

We gather at 6:30 for the business meeting and begin the social immediately after until 9:30 p.m to share information, support DVIDB, and relax with colleagues!

Please consider supporting DVIDB's social and business meeting. See below for sponsorship levels and opportunities.

To become a sponsor, contact Amy Parker at atp5@pdx.edu or Nicole Johnson at njohnson@kutztown.edu for more information.

DVIDB Sponsorship Levels
CEC Convention 2019, Indianapolis

$ 250.00 sponsorship level – You will receive **1 Free Ticket** to the DVIDB pre-conference workshop and a **name plate** for your organization, engraved by students at The Ohio State School for the Blind.

$ 500.00 sponsorship level – You will receive **2 Free Tickets** to the DVIDB pre-conference workshop, a **name plate** for your organization, engraved by students at The Ohio State School for the Blind, and a **display table** at the Teacher and Intervener forum.

$ 1000.00 sponsorship level – You will receive **4 Free Tickets** to the DVIDB pre-conference workshop, a **name plate** for your organization, engraved by students at The Ohio State School for the Blind, a **display table** at the Teacher and Intervener forum, and **10 minutes speaking time** at the forum to share your work with others.

One additional opportunity for sponsorship is to sponsor one of our speakers at the pre-conference. By sponsoring one of our speakers you are entitled to everything at the $1000.00 sponsorship level.

All sponsors will receive social media advertising through our Facebook and Twitter feeds. They will also receive recognition at all of our events, as well as, in our Quarterly publication, VIDBE-Q.

Sponsorship is easy!

1. Simply email Amy Parker atp5@pdx.edu or Nicole Johnson at njohnson@kutztown.edu and let them know your level of sponsorship.

2. Our treasurer, Lanya McKittrick (lanyamck@gmail.com) will email you an invoice based upon your level of sponsorship. The invoice will state the details related to the agreed sponsorship.

3. We will work with your representative, who is attending the conference, to arrange the display information at the forum (for those at the $500 and $1000 level.

Teaching Street Crossings in Our Modern World: Self-Study Guides and Software Program Now Available

Dona Sauerburger, M.A., COMS

Dona@Sauerburger.org

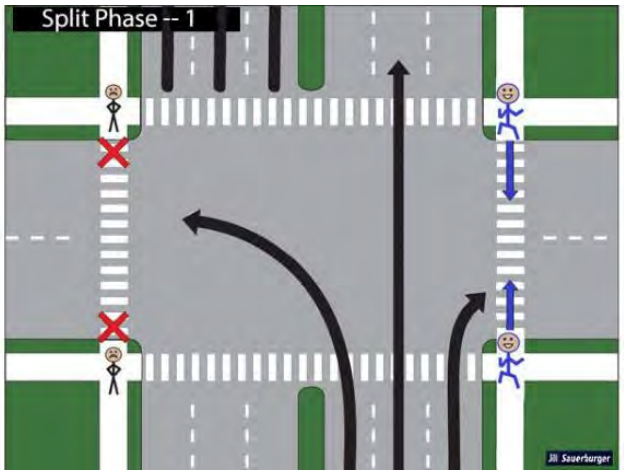
Hey, you know it, we know it, EVERYBODY knows it –crossings at modern intersections aren't your grandfather's crossings anymore! Teaching our students to use traditional O&M techniques to cross puts them at great risk.

Picture 1. A woman wearing a poncho and holding a long cane stands at a corner, facing a street with no stop sign or traffic signal.

At crossings with no traffic control, people who are blind have been seriously injured or killed by using the traditional strategy "cross when quiet." For example, the woman in the picture to the right is standing where she was hit and suffered permanent disabilities when she crossed as she had been taught years ago. She and her O&M instructors didn't realize that (1) she needs to analyze whether she is in what we call a "Situation of Uncertainty" before she can be confident that it's clear to cross when quiet, and (2) she needed to learn what "quiet" means.

Intersections with traffic signals have also changed. For example, the drawing below illustrates a “split phase” traffic pattern, where some pedestrians are not allowed to cross with the parallel traffic surge. And most signals are actuated, which means that pedestrians must inform the signal computer that they want to cross in order to ensure that they have enough time. Research shows that when blind people used traditional techniques to cross, they sometimes began crossing when traffic had the right-of-way across their crosswalk *(YIKES!)*, or when they did not have enough time to complete their crossing before the signal changed *(yikes again!).*

If you are an O&M specialist teaching children and adults with visual impairments to cross streets, how can you learn what you need to know to prepare your students for modern crossings?



Picture 2. This is a graphic illustrating the movement of traffic and pedestrians traveling along the major street of a plus-shaped signalized intersection. Arrows indicate that vehicles from the south (traveling along the east side of the main street) can go straight, turn left (without having to yield to any vehicles or pedestrians) or turn right (if they yield to pedestrians). Pedestrians on the east side of the major street can cross the minor street going either direction, but pedestrians on the west side of the major street cannot cross.

You’re in luck . . .

There are now two Self-Study Guides for O&M specialists, available online for free to take any time, from anywhere! One is for crossings with no traffic control and the other is for crossings with traffic signals. They each have comprehensive information that you need to know about teaching at modern intersections, using friendly, easy-to-read text

and illustrated with plenty of videos and pictures. They offer a total of 10 hours of ACVREP credit towards certification renewal, and quizzes that can be used as a learning tool to help evaluate what you need to review further.

In addition, the American Printing House for the Blind and I have been working for several years to develop a software program which provides simulation experiences and information that can help instructors teach students to analyze and cross where there is no traffic control. This program is finally being released this month!

Below is some more information about each of these:

Self-Study Guide:

Preparing Visually Impaired Students for Uncontrolled Crossings

by Dona Sauerburger

For crossings with no stop sign or traffic signal, students need to know that . . .

- in order to be confident about whether it's clear to cross, warning times of approaching traffic should be longer than their crossing time.
- there are situations where warning times are sufficient, and "Situations of Uncertainty" where they are not.

Our students need to be able to recognize these Situations of Uncertainty; analyze the risk of crossing, and use alternatives when the risk is not acceptable.

Picture 3. A man is standing at a corner, facing a street with a car moving along that street. There is a stop sign for traffic on the street beside him, but not for the street he is facing.

Picture 4. Photo shows a stick figure with question marks around its head, facing a crosswalk across two lanes. About 20 feet to the right, cars are going around a roundabout -- it is unclear whether those cars will continue to circle the roundabout, or approach the crosswalk where the stick figure is waiting.

Picture 5. Photo shows two students facing a street and listening to a car passing in front of them. Dona is behind them, indicating that the car is in the third lane.

And in situations where they can be confident about whether it's clear to cross ("Situations of Confidence"), students also need to know how to reliably determine when there's a crossable gap in traffic. I already explained about the woman who was hit because even though she crossed when she thought it was quiet, she didn't know how quiet it must be. Students who use vision to cross also need to learn how to use that vision to detect vehicles (I had to save one of my students from being hit by a car she didn't see because she was scanning too quickly), and judge gaps in traffic (one of my colleagues with a visual impairment and her husband were killed because she thought that the vehicles that she could see approaching were slow and/or far enough to allow them to cross).

If you're thinking that there seems to be a lot to learn, you're right! And it's all in this Self-Study Guide with lots of videos, pictures, and examples. To get started, just go to www.sauerburger.org/dona/crosscredit.

Self-Study Guide: Crossing at Modern Traffic Signals

By Dona Sauerburger, Gene Bourquin, and Bonnie Dodson-Burk

Picture 6. Picture shows a traffic signal suspended on a horizontal pole above the street. Next to the signal is a camera, which is circled for emphasis. The camera looks like a long tube about a foot long and 4 inches high, aiming toward the traffic that is facing the signal.

Picture 7. There are four images of different pedestrian signals: red lettering that says “DON’T WALK,” and white lettering that says “WALK;” a red hand, and a white silhouette of a person walking.

Picture 8. A man with a long cane stands on the sidewalk next to a pole with a box that has the pedestrian pushbutton. He has his hand on top of the box, waiting to feel it vibrate, which would indicate the WALK sign is on.

Essential topics covered in this Self-Study Guide include:

- Implications of actuation (unpredictability of the timing of the cycles, and the need for pressing the pedestrian pushbutton);
- Pedestrian signals and pushbuttons, how they work (including the need to start the crossing during WALK signal), and suggestions for when the WALK signal is not accessible as well as what to do at actuated signals with no pushbutton or WALK signal;
- Implications of traffic patterns of modern signals for pedestrians, including protected left turns.

The Self-Study Guide has a dozen videos illustrating many of the concepts, as well as drawings and pictures.

To get started with this Self-Study Guide, go to

www.sauerburger.org/dona/signal.

Picture 9. A woman crosses the street in a crosswalk adjacent to a roundabout.

Picture 10. Dona is holding a clipboard and talking with a man and a woman who each have a long cane. Behind them is a street with no traffic control.

Crossings with no Traffic Control:

Teaching Concepts and Skills to Deal with Them

American Printing House for the Blind with Dona Sauerburger

As you can imagine, it can be a challenge to find appropriate sites where your students can get enough experience to learn the concepts and skills needed for analyzing and crossing with no traffic control, especially for students who use their hearing for crossings. That is why APH developed a program that O&M specialists can use to provide your students with information and simulated experiences. Of course it comes with detailed instructions for the O&M specialist, including how your students can apply what they learn from simulation to the real world.

Chapters include:

• Understanding essential concepts (text for students)

• Recognizing Situations of Uncertainty

Simulations listening to / watching vehicles, and comparing their warning time with your crossing time

• What to do in a Situation of Uncertainty?

Videos of Carlo and Cecilia analyzing risks of crossing and considering alternatives

• Let's take this show on the road

Suggestions for O&M specialists to teach students to apply what they learned to real-life situations (including videos).

For more information about the program, contact the American Printing House for the Blind at 502-895-2405; info@aph.org (www.aph.org)

And for information about the Self-Study Guides, you can contact me at dona@sauerburger.org.

2019 Spring Convention Issue

Submit your manuscript on your accepted 2019 conference presentation to VIDBE-Q today!

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Share your work in a practitioner format for a manuscript connected to your presentation .

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Highlight your work in the visual impairment and deafblind community by submitting today.

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Email your manuscript to the editor by March 8, 2019.

Editor: Dr. Kathleen M. Farrand, kathleen.farrand@asu.edu

Dog Days of Summer: An O&M Intern's Perspective

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Where are you?

Completing an internship is part of the training required to become a Certified Orientation and Mobility Specialist. There were several places I could have applied to fulfill this requirement. However, there is only one facility in the country that offers both an Orientation and Mobility program and a Dog Guide program within the same building. Approximately 2% of the population is blind and only 2% of that group choose to use a guide dog. It's a niche group. But what it lacks in numbers it makes up for in wags and licks.

This May, I chose to leave Pittsburgh, PA to spend my summer days at Leader Dogs for the Blind in Michigan. It was a daunting task to leave my home knowing I would spend 3 months in an unfamiliar environment. Add on the pressure of being observed, followed, and critiqued, I was a nervous wreck. I wasn't sure I even wanted the summer to come. Ready or not, May came and I drove the 6 hours from my home to the Leader Dog campus to do my training, carrying the weight of the unknown in my suitcase. The first day of my internship was upon me and I did not know what to expect.

I walked the very short walk from my room to the O&M office to find two sets of four legs and smiles that seemed to say, “Welcome!” Dogs in the office! Enter instant relief! LDFB allows employees to bring their dogs to work and the relaxed and playful vibe the four-legged friends provide seemed to carry on to the staff. Everyone was welcoming, supportive, and interested. I could tell that the staff cared about their mission, providing services to people that are blind and visually impaired to lead them toward a life of confidence and independence. It permeated the entire building from the O&M Specialists, to the Guide Dog Mobility Instructors, to the kitchen staff, the Residence Assistants, and everyone in between. I knew instantly that this place would make a positive impact.

Each week, there are new O&M clients that arrive and each month there are new Guide Dog clients. Most clients stay in the residence facility, where a room and three meals a day are provided for them. It’s a busy place and the atmosphere is abuzz with excitement and hope. Upon meeting my clients, I got a taste of who they were, where they were from, and why they were at Leader Dogs. Many reported feeling nervous and anxious, just like I felt when I arrived at LDFB, but all were excited to begin a journey toward independence. For many, receiving O&M services was the first step in their ultimate mobility goal – getting a guide dog. Having excellent cane and O&M skills is a requirement for clients before being considered for a guide dog. Canes and dogs are both mobility devices and clients are told that they will simply be swapping one mobility tool out for another. That means that the client still must maintain all the orientation and mobility skills and concepts he or she had when using a cane. Ultimately, dogs are mobility devices. But, for many, they are so much more than that. They offer a symbol

of independence and companionship. It's those feelings that fill the dining room with an anticipatory energy so intense it's almost tangible. The morning before dogs are issued, both guide dog and O&M clients are upbeat and positive energy radiates off the walls. A sense of hope is felt by both sets of clients and shared joy and support is expressed. Their lives are about to change!

In addition to having the opportunity to intermingle with guide dog clients, O&M clients work one-on-one with a COMS to develop independent travel skills in multiple environments. LDFB sees a wide range of visual conditions and each client possesses different functional vision and mobility needs. Some areas where instruction takes place include but are not limited to: the residence facility, a practice course on campus, downtown areas both residential and business, the mall, grocery stores, rural environments, and night lessons. Clients work with a COMS to decide what areas would be most beneficial to them and what goals they are setting for themselves in each environment. The program is very individualized and while clients are encouraged to share their experiences, they are asked not to compare. Each experience is different, much like the visual conditions themselves. This was a definite strength of my internship. Each week, I was assigned a new client with a new visual condition, which meant a new set of goals and challenges. While interest in a guide dog is not necessary to pursue O&M training at LDFB, out of the eight clients I worked with during the summer, all were interested in the guide dog program in one way or another. Some clients come and decide that a dog is not for them and that they are comfortable with the independence they were able to attain with the white cane. Individuals can be very independent when traveling with the white cane, and that's an exciting and powerful

realization that many of our clients come to. But for others, that increased independence means they are one step closer to meeting their dog. They are one step closer to the life that they want to live. They are one step closer to having the independence and confidence that they never knew they'd have again. That's what makes LDFB so special.

Where do you want to go?

Although each O&M client has an individualized plan when it comes to learning skills and concepts, the structure of the week can look very similar. Clients work from Monday through Friday and have two sessions per day, one in the morning and one in the afternoon. Since the model for O&M services is so unique at LDFB, I was not sure what to expect. But once I got into the swing of things, I felt right at home planning and implementing instruction, taking my clients to different training environments, and cultivating a plan of action based on client needs. Many weeks, the framework looked a lot like this:

Monday morning is a mix of feelings for people. O&M clients are typically nervous about the week ahead and about leaving home; but, the kitchen staff and Residence Assistants are so friendly and accommodating, it's hard to not feel at home on the first day. After breakfast, the clients introduced themselves to one another and to the COMS that would be working with them that week. They then split into different rooms to discuss their more individualized needs and goals. Clients would answer questions like: Why leader dog? What are your mobility goals? What do you think a dog would help you do? I always appreciated having this conversation with clients because I got a sense of who they were, what made them tick, and what they wanted to

accomplish that week. I also got a sense of if a dog would be a viable option for them based on their lifestyle and mobility needs. From there I could begin to develop a working plan for the week.

There was beautiful weather in Rochester for the three months that I was there. My clients and I hardly ever had to worry about weather interrupting our outdoor lessons. However, if there was bad weather or if the client had particular interest in a large building orientation lesson, we had the option of going to a grocery store to instruct the clients on functional strategies and techniques when shopping. For many of my clients, shopping was something they crossed off the list of things they could never do independently again. Many used apps to have their groceries delivered. Some gave lists to their spouses or children. Others went with their spouses but felt as if they were being dragged around and felt lost. The grocery store lesson was my favorite lesson to teach because I could see the light bulb go off in their mind as the lesson progressed. "I never knew I could do this," "I think this is something I could do at home," and "Now I don't feel like I'm lost anymore," were examples of verbal testimonies from clients. At LDFB, little by little, throughout the week, clients begin to feel more confident in the fact that they could be more independent. Because of the major impact I was having on my clients, grocery story lessons in particular, will stick with me through my career.

For clients that were interested in applying for a dog, a Juno and dog walk was set up on Fridays. The dog walk would take place with one of LDFB's Ambassador Dogs, Vadar. Vadar completed all training to become a Leader Dog but was pulled to be an Ambassador Dog for the organization. Vadar does walks for donors, makes television appearances, and shows up at Lion's Club events. Clients would learn pre-

dog guide skills such as commands, treating, and what to expect since it is such a difference transitioning from cane to guide dog travel. Clients must allow the dog to take the first step after giving the command, they must trust their dog as it is guiding, and they must also maintain their orientation just as they had to do when traveling with a cane. This is often a difficult transition as canes are obstacle detectors and dogs are obstacle avoiders. Some clients decide it's not for them but others decide that this is what they have been looking for for years. They feel free!

How are you going to get there?

At the end of the week, clients are given resource packets. These include support documents handpicked for the client to match their goals and needs. Clients will also be given Orientation and Mobility homework. Generally, clients are tasked with 3-4 areas of O&M to continue practicing before they can be considered for a guide dog. Clients are required to wait 30 days before applying for a guide dog. During this time they are recommended to practice, practice, practice. When they are ready, they must submit a video that illustrates all of their O&M skills and highlights the areas that were covered during their week at LDFB. Their video then goes to the admissions committee and a decision is made. If it is decided that the client is eligible for a guide dog, work begins on finding the perfect match. Guide Dog Mobility Instructors consider the client's walking pace, their lifestyle, home life, and physical abilities so that a match can be made.

When approved for class, clients will travel again to campus for a month to learn, grow, and bond with their new dogs in different environments. They are about to begin a new chapter of their lives, one that will allow them to be independent and feel

confident. That is what is truly special about this place. I spent 3 months learning, teaching, and watching peoples' lives change for the better. I witnessed bonds and friendships being created before my very eyes. LDFB takes people whose impairment makes them feel isolated, alone, and insignificant, and gives them tools so that they feel confident seeking their own happiness again. Despite being nervous and anxious about leaving my home and spending months in an unknown environment, I knew I was going to learn so much and make connections that would last a lifetime. Looking back on this experience, em**bark**ing on this journey was one of the greatest adventures of my life - pun intended.

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Canes and Dogs: Interning at a Dog Guide School for Orientation and Mobility Certification

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Internships for Orientation & Mobility can be exciting and intimidating and typically take place in a school or state agency setting. A few interns each year are lucky enough to complete their internship in a unique setting such as Leader Dogs for the Blind. Leader Dogs for the Blind is the only dog guide school in the United States that has an on-site Orientation & Mobility program.

The Orientation & Mobility program at Leader Dog is an accelerated program that lasts for one week and the instructors provide training in skills from human guide to independent cane travel in multiple environments. The clients served at Leader Dog are sixteen or older. With the one-week program model there can be a lot of challenges but for an intern it provides a lot of experience with different visual conditions and a variety of clients. Having a new client each week requires an ability to get to know the client and their needs quickly so that the best possible instruction can be given during the week. However, the program has a basic timeline for the week that helps with lesson preparation and allows interns to repeatedly practice teaching the skills needed for Orientation & Mobility. For some clients the lessons may be paced a bit slower and they may not complete all lessons, but they are able to get the instruction they need. The

majority of clients who complete the program continue on to get a dog guide. Clients who attend Leader Dog for Orientation & Mobility also have the option of coming back for a second week of Orientation & Mobility if it is needed. Leader dog also provides a one week camp during the summer for teens aged 16 and 17 which provides opportunities for the teens to try new sports, activities, orientation and mobility skills, and learn how to use the Victor Reader Trek GPS device.

While I had my share of nerves as the start of my internship approached I quickly got over them as I began my internship. My time as an intern at Leader Dog in their Orientation & Mobility program provided a wealth of knowledge and some opportunities that I may not have gotten at another placement. Having a new client each week provided opportunities to work with a vast variety of personalities and ages as well as a variety of visual impairments. I was able to teach the same skills every week with different approaches to the teaching depending on the client's vision, needs, and learning style. This week-long model of teaching provided some challenges as well. For myself, the main challenge was getting to know the client and building the needed rapport to work with them for the week. With such a short time to teach the skills needed to travel independently a good rapport with the client is essential for building trust and needs to be developed quickly.

In addition to the typical orientation and mobility skills, the program at Leader Dog teaches a few techniques that are used when traveling with a dog guide in order to prepare the client for a dog guide. This inclusion of pre-dog guide preparation for the clients is part of what made the internship at Leader Dog so unique. Clients who are intending to get a dog guide are given instruction in curb to curb travel and the basic

commands used with a dog guide. They are given the chance to do a Juno walk, using the harness with the instructor as “Juno” the dog, on the last day of their training if it is appropriate for their instruction. If the instructor feels it would also be beneficial for the client to complete a dog walk they are given the chance to complete one with one of Leader Dogs Ambassador Dogs. This opportunity can provide valuable information to the client regarding which type of travel they prefer, cane or dog. As an intern learning the techniques used in dog guide travel provided insight into what my future clients may need to have instruction in if they are planning to get a dog guide. While completing my internship I also observed three dog guide classes as they worked on campus and in the same areas as the Orientation and Mobility class. Observing the clients and their new dogs over the course of their 26-day class was an interesting experience and provided a lot of insight into how they work and learn the commands.

The opportunity to observe this part of Leader Dog not only provided some insight for myself into the world of dog guides but allowed our clients who were there for Orientation & Mobility to get this same insight if not more. The Orientation & Mobility clients were able to observe and interact with the clients who were there to get a dog, so they had an opportunity to ask questions that myself and the other Orientation & Mobility instructors may not be able to answer. This provided the clients with more information so that they could make a more informed decision about getting a dog guide after completing their Orientation & Mobility. Observing the dog guide class provided myself with the opportunity to see how the cane skills transferred to working with a dog and has better prepared me for my future as an Orientation & Mobility Specialist.

The week-long camp that I was able to be a part of gave me the additional opportunity to work with clients that were younger than most Leader Dog clients. During camp there were many activities that provided the campers with the chance to see what they could do independently that they may not have realized that they could do. These activities included tandem biking, rock climbing, zip lining, and using a handheld GPS. Most of the campers that attended camp had received Orientation & Mobility for several years, so the focus of camp was more on the GPS and giving the campers chance to expand their Orientation & Mobility knowledge into new areas. The camp also provided the campers a chance to meet and interact with others their age who also had a visual impairment.

In completing my internship at Leader Dog, I was given the chance to see a different side of Orientation & Mobility that I knew was out there but would not have been able to see so completely if I had completed my internship elsewhere. I not only learned more about the cane skills I will be teaching in the future but gained some insight into dog guides and what they can provide to our clients. The extra opportunities at Leader Dog were many and I feel that they really rounded out my experience as an intern. For anyone who will be completing an internship in the future – don't be afraid to try something you hadn't previously considered, you never know where it will take you.


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With the Support of Many, An O&M Program is Born

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Sometimes one is allowed to be around at the beginning of a journey. True beginnings are rare as almost always the seeds of ideas are carried on the winds of time in the minds of people from one place to another- traveling to places where they may find fertile ground from germination to realization. The origin of the Orientation and Mobility (O&M) program at Portland State University (PSU) began long before its first cohort of students started courses in the Fall of 2017. It was developing long before its current faculty members even arrived.

Local partners in the Pacific Northwest Community and Dr. James “Blue” Bickford conceived of an O&M program at PSU that could meet regional needs and developed a program of study proposal that was rooted in the foundation of the well-established teacher of the visually impaired, or Visually Impaired Learner (VIL) program. When Blue retired in 2014 and Dr. Holly Lawson was hired as VIL Program Coordinator, she began collaborating with members of the Pacific Northwest Consortium of Vision Educators (PNWCVE) to assess regional needs. Shortly after Dr. Kathryn Botsford was hired at PSU, Holly and Kathryn began working through Blue’s original program of study, seeking advice from leaders in the O&M field, like Dr. Laura Bozeman at the University of Massachusetts in Boston (UMass Boston) and Dr.

Robert Wall Emerson at Western Michigan University (WMU). Together, Holly and Kathryn pursued and won federal support for the O&M program from the Office of Special Education Programs (OSEP) through Project COMET: Certified Orientation and Mobility Educators in Training. Holly and Kathryn worked collaboratively to refine coursework based on the 54-year-old Visually Impaired Learner (VIL) model of preparation and to select the first cohort of O&M students (all of them teachers of the visually impaired who wished to add the O&M endorsement). When Kathryn transitioned to private practice, I was lucky enough to be selected to be the caretaker and Coordinator of PSU's O&M program and began my tenure at PSU in Fall 2017.

"It takes a village to raise a child", "many hands make light work", and other such adages ring true when one is challenged to grow a new program that is responsive to the community's needs and based on international O&M standards of practice. Fortunately, COMET has not only been serving as an infusion of financial support for students, but it also has given the program a good place to focus its first efforts to meet regional needs. The goals of Project COMET include:

1) Train 38 orientation and mobility (O&M) instructors in the Pacific Northwest, Alaska, and Hawaii;
2) Through a regionalized, innovative hybrid training program:
    a) offer research-based course content related to O&M for individuals with visual impairment (VI) and additional disabilities, particularly those with deafblindness;
    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.

In a culturally diverse region that includes 28% of the U.S.'s geography, covering more than 1,061,000 square miles, the states of Oregon, Washington, Idaho, Montana, Alaska and Hawaii are the priority service states for PSU's O&M and VIL programs. When one considers the challenges that family members and administrators experience when trying to identify qualified personnel in such a widespread region, it is humbling to recognize that our preparation program is tasked with addressing a critical need. As a new Coordinator of a new O&M program, it has been essential for me to seek the counsel of trusted professional partners, local practitioners, and to tap into the assets of the region to ensure that the O&M program is developing well. Like a newly appointed gardener, I have felt a strong call to learn about the soil around me, to hear from those more experienced at the practitioner and university levels, and to adopt a participatory approach to ensure that our O&M students have the experiences they need.

One of the benefits of Holly's and Kathryn's planning was that Robert Wall Emerson was written into the COMET grant as an external evaluator. Not only has he been important in reviewing course syllabuses and aligning standards, Dr. Emerson has been working with me as a coach, thinking through the layers of developing and sustaining a network of professionals who will partner with our students as mentors, supervisors, and senior colleagues.

Project COMET was funded to address the critical shortage of O&M personnel. Currently the PNW region has a limited numbers of practicing O&M Specialists who may mentor and supervise university students as they progress through their training experiences. To address this gap, Project COMET personnel crafted grant activities to

provide train-the-trainer events from Dr. Emerson, to a small network of O&M professionals to build local capacity and to ensure that COMET scholars would experience greater programmatic fidelity within preparation.

As we began implementing grant activities, the Transportation Research and Education Center (TREC) staff at PSU began a dialogue with our faculty about the shared learning needs of transportation specialists, urban planners, geographers, and civil engineers. Out of this collaboration, COMET staff leveraged a grant-related visit from Robert, to co-design an interdisciplinary training summit in partnership with TREC entitled ***Mobility Matters***, which was hosted on March 9, 2018. At the summit, representatives from city, state, and federal transportation planning participated in learning and dialogue regarding O&M, acoustics and intersection design for people, including young adults who are visually impaired or deafblind.

Later in the one day agenda, design work from the transportation and urban design fields were shared with O&M Specialists, many of whom are supporting students served by the COMET preparation grant. Individuals who have visual impairments or deafblindness, not only attended but participated at community round tables at ***Mobility Matters***. From this shared event which was attended by 125 people from diverse disciplines, further conversation regarding curriculum development, professional learning events, and research projects have emerged. Interdisciplinary interest in transportation, access and O&M have provided support for a ***Mobility Matters 2019*** in Portland (Mobility Matters, 2019).

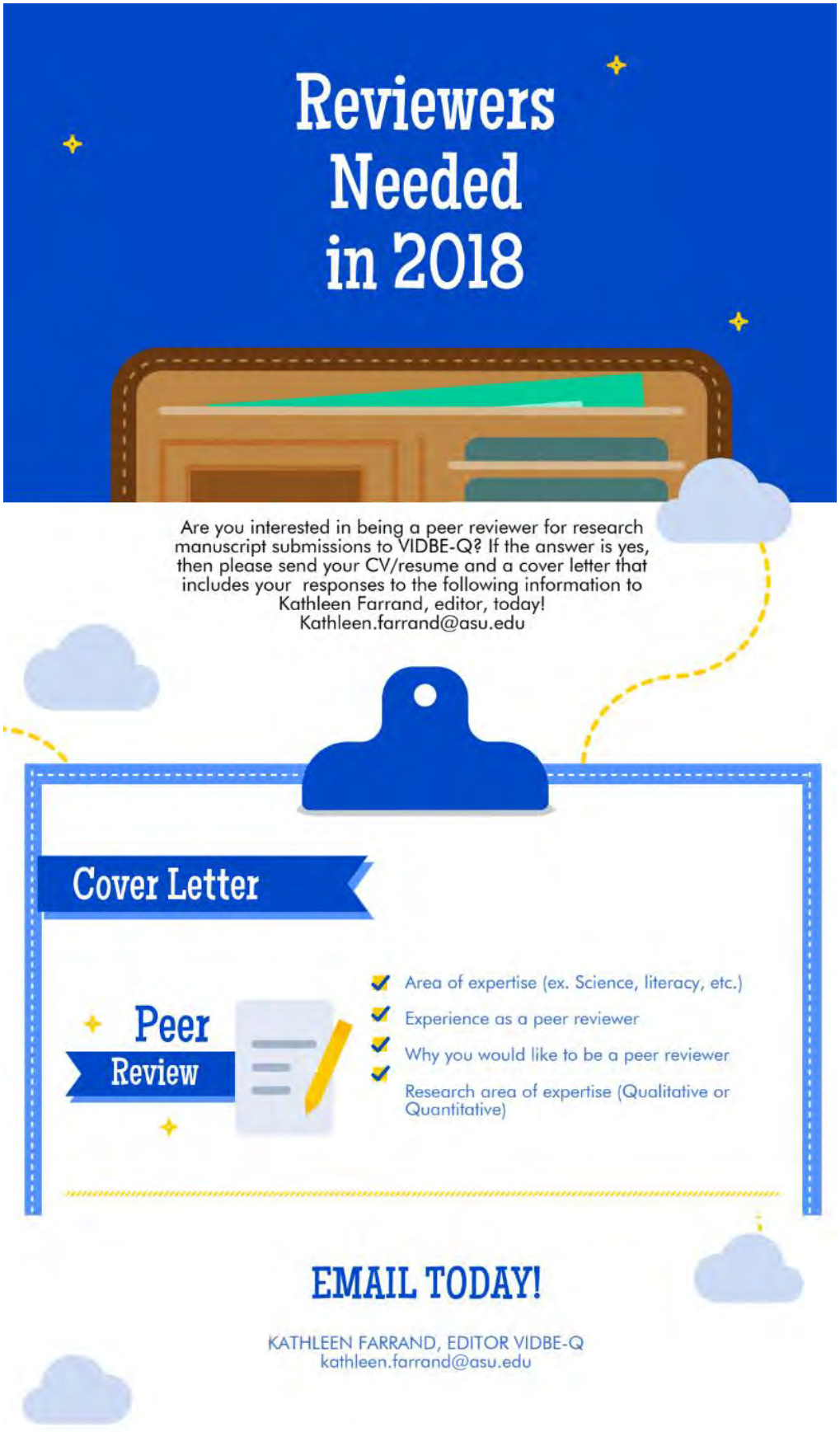
To prepare for our first cane course, Robert continued to work with me and a small group of largely regional O&M colleagues to develop a well-founded structure for preparing our students on the streets of Portland and Seattle. What was interesting

about conversations that weekend with colleagues was hearing about their own experiences in a variety of O&M preparation programs, Northern Illinois University, University of Arkansas at Little Rock, Cal State L.A., Western Michigan University, Florida State University, and my own alma mater, Texas Tech University. While listening to the diversity of experiences in these programs across different professors and in various decades, I was bolstered by the realization that our newly forming program at PSU was developing on a solid foundation of knowledge and experience.

Like many O&M programs, the majority of our courses are online with the advanced course being hosted face-to-face in the summer. As our first cohort of 16 students were delving into the Foundations of O&M textbook; reviewing APH's "Step-by-Step" curriculum; and reading peer-reviewed articles, they were listening to podcast interviews that willing O&M colleagues generously shared with me (http://podcasts.gseweb.org/; PDX Scholar Podcast). Our courses were also enriched by deep practitioners such as Mary Tellefson, and emerging scholars such as Tara Brown-Ogilvie. This summer, respected O&Ms, including Mike Yamada, Judy Koch-Smith, Ed Silva-Geversoni, Sarah Willsie, Rebecca Cervantes-Foley, David Miller, and Scott Crawford all provided direct instruction and enrichment to our first cohort and to me.

With 16 students in our first cohort and 21 in our second, PSU is joining the few and hardworking sister O&M programs to meet the needs of children and adults in unique communities. As one administrator from Hawaii shared, although an O&M may only serve a radius of 50 miles, that professional often has to travel by boat or plane to

see their students. The newly minted O&M program at PSU is growing and learning, thanks to the integration of knowledge and support from national, regional and local partners. Like so many personnel preparation programs in the field of O&M, our origin story begins with those who wished to address service provision gaps with support from OSEP. In the mighty company of an esteemed group who have dedicated their professional lives to meeting a critical need, I have much to learn but stand less daunted because of the spirit of generosity, of service, and of commitment I see in the O&M colleagues in our community.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