

Image courtesy of Alison Bert



Marilynn Larkin, MA

BikeAround:

Making memories
accessible and world
travel feasible for all



New device blends interactivity, reminiscence and movement to improve quality of life for individuals with cognitive and physical challenges

by Marilyn Larkin, MA

Shortly after George Fermanis started The Fermanis Group, a Canadian consultancy that advises and invests in companies aiming to improve the lives of older adults, a colleague sent him a video about BikeAround™. “Google had produced the video because BikeAround uses Google Street View, and they wanted to show that Street View has both meaningful and practical purposes,” he recalls. At the time, Fermanis had worked in senior living for eight years. He had also served as an advisory board member to the National Institute on Ageing, a policy and research think tank at Ryerson University, in Toronto.

BikeAround consists of a large dome and a cycling unit with sensors embedded in the pedals. It integrates Google Street View, a technology that provides panoramic views of many natural wonders and landmarks, as well as specific streets worldwide.

The user sits in the cycling unit and pedals and steers. That same speed and motion are displayed in the dome, offering a user-controlled immersive experience in the environment of choice. The streets and views displayed also can be controlled via computer by another individual—a staff member in a community, for example—to facilitate use by people with mobility impairments.

“After I saw the video, I immediately got in touch with the developers, Camanio Care in Sweden,” Fermanis told the *Journal on Active Aging*® in an inter-

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The BikeAround features the jDome, in which users see scenes from Google Street View that move as they pedal a cycling unit. This provides people with a ‘user-controlled immersive experience’

view. “I was convinced this technology could have practical applications in older-adult communities throughout Canada.”

Fermanis continued, “Our strongest memories are tied to location. When you think about any big past event or memory, your first thought is often, ‘Where was I when that happened?’ BikeAround taps into this concept by surrounding people with places they recognize—plus, they get the physical stimulation of pedaling and steering.” He explains that while “the optimal experience” is when the individual pedals and gains physical as well as cognitive benefits, “we’ve seen very gratifying results both ways” [user controlled and staff controlled].

JAA spoke with Fermanis about the recently completed pilot project he ran at Carriage House Retirement Residence in Oshawa, Ontario. This pilot involved residents of the community, as well as couples and individuals referred by the Alzheimer’s Society of Durham Region and other local organizations.

ML: *George, can you tell us a bit more about how the pilot started and who was involved?*

GF: Certainly. I had previously worked with the owner of Carriage House, Maurice Rollins, who is always seeking innovative approaches to improve the experience of his residents. Maurice is 91, and very much a hands-on owner. He invited us to do a three-month pilot, which ran from April through June 2018 and involved 60 people, 45 of whom were diagnosed with varying levels of cognitive impairment.

We knew that the BikeAround device could be an intimidating piece of equipment when people first see it—but it sparked curiosity, as well. So, we set it up in the recreation room where the community also hosts bingo, knowing that the people who played bingo were normally the most socially active. After bingo, which ran from 11 a.m. to noon, I did a brief demonstration: I dimmed the lights and asked someone to give me an address of where she grew up. We

fed the address into the BikeAround, and immediately were at that home. The woman who gave the address was able to identify other nearby buildings like the library, and the church where she got married, which was around the corner from her home.

That was a remarkable experience for the group of bingo players, and word spread quickly through the community. From there, in a low-key way, we simply said if anyone was interested in having a personalized session to return to places that were meaningful to them, all they had to do was make an appointment. We didn’t pressure anyone.

As we moved forward, we found it wasn’t just about the particular destination the person was visiting there and then. One woman came in with a few friends and visited Hawaii, which is where she and her husband had their last vacation, in 1972. We were even able to find the hotel they stayed at. The experience opened up a conversation about other aspects of the vacation—what it felt like to get off the plane, and to have a lei [a flower wreath] placed on them. The woman even acted as an impromptu tour guide for her friends, showing them various attractions in the area. That led into a conversation about her husband, who had passed away.

Another example is a couple referred by the Alzheimer’s Society. The husband has dementia, and we went back to the house he grew up in—in Elderslie, Scotland—which thankfully was very much the same as when he lived there as a child. He told us stories with some vivid details, like when he and a friend tied a string on a door handle, knocked on the door and then ran away. It was a small thing, but meaningful to his wife. She had never heard some of the stories before.

Each experience is unique, so no one has to go to their family home, for example.

We did have someone who didn't want to go back to the family home, but did want to visit his elementary school. And we absolutely respected this person's wishes.

ML: *How many times a week did the participants use the BikeAround, and for how long?*

GF: The average was twice a week, although we were careful not to force anyone to stick to a schedule. We've had people use the BikeAround as little as once every two weeks and individuals who use it every other day. We've found that when a family member is involved in identifying a meaningful destination, the buy-in for both is much greater; this encourages the individual to use the device more. So, it was helpful when a family member said something like, "I remember when I went on vacation with mom and dad to this area years ago" or "This is an old family cottage we used to go to."

A session will typically run about 20 minutes. We then follow up with a 10- or 15-minute conversation to wind down. But we've had people stay on the BikeAround for more than two hours when they really get into it and want to explore and converse further.

ML: *What kinds of outcomes have you seen?*

GF: The outcomes have been wide-ranging. We've had reports from staff of residents with elevated mood, enhanced ability to recall details vividly, and in some people, reduced anxiety. One woman seemed more relaxed at her childhood home, so staff would take her for a ride on the BikeAround before she went to sleep. We also heard about reduced aggressive behaviors in people with Alzheimer's-associated aggression.

Generally, we get a lot of excitement. One gentleman went back to his high school and said he never thought he would see it again. Some people were very surprised; they took a little time to absorb what was happening, because they had never experienced this level of technology before. Others were completely silent, yet their eyes showed they were experiencing something meaningful.

There was also someone who had impaired speech because of a stroke, but again, the reaction on his face was telling. When we asked whether the visit brought back good memories, he attempted to respond verbally, as well. In fact, part of the staff training for the

BikeAround includes asking probing questions to try to draw out what the participant is feeling.

ML: *What else does staff training involve?*

GF: Training usually runs about three hours, during which time we focus first on how to explain the equipment to people and what they can expect to happen. Then we talk about working with a family member to help identify meaningful destinations that will generate positive feeling for the individual with dementia.

We also discuss questions to ask people when they're on the BikeAround. Some individuals get on the bike and we can tell they're enjoying it, but they're not verbalizing it—which we generally will want them to do. So if, for example, someone visits a family home, we recommend that staff ask questions such as, "Who lived with you there?" "Any brothers or sisters?" and "What were your parents' names?"

If the home has a yard, we suggest asking if the individual remembers playing any games there. We might also move out into the neighborhood to the school

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BikeAround pilot results

Camano Care initiated an eight-month pilot at a rehabilitation center aimed at improving its BikeAround device and evaluating challenges and benefits, according to a company communication. Thirty-seven people participated in a total of 147 sessions and provided feedback.

Most participants requested BikeAround visits to their home or homes where they grew up; previous vacation venues; and other locations of interest, such as Paris, France, or Las Vegas, Nevada.

Among the challenges, physical therapists reported that the bike portion

of the device slid forward during use because of its light weight; weights were added to help keep the unit stable. Individuals with motor impairments found it difficult to hold the handlebars to steer and to keep their feet on the pedals, so a bandage or a resistance band was used to strap hands and/or feet to the bike unit to facilitate use. Users and physical therapists also wanted to be able to increase the pedal resistance when desired.

However, users significantly increased their effort during therapy sessions using BikeAround with the jDome compared to sessions without the device. Improvements were also seen in the ability to sustain attention; generate language and

increase the length of utterances for those whose speech was impaired; short-term recall (episodic memory for previous sessions); and alertness.

Other benefits included engagement by both staff and families, leading to the development of a family training protocol so that individuals and families could use the device between sessions. Further, the pilot found increased communication from patients and improvements in finding the right word and using expressive language. Also identified was the potential for collaborative sessions involving speech therapy and therapeutic recreation staff.

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Riding the BikeAround encourages users to recall memories and reminisce about people, places and events in their lives

this person attended, and ask about friends' names.

ML: *Can you share any lessons learned from the pilot, for people who may be thinking of purchasing a BikeAround?*

GF: I've learned that organizations should stop thinking that older adults are not interested in or capable of using new technology. This is definitely not true. I've also learned that technology such as BikeAround can benefit people who are well into their 90s. You need to make them comfortable, have patience and respect boundaries, understanding that for many, this is unknown territory. If you go slowly and ease them into it, most will be able to use the device, including those with cognitive impairments.

I thought I knew this going into the pilot, but now I've really experienced it and don't want these individuals to be overlooked any longer. 🙏

Although BikeAround hasn't formally launched in Canada, Fermanis is expanding access to other Canadian communities and looking into ways to offset the cost of

the device (currently, about CAD\$20,000; USD\$14,500). The equipment is still installed at Carriage House; representatives of organizations interested in purchasing a unit are booking appointments to try it out there. For more information, email Fermanis at george@thefermanisgroup.com. While he is the exclusive distributor in Canada, he will refer inquiries from the United States and elsewhere to the appropriate individuals.

Marilynn Larkin, contributing editor to the Journal on Active Aging®, has been involved in technology and the web since 1995 and published extensively about her experiences. Her early work encouraged consumers and medical professionals to go online, and she had her own "WebWatch" page in The Lancet. Larkin's current interests include technologies that boost communication and connection, provide support and motivation, and prompt innovation.

Questions or comments? Email: mlarkin@icaa.cc

Images courtesy of Camanio Care

Resources

Internet

Camanio Care: The story behind BikeAround jDome

<https://www.camanio.com/en/story-bikearound-jdome>

Carriage House Retirement Residence

<http://www.carriagehouseoshawa.com>

The Fermanis Group

<http://www.thefermanisgroup.com>

Google Street View

<https://www.google.com/streetview>

Multimedia

CTV News: "Retirement homes helping seniors virtually bike through old neighborhoods"

<https://www.ctvnews.ca/health/retirement-homes-helping-seniors-virtually-bike-through-old-neighbourhoods-1.3891164>

Google's YouTube channel: "BikeAround"

<https://youtu.be/mTBCWc53D80>

Durham Region Media: "Oshawa seniors get to relive important memories" (includes video)

<https://www.durhamregion.com/community-story/8566232-oshawa-seniors-get-to-relive-important-memories>