Report Contents

01 Letter from the Director

INFRASTRUCTURE
02 The University of Alabama at Birmingham and Lakeshore Foundation Join Forces to Change the Paradigm and Enhance Quality of Life for People with Disabilities
05 Collaborative’s Team of Experts Enriches and Accelerates Research in Physical Activity, Wellness and Disability
08 Collaborative’s Portfolio of Grants Reflects a Commitment to Improve Quality of Life for Individuals with Disabilities

IMPACT THROUGH RESEARCH
09 Innovative Research in Telehealth Points to New Pathways for Making Searless Transition from Clinic to Community
13 Collaborative Builds Knowledge and Changes Lives through Research
16 Lakeshore Foundation Staff Shapes Collaborative’s Research Agenda through Innovative Pilot Feasibility Studies
18 Focus on Technologies to Promote Health Moves Research from the Lab to the Marketplace
21 Lakeshore Foundation and UAB Host Blue Ribbon Panel on Transformation of Healthcare Services and Quality of Life for Individuals with SCI

INCLUSION
23 NCHPAD Serves as National Voice for Inclusion through its Resource to Practice Center and Strategic Partnerships
27 Leadership in Competitive Sport and Recreation Serves as a Platform for Collaborative’s Global Engagement and Impact

INTEGRATION
30 Collaborative Looks to the Future and Shifts Focus from Infrastructure to Integration
33 In Memoriam - Michael E. Stephens

UAB / Lakeshore Research Collaborative Leadership
Jeff Underwood, President, Lakeshore Foundation
Harold Jones, PhD, Dean, UAB School of Health Professions
James H. Rimmer, PhD, Director, UAB / Lakeshore Research Collaborative
Robert Motl, PhD, Associate Director, UAB / Lakeshore Research Collaborative

Letter from the Director

Colleagues and Friends,

I am delighted to share with you this inaugural report describing a unique and unprecedented collaboration between the University of Alabama at Birmingham (UAB) and Lakeshore Foundation. Founded in 2012 as the UAB / Lakeshore Research Collaborative, this partnership focuses on helping to bridge the gap between rehabilitation and community-based exercise and wellness.

In the pages that follow, you will read about the first five years of the Research Collaborative. The report highlights some of our most significant achievements resulting from successful partnerships with key collaborators from academia to the business community. You will also read about the core values that have shaped our work:

- Participant-Centered Focus – Generating new research ideas and strategies through regular contact with stakeholders, including their role on advisory committees.
- Vision – A vision for improving quality of life, health and wellness for people with disabilities through science, technology and innovation.
- Talent – A multidisciplinary team of stakeholders, researchers, practitioners and innovators whose leadership forms the foundation of the Collaborative.
- Discovery – Interaction between researchers and participants leading to exciting learning and discovery opportunities.
- Inclusion – Building an inclusion science on the UAB campus that encourages researchers not familiar with disability to use their expertise to address issues associated with improving health and preventing secondary conditions in people with disabilities.

I am incredibly proud of the impact our team has had on the first five years of the Collaborative and am equally excited about our future, as we shift from building the infrastructure toward integration of research, programs and advocacy on the Lakeshore campus. Over the next five years the Collaborative will expand its work in exercise and rehabilitation into a broader set of therapeutic wellness practices. This network of wellness will include mindfulness, social dynamics, spirituality, nutrition and other practices that have enormous potential for improving physical, emotional and metabolic health.

We would not be where we are today nor would our future look so bright without each of our collaborators. Among these colleagues, I am especially grateful for the vision of my dear friend, Michael E. Stephens, who passed away in July. Mike acquired a spinal cord injury in 1970 and found that through the medium of sport, his physical and emotional recovery excelled. Mike was a visionary who recognized a need for more research in physical activity and disability and set Lakeshore Foundation on a path that led to the UAB / Lakeshore Research Collaborative.

Mike and his vision continue to be the spiritual driver for the Collaborative, as we work toward making the world a more inclusive place for people with disabilities. As you read through the report, I invite you to join us in building a more streamlined pathway from rehabilitation to community-based health, exercise and wellness.
The University of Alabama at Birmingham and Lakeshore Foundation Join Forces to Change the Paradigm and Enhance Quality of Life for People with Disabilities

The University of Alabama at Birmingham (UAB) is internationally known for its breakthrough research. Lakeshore Foundation is internationally known for leadership in physical activity and disability and its distinction as a U.S. Olympic and Paralympic Training Site. A bold vision for inclusion brought the two organizations together with a mission to support people with disabilities in their effort to promote their own personal health and wellbeing.

Founded in 1984 as a center for community-based sport and recreation programs for people with disabilities, Lakeshore Foundation has become a recognized leader not only in physical activity but also in advocacy and research for people with disabilities around the world. The identification of a need for research and data associated with physical disability in general, and as an evaluation tool for Lakeshore programs in particular, is where the story of the UAB / Lakeshore Research Collaborative begins.

Lakeshore Foundation Identifies Critical Need for Research on Physical Activity and Disability

“An early step in the process was to establish a research department within the organization. Sometime later, board members recognized collaboration with an external research institution could amplify Lakeshore’s research efforts. “By the time we decided to pursue a partnership with a research institution, we were involved with the United States Olympic Committee,” says board member Tom Carruthers. “That gave us more clout and, along with good resources, put us in a position to partner with a good institution.” "In the days when we were primarily a program provider, we heard a lot from folks about the lack of any real data associated with physical disability,” explains Jeff Underwood, President and CEO of Lakeshore Foundation. “That planted a seed about doing research at Lakeshore Foundation.”

In addition to recognizing a need to fill the gap in research on physical disability, Lakeshore was also interested in studying the impact of its own programs in a systematic way. “We wanted to move from anecdotal stories about our programs to data showing the impact,” says Underwood, who believed data could help identify opportunities to improve existing programs and provide the evidence base to replicate successful programs in other organizations. “Really it came down to having greater impact and serving more people.”

Key Lakeshore board members including the late Mike Stephens, Lakeshore founder and visionary, Tom Carruthers, Bill Acker and Cathy Sloss Jones, supported Lakeshore pursuing research and became deeply involved in shaping the opportunity. An early step in the process was to establish a research department within the organization.

Sometime later, board members recognized collaboration with an external research institution could amplify Lakeshore’s research efforts. “By the time we decided to pursue a partnership with a research institution, we were involved with the United States Olympic Committee,” says board member Tom Carruthers. “That gave us more clout and, along with good resources, put us in a position to partner with a good institution.”

“Our goal is to build a pathway from acute rehabilitation to lifelong health and wellness for people with disabilities.”

-James H. Rimmer
Lakeshore Foundation Endowed Chair in Health Promotion and Rehabilitation Sciences at UAB and Director of the UAB / Lakeshore Research Collaborative

While a formal partnership with a number of research institutions was explored, the most compelling was the UAB School of Health Professions. “Conversations with the School of Health Professions led us to believe our goals were really aligned,” says Underwood. “It was also occurring at a time that the School under the leadership of Dean Harold Jones appeared to be putting more effort into disability and rehabilitation. The timing was good.”

UAB School of Health Professions Looks to Grow Programs in Health, Rehabilitation and Disability

In conversations about a partnership, Harold Jones, Dean of the UAB School of Health Professions, recognized collaborating with Lakeshore could not only advance what he saw as critical research on physical activity and disability, but also provide opportunities in areas of strategic growth for the School of Health Professions. Jones believed the School’s nationally ranked programs in Physical Therapy and Occupational Therapy and emerging PhD program in Rehabilitation Science were a natural fit for the research partnership.

“The collaboration created a platform for attracting even more high quality faculty, building strong research programs and giving a cornerstone to our PhD program all while partnering with a community-based organization doing quality things and impacting society,” says Jones. “We decided to steer our resources in that direction.”

Jones and others at UAB also saw an opportunity to engage disciplines across the campus to build out the collaboration with Lakeshore. Partnering with the School of Medicine Department of Physical Medicine & Rehabilitation under the leadership of Dr. Amie Brown McLain, for example, would provide a critical piece of a holistic approach to care and support for individuals with disabilities.
"Our skill sets and knowledge of how to do research, especially in the post-rehab world, paired with Lakeshore’s commitment to improve the quality of life for people with disabilities, created an opportunity to do something really impressive," explains Dean Jones. "It was a mission-critical thing for both of us."

Partners Design the Architecture and Find a Leader for the Collaborative Model

The blueprint and framework for how Lakeshore and UAB would operate as a collaborative entity was carefully laid out over the course of about two years. The UAB Board of Trustees and Lakeshore Foundation ultimately reached an agreement to form the UAB/Lakeshore Research Collaborative with an initial investment of $2 million from Lakeshore to create the Lakeshore Foundation Endowed Chair in Health Promotion and Rehabilitation Sciences at UAB. The Collaborative recruited James H. Rimmer as the inaugural Chair and Director of the Research Collaborative.

“What made Jim Rimmer the right person for the Collaborative was that, in addition to being the smartest in the field, the most up to date and a great thinker, he is a passionate and articulate advocate,” explains Jones. “He excites people about the work he’s doing and about the importance of the work of the Collaborative.”

A New Equation for Success

If Underwood, Jones and their teams at Lakeshore and UAB designed the architectural blueprint for the Collaborative, it became Rimmer’s responsibility to build out the Collaborative’s work according to his vision. “From day one, we felt like we were in a really strong place,” says Underwood. “We had the leading programming provider, a leading research institution in the country, and the number one researcher in the country. One plus one plus one equaled ten.”

Over the past five years, the Collaborative’s growth in faculty, staff, grants and impact on the lives of people with disabilities has far exceeded odds and expectations. The partners attribute this success to a shared vision and the passion and dedication of all involved. “Mike Stephens would be very proud of where we are now,” says Tom Carruthers. “He knew UAB very well. He knew Lakeshore Foundation very well. He thought a partnership was possible, and now it’s happening.”

The success of the Collaborative to date has positioned it for still more strides in research and services for people with disabilities. “Our goal is to build a pathway from acute rehabilitation to lifelong health and wellness for people with disabilities,” says Jim Rimmer. “Through new and emerging technologies, Lakeshore Foundation and the Research Collaborative are now poised to serve as the nation’s on-site and virtual hub for supporting people with disabilities in their home and community.”

Collaborative’s Team of Experts Enriches and Accelerates Research in Physical Activity, Wellness and Disability

When the UAB/Lakeshore Research Collaborative began in 2012, it had two full-time and two part-time staff. Today, the Collaborative has fifty-six full- and part-time staff who represent a range of skill sets, backgrounds and experience. This team of experts is building the infrastructure for enriching and accelerating research in physical activity, wellness and disability, leading to innovation and transformation today and for the future.

“There is such a need for disability research, and the Collaborative has created a place for people to take their expertise and apply it to the world of disability,” says Dustin Dew, UAB/Lakeshore Research Collaborative Manager. “I think science on disability and physical activity is going to progress at a much faster rate because of the number of people who are investing time to be a part of the Collaborative.”

Dew, who is responsible for day-to-day management and problem solving across all of the Collaborative’s research projects, has a unique window into how the individuals and teams involved in the Collaborative interact and create collective impact. “I think a lot of people are doing research similar to the Collaborative, but by doing research at UAB and Lakeshore, the Collaborative is moving at a much faster rate and translating research into actual practice.”

Asking critical research questions is central to the Collaborative’s work. “Through guidance of people we work with around the world, we come together and ask really great questions,” says Dew. The Collaborative is designed so that these research questions can then be addressed by UAB faculty and students, informed by Lakeshore Foundation staff and members and ultimately rolled out to consumers and communities in a coordinated way.

UAB Faculty and Students Tackle Critical Research Questions

“The Collaborative started largely as a single investigator with a team,” says Harold Jones, Dean of the UAB School of Health Professions. “It’s been amazing how the number of people engaged has grown. Now it is a university-wide center and people across campus are very aware of it.” While the UAB School of Health Professions is home to the Collaborative at UAB, faculty and students from across campus and disciplines, including medicine, engineering, education and the health system, are applying their knowledge to the world of disability through the Collaborative.

Engagement of UAB students is also a hallmark of the Collaborative. “As faculty become more engaged, they bring students with them,” says Jones. “Students ask questions that create lightbulb moments. They bring energy and fresh perspective.” Jones believes student involvement benefits both the research and student training. “Students can be inspired by seeing a real application of the things they’re learning and how it impacts people’s lives,” he says. “The Collaborative provides research and career opportunities for students who want to pursue them.”

“The fact that we focus on how people live the healthiest lives they can within the context of their disability is truly unique. It changes the conversation and focus.”

-Beth Curry
Chief Program Officer for Lakeshore Foundation
Lakeshore Foundation Staff and Members Bring Research to Life

“The Lakeshore staff are content experts on physical activity and disability,” says Jeff Underwood, President and CEO of Lakeshore Foundation. “We know how to provide programs for a wide variety of disabling conditions, and our responsibility is to use that knowledge for the benefit of research.”

The expertise of Lakeshore Foundation staff equips the organization to serve over 4,000 individuals annually through delivery of fifty aquatic, fitness and recreation programs; support for twelve competitive sports; and research and advocacy services.

In addition to expertise in physical health, Lakeshore staff are also experts in the psychosocial health of people with disabilities. “One of the things that is beautiful about the staff is meeting people where they are,” says Beth Curry, Chief Program Officer for Lakeshore Foundation. “So often what we hear from our members is that this is the place they feel ‘normal’ or not like they’re different. That’s about meeting people where they are.”

Lakeshore Foundation members contribute to the success of the Collaborative through their support and participation in research projects, and UAB faculty and researchers see the benefit of Lakeshore members and staff bringing research to life. “Beyond UAB’s academic support, every other expertise is available at Lakeshore. I just have to call Lakeshore with a question and someone will know the answer,” says Mohanraj Thirumalai, Director of Information and Communication Technology for the Collaborative. “The members provide valuable input into our projects.”

Stakeholder Panels Deepen Research Design and Impact

In addition to the diverse perspectives offered by a multidisciplinary team, the Collaborative’s research is informed and enriched by community stakeholders who are engaged regularly to help shape the Collaborative’s work. “We have a research advisory committee that includes expert level researchers and a consumer research advisory committee that includes members of Lakeshore and stakeholders in the community,” says Dew. These committees create an opportunity for stakeholders to provide feedback to the research team directly.

The Collaborative also convenes stakeholder panels for particular research projects. These panels are focused on a specific topic and have the opportunity to review, guide and inform all aspects of a research project. The Collaborative has convened a stakeholder panel for a current project called Tele-Exercise And Multiple Sclerosis, or TEAMS, funded through the Patient-Centered Outcomes Research Institute. The panel, which includes both research experts and individuals with MS, helped the research team identify fatigue as a critical barrier to exercise. This insight shaped and strengthened the overall project and helped redefine targeted outcomes and measurements.

Through ongoing stakeholder engagement, committees and panels create a truly community-based participatory research model.

NCHPAD Team Moves Research to Practice

“NCHPAD is unique in that it doesn’t do research. We do implementation science,” explains Amy Rauworth, Director of Policy and Public Affairs at Lakeshore Foundation and Associate Director of the National Center on Health, Physical Activity and Disability (NCHPAD). “NCHPAD is located at Lakeshore and has all the experts in terms of applied knowledge. We’re moving research to practice through evidence-based and practice-based solutions.”

Rauworth leads a team of specialists whose focus is moving research beyond the lab and into communities through web-based materials, one-on-one support by phone and online and on-the-ground training delivered across the country. The NCHPAD team also builds partnerships at the national level to amplify its efforts and accelerate implementation in communities across the country.

“When you work in research, you don’t always get to see the impact,” says Amy Rauworth. “What’s unique about the Collaborative is that we’re going to see the impact because of the acceleration we’re putting on issues. We’re going to get there sooner because of the Collaborative, and that makes me excited.”

Collectively Changing the Conversation

“A lot of research that I know of about people with disabilities is about how to stop the disease or reverse the disability,” says Curry. “I think the fact that we focus on how people live the healthiest lives they can within the context of their disability is truly unique. It changes the conversation and focus.” By working together through the Collaborative, partners at UAB, Lakeshore Foundation, NCHPAD and other organizations create a collective impact that is exponentially greater than the sum of its parts. That impact is beginning to change the conversation so there is greater focus and understanding of quality of life for people with disabilities.
Collaborative's Portfolio of Grants Reflects a Commitment to Improve Quality of Life for Individuals with Disabilities

The UAB / Lakeshore Research Collaborative started in 2012 with an investment of $2 million. Several federal agencies are intrigued with the partnership between a Research Institution and a nationally recognized community leader in programs and services for people with disabilities. This is reflected in the Collaborative’s grant funding portfolio totaling nearly $24 million in the first five years of its existence.

The Collaborative team recognizes its success must be attributed to its many partners and collaborators. The model of community, academia and government working together is critical, and the Collaborative plans to continue partnerships to enable more people and resources to contribute to its vision of improving quality of life for individuals with disabilities.

Innovative Research in Telehealth Points to New Pathways for Making Seamless Transition from Clinic to Community

Opportunities to promote health and wellness through technology exist as never before. The UAB / Lakeshore Research Collaborative is leveraging those opportunities by using technology as a critical tool in much of its work. One group of research projects is focused specifically on using telehealth to bridge a critical gap in the continuum of care for people with disabilities.

“Studies Show Teleexercise Programs Promote Health in Individuals with a Spinal Cord Injury (SCI) and Parkinson’s

Using remote communication technology to deliver one-on-one supervised exercise training in the home can bypass typical barriers such as travel time and transportation,” explains Lai, who coordinated two research studies for people with neuromuscular disability. Both studies used an exercise training and monitoring system called TExT-ME (Telehealth Exercise Training for Monitoring and Evaluation of Home-Based Exercise in People with Neuromuscular Disability). TExT-ME connects an exercise coach to a participant in real time through a website that enables video conferencing and monitoring of participant health data, such as heart rate and respiratory rate.

Lai, who is involved in the Collaborative’s work in telehealth, relates a common scenario in which an individual with a disability goes to rehab, makes significant improvements physiologically, then is sent home with a charge to continue his or her therapeutic exercises at a community facility. “That’s where the disconnect happens,” explains Lai. “Typical fitness facilities often lack the resources, programs or access required to be holistically inclusive of people with disabilities.” Lai is among the team of experts at the Collaborative who believe delivering safe and customized exercise in the home is one way of circumventing barriers in this scenario.

“When it comes to health promotion for people with disabilities, I think the technology would not be where it is without the Collaborative,” says Mohanraj Thirumalai, Director of Information and Communication Technology for the UAB / Lakeshore Research Collaborative. “We take pride in the fact that every project we do is deep in technology.”
In a feasibility study, a trainer used the TExT-ME platform to remotely coach four people with SCI in their home through exercise sessions several times a week over a period of several months. Pre and post assessments conducted at Lakeshore demonstrated improvements in participants’ levels of physical activity and physiologic health. All participants verbally reported that the teleexercise program overcame several participation barriers, including transportation and time. These results suggest using simple exercise equipment, with the support of a telecoach familiar with an individual’s condition, promotes health and wellness while removing significant barriers to participation.

In a follow-up pilot study, the outcomes of a home-based teleexercise intervention similar to the one delivered in the feasibility study were compared to an onsite conventional fitness facility program, which involved a total of thirty individuals with Parkinson’s. The study showed an adherence rate of 99% in the individuals who participated in the supervised home-based teleexercise intervention, again showing promise for utilizing teleexercise as a viable alternative to exercising at a fitness facility. More important, however, is the fact that many people with Parkinson’s did not want to participate in the fitness center program, and opted out of receiving a free fitness membership. “Delivering safe and customized adapted exercise in the home is a convenient way of circumventing logistical barriers to exercise participation,” says Lai.

Large Clinical Trial Builds on Outcomes of Tele-Exercise Studies

Building on two population-specific studies that show teleexercise can help overcome barriers to participation, the Collaborative now has the opportunity to explore the findings in a large clinical trial funded by the Patient-Centered Outcomes Research Institute (PCORI). The study is examining whether individuals receive as much benefit from an exercise-based rehabilitation program delivered via a telehealth platform as one delivered in a clinical setting. The project is called Tele-Exercise And Multiple Sclerosis, or TEAMS.

“TEAMS is a four-year grant targeting people with MS in Alabama, Mississippi and Tennessee,” explains Thirumalai. “It involves thirty-eight different clinical sites where we are reaching into the deepest rural pockets to offer a telehealth program to this underserved community.” Typical barriers to exercise and rehabilitation for people with disabilities are even more pronounced in rural and low-resource areas where access to rehabilitation services can be especially scarce. If the study successfully demonstrates that the benefits of physical activity and other therapies delivered to individuals with MS in their home offer the same benefits as those in a clinical setting, teleexercise could prove to be a game-changer not just in rural and low-resource areas but across all communities.

The study also has potential to demonstrate benefits for individuals with a range of disabilities and chronic neurological conditions. “I believe the work that we are doing through the PCORI grant which is focused on patients with MS will create similar opportunities to reach patients who are living with spinal cord injuries, Parkinson’s and ALS,” says Emily Riser, MD, Director of the Tanner Center for MS and co-principal investigator for the TEAMS study.

“The study will also support the work of NCHPAD and provide an opportunity to begin connecting dots between research and practice.”

Riser believes the Collaborative aligns the vision and critical resources to make projects like TEAMS possible. “The Collaborative under Dr. Rimmer’s leadership has an extraordinary ability to bring the right people to the table who can break down traditional barriers and enable clinicians and researchers to work outside their silos,” says Riser. “This sets in motion opportunities to address critical issues of access and offer the comprehensive array of services these patients deserve.” Through studies like TEAMS, the Collaborative is providing a pathway and access to services for individuals in a comprehensive and holistic way.

UAB / Lakeshore Research Collaborative 2012-2017: Impact through Research
The Collaborative developed an innovative exercise program for adults with physical disabilities called Movement-2-Music (M2M). Based on growing research that exercise and music have strong potential for improving both physical and neurocognitive function in people with neurologic disorders, the M2M program is delivered three times per week at Lakeshore, and scientists are examining its effects on mobility, fitness and symptom management (e.g., fatigue, pain).

“There are a few dance programs out there for people with disabilities, but the way we combined the principles and knowledge obtained from both exercise science and dance fields to develop our M2M program is unique,” says Hui-Ju (Zoe) Young, Postdoctoral Fellow at the UAB School of Health Professions and the UAB / Lakeshore Research Collaborative. Young, who is professionally trained in Classical Chinese dance and received her doctoral degree in Exercise Physiology from the University of Georgia, helped develop the M2M program structure and curriculum. “The Research Collaborative is all about improving health and quality of life for people with disabilities,” says Young. “That’s being done through many novel projects within the Collaborative including M2M.”

The Collaborative was recently awarded a second five-year grant from the National Institutes of Health that will be used to transition the M2M program to a telehealth platform for home-based delivery to adults with mobility disabilities. This grant, which will allow the M2M program to reach hundreds, is yet another application of telehealth to help individuals transition seamlessly from clinic to community and from patient to participant.

Grant Information
Project Name: LEADERS / Disability and Rehabilitation Research Project
Funding Agency and Award: National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR), $2.375M
Principal Investigator: James H. Rimmer, PhD

Quad Rider Technology Increases Accessibility of Handcycles
Through a Small Business Innovation Research (SBIR) grant from the National Institutes of Health, InvoTek, Inc., a research and development company based in Arkansas, developed technology to facilitate handcycle gear shifting and braking electronically, making operating and riding a handcycle safe and efficient for individuals with limited use of hands and arms.

Powered by operating a hand crank system using one’s arms, handcycles enable recreational activity for many who have no or limited use of their legs. Handcycling, however, remains difficult or inaccessible to those who have more severe injuries, including high-level spinal cord injury, affecting use of hands and arms. InvoTek set out to develop technology to make handcycling more accessible to these individuals. InvoTek partnered with the UAB / Lakeshore Research Collaborative to implement user testing of the technology and prototype called Quad Rider.

Quad Rider Study Promotes Positive Health Outcomes for Research Participant
Following a hospital stay for a serious infection, Christain received a letter inviting him to participate in a study to test a new technology for handcycles. “The letter was from the Collaborative talking about a handcycle study I might qualify for,” explains Christain. “I thought I would go to Lakeshore to check it out. The idea of doing exercise by riding a handcycle sounded interesting if I could do it.”

Movement-2-Music Program Reaches Many through Telehealth Platform

For me personally, the Collaborative has helped me get in much better shape,” says Sid Christain. “Without the Collaborative I would probably still have the health issues I had after my hospital stay and probably worse. The Collaborative has been huge in my life.” Christain, who has had a C4/C5 incomplete spinal cord injury for thirty-six years, participated in user testing for a new technology for handcycles. His participation not only helped improve the technology for future users but also shaped his own life and health.

Movement-2-Music, a program provided on-site at Lakeshore Foundation that improves mobility and endurance, will soon expand to a telehealth platform through a five-year grant from NIH.
After meeting with Cliff Cook and Casey Herman, Lakeshore Foundation staff and managers of the user testing portion of the Quad Rider study, Christain agreed to participate in the study and became a Lakeshore member. As part of the study, Christain exercised at Lakeshore using the Quad Rider twice a week for six weeks. The primary focus of the usability study was making improvements to the Quad Rider prototype, but participants also set personal goals aligned with the protocol. “My goal was to build up to an hour, but I started at thirty minutes,” says Christain. “By the end of the six-week study, I went seven miles. It let me know right then that I could get in better shape.”

Research Participant Engages in Healthy Activity beyond Quad Rider Study

“I don’t believe in coincidences, and I believe the Lord directs my life. He helped me a great deal when that letter came from UAB and Lakeshore,” says Christain. “There’s a series of events that fell in place, and I’m glad the Collaborative was doing the study.”

Participating in the Quad Rider study opened doors to many more opportunities for Christain to participate in social and recreational activities as a Lakeshore member. Following completion of the study, Christain joined Lakeshore’s recreational league rugby team at the invitation of Cook. Later, Christain was recruited to play on Lakeshore’s Demolition rugby team. Christain now travels with Demolition and won a Division 2 National Championship in Phoenix last year.

Christain acknowledges the staff of the Collaborative and Lakeshore Foundation is key to his success. “You can do a job you get paid for, but I never felt like this was just a job to the staff,” says Christain. “They were very encouraging, supportive and helpful, and I felt like they wanted me to succeed. It seemed like more than a job for them, and I’ve experienced that at every level.”

Continuing Research is Critically Important to Participants Today and in the Future

While Christain is continuing a commitment to physical activity initiated by the Quad Rider study, he hopes the project also continues to move forward. “At some point I would love to be able to have a cycle that I could use,” says Christain. “I’m hopeful that the project is fruitful enough that there will be results I can take advantage of practically in the future.” A Phase II SBIR application will be submitted for advancing the technology elements of the Quad Rider and for commercializing the product and transferring it to market.

Seeing the benefit of the Quad Rider study in his personal life as well as its potential for others, Christain hopes this and other studies continue to grow. “I don’t know what they’re going to come up with, but with changes in technology I can’t imagine there wouldn’t be changes that could help me continue to get stronger and improve,” says Christain. “I know they need participants, and I’m hopeful I can continue to be part of those. I hope the research continues and that they find more and more ways to benefit people with disabilities.”

Grant Information

Project Name: Quad Rider Accessible Handcycle
Funding Agency and Total Award: National Institutes of Health, $175,392
Principal Investigator: Tom Jakobs, PE
Research Director: James H. Rimmer, PhD

“For me personally, the Collaborative has helped me get in much better shape. Without the Collaborative I would probably still have the health issues I had after my hospital stay and probably worse. The Collaborative has been huge in my life.”
-Sid Christain, Lakeshore Member

(above) Sid Christain, Lakeshore Member
More than a means to build the evidence base for the solutions of tomorrow, the Collaborative’s research studies often serve as the vehicle for improving health and quality of life in individuals today.

UAB / Lakeshore Research Collaborative 2012-2017: Impact through Research
Lakeshore Foundation Staff Shapes Collaborative’s Research Agenda through Innovative Pilot Feasibility Studies

Lakeshore Foundation and its staff are internationally known for expertise in physical activity and disability. Today, Lakeshore Foundation staff helps shape the Collaborative’s research agenda through Lakeshore Research Topics of Interest (LRTOI), a program that funds pilot feasibility studies on emerging topics and areas of practice in the field.

“We have lots of interested and willing staff who are helping generate ideas for research questions and areas of interest,” says Beth Curry, Chief Program Officer for Lakeshore Foundation. “The most exciting thing about LRTOI is the dialogue generated in an effort to define the topics we want to explore.”

Curry, who is responsible for development, implementation and management of physical activity programs at Lakeshore Foundation, sees potential for the interplay of programs and research at Lakeshore. She was integral in the development of LRTOI in 2015 and helped staff of Lakeshore Foundation and the Collaborative work together to define the criteria for the initial funding round.

A review committee composed of UAB researchers, Lakeshore members and Lakeshore program staff, selected three proposals to receive up to $50,000 each in funding. The projects have engaged researchers with a range of expertise to help identify innovative new directions in exercise science and disability.

**Interactive Video Gaming Increases Engagement in Exercise**

“Lakeshore is looking for technologies and research that will immediately provide a benefit for their members,” says Samuel Misko, an electrical engineer with the UAB Engineering and Innovative Technology Development (EITD) group. “As an engineering group, we see the potential for making an impact and want to contribute as much as we can.”

Misko was awarded pilot funding through LRTOI to apply immersive virtual reality technology to existing exercise equipment. “A hot topic in research right now is how to make things that are healthy for people more enjoyable,” says Misko. He and his multidisciplinary team are interested in whether a virtual reality environment can get people more active.

The team will create a virtual environment, or game, that will encourage people to exercise more effectively as measured by duration, intensity and achievement of target heart rate levels. The team will also look at whether the positive reinforcement mechanisms in the virtual environment affect motivation to exercise. Misko will lead the group in integrating the gaming system with select exercise equipment so that it can ultimately be used with many different kinds of equipment.

The project is moving to user testing in the fall of 2017. The team is excited about seeing how users at Lakeshore respond and how outcomes and engagement in exercise are affected. “The Research Collaborative was set up to truly understand problems and find pathways for better outcomes,” says Misko. “It’s a privilege to have the opportunity to learn from such renowned researchers in the area and be given access to a world class facility like Lakeshore.”

**New Training Approaches Promote Adherence in Individuals with Spinal Cord Injury**

“The most exciting thing about this research project is the immediate benefit to the participant,” says Gordon Fisher, Associate Professor in the UAB School of Education Department of Human Studies and Principal Investigator of a LRTOI Pilot Study.

“Adherence to exercise is a challenge,” explains Fisher, who has conducted similar studies in people without disabilities. He believes HIIT may promote greater adherence in individuals with SCI because it requires a significantly lower time commitment than traditional modes of MIT while providing the same if not better overall health improvements. “Scientific evidence from data in the study could lead to training recommendations that provide powerful benefits but that are much more realistic.”

“Scientific questions are great, but how things affect quality of life is the meaningful question,” says Fisher who sees potential for a much larger clinical trial based on the preliminary data from the pilot study. Both Fisher and Curry see potential for the answers to the questions posed by the study to suggest new, real-world training approaches for people with SCI.

The preliminary data show numerous health benefits in almost all of the individuals, and that’s in addition to how much they seem to enjoy it.”

Fisher’s study compares the effects of low volume high intensity interval training (HIIT) and moderate intensity continuous training (MIT) in individuals with spinal cord injury (SCI) over a six-week period using arm crank ergometer exercise. The study looks at physiological and functional health outcomes, such as body composition, cardiovascular fitness, glucose tolerance, blood lipids and vascular health, as well as psychometric factors such as quality of life and exercise enjoyment.

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Focus on Technologies to Promote Health Moves Research from the Lab to the Marketplace

The UAB / Lakeshore Research Collaborative is home to the Rehabilitation Engineering Research Center on Exercise and Recreational Technologies for People with Disabilities (RecTech). Funded by the National Institute on Disability, Independent Living, and Rehabilitation Research, RecTech and its team of researchers, developers, practitioners and students work to address critical gaps in research and development (R&D) in the areas of exercise physiology, rehabilitation science, engineering and technology.

“The focus of the Collaborative is working with individuals with disabilities and creating products and systems that improve their lives,” says Lloyd Cooper, Principal Designer at Birmingham’s PUSH Product Design, LLC. “As a designer, I see that as the ultimate application of technology.”

Cooper, whose firm has delivered research and development services for clients ranging from Medtronic to Yamaha, began working with the Collaborative in 2012 as lead designer for one of the initial projects funded through RecTech. The project, Advanced Virtual Environment Exercise Device, or AVE2D, seeks to develop a multi-functional universally designed device promoting arm, leg and core exercise for people with a range of physical function.

Designing for Access and Affordability

“Traditionally, exercise equipment for people with physical disabilities has been in the form of discrete pieces of equipment, like a hand crank, that tend to be for a distinct patient or user population. That makes it very difficult to move the equipment to market without being very expensive,” Cooper explains. With AVE2D, the team is designing and prototyping a piece of equipment that is universally designed and affordable to increase the probability of moving the technology to market.

Cooper led his team through a formal design process that moved from criteria definition through concept development, concept refinement and prototype iterations. The prototype is now being tested at Lakeshore.

Designing for Inclusion and Adherence

In addition to the physical prototype, Cooper’s team and the Collaborative are designing a user interface component of AVE2D that will engage users through a virtual environment. “The physical system is our focus, but we’re also working to make it as cool and compelling as possible to meet Dr. Rimmer’s goal of adherence,” explains Cooper.

This virtual platform will complement the physical device by simulating real-world outdoor recreational venues and adding realistic resistance and speed control of both arm and leg exercise inputs based on change in the virtual terrain. Students in the UAB School of Engineering have played a critical role in the development of the virtual platform for AVE2D. Dr. Alan Eberhardt, Professor and Associate Chair of Education in the UAB School of Engineering Department of Biomedical Engineering and Director of Training for the UAB / Lakeshore Research Collaborative, directed the student project to create the virtual interface and implement controls and testing for the device.

For the project, John Hoyle, a graduate student in the UAB Department of Biomedical Engineering, began by capturing footage at Birmingham’s Red Mountain Park. He then developed the functional control system that will allow AVE2D users to experience more resistance when traveling uphill, encounter less resistance going downhill, and choose a direction when they reach a fork in the trail. Finally, Hoyle was able to test the system by meeting with participants and members at Lakeshore Foundation.

With the Collaborative, we’ve been able to expose students to the big picture and real world applications of their work,” explains Eberhardt. “The beauty of the Collaborative is that we can develop devices and test those devices on real clients with disabilities at Lakeshore Foundation in a very effective manner. In the future, we see this as the model.”

Moving Beyond the Lab

Cooper hopes the AVE2D project will move to design for production in the near future. “Dr. Rimmer’s aim is not only to do research but to actually move the needle on science and get projects out of the lab and into the marketplace,” Cooper says. AVE2D is only one of several new technologies in development through the Collaborative with potential to impact the lives of people with disabilities living today. Cooper credits the Collaborative’s success to its ability to create convergence of demand, expertise and interest and allow these factors to play off one another.

“The capacity and knowledge base here is much greater than the sum of the components, and it’s unusual that all of these things exist in one city,” explains Cooper. “From a product development standpoint, that’s why I’m excited to be here. There are so many opportunities to work with these areas of knowledge and need to create new technologies and innovations that can touch so many lives.”

Development of the AVE2D prototype drew from the full range of the Collaborative’s expertise including UAB faculty and students, Lakeshore staff and members, and business partners.

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**Lakeshore Foundation and UAB Host Blue Ribbon Panel on Transformation of Healthcare Services and Quality of Life for Individuals with SCI**

The UAB / Lakeshore Research Collaborative seeks input from a diverse team of experts locally as well as from across the country and around the globe. In 2015 when Lakeshore Foundation and UAB sought to envision transformation of healthcare services and quality of life for individuals with spinal cord injury (SCI) and other disabilities, the two organizations organized a blue ribbon panel to explore the topic.

"UAB and Lakeshore Foundation have a unique opportunity to develop a new paradigm for delivering novel rehabilitative services," says Amie Brown McLain, Chair of the UAB School of Medicine Department of Physical Medicine & Rehabilitation and Director of the UAB Spinal Cord Injury Model System. McLain, who serves on the Board of Directors for the Collaborative, worked with Jim Rimmer, Director of the Collaborative, to organize a panel to explore and envision this new paradigm for individuals with SCI.

**Thought Leadership and Experiential Understanding of SCI**

McLain and Rimmer invited colleagues from across the country to travel to Birmingham to participate in the panel. Panel members’ work and scholarship not only represent leading organizations and institutions across the country, but the participants themselves also understand SCI on a personal and experiential level. The twelve panel members generously contributed time, energy, ideas and experience. Their personal and collective accomplishments already contributed to advances in a number of related fields and through the panel discussion they helped shape the future of healthcare for individuals with SCI, their families and the communities in which they live.

**Vision for Lifelong Health and Wellness**

Panel members outlined a vision for lifelong health and wellness for individuals with SCI, supported along a continuum from acute care through rehabilitation and finally to sustainable access to community-based services and resources. They agreed person-centered engagement and enhanced team-based care along this continuum is critical to the future of healthcare delivery for people with SCI and other newly acquired disabilities.

Panel members identified best practices and existing models that are already moving care in the direction of their vision. They also noted that research around these models that are having an impact on SCI is needed in order to make them better-known and accepted in the medical and rehabilitation communities.

**Collaborative Integrates Panel Feedback into Research**

In 2017, the Collaborative was awarded a Craig H. Neilsen Foundation grant for a research protocol generated from discussion at the panel. McLain and Rimmer serve as co-investigators on the study that is examining a panel recommendation that individuals with SCI could benefit from periodic check-ins and “tune-ups.” Examples of check-ins named by panel members included respite and spiritual retreats, additional training or peer learning opportunities.

The study, Mindfulness, Exercise and Nutrition to Optimize Resilience (MENTOR), will compare the effectiveness of telehealth coaching in two cohorts. One cohort will participate in a one week intensive residential wellness retreat followed by twelve months of telehealth coaching. The second cohort will receive twelve months of telehealth coaching without the retreat.

The implementation phase of the study will begin in 2018, and panel members are committed to...
remain engaged in the project to help inform and shape the effort. "The Neilsen Foundation grant includes funding to bring our expert panel back to Birmingham to evaluate the effectiveness of this pilot project and to determine how we can reach more people in the future," says Rimmer. Results of the study combined with evaluation from the panel will have important implications for strengthening community-based services and resources.

McLain views the study as an opportunity to explore certain aspects of a holistic model of care. "The Collaborative will integrate all aspects of evidence-based, traditional and nontraditional methodologies in the medical management of individuals with disabilities," says McLain. "Our holistic model will be continuously evaluated by patient-wellness outcomes that will define ‘resiliency’ science."

NCHPAD Serves as National Voice for Inclusion through its Resource to Practice Center and Strategic Partnerships

The UAB / Lakeshore Research Collaborative is home to the National Center on Health, Physical Activity and Disability (NCHPAD). The only public health center of its kind in the nation, NCHPAD is a champion for community health inclusion and helps translate cutting edge research and the work of the Collaborative into communities so it can change lives every day.

"I’m passionate about the potential and the reach of the Collaborative, and I know that we can really change lives," says Amy Rauworth, Director of Policy and Public Affairs at Lakeshore Foundation and Associate Director of NCHPAD. "We can really do something about health equity and health disparity in a way that’s efficient, effective, evidence-based and practice-based like no one else can do."

Rauworth’s team is working to address the urgent need for inclusion and health equity that exists in communities across the country. The U.S. Census Bureau reports that approximately one in five Americans has a disability, and as the population ages, this percentage will increase. "Disability is a universal experience," says Rauworth. "We will all be either touched by it or know someone who has at some point. We need to start designing our communities, programs and research around inclusion now."

NCHPAD is working to create health equity for people with disabilities by providing resources to individuals, promoting community and environmental change, accelerating research to practice and focusing national attention on the urgent need for inclusion.

Premier Resource Center for Information on Health Promotion and Disability

"It’s about impacting the people who need it the most," says Allison Tubbs, Project Coordinator for NCHPAD. "We have resources for kids all the way to older adults, and we push the resources out through a national platform headquartered at Lakeshore Foundation."

While individuals and their families and caregivers are a primary focus of NCHPAD, the Center also supports a broader community of providers of health and wellness services, including rehabilitation and public health professionals, educators and policymakers. Through this broader focus, NCHPAD facilitates programmatic, policy, systems and environmental changes to promote inclusion.

NCHPAD reaches these individuals through a number of health communication strategies including:

- Print and web-based materials, such as articles, fact sheets and videos
- Individualized consultation and referral services through a hotline, live web chat and email
- Training and technical assistance programs and workshops

(pictured left to right) Mary Allison Cook, Amy Rauworth, Allison Tubbs and Bob Lujano at the White House Summit and Research Forum on Health and Fitness for Americans with Disabilities. Official launch of NCHPAD’s Commit to Inclusion campaign (2014).
The range of information developed and audiences reached through NCHPAD requires a diverse team of experts. The NCHPAD team includes information specialists in the areas of fitness, recreation, sport, health, wellness, nutrition and public health, as well as communication specialists, videographers and graphic designers.

Dissemination Arm of the Collaborative

The Collaborative has served as the home for NCHPAD since 2012. During this time the Center has grown in transformative ways. “Being ingrained in Lakeshore Foundation and the disability world makes a big difference in the products we’re able to produce,” says Tubbs. “We have our target audience right here at Lakeshore Foundation. We can take a video of programming happening or capture a research study and lift it up for people to see. That impact is because of our location at Lakeshore.”

In addition, NCHPAD’s infrastructure as a resource center provides the Collaborative with direct channels for moving research to practice. “I take pride in the work we’re doing to make people aware that we are a resource and tool to help people with disabilities,” says Bob Lujano, Information Specialist at NCHPAD. “NCHPAD is the voice of the Collaborative. Whatever is developed in the lab, NCHPAD pushes the content out.” This acceleration of research to practice is helping to reduce the amount of time it typically takes for research to move from the lab to community.

Applied Practice Center for Community Health Inclusion

Over the past five years, NCHPAD has expanded its knowledge-to-practice focus to help build and maintain an evidence base of successful strategies for promoting community health inclusion. Two research-to-practice initiatives have helped advance this goal.

Guidelines, Recommendations, Adaptations Including Disability (GRAIDs)

“There is a realization in this field that you can only focus on the individual so much, but if the environment isn’t accessible the individual can’t improve his or her health,” explains Kerri Vanderbom, Research Assistant Professor in the UAB School of Health Professions Department of Physical Therapy and a member of the UAB / Lakeshore Research Collaborative. “Focusing on policy and different target groups like health professionals, who can support the health of people with disabilities, is incredible.”

Vanderbom served as project coordinator for a Disability and Rehabilitation Research Project (DRRP) called Obesity Prevalence, Adaptations and Knowledge Translation in Youth and Young Adults with Disabilities. Funded through a grant from the National Institute on Disability, Independent Living, and Rehabilitation Research, the project developed a set of methods and criteria (called the GRAIDs framework) to help researchers, practitioners and policymakers adapt evidence-based health promotion programs that are inclusive for people with disabilities.

A key outcome of the project was the successful adaptation of the Centers for Disease Control and Prevention’s twenty-four Recommended Community Strategies and Measurements to Prevent Obesity to be inclusive of people with disabilities. “Being a part of taking the research and putting it into practice in the real world is exciting,” says Vanderbom. “We know that we can take research and truly make an impact on someone’s life.”
Building on the success of the GRAIDs adaptation framework, NCHPAD folded this framework into a broader framework referred to as NCHPAD’s Knowledge Adaptation, Translation and Scale-up (N-KATS). The focus of N-KATS is to develop and grow the evidence base of inclusive health programs, practices and services. The N-KATS framework has four sequencing phases:

- Phase I: New knowledge is collected and systematically adapted for the local context or community
- Phase II: Customized resources and training tools are shared with key stakeholders
- Phase III: NCHPAD staff serve as facilitators to help key stakeholders implement recommendations
- Phase IV: Successful elements of practice are captured, archived and made available for others to use

Through the N-KATS framework, the GRAIDs adaptations are now moving into an implementation phase (Phase III) to help make communities more inclusive. “NCHPAD became the vehicle for pushing out the findings and is the dissemination vehicle for this work,” says Vanderbom. “The policy work that NCHPAD is doing has raised awareness on a national level, not just among people with disabilities but among people without disabilities, as well.”

Expanding Impact through National Partnerships

Beyond leading the way in the development of a unique knowledge-to-implementation framework to promote inclusion, NCHPAD is expanding community health inclusion through national strategic partnerships. “The impact has been the opportunity to contribute to the national narrative,” says Rauworth. “We are working with sixteen partners including the American Heart Association, National Recreation and Parks Association, Alliance for a Healthier Generation and USA Track and Field. We have formalized partnerships to reach our targeted population through lots of dissemination channels.”

These strategic partnerships are helping advance the vision of community health inclusion through major national and international campaigns, such as Commit to Inclusion and the Partnership for Inclusive Health. These partnerships and initiatives help change lives and communities through inclusion.

Leadership in the Paralympic Movement

A U.S. Olympic and Paralympic Training Site since 2003, Lakeshore Foundation has served as a training site for USA Goalball and USA Wheelchair Basketball as well as the High Performance Management Organization (HPMO) of USA Wheelchair Rugby. Excellence in adapted sport offers a platform for the Collaborative to reach a global audience.

Mandy Goff, High Performance Manager for USA Wheelchair Rugby at Lakeshore Foundation, believes adding research and advocacy to the mission of Lakeshore Foundation through the Collaborative has strengthened the organization. “We were excellent before, but when we put in advocacy and research, we became the pinnacle,” says Goff. “In the world of movement there is nothing more important than being able to say we just proved something. We have a more powerful voice when we can back it up with proof. Case closed.”

The Collaborative has increased capacity for athlete testing and high performance management for Goff and her team through research in movement analysis, nutrition science and physiological testing. Most recently, lactate testing through the Collaborative helped USA Wheelchair Rugby make adjustments to playing time for athletes, giving them an edge in Rio where they won the silver medal. “The athlete testing we do with the Collaborative every single year is extremely beneficial to us,” says Goff. “The athletes want to know this information. It helps them modify their training and routines, and being able to tweak little things helps immensely.”

Power of Adapted Sport to Bridge Nations

While Lakeshore Foundation and the Collaborative focus primarily on Team USA, they also have the opportunity to work with athletes from around the world. “We bring teams in from all over the world,” says Lisa Hilborn, Director of Recreation and Athletics at Lakeshore Foundation. “We host other countries here and facilitate their high performance managers working with the Collaborative.”

“...change the world. Every aspect of what we do has an impact on humankind, health and inclusiveness.” -Mandy Goff

High Performance Manager for USA Wheelchair Rugby at Lakeshore Foundation
Hilborn is proud of the way Lakeshore and the Collaborative use sport to bring people together from around the globe. “We are all about Team USA, but when we think about the Paralympic movement and making a particular sport better, we need to bond together as a sport and share information with other countries,” says Hilborn. “Lakeshore can be the answer to that collaboration, and we have the capacity to do that.”

As recognition for the work of Lakeshore and the Collaborative has grown, so has its platform for international engagement. This platform includes representatives from abroad visiting Lakeshore to see the cutting edge of adapted sport and inclusion, as well as Lakeshore team members traveling abroad to teach and train athletes. “According to the 2011 World Report on Disability, there are one billion people who have a disability and a lot are being excluded from access to competitive sport,” says Bob Luñano, former member of the USA Wheelchair Rugby team and Information Specialist at Lakeshore Foundation and NCHPAD. “Anything we can do to meet that need is important.”

Luñano was a member of a Lakeshore team who traveled to Russia in 2016 as part of a sport collaboration program through the U.S. Department of State. The team helped train Russia’s new wheelchair rugby team and shared knowledge about the sport. “I make friends around the world, and knowing that there are things we can do to make their lives better is important,” says Luñano. “We are ahead of the game internationally, and when we travel and present we are bringing a new perspective on inclusion, accessibility and adapted sport.”

Future of Inclusion for Everyone

The resources, knowledge and capacity in Birmingham and in the Collaborative can truly have a global impact. “When we look at sport and health and movement, we’re exactly poised to change the world,” says Goff. “Every aspect of what we do has an impact on humankind, health and inclusiveness.”

Confidence in this potential is shared throughout the Collaborative. “Through the Department of State we had delegates from the Philippines and Estonia visit,” says Lakeshore Foundation board member Cathy Sloss Jones. “They came and got inspired by what we’re doing and took that back home. The international connection is huge to me.”

Birmingham also provides a unique context for taking the lead on inclusion because of its civil rights history. “How do you build public spaces that include all people? How do you really implement universal design?” asks Jones. “The opportunity for Birmingham to be one of the most accessible cities in the country should be one of our goals. We need to take the lead in building a world where there’s a place at the table for everyone.”
Collaborative Looks to the Future and Shifts Focus from Infrastructure to Integration

Since its founding in 2012, the UAB / Lakeshore Research Collaborative and its leaders and partners have built a remarkably impactful organization through careful attention to building infrastructure to support collaboration. As those leaders and partners look to the next five years of the Collaborative, there is consensus that the sky is the limit for pivoting from building the infrastructure to integration of research, programs and advocacy in a truly transformative model for individuals with disabilities.

Model for Integration of Research, Advocacy and Programs

“We want to set the model for the rest of the country for what integration means,” says Jim Rimmer, Lakeshore Foundation Endowed Chair in Health Promotion and Rehabilitation Sciences at UAB and Director of the UAB / Lakeshore Research Collaborative. “We want to build a culture of inclusion in which each person is part of advocacy, research and programs.” Rimmer, whose vision has shaped the growth and impact of the Collaborative since 2012, believes the Collaborative is ready to shift its focus from developing the infrastructure to focusing on integration of all its many resources, partners and services for the benefit of individuals with disabilities.

Lakeshore Foundation staff and leadership have been focused on a model for integration and alignment across the Foundation’s three pillars of advocacy, research and programs for a number of years. These efforts of the Foundation are providing a strong cornerstone for expansion of an integrated model to support research through the Collaborative.

Rob Motl, Professor in the UAB School of Health Professions Department of Physical Therapy and Associate Director of Research for the UAB/Lakeshore Research Collaborative, agrees integration is critical to the future of the Collaborative. “I see the future of the Collaborative being one in which we can increase the intersection between research and practice in a way that will bring the greatest impact to the population we are serving. This is where real transformation will happen.”

The Collaborative’s team believes a focus on people and facilities will help support continued expansion of this integrated model. Engaging more researchers, program and healthcare providers and partners of all kinds into the work of the Collaborative and ensuring they are all able to work together will be critical.

Providing the physical space to promote the integrated model will also be an exciting next step for the Collaborative. Plans to renovate the Wallace Gymnasium, a facility central to the Lakeshore Foundation campus, will support the integrated model. “I am referring to the new space as our Collaboratorium,” explains Motl. “It will be a place where we can all come together and work collectively around research and practice. It will be the place that will totally embody what is meant by collaborative research.”

“I see the future of the Collaborative being one in which we can increase the intersection between research and practice in a way that will bring the greatest impact to the population we are serving. This is where real transformation will happen.”

- Rob Motl
Professor in the UAB School of Health Professions Department of Physical Therapy and Associate Director of Research for the UAB/Lakeshore Research Collaborative

Breakthrough Research

A strengthened focus on integration will provide a new lens for emerging and ongoing research initiatives. “There are so many different ways the Collaborative can go in terms of research,” says Harold Jones, Dean of the UAB School of Health Professions. “I can see it accelerating and building momentum.” While the possibilities for research for the Collaborative are endless, a number of new research projects are in a start-up phase and still more areas of need have been targeted for research focus in the coming years.

Research highlights are described below.

TEAMS (Tele-Exercise and Multiple Sclerosis)

TEAMS is examining whether the benefits of complementary and alternative medicine including yoga, Pilates and neurorehabilitative exercise delivered to individuals in their home via a teleexercise platform offer the same benefits as those in a clinical setting. TEAMS is a four-year study funded by the Patient-Centered Outcomes Research Institute (PCORI), which began in fall 2016.

(above) NCHPAD Information Specialists
As the Collaborative continues to work toward seamless integration of research and practice, leadership of individuals across disciplines and all abilities will be the center of its transformational vision.
Continuum of Care

The Collaborative will continue to work closely with healthcare providers to build a seamless continuum of care from injury through lifelong health and wellness in the community. This will include strengthening partnerships with the medical community, particularly the Collaborative’s strong partnership with the UAB School of Medicine: Department of Physical Medicine & Rehabilitation and Spain Rehabilitation Center. PM&R physicians and researchers bring an expertise in the post-acute rehab world by building an environment of resiliency, health and wellness for individuals with disabilities.

Impact on Quality of Life for Individuals

As the Collaborative continues to expand its groundbreaking research efforts, it will remain steadfastly focused on improving the quality of life for individuals with disabilities living today. “The success of the Collaborative is measured by the people who benefit from it,” says Jeff Underwood, President and CEO of Lakeshore Foundation.

There is a shared sense among the Collaborative’s partners that the sky is the limit in terms of what the Collaborative can do, and a person-centered focus will shape the next five years. All of this work will continue to be guided by a bold vision for inclusion that can truly change the paradigm and quality of life for people with disabilities.

As Winston Churchill once said, “Now this is not the end. It is not even the beginning of the end. But it is, perhaps, the end of the beginning.”

Michael E. Stephens
Michael E. Stephens, alumnus of the UAB School of Health Professions’ Master of Science in Health Administration and the driving force behind Lakeshore Foundation, passed away on July 1, 2017, at the age of 73.

Stephens, who acquired a traumatic spinal cord injury in 1970 that changed his life and eventually the lives of countless others, will be most remembered as the man who built Lakeshore Hospital from a 100-bed rehabilitation facility into an internationally renowned rehabilitation campus that serves over 4,000 people with physical disabilities and chronic health conditions annually. Lakeshore Foundation, as it is known today, was the first entity to become an official U.S. Olympic and Paralympic Training Site thanks to Stephens’ leadership.

At UAB, where he was a member of MSHA Class 9, he will be most remembered for his efforts to bring together the academic excellence and groundbreaking research of the School of Health Professions and the world-class facilities of the Lakeshore Foundation to create the UAB / Lakeshore Research Collaborative. Stephens long played an active role with the UAB School of Health Professions. In the 2000’s he served for many years as a member of the Dean’s Advisory Board. In 2009, as part of the celebration of the School’s 40th anniversary, Stephens was honored as a member of the “Fab 40 Alumni” which recognized the 40 best alumni all-time.

In addition to his UAB School of Health Professions’ honors, Stephens was also recognized multiple times by UAB including in 2002 when he received the honorary degree Doctor of Humanities during the May commencement and the UAB Distinguished Alumnus Award during the December commencement. In 2006, Stephens was inducted into the Alabama Sports Hall of Fame in the category of Distinguished Alabama Sportsman. The ceremony noted his service to “the United States Olympic Committee (USOC) CEO Leadership Council, an advisory group to then USOC Chief Executive Officer Jim Scherr” and for being a member of the USOC Chairman’s Circle which was an advisory group to then USOC Chairman Peter Ueberroth.

In 2013, the University of Montevallo, where he earned a Bachelor’s Degree in 1975 and was awarded the Doctor of Humane Letters in 1995, named him their Founders’ Day speaker. At the 17th Founders’ Day celebration, the university welcomed Stephens as “one of its most notable and generous alumni to speak to those attending the convocation.”

In 2014, Stephens was inducted into the Alabama Healthcare Hall of Fame where he told the crowd: “I am most fortunate to have chosen a career in healthcare in the area of rehabilitation at a time when its paradigm was changing and I was able to have an influence on that change. And because of that I ended up with a bunch of honors. But there is no greater honor than the one you’re giving me today.”

Stephens, who up until his passing was president of S. Enterprises, Inc., and an active member of the Lakeshore Foundation Board of Advisors, will be remembered for his business success at Lakeshore and again at Relife, which went from one specialized rehabilitation company to a 12-state 46 facility enterprise in a decade in the late 80’s.

But most importantly, Michael E. Stephens will be remembered for his success in changing people’s lives (including his own). Nobody did more in the past 40 years to help the world recognize the strengths and abilities of people with disabilities. And with the legacy he has left behind at Lakeshore Foundation and the UAB School of Health Professions – nobody will do more than Stephens over the next 40 years and beyond.

Adapted with permission from the UAB School of Health Professions online news article, “Michael E. Stephens, SHP Fab 40 Alumni honored, passes away at age 73.”