

Toyota Mobility Foundation Unveils Five Visions for the Future of Mobility at CES

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LAS VEGAS (January 7, 2019) – The five finalists in the three-year Mobility Unlimited Challenge have been unveiled at CES in Las Vegas. The Toyota Mobility Foundation launched the \$4 million global challenge in 2017 in partnership with Nesta’s Challenge Prize Centre, with the aim of improving the lives of millions of people with lower-limb paralysis.

The Challenge invited engineers, innovators, and designers from across the world to submit designs for game-changing technologies, incorporating intelligent systems, to improve the mobility and independence of people with lower-limb paralysis. Central to the Challenge is the importance of collaboration with end-users to develop devices which will integrate seamlessly into users’ lives and environments, while being comfortable and easy to use, enabling greater independence and increased participation in daily life.

Each of the five finalists will receive a grant of \$500,000 to develop their concept further, with the final winner of the Challenge receiving \$1 million in Tokyo in 2020.

The five finalists are:

The Evowalk: Evolution Devices (United States) – a non-intrusive sleeve which goes around the user’s leg and has sensors that track the user’s walking motion and will stimulate the right muscles at the right time to improve mobility.

Moby: Italdesign (Italy) – an integrated network of wheel-on powered devices, allowing users of manual wheelchairs the convenience and benefits of a powered chair, accessible via an app-based share scheme.

Phoenix Ai Ultralight Wheelchair: Phoenix Instinct (United Kingdom) – an ultra-lightweight, self-balancing, intelligent wheelchair which eliminates painful vibrations.

Qolo (Quality of Life with Locomotion): Team Qolo, University of Tsukuba, (Japan) – a mobile exoskeleton on wheels, allowing users to sit or stand with ease.

Quix: IHMC & MYOLYN (United States) – a highly mobile, powered exoskeleton offering fast, stable and agile upright mobility.

(See Notes to Editors for further details about the shortlisted entries, their personal quote and a link through to their images.)

Eighty entries were received from specialist teams in 28 countries globally. The finalists were chosen by a panel of expert judges including:

Professor Linamara Battistella, Physical and Rehabilitation Medicine doctor at the University of Sao Paulo (Brazil)

Winfried Beigel, Director of Research and Development for Otto Bock Mobility Solutions (Germany)

Dr. Mary Ellen Buning, President-elect for the Rehabilitation Engineering and Assistive Technology Society of North America (United States)

Dr. Kay Kim, President of NT Robot Co (South Korea)

Dr. Eric Krotkov, Chief Science Officer at Toyota Research Institute (United States)

Eric LeGrand, disability rights advocate (United States)

Sophie Morgan, television presenter and disability advocate (United Kingdom)

Ruth Peachment, Occupational Therapy Clinical Specialist at the National Spinal Injuries Centre (United Kingdom)

Matthew Reeve, Director of the Christopher & Dana Reeve Foundation (United States)

Dr. Yoshiyuki Sankai, President of robotics company Cyberdyne (Japan)

Dr. Lloyd Walker, professional rehabilitation engineer at Tech4Life (Australia)

Dr. Eric Krotkov, Chief Science Officer at Toyota Research Institute and one of the judges of the Challenge, stated: “There are so many technological opportunities to explore approaches to alleviate challenges stemming from lower-limb paralysis. A competition like the Mobility Unlimited Challenge gets innovators to focus on the same problem to identify something of great common interest that serves society. I am excited by these finalists who have a breadth of technical approaches – wheelchairs, orthotics, braces, exoskeletons. I look forward to seeing how they will take these devices out of their conceptual stage to help our end users.”

In addition to the \$500,000 grant, the finalists will attend tailored workshops, receive mentoring opportunities with engineering experts, and collaborate with end users to further the development of their concepts through to

2020.

Ryan Klem, Director of Programs for Toyota Mobility Foundation commented: “These five finalists have shown real innovation driven by human-centered design. We think that the technology incorporated in these devices could change the lives of a huge number of people around the world, not just for people with lower-limb paralysis, but also those with a wider range of mobility needs. It will be fascinating to follow the teams’ journeys and see how the \$500,000 grant will help them develop their ideas to bring to market and get them into users’ hands.”

To ensure entries from organizations of all sizes, the Challenge also offered ten teams seed funding in the form of \$50,000 Discovery Award grants during the entry period. Of the ten Discovery Award winners, four went on to be selected as finalists.

Charlotte Macken of Nesta’s Challenge Prize Centre said: “Current personal mobility devices are often unable to fully meet the needs of users due to limitations affecting functionality and usability. Historically, the pace of innovation is slow, due to small and fragmented markets and difficulties in getting new technology funded by health-care systems and insurers. This can make the field unattractive to the very people who could help change the world. We hope that challenges like this can inspire innovation and are excited to see how the five finalists use this opportunity to develop their ideas further.”

Around the world, millions of people are living with lower-limb paralysis (the most common causes being strokes, spinal cord injury and multiple sclerosis). While there are no statistics on paralysis worldwide, the World Health Organization estimates there are 250,000-500,000 new cases of spinal cord injury globally every year.