

For immediate release:

Long Term Care Revolution – Innovate UK funding for assistive robotic system will offer a ‘new perspective on ageing’

A consortium of leading researchers, care providers and robotics experts have received a major award of over £2m from Innovate UK to develop a modular robotic solution for the home to revolutionise long-term care by giving people the choice to stay independent in their own homes as they age.

The Office for Budget Responsibility recognises that by 2065, 26% of the population of England and Wales would be more than 65 years old, up from 18% today. With increasing numbers of older adults needing assistance in later life, there is a challenge for society as to how best provide and maintain high quality support, and ensure that people can stay integrated and valued members of their communities.

The CHIRON project is developing a connected system of modular robotic components, which can be adapted to different assistive tasks. CHIRON’s various components will be designed to be mixed and matched. This will enable the person using CHIRON to undertake a wide range of domestic and self-care tasks independently, which for some people could mean that their carer would then have more time to spend providing valuable social companionship. The project will create a prototype that will lead to the development of a commercially viable product.

The CHIRON consortium is led by [Designability](#), specialists in assistive technology solutions that enhance people’s lives. The key technology partners are [Bristol Robotics Laboratory](#) (BRL) and [Shadow Robot Company](#), experts in conducting pioneering research and development in robotics. Award winning social enterprise care provider, [Three Sisters Care](#) will bring user-centred design to the core of the project, with [Telemetry Associates](#) providing project management support. [Smart Homes & Buildings Association](#), specialists in telecare and assisted living, will bring sector knowledge to the project to support commercialisation. The project will draw upon the consortium’s expertise of working with end-users, clinicians, and health and social care providers, to develop an effective robotic solution that offers adaptability to a person’s changing needs.

Designability Director, Professor Nigel Harris said: ‘We are tremendously pleased to contribute to this work, focusing on the Long Term Care Revolution. This project is all about technological innovation and perfectly compliments other work that looks at social innovation.’

Praminda Caleb-Solly, Associate Professor in Independent Living Systems, who is principal investigator on CHIRON in the Bristol Robotics Laboratory said: “We are proposing a paradigm shift to enable assistive care robots to become a reality. Our approach is to combine modular functional units that work in a distributed manner, adapting to support user needs in context. The focus is on robust solutions that can be integrated with other products and assistive devices. This will also impact on personal and social perception and understanding of assistive robotics, and how people interact with these technologies to best support them.

“Our ultimate aim is to offer a new perspective on ageing, helping people realise their aspirations as they age. It is also important that CHIRON products look good and feel good. Aesthetic and beautiful designs that suit a range of preferences will be developed in collaboration with user experience and product designers. As the system develops it will be installed and trialled in the BRL’s [Anchor Robotics Assisted Living Studio](#) which will ensure that it is tested for safety and usability in a realistic environment.”

Sanja Dogramadzi, Associate Professor in Robotics, who is the project technology lead for BRL said: “Our vision is a CHIRON in every home. CHIRON doesn’t have one body, but many. A set of intelligent modular robotic systems, located in multiple positions around your home; CHIRON could help you with personal hygiene tasks in the morning, help you get ready for the day and even support you in preparing your favourite meal in the kitchen. User-centred design is at the heart of the project. Through our research we will focus on the tasks that people tell us are the most burdensome and inhibit independent living, then design the system to help with these.”

Rich Walker, Managing Director of the Shadow Robot Company, said: "Shadow's founding vision is to use robots to solve real-world problems for real people. This Long Term Care Revolution project will create a new generation of robot technology - affordable and aspirational - to change the way we think and feel about aging. We are fantastically excited by this opportunity."

Jobeda Ali, CEO of Three Sisters Care said: “The workforce requirement in domiciliary care has increased by 35% since 2009. Care providers like us are finding it extremely difficult to meet the shortfall. By 2025, nationwide we will have a workforce gap of 75,000 care workers. This ultimately means that older people will go without care or receive very poor quality care. Technology is a crucial part of the plan to meet this workforce shortage and this project will be instrumental in averting a care crisis as the UK’s demographic changes. Robotic assistance will allow more people to avoid being institutionalised and will allow couples to remain together if one of them needs extra care.”

A key component of the system will be a flexible wall or ceiling mounted robotic arm-like structure, which will fold away when not in use. The device will provide various degrees of support in assisting a person, depending on their particular needs. The hardware of the robotic arm will be part of an integrated system in the home, designed to be connected to other devices and sensors, and capable of responding to voice, visual and touch inputs.

In the future the design will enable the core device and system to be adapted and upgraded as the needs of a person changes, so that someone with a condition which changed over time could have their individual assistive robotic elements altered to provide the additional support needed.

The project will draw upon existing care technologies and develop new ones, focusing on economic, pragmatic and aesthetic designs that are affordable and desirable. Award winning social enterprise care provider, Three Sisters Care, in collaboration with Designability, will ensure that the user is at heart of the project.

The funding for this project has been awarded by [Innovate UK](#)’s Long Term Care Revolution SBRI national challenge that aims to revolutionise long term care in the UK through business-led innovation. The two year project will begin in February 2016.

Editor's notes

Link to CHIRON project page: <http://www.designability.org.uk/researchproject/chiron-care-at-home-using-intelligent-robotic-omni-functional-nodes>

Project Name: CHIRON (Care at Home using Intelligent Robotic Omni-functional Nodes). Chiron is the healing centaur of Greek mythology and embodies the spirit of compassion and selfless service.

CHIRON is one of only two projects in the UK to receive Innovate UK funding in the Long Term Care Revolution National Challenge. The challenge received 113 proposals of which 5 were shortlisted for interview.

[Designability](#) are an engineering and design charity with a passion for creating life-changing assistive technologies. They conduct original research and develop commercial products that meet real needs. Their use principles of inclusive design, working with end-users, carers and health professionals to help understand the problem, find a solution and then test it in real life situations.

[Bristol Robotics Laboratory](#) is the most comprehensive academic centre for multi-disciplinary robotics research in the UK. It is a collaborative partnership between the University of the West of England (UWE Bristol) and the University of Bristol, and home to a vibrant community of over 200 academics, researchers and industry practitioners, which lead current thinking in service robotics, intelligent autonomous systems and bio-engineering. An internationally recognised Centre of Excellence in Robotics, it is a unique collaboration that harnesses the collective strengths of its university partners, and brings together the best expertise from industry and the academic community to spearhead Britain's efforts to be a world leader in modern advanced robotics.

[Shadow Robot Company](#) has been developing a variety of robotic components since 1987, the best known of which is the Dexterous Hand. These are being used globally by people pushing forward the state of the art in robotics technology working out how robots can handle, grasp and manipulate objects. Shadow has been investigating new actuation such as pneumatical artificial muscles and artificial tendons.

[Telemetry Associates Limited](#) is a consultancy specialising in complex systems and especially those related to buildings and home systems. TAL is active in the Internet of things and in factories of the future and has consultants who cover a range of market areas. TAL was project manager of the IoT-Bay Project and is Lead partner and manager of AUTOPIC (robotic strawberry picking), IODiCUS (Urban Local Energy) and FARMERS (Rural Local Energy).

[Three Sisters Care Ltd](#) is a social enterprise domiciliary care provider assisting older people and people with disabilities to live comfortably, securely and with dignity. Founded in 2011 by three sisters, Three Sisters Care work across London and Essex. In 2014 and 2015, Three Sisters Care won the Precious Social Enterprise of the Year Award and the Forward Ladies Social Enterprise of the Year Award respectively.

[Smart Homes & Building Association](#) specialises in smart homes which includes telemedicine, telecare and assisted living. SH&BA and will be responsible for bringing sector views, ideas and feedback into the project as well as advising on commercialisation.

[Innovate UK](#) is the UK's innovation agency. It works with people, companies and partner organisations to find and drive the science and technology innovations that will grow the UK economy - delivering productivity, new jobs and exports and keeping the UK globally competitive in the race for future prosperity.