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Accord Care and Support's Research and Innovation function sits with our Business Development team, headed by Assistant Director, Nicole Beeching.

Their work focuses on:

- Innovation
- Information sharing
- Promoting and supporting evidence informed practice
- Outcome and impact measurement
- Service redesign and evaluation
- Piloting new services
- Local and European collaborative research and learning projects
- Assistive technology.

Our Research & Intelligence relies on working closely with staff and customers as well as collaborative working on projects with colleagues from local, national and international organisations and universities. This includes hosting and jointly supervising university student MSc Projects.

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## Project examples

### **ACROSSING: Advanced Technologies and Platform for Smarter assisted Living (2016-2018)**

A European project led by De Montfort University which combines a network of 26 leading European research groups, industry partners and user organisations who are working together to (i) create an open Smart Home technology infrastructure, and (ii) train 15 Early Stage Researchers on concepts and methodologies of Smart Homes and support them to obtain PhDs.

Project overview poster [http://www.acrossing-itn.eu/sites/default/files/ACROSSING\\_poster.pdf](http://www.acrossing-itn.eu/sites/default/files/ACROSSING_poster.pdf)

Latest newsletter [http://www.acrossing-itn.eu/sites/default/files/ACROSSING\\_newsletter.pdf](http://www.acrossing-itn.eu/sites/default/files/ACROSSING_newsletter.pdf)

Project website [acrossing-itn.eu](http://acrossing-itn.eu)

### **Eco-Assistive Technology Homes (2016 – 2018)**

A joint project with Accord’s Regeneration Team looking to combine energy efficient technologies and assisted living technologies to create Accord’s Eco-Assistive Technology homes which will be piloted with customers. The aim is to develop a single off-grid platform to provide a range of solutions relating to: the management of the building; the provision of care, support; health promotion; communication; risk reduction services; and value for money.

### **DOREMI: Decrease of cognitive decline, malnutrition and sedentariness by elderly empowerment in lifestyle management and social inclusion (2013 – 2016)**

A three year project funded by the European Commission FP7 ICT programme which commenced in November 2013. DOREMI is developing a systemic solution for healthy ageing for older people with mild cognitive impairment. Its aim is to prolong people’s functional and cognitive capacity by empowering, stimulating and unobtrusively monitoring their daily activities according to DOREMI’s Active Ageing lifestyle protocols which have been developed. It is a health promotion approach with constructive interaction between the mind, body and social engagement. The consortium is developing and trialing technology to, for example, monitor food intake and metabolic control, and to deliver exergames, social interaction stimulation, and cognitive training programs using gamification techniques.

[doremi-fp7.eu](http://doremi-fp7.eu)

### **Evaluation of Eden Alternative (2016-2017)**

The R&I Team are carrying out a pre and post-implementation of the Eden Alternative (EA) approach in the three of Accord’s DCoE residential homes in Staffordshire. The evaluation will look to measure changes in key areas that are the focus of the EA approach including positive care, empowerment, spontaneity, and the elimination of loneliness, helplessness and boredom.

### **PIA: Personal IADL (Instrumental Activities of Daily Living) Assistant (2013 – 2015)**

A "Personal IADL Assistant" (PIA) system was researched and developed with European partners to assist people in the early stages of dementia to carry out Instrumental Activities of Daily Living (IADLs) including cooking, making drinks, carrying out housework, using equipment such as the washing machine, and taking a shower. Assistance was provided through the use of NFC tags which attached to objects and automatically activated instructional video clips via a touch screen tablet. The prototype was successfully trialled in Accord customer's own homes.

[pia-project.org/](http://pia-project.org/)

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## Publications

*Dutton, R. (2016)*

**Case study: End of Life Care Service for People with Dementia Living in Care Homes in Walsall**

*Dutton, R. (2014).*

**The Built Housing Environment, Wellbeing, and Older People.**

In *Wellbeing: a Complete Reference Guide. Part 2:2:13:1* 38.

**Abstract:** Drawing on research evidence this chapter explores how the built housing environment impacts on older people's wellbeing. It focuses on mainstream and specialist housing (not on care and residential homes) and gives an overview of important factors that affect wellbeing and how these related to housing, the sorts of accommodation in which older people live and the suitability of these, essential design features that are needed to provide accommodation that older people want and can use, and which will remain supportive as they get older, and approaches and standards that promote aging in place.

<http://onlinelibrary.wiley.com/doi/10.1002/9781118539415.wbwell067/abstract>

*Burrows, M., Dutton, R., Schulze, E., and Zirk, A. (2014)*

**PIA "Practical Support for Everyday Life" Results of the User Tests.**

In: Paul Cunningham and Miriam Cunningham (Eds) *eChallenges e-2014 Conference Proceedings*. IIMC International Information Management Corporation, 2014.

**Abstract:** PIA (Personal IADL Assistant) aims to improve the everyday competencies of older people. It provides video instructions to help with operating everyday tasks or handling technologies in the household. User tests were conducted in order to analyse the usability, functionality and usefulness of the PIA prototype 2. Furthermore recommendations for improvement were collected. 24 caregivers and older people participated in this study. Caregivers had to record two or more videos and afterwards link them to NFC (Near Field Communication) tags. Older people had to fulfil the respective task recorded by their caregivers with the help of the video instruction. Results indicate that the PIA system is considered as a highly useful system. Nevertheless some problems occurred when interacting with the app on the tablet for both caregivers and older people. Results of these research activities are used to revise the PIA prototype 2, which will be evaluated in further tests.

<http://ieeexplore.ieee.org/document/7058157/>

Rafferty, J., Nugent, C., Chen, L., Dutton, R., Zirk, A., Boyle, L.T., Khon, M., and Hellman, R. (2014)

## **NFC Based Provisioning of Instructional Videos to Assist with Instrumental Activities of Daily Living.**

*36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'14).*

**Abstract:** Existing assistive living and prompting based solutions have adopted a relatively complex approach to supporting individuals. These solutions have involved sensor based monitoring, activity recognition and assistance provisioning. Traditionally they have suffered from a number of issues rooted in scalability and performance levels associated with the activity recognition process. This paper introduces a simplistic approach to assistive living within a user's residence through the use of NFC tags and smart devices. The core concept of this approach is presented and is subsequently placed within the context of related work. A description of the architecture is provided and results following technical evaluation of the first system prototype are discussed.

<https://www.ncbi.nlm.nih.gov/pubmed/25570901>

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## Further information

For more details about our Research & Innovation, please email [Nicole Beeching](#)

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