SPARC

Keeping Close to the Realities of Ageing

SPARC is a unique initiative supported by the Engineering and Physical Sciences Research Council and the Biotechnology and Biological Sciences Research Council to encourage the greater involvement of researchers in the many issues faced by an ageing population and encountered by older people in their daily lives. Drawing on modest funding but much enthusiasm it has been informed by the broader community of researchers, practitioners, policy makers and older people and their carers.

The SPARC Network

SPARC has enabled 800 researchers, and nearly 1200 practitioners, policymakers and older people regularly to share their expertise and experience about a wide range of health issues, not just the impact of disease and approaches to recovery but effective approaches to healthy ageing, the realities of growing old, and a myriad of issues arising from the way individuals live their lives and the challenges they face, especially in the design of products and the built environment. The network includes academics from physical and biological sciences, engineering, technology, medicine, health, architecture, design and social sciences as well as charitable, professional and national representative bodies, local and central government and industry. It has encouraged the better application of research and the attainment of work of the highest quality, rigour and relevance.

Between 2005 and 2008 SPARC pursued three main activities: Workshops to bring together all stakeholders interested in improving the quality of life and independence of older people; Advocacy of the need for and benefits to individual older people and to society of ageing-related research; Small Awards to newcomers to ageing research, across all areas of design, engineering and biology and at the interfaces, relevant to an ageing population and older people. SPARC has warmly welcomed everyone’s interest and involvement in its activities.

Workshops

SPARC has organised 47 research workshops, some overseas, usually with other organisations. Most have been open and accessible to all stakeholders. These have provided a platform for newcomers supported by SPARC as well as experienced researchers funded through other programmes and for practitioners and older people. Workshops have been very well received by the participants, typically between 80 and 110 at each event, 3250 in total and over 50% non-academics.

Participation in workshops

Participant evaluations of workshops
Website – www.sparc.ac.uk
Packed with information about SPARC activities, funding sources and the world of ageing research, in 2008 the SPARC website became the most visited ageing research website in the UK, on most days with over 4000 hits.

Advocacy
SPARC represents the interests of researchers into ageing and those who can use their findings to key policy makers and the media. At every opportunity it makes the case that the type of ageing-related research supported by SPARC is able to make a major contribution to improving the quality of life of older people. SPARC operates regionally, nationally and internationally. It has initiated two questions in Parliament – on ageing research and on the older worker and has been invited to participate in reviews on the health and mental wellbeing of older people. Its workshops have attracted the interest and participation of HRH The Princess Royal and Ministers for Older People in Wales and the Irish Republic. It has enjoyed considerable support from MPs.

Some SPARC supporters: HRH The Princess Royal; Mrs Gwenda Thomas, Minister for Social Services, WAG; Minister Máire Hoctor, TD, Minister for Older People, Ireland; Ms Ruth Marks, Older People’s Commissioner for Wales; Lord Sutherland; Phil Willis, MP.

Small Awards
SPARC has made 34 pump-priming awards to newcomers to build national capacity for ageing research. Selection was through peer-review of nearly 200 applications submitted in response to two calls for proposals. The total value of these awards was £1.25m; administration of the scheme, the workshops and other activities a further £0.5m. Each proposal was reviewed by typically four or more referees, and the advisory committee. They focused on two criteria – scientific excellence and capacity building potential. Forty-eight projects were strong candidates for support; funding was available for 34.

Resources for Award Holders
Award holders received a grant, between £17,000 and £60,000; mentoring from leading scientists and practitioners; professional editorial assistance; access to prestigious platforms for dissemination; and involvement with international activities.

Projects were of four broad types:
Ethnographic – 8 - principally open-ended observational, interview and discussion methodologies, largely with older people in their living, working and travelling environments
Modelling – 9 – data gathering and modelling behavioural systems, relating to the visuomotor system, the use of packaging, computers and other technologies
Health – 8 - physical and mental health issues, such as diet, exercise and cognition
Biology – 9 - the biology of ageing.
Final Reports
Project reports were peer-reviewed and assessed by the advisory committee.

Opinions of the reviewers

Were the projects worthwhile?

Executive Summaries
Lay summaries of 23 projects, interviews with 20 project team members and professionally designed posters for all projects were published on the SPARC website along with much other project information.

Presentations
All SPARC projects were presented at least once at a SPARC workshop or a SPARC supported event; most were presented at several. Of 311 presentations made at SPARC workshops 66 were about SPARC projects. This ensured that workshops showcased a spread of work relevant to a particular theme and involved other key players.

Participants in SPARC workshops

Number of presentations made by SPARC teams at SPARC workshops by type of workshop

Number of presentations made at SPARC workshops by research programme

note: Presentations were made by 31 of the 34 SPARC teams, 21 of the 26 EQUAL teams and 9 of the 38 SAGE/ERA teams.
Publication and Adoption
The 34 teams followed three dissemination strategies:
1. *Across the board*. Refereed journal papers, conference papers of all types, presentations to all audiences – 16
2. *Academic*. Largely refereed journal and conference papers – 11
3. *Presentations* to all audiences and conference papers - 7.

By December 2008 18 teams had published refereed journal papers, of these nine had three or more papers, eight more had papers in revision, all had refereed conference papers. Findings from several projects had been taken up and adopted by a variety of organisations and professions.

Further Funding
During the course of their projects or shortly afterwards nearly all teams had bid for substantial follow-on funding. Twenty had secured portfolios of work which included substantial projects (£100k - £0.5m). A further six had gained support for smaller projects. In total, 69 projects were secured with a value of nearly £10m of which over £6m was from research council or other large funding bodies. The rest came from many small charities, government departments and industry.

Media Involvement
Eight SPARC teams were especially targeted by the press, radio and TV as a result of SPARC workshops on Stroke, Older Workers and Transport and at the BA Festival 2008 and as a consequence of the activities of the SPARC Publicity Officer.

International Involvement
SPARC organised eleven international events, six of which were overseas. They included five workshops within international conferences and five bilateral invitation-only symposia involving researchers from the USA, Canada, and Japan. Twenty teams were involved.

Career Advancement
Of the 34 award holders 22 had mostly recently completed their doctorates and had achieved their first academic post, typically fixed term. Twelve were mature academics new to ageing. Of the 27 non-professorial award holders nine were promoted or secured better appointments and similarly for four of the six very active co-investigators. Four more award holders had taken on significant university or departmental responsibilities during SPARC. Many award holders joined prestigious committees of professional bodies and journals. Some became associated with the research teams of leading figures. Their appraisal of the benefits of SPARC in providing an accelerated introduction to ageing research was very enthusiastic and wholly positive.

Views of Award Holders
Of particular interest was the extent to which SPARC had given the award holders and their team members an introduction, training and experience of ageing research. All award holders responded positively. The most frequent comment was that SPARC had provided a “superb” introduction to ageing research and to the importance of the area. About half used terms such as “excellent”, “invaluable”, “fundamental”, “wonderful”, “developmental” and “stimulating”. The breadth of the experience was mentioned frequently, variously covering the subject areas which were being studied, the value of working with collaborators, experts and mentors, the contacts made, the introduction to working directly with older people, and new research methods and technologies which had been employed.
Some at a very early stage in their careers commented that SPARC had provided an invaluable bridge from recently completing doctoral research to becoming an independent researcher, knowledgeable about managing research projects and bidding for funding.

For both early-career and experienced award holders key features of the SPARC experience had been, for example, the development of new collaborations, often with individuals from other disciplines, the development of a greater familiarity of ways of working with older people, voluntary agencies, and professionals, for example in the health sector, and the opportunity to gather credible preliminary data. These contributed to the development of a track record in ageing research which, together with other contributions from SPARC, had “opened doors”, not least for securing funding for future projects and studentships.

Over half of the respondents stressed, often in superlative terms, the importance of the SPARC infrastructure. There were two main areas of comment. Firstly, the SPARC workshops were seen as providing exceptional opportunities for development, for presenting work and forums for discussion, meeting older people and practitioners, making contacts, and sharing experiences and frustrations with other researchers. Secondly, the SPARC secretariat was seen to be “incredibly” and “totally” supportive of award holders.

Adding Value to Careers

What value did the support activities of SPARC add to the development of the award holders and their teams especially their exposure to the academic environment and that of other non-academic stakeholders? Taking our indicators for activities in each environment we can ask both what did the award holders achieve 1. On their own account, and 2. With the support of SPARC?

The indicators: 1. follow-on funding from academic bodies and user-focused ‘other’ bodies; 2. publications and 3. presentations for academic and ‘other’ audiences; 4a. international academic activities, 4b. media activities for ‘other’, non-academic, audiences. Each indicator is measured in terms of presence/absence.
SPARC Projects

Getting Out and About

Transport and older people: integrating transport planning tools with users’ needs
Dr Gregory Marsden, Leeds University &
Dr Mima Cattan, Leeds Metropolitan University

Promoting safe driving behaviour through technology: attitudes of older drivers Dr Charles Mussewhite, UWE

Advanced technology desires, needs and requirements of older drivers Mike Bradley, Middlesex University

Design and community regeneration: investigating personal safety concerns in socio-economically deprived communities Professor Richard Neale, Glamorgan University

Life in the Home

Design and the home Professor Paul Chamberlain, Sheffield Hallam University

Integrating the technological and social model of later life in the maintenance and adaptation of private housing Philip Astley, London South Bank University

Multimodal augmented reality to support ageing in place Dr Shaun Lawson, University of Lincoln

Product and Interface Design

The “inclusive engineering” approach: enhanced data gathering for an optimum diameter for ease of opening Dr Alaster Yoxall, Sheffield Hallam University

Designer relevant biomechanical data for packaging: package opening in an older adult population Dr Avril Thomson, Strathclyde University

Improving computer interaction for older users Dr Faustina Hwang, Reading University

Mathematical modelling of age-related differences in web browsing Dr Panayiotis Zaphiris, City University

The Older Worker

Understanding the design of the workplace for the older worker Professor Peter Buckle, Surrey University

Ageing in construction workers
Professor Alistair Gibb, Loughborough University

Vision

Age-related signalling capacities of the human lens
Dr Michael Wormstone, East Anglia University

Age, eye movement and motion perception
Dr Tom Freeman, Cardiff University

The contribution of visuomotor decline to falls during adaptive locomotion
Dr Mark Hollands, Birmingham University

Care Systems

Evaluating proposed policies in the care of older people using computer simulations
Dr Christos Vasilakis, UCL

Cognition

Biomarkers for cognitive ageing in the human brain Professor Zoe Kourtzi, Birmingham University

Neural Underpinnings of word-finding problems across the life span
Professor Lorraine Tyler, Cambridge University

What makes synthetic speech difficult for older people to understand?
Dr Maria Klara Wolters, Edinburgh University
Activity and Diet

**Ageing, exercise and gender**
*Dr Matthew Lancaster, Leeds University*

**Optimisation of skeletal muscle responses and quality of life to exercise in people over 60 years old: healthy diet vs. dietary supplementation**
*Dr Gladys Onambé-Pearson, MMU*

**Temperature and velocity interactions in neuromuscular function during locomotion in older people**
*Dr Richard Ferguson, Loughborough University*

**Lipoprotein oxidation in ageing**
*Dr Sarah Aldred, Birmingham University*

**Molecular basis of effects of calorie restriction on ageing**
*Dr Dianne Ford, Newcastle University*

Chemical Biology of Ageing

**Chemical tool for ageing research**
*Dr Mark Bagley, Cardiff University*

**Evaluating the role of p38 MAP kinase in accelerated ageing**
*Dr Terry Davis, Cardiff Univ.*

**Chemical analysis of ageing tissue**
*Dr Elizabeth Ostler, Brighton University*

Ageing Mechanisms and Oxidative Stress

**EPR, oxidative stress and ageing**
*Dr Richard Hartley, Glasgow University*

**Application of high throughput assays of oxidative stress to studies of the role of common genetic variation in healthy human ageing**
*Professor Paul Winyard, Exeter University*

**A proteomics approach to understanding age-related changes in neuronal function**
*Dr Katrin Jennert-Burston, Brighton University*

**Gene expression profiling to understand stem ageing**
*Dr Ilaria Bellantuono, Sheffield University*

**Unnatural ageing of killer cells**
*Dr Donald Palmer, Royal Veterinary College*

**Role of endothelial nitric oxide synthase in vascular ageing and consequences for cardiac function**
*Dr Andrew Trafford, Manchester University*

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