SYMPOSIUM

Presidential Symposium

W. KEARNS (Convenor). Building creative gerontechnology research funding to support international collaborations. Gerontechnology 2018;17(Suppl):7s; https://doi.org/10.4017/gt.2018.17.s.007.00 **Participants** E. FEMIA (USA), N. MAGLAVERAS (GR), A. SIXSMITH (CN). **Issue** Worldwide interest in Gerontechnology is increasing as governments are turning to advanced technologies to meet the needs of their growing elderly populations. National and international efforts to create and provide these technologies in a timely way stimulate basic research and feasibility studies and set the stage for collaborative efforts domestically and internationally. **Content** The symposium will provide: (1) an overview of the mission of the National Institutes of Health, the types of grant applications that are considered for gerontechnology, and how the NIH conducts review of these applications; (2) An overview of the funding organizations in the European Union which currently fund Gerontechnology research and the mechanisms by which international collaborations are funded and supported both within the EU, and between the EU and its eligible partners; and (3) A presentation on Canada's AGE-WELL program focusing on the "AGE-WELL Way" of driving successful innovation: strong partnerships; co-creation and user-driven research; and meaningful stakeholder involvement. **Structure** E. Femia (USA) will present "*NIH and the Process of Peer Review*", N. Maglaveras (GR/USA) will present "Personalized health systems and Active and Healthy Ageing Research in the European Union: Current state-of-the-art and medical applications", A. Sixsmith (CN) will present "AGE-WELL: Driving Innovation in the Technology and Aging Sector in Canada". **Conclusion** Symposium attendees will gain knowledge of the peer review process at the NIH and how Gerontechnology research is supported in the US, the European Union, and in Canada and of funding mechanisms that can facilitate and support international Gerontechnology collaborations.

Keywords: Gerontechnology funding, US National Institutes of Health, peer review, European Union Gerontechnology funding, Age-Well
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E. FEMIA. The NIH and the process of peer review. Gerontechnology 2018;17(Suppl):8s; https://doi.org/10.4017/gt.2018.17.s.008.00 **Purpose** The National Institutes of Health is the largest public funder of biomedical and biobehavioral research in the United States whose mission is to enhance health, lengthen life, and reduce illness and disability. **Method** To achieve this mission, the NIH provides funding for cutting-edge research and technology development in a variety of fields, ranging from translation of innovative ideas in technology to basic science on major health challenges and disease. There are many types of research, training, and technology development programs that are supported by the NIH across the 24 institutes and centers that provide funding. The majority of grant applications are reviewed by the NIH Center for Scientific Review. In this symposium, attendees will get: (1) A broad understanding about the types of applications submitted to the NIH for support; (2) General knowledge about the NIH peer review process; and (3) An overview of the Center for Scientific Review. **Results & Discussion** Peer review is the cornerstone of the NIH grants process, and an insider's view can lead to a better understanding of how the most meritorious projects are evaluated that lead to the innovative discoveries in gerontechnology and beyond.

Keywords: National Institutes of Health, peer review, grant applications, research
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N. MAGLAVERAS. Personalized health systems and active and healthy ageing research in the European Union: Current state-of-the-art and medical applications. Gerontechnology 2018;17(Suppl):9s; https://doi.org/10.4017/gt.2018.17.s.009.00 **Purpose** During the past two decades there is an increasing trend towards personal health systems (PHS) as can be evidenced by a number of subsystems and modules that can be part of a PHS. These include personal health devices, contact centres, medical decision support systems (DSS), EHR/PHR, mHealth apps, coaching and educational services, as well as frameworks for efficient and interoperable medical knowledge management. **Method** In this talk, we shall concentrate on the current state-of-the-art in PHS in the EU through a new generation of Information and Communication Technologies (ICT) based systems which are designed to advance the precision medicine approach especially related to elderly patients. Specific application areas to be presented are: (1) ADE prevention using big data, advanced CDSS, and social media semantics extraction based on the PSIP and PINCLOUD projects; (2) New ICT interventions for effective cardiac rehabilitation in a community setting integrating motion analytics with biosignal and behavioural biomarkers based on the PATHWAY project; (3) New methodologies and technologies (new sensors, wearable EIT for bioimpedance estimation, FHIR, heart sounds and crackles analytics, cloud technologies) for coordinated and integrated care models targeting COPD patients with comorbidities based on the WELCOME project; (4) High Performance Computing Next Generation Sequencing (NGS) analytics for cervics, CLL and CML big biodata cloud based health services pipeline based on the AEGLE, ASSIST and PIPAVIR projects; (5) ICU patient – ventilator interaction (PVI) analytics and modelling using advanced machine learning and multi-parametric analytics for ineffective effort clustering based on the AEGLE project; (6) Obesity prevention through new ICT apps for nutritional monitoring and management and behavioural informatics – connected health based on the SPLENDID, IN-LIFE, CHESS and BigO projects; and (7) In-silico modelling of medical images for use in understanding the pathophysiological mechanisms in the cardio-respiratory system at-large. **Results & Discussion** These specific technologies aim to enable the evolution of systems that monitor personal health data, in order to individualise patient treatment and medical interventions increasing adherence and patient safety as well as develop efficient regional health information systems. The presented technologies and PHS can be readily deployed in the US as for example with the tailoring of cardiac rehabilitation so as to involve / empower more senior citizens. Such a deployment could address a number of issues with PHS systems gaps which are still unresolved, e.g.: (a) certification of data quality, (b) communication/connectivity is not always for granted, (c) multiparametric analysis is widely missing and evaluated, (d) the patient loop is not yet adequately tested and thus coaching is still immature, (e) clinical protocols are not yet adjusted using input from PHS, CDSS and mHealth systems, and (f) access, user interfacing and interaction between the patient/ citizen and the medical personnel is suboptimal.

Keywords: AAL, eHealth, connected health, integrated care, telemonitoring, eICU, chronic diseases, prevention, CAD, HF, diabetes, COPD, neuro-degenerative diseases, eCoaching
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A. SIXSMITH. AGE-WELL: Driving innovation in the technology and aging sector in Canada. Gerontechnology 2018;17(Suppl):10s; https://doi.org/10.4017/gt.2018.17.s.010.00 **Purpose** Information and communication technologies offer considerable potential benefit to support independence, health and well-being of seniors, as well as providing opportunities for new services and industry. The growing significance of this sector can be seen in the investment in research and innovation activities by government/industry/academic initiatives in the European Union and North America. The AGE-WELL Network of Centres of Excellence AGE-WELL (http://www.agewell-nce.ca/) is a Canadian-federally funded network of academic partners, industry, NGOs, government and service providers, whose aim is to drive innovation in the technology and aging sector through high-quality research. **Method** This presentation describes AGE-WELL and particularly focuses on the "AGE-WELL Way" of driving successful innovation: strong partnerships, co-creation and user-driven research, and meaningful stakeholder involvement. Effective program management is a crucial part of AGE-WELL. The funding programs target different stages of the innovation "pipeline", while the performance management system monitors progress of technology "products" from early stage concept through to knowledge mobilization and commercialization. The presentation will also look more generally at the technology and aging funding "landscape" internationally and at the local and national levels within Canada. **Results & Discussion** A number of key challenges exist going forward: How can the various funders work together more effectively? How can we move from grant-funded R&D to a thriving consumer-driven market? Which area of research and innovation are we most likely to make real-world social and economic impact? How do we reimagine research and innovation for aging in 20 and 30 years time?

Keywords: Age-Well NCE, ageing and technology, Gerontechnology funding
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