



A Healthy Society for Everyone

Self Evaluation Report

Part B1: Ageing and Long-Term Care

1 Mission, strategy and ambition

This self-evaluation report covers a period of six years (2017 - 2022). While describing the vision, mission, objectives and strategy, we do this from the perspective of our current research line.

1.1 Vision, mission, and objectives

Vision

The CAPHRI Research Line Ageing and Long-Term Care aim is to promote resilience in the daily functioning and lives of older people, irrespective of their living situation, abilities and place of residence. We follow the new definition of health, as a dynamic process based on the ability to adapt and self-manage, and our research focuses on aspects of physical, mental and social health, especially in later in life when intrinsic capacity is decreasing, and older people become more dependent on others. Our research aligns with the vision of healthy ageing, as formulated by WHO, in which we aim to contribute to creating the environments and opportunities that enable older people to be and do what they value throughout their lives.

Mission

The RL creates an inspiring scientific environment where researchers in the area of ageing and long-term care conduct high quality research in close collaboration with the (regional) health care field in order to increase the quality of care and quality of life among older people. The aims of this RL are twofold. Firstly, to develop and disseminate knowledge and expertise on psychosocial, clinical and environmental determinants of health, resilience and coping with care problems including their prevalence, the need for care, social participation, independence and quality of life among older persons. Secondly, to develop and evaluate innovative health care programmes, care environments and interventions for and with older persons and their caregivers to slow down disablement processes, increase their resilience and improve the quality of, in particular, long-term care. In addition, the improvement of scientific methods and techniques in these areas as well as the implementation of research evidence in daily practice (including the place of care organisations in the chain of (long-term) care) is of great importance to us.

Objectives

The three main objectives in this area of research are (a) to disentangle the role of medical, environmental (including technology) and psychosocial factors in trajectories of functioning (physical, mental, social) in older persons and their caregivers, (b) to investigate determinants, prevalence, and consequences of specific health care problems among older persons (e.g., pressure ulcers, malnutrition, falls, fatigue, pain, dyspnoea) in long-term care settings (including nursing homes) and community-based settings, and (c) to develop and evaluate innovative, client-oriented, and targeted health

care arrangements which handle these health care problems and maximise independence, social participation, quality of life and quality of care and increase daily functioning in older people with health problems and their caregivers.

1.2 Strategy and Research Area

The strategy and research area of the RL Ageing and Long-Term Care encompasses three aspects:

1. The focus of the research is on long-term care among older people, irrespective of their living situation (e.g. at home, nursing homes, new innovative long-term care settings, geriatric rehabilitation centres or hospices); A strong collaboration with the health care field of older people through the Living Lab in Ageing and Long-Term Care (www.academischewerkplaatsouderenzorg.nl/living-lab-ageing-long-term-care) with respect to problem identification and development of research questions, research, and implementation of research evidence. Using a citizen science approach, we translate questions from long-term care practice, into evidence gathered by state-of-the-art research methods that can be applied in practice itself. This is a transdisciplinary approach, in which we seek to value and integrate the knowledge from non-academic stakeholders such as older persons and their families, caregivers, health care staff, policymakers, educators, managers and administrators. It implies that stakeholders are the co-producers of knowledge, involving processes of mutual learning between our scientific researchers and societal partners. Reciprocity is paramount in our research and therefore the majority of projects are co-created with networks consisting of older people and their informal caregivers, formal caregivers (e.g. nursing staff, physicians, psychologists, physio- and occupational therapists), teachers, researchers, managers, administrators, Chief Executive Officers (CEO), health care insurers, municipalities, governments, general practitioners, hospitals, policymakers.
2. A strong interdisciplinary scope as the field of care for older people are multi-faceted and may be complex. Disciplines as nursing science, health promotion, old age medicine, internal medicine, social gerontology, psychology, health sciences, human movement sciences, service science, education sciences, data sciences and statistics are present. As a result, our research methodology is diverse, including observational, intervention and implementation research. The interdisciplinarity is reflected in mutual integration of organising concepts, methodologies, procedures, epistemologies, terminologies, data and terms organised into a common effort to improve daily life and care for older persons, with continuous intercommunication among researchers from the different disciplines.

1.3 Specific targets of the past six years (2017-2022)

The RL has focused on the continuation of being highly successful with respect to research quality (publications, dissertations, earning power, conference attention) and societal impact (reports, participation in committees, policy changes, public appearances, etc). This has been established by creating tenured positions to talented research staff in the RL (direct funding) and attracting new research talent using targeted staff policy management. We invested in strengthening coherence and collaboration between and within research teams. Furthermore, the Living Lab in Ageing and Long-Term Care was granted a structural funding by the Ministry of Health, Welfare and Sports (see section 4), enabling the RL

further to elaborate tenured positions and attract high potentials to the Living Lab and RL. We aimed to further develop and foster the Living Lab model and also increase our impact on a local as well as national and global level, for example by exporting our Living Lab model to other countries through our so-called twinning labs (see section 4). In 2018, NICHE Leeds was founded (Leeds University, prof. Karen Spilsbury) as a twin living lab based on our model. Since then two other twin labs have been founded, and actively coached: PraWiDem (with locations at Martin Luther Universität Halle Wittenberg, Germany; Prof. Meyer and University of Cologne, Germany; Prof. Köpke) and OPINION Lab (Medical University of Graz, Austria; Dr. Manuela Hoedl).

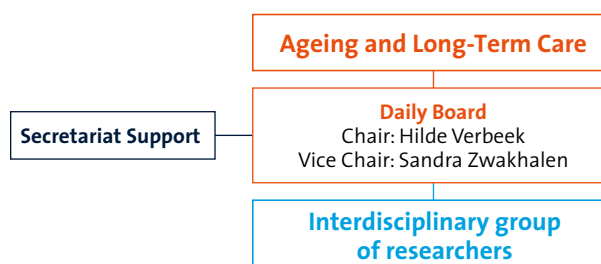


2 Description of the Research Line's organisation, composition and financing

2.1 Organisation and embedding of the Research Line

The Research Line 'Ageing and Long-Term Care is one of six research lines within the Care And Public Health Research Institute (Part A §2). Figure 2.1 shows an organisation chart for the research line. The daily board meets at least weekly to discuss ongoing issues. The senior scientific staff of the RL meets four times a year to discuss RL and CAPHRI policy, funding opportunities, the progress of projects, initiations/wishes of future projects and research methods etc. Every month all RL researchers (including PhD candidates) are invited for a meeting where upon request preliminary papers, conference contributions, draft research proposals etc. are discussed with the objective to improve the quality; these sessions are chaired by two senior staff members. Junior research staff members meet in an additional junior staff

meeting and are facilitated to organise training sessions on topics of their interest. For each PhD-defence ceremony a try-out session is organised. And once a year a Research Line 'Ageing and Long-Term Care conference is organised by one or two staff members for all RL staff where a specific topic is handled (e.g. choices of research designs in ageing research) and combined with a social event and a dinner.



2.2 Composition

Table 2.2: Research staff at Research Line level (2017-2022)

Research staff	2017	2018	2019	2020	2021	2022
	#/fte	#/fte	#/fte	#/fte	#/fte	#/fte
Scientific staff FHML ¹	15/6,0	15/4.8	19/8.1	17/8,0	21/9.4	27/ 9
Scientific staff azM	1/0.4	1/0.4	0/0	0/0	0/0	0/0
Postdocs ²	7/4.9	7/5.3	10/7.9	9/5.6	4/2.7	8/4.4
Internal PhD candidate ³	12/12.0	12/11.6	16/16.0	16/15.6	14 /12.9	14/13.2
	35 / 23.3	35/22.1	45/32.0	42/29.2	39 /24.9	49/26.6
External PhD candidates ⁴	26	41	35	41	32	34

¹ Categories Prof / Assoc. Prof / Assist. Prof; tenured and non-tenured staff appointed at the FHML.

² Category Researcher (1, 2, 3, 4), with completed PhD, not belonging to scientific staff (note 1)

³ Standard PhD (employed)

⁴ External PhD (externally or internally funded but not employed)

2.3 Financing

Table 2.3a: Funding at Research Line level (2017-2022)

Funding	2017		2018		2019		2020		2021		2022	
	Fte	%	Fte	%	Fte	%	Fte	%	Fte	%	Fte	%
Direct funding ¹	5.3	23%	5.1	20%	5.1	20%	4.8	17%	5.3	22%	4.4	17%
Research grants ²	6.9	30%	11.3	45%	11.3	45%	12.8	45%	10.8	44%	10	38%
Contract research ³	10.7	47%	8.5	34%	8.5	34%	9.7	34%	5.9	24%	8.3	31%
Other ⁴	0	0%	0	0%	0	0%	1	4%	2.4	10%	3.9	15%
Total funding⁵	22.9	100%	24.9	100%	24.9	100%	28.3	100%	24.4	100%	26.6	100%

¹ Direct funding by FHML/ Maastricht University ('basis financiering' / lump sum budget).

² Research grants obtained in national scientific competition (e.g. grants from NWO, ZonMw and KNAW)

³ Research contracts for specific research projects obtained from external organisations, such as industry, governmental ministries, European organisations, including ERC, and charity organisations

⁴ Funds that do not fit the other categories.

⁵ The funding in fte includes the total research staff but excludes the academic hospital-staff

⁶ the funding in % in the research programme should be compared to the total within each research programme

Table 2.3b: Research Grants at Research Level (2017-2022)

Funding	Order	Grant title	Principal Investigator	2017	2018	2019	2020	2021	2022
Grants	30951208N	ZonMw Pall. Zorg Dementie	J.Meijers	€506.284					
	30951212N	ZonMw I-HARP	D. Janssen		€338.200				
	30951214N	ZonMw MPSS Trimbos	H. Verbeek		€38.320				
	30951215N	ZonMw - Zorg bij ADL	S. Zwakhalen		€199.980				
	30951218N	ZonMw LINC aanpak	J. Meijers		€337.430				
	30951219N	ZonMw Improving ADL nursing care	S. Zwakhalen		€255.159				
	30952602N	AWO LP-UM	J.Hamers		€3.600.000				
	30951222N	ZonMw - Leren & Verbeteren	H. Verbeek			€213.000			
	30951235N	ZonMw - Ontwikkeling Verplk. Richtlijn	M. Bleijlevens			€119.900			
	30952603N	AWO ophoging	J.Hamers			€400.000			
	30951237N	ZonMw Nurses in the lead	G.Bours				€49.640		
	30951242N	ZonMw - Ruimte voor Zorg	J.Hamers				€299.726		
	30951244N	ZonMw - ACCENT	P.Erkens					€599.900	
	30951245N	VIDI Verbeek	H. Verbeek					€800.000	
	30951246N	ZonMw-VenV_P-Grant	J.Meijers					€200.000	
	30951247N	ZonMw - TipToolbox	P. Erkens					€49.995	
	41150110020N	ZonMw_PRITAH	M. Bleijlevens						€299.825
Grants Total				€506.284	€4.769.089	€732.900	€349.366	€1.649.895	€299.825
Contracts	30951206N	PhD traject Moafa	H. Haak		€20.000				
	30951207N	Dutch Database for PROMS	H.Haak	€141.692					
	30951216N	H2020-TRANS-SENIOR	H. Verbeek		€489.840				
	30951239N	VWS - COVID-19 in Verpleeghuizen	J.Hamers				€75.000		
	30951241N	PhD traject Meander	H. Verbeek				€300.000		
	30951236B	VWS - Praktijkvariatie Wijkverpleging	S. Zwakhalen				€229.369		
	30951240N	VWS - Waardig verhuizen	H. Verbeek				€470.000		
	30951238N	Onvrijwillige Zorg	J. Hamers					€0	
	30952604N	PhD traject 'innovation readiness'	J.Hamers					€0	
	41150110022N	PhD traject De Zorggroep	B. de Boer						€290.000
	41150110023N	VWS - Zorgprofessional aan Zet	J.Hamers						€2.014.790
	41150111022N	I-HARP voor COPD	D. Janssen						€29.796
	41150111025N	ZonMw - Beter Thuis	J. van Haastregt						€35.782
Contracts Total				€141.692	€509.840		€1.074.369		€2.370.368
Other	30951249B	PROM - Kwaliteit van Leven	S. Zwakhalen					€129.750	
Other Total								€129.750	
Total				€647.976	€5.278.929	€732.900	€1.423.735	€1.779.645	€2.670.193

3 Research Quality and Societal Relevance

3.1 Research quality

3.1.1 Research products for peers

86% of the research output of ALTC are refereed papers in scientific journals. These papers have a high scholarly impact, looking at the Category Normalised Citation Impact (CNCI) scores, which allows for benchmarking of our scholarly work against its peers in the literature. 23% of our papers have a CNCI score of 2 or higher.

Main categories of research output at Research Line level

Table 3.1a: Main categories of research output at Research Line level (2017-2022)

Research output	2017	2018	2019	2020	2021	2022
Refereed articles	90	94	80	128	151	111
PhD theses involved/accounted	8/8.0	6/5.3	2/1.5	5/4.7	11/9.8	12/10.2

Most important scientific publications

Table 3.1b gives an overview of some important scientific publications of ALTC. Publications have been selected for various reasons. The selected publication represents illustrate the scope, nature and multidisciplinary of the research activities of ALTC, the collaborative alliances (both national and international), and the mixture of methodologies. Relative to the field (i.e. geriatrics, gerontology and nursing) papers are published within the top 10% of their field (e.g. Zwakhalen et al., 2018; Bolt et al, 2019; Cruz-Jentoft et al, 2019; Verberkt et al. 2020; Mengelers et al, 2021; Rooijackers et al., 2021; Koopmans et al., 2022) The papers of Verbeek et al 2020 and the 2019 paper by the European Working Group on Sarcopenia in Older People have CNCI scores of 16.7 and 258,6 respectively, showing the high scholarly impact in the field.

Table 3.1b Most important scientific publications (2017-2022, top-10)

Year	Scientific publication
2018	Basic nursing care: The most provided, the least evidence based - A discussion paper. Zwakhalen, S. M. G., Hamers, J. P. H., Metzelthin, S. F., Ettema, R., Heinen, M., de Man-Van Ginkel, J. M., Vermeulen, H., Huisman-de Waal, G. & Schuurmans, M. J., 1 Jun 2018, In : Journal of Clinical Nursing. 27, 11-12, p. 2496-2505 10 p.
2019	Nursing staff needs in providing palliative care for people with dementia at home or in long-term care facilities: A scoping review Bolt, S. R., van der Steen, J. T., Schols, J. M. G. A., Zwakhalen, S. M. G., Pieters, S. & Meijers, J. M. M., Aug 2019, In : International Journal of Nursing Studies. 96, p. 143-152 10 p.
2019	Sarcopenia: revised European consensus on definition and diagnosis. Alfonso J Cruz-Jentoft, Gülistan Bahat, Jürgen Bauer, Yves Boirie, Olivier Bruyère, Tommy Cederholm, Cyrus Cooper, Francesco Landi, Yves Rolland, Avan Aihie Sayer, Stéphane M Schneider, Cornel C Sieber, Eva Topinkova, Maurits Vandewoude, Marjolein Visser, Mauro Zamboni, Writing Group for the European Working Group on Sarcopenia in Older People 2 (EWGSOP2), and the Extended Group for EWGSOP2. <i>Age and Ageing</i> , Volume 48, Issue 1, January 2019, Pages 16–31
2020	Verbeek, H., Gerritsen, D. L., Backhaus, R., de Boer, B. S., Koopmans, R. T., & Hamers, J. P. (2020). Allowing visitors back in the nursing home during the COVID-19 crisis: A Dutch national study into first experiences and impact on well-being. <i>Journal of the American Medical Directors Association</i> , 21(7), 900-904
2020	Verberkt CA, van den Beuken-van Everdingen MHJ, Schols JMGA, Hameleers N, Wouters EFM, Janssen DJA. Effect of Sustained-Release Morphine for Refractory Breathlessness in Chronic Obstructive Pulmonary Disease on Health Status: A Randomised Clinical Trial. <i>JAMA Intern Med.</i> 2020 Oct 1;180(10):1306-1314.
2020	Quality of acute internal medicine: A patient-centered approach. Validation of the Patient Reported Measure-acute care in the Netherlands. Kremers MNT, Mols EEM, Simons YAE, van Kuijk SMJ, Holleman F, Nanayakkara PWB, Haak HR. <i>PLoS One.</i> 2020 Dec 1;15(12):e0242603. doi: 10.1371/journal.pone.0242603. eCollection 202010.1371/journal.pone.0242603. eCollection 2020. <i>PLoS One.</i> 2020.
2021	Mengelers AMHJ, Bleijlevens MHC, Verbeek H, Capezuti E, Hamers JPH. A Quasi-experimental study on prevention and reduction of involuntary treatment at home (PRITAH) in people with dementia. <i>J Clin Nurs</i> https://doi.org/10.1111/jocn.16163
2021	Rooijackers, T. H., Kempen, G. I., Zijlstra, G. R., van Rossum, E., Koster, A., Lima Passos, V., & Metzelthin, S. F. Effectiveness of a reablement training programme for homecare staff on older adults' sedentary behavior: A cluster randomised controlled trial. <i>Journal of the American Geriatrics Society</i> .69(9):2566-2578. doi: 10.1111/jgs.17286.
2022	Metzelthin, S., Rostgaard, T., Parsons, M., & Burton, E..Development of an internationally accepted definition of reablement: A Delphi study. <i>Ageing & Society</i> , 42(3), 703-718.
2022	Attafuah PYA, Everink I, Abuosi AA, Lohrmann C, Schols JMGA. Quality of life of older adults and associated factors in Ghanaian urban slums: a cross-sectional study. <i>BMJ Open.</i> 2022 Feb 11;12(2):e057264. doi: 10.1136/bmjopen-2021-057264. <i>BMJ Open</i>

3.1.2 Use of research products for peers

Our scientific work is recognised by peers in the field. Publications, theses and other scientific work has won prizes from peer groups. For example, the paper by Verbeek et al. (2020) has won the Morley Impact Award, being the paper with most citations and downloads of the journal in that year. For example, the PhD thesis of Katya Sion was awarded by Maastricht University Prize for best PhD thesis with most societal impact. The thesis has moved forward the theory on quality of care for older persons and has translated that into an assessment instrument, in co-creation with long-term care practice (see case study section 4). Looking at the analyses from social attention, the top 10 of our papers received high attention and were used by various media (e.g. Wikipedia, blogs, policy documents, twitter and facebook). For example, co-authored by H. Haak (The Lancet Respiratory Medicine, 2018; Altmetric score 538 on prehospital antibiotics and JAMA Internal medicine, 2018; Altmetric score 243 on quality and quantity of sleep in older people) were used in various blogs, facebook posts and on Wikipedia. The paper co-authored by D. Jansen (2020) on care dependency in non-hospitalised patients with Covid-19 was used in several WHO policy documents and the paper from our group (Verbeek et al., 2020) on Allowing visitors back in nursing homes (Altmetric score 222) was used in several OECD guidelines. Knowledge is being used in the development of guidelines (i.e. European guideline for Sarcopenia)

3.1.3 Marks of recognition from peers

Scientific Awards or Public Societal prizes

Table 3.1c: Most important scientific awards or public societal prizes (2017-2022 top-10)

Year	Name	Scientific Awards/Public Societal prizes
2018	I. Everink	LPZ verkozen tot één van de National Health Services Innovations 2018 by the NHS (UK)
2019	C. Golz	Best Oral Presentation European Doctoral Conference of Nursing Science 2019
2019	T. Thoma-Lürken	UM Valorisation Award for best PhD thesis
2020	C. van den Berg-Verberkt	“Yearly Award Palliative Care Research” for the article “Verberkt, C.A., van den Beuken-van Everdingen, M.H.J., Schols, J.M.G.A., Hamelers, N., Wouters, E.F.M., and Janssen, D.J.A. Effect of sustained-release morphine for refractory breathlessness in COPD on health status. JAMA Int Med. 2020. 180(10):1306-1314. Dutch Conference Palliative Care
2020	L. Verbeek, J. Meijers	RhoChi Johanna Diepeveen Science prize
2020	T. Rooijackers	CAPHRI poster pitch award
2020	H. Verbeek	JAMDA Morley Award for article “Allowing Visitors Vack in the Nursing Homes During COVID-19 Crisis”. Most downloaded publication in 2020
2021	The team that investigates COVID-19 in nursing homes	CAPHRI Societal Impact Team Award
2021	K. Sion	UM Impact Prize for best PhD thesis
2022	K. Pani	Best Poster Award at the national congress of the Dutch Society for Gerontology (NVG-KNOWS)

Research grants

Table 3.1d: Research grants awarded to individuals (2017-2022)

Year	Name	Type of grant
2017	-	-
2018	-	-
2019	-	-
2020	-	-
2021	Hilde Verbeek	Vidi personal grant
2021	Judith Meijers	ZonMW personal grant for talented nurses with a PhD
2022	-	-

3 Research Quality and Societal Relevance

Invited lectures

ALTC researchers are invited on a regular basis for giving key-notes, lectures, workshops and other presentation on their work for national and international audiences. Please find below a selection.

Table 3.1e: Most important invited lectures (2017-2022 top 10)

Year	Name	Which organisation	Name event	Name lecture/workshop
2018	J. Hamers	German Nursing Science Society	International Congress on Nursing Sciences	Living Lab in Ageing and Long-Term Care: a model for successful nursing research
2018	T.Thoma-Lürken	German Society of Nursing Science	1 st International Conference of the German Society of Nursing Science-symposium	The 'Dutch approach' in community-based nursing' Four examples of innovations that aim to facilitate 'ageing-in-place
2019	H. Verbeek	American Medical Directors Association (AMDA)	Annual Scientific Meeting, Atlanta, USA	Pragmatic trials in Dutch nursing homes: caring environments
2019	M. Kremers	EMS	Acute zorg congres	De rol van de internist op de SEH
2019	D. Janssen	ACP-I	ACP-I conference	What is ACP and how to do it?
2019	S. Metzelthin	Danish Centre for Social Science Research	Public seminar on reablement	Reablement in the Netherlands. The Stay Active at Home programme
2019	G. v. Breukelen	University of Salzburg	10th international workshop on simulation and statistics	Efficient sample sizes for trials with clustered data (lecture within the workshop Optimal Design for Mixed Models)
2020	S. Zwakhalen	Vilans/ VWS	Invitational conference meeting Vilans/ VWS	Toekomst zorg thuiswonende ouderen
2021	S. Aarts	Dutch Society for Gerontology (NVG-KNOWS)	2021 national congress	Big data in the Living Lab in Ageing and Long-Term Care
2021	J. Schols	Netherlands-Caribbean Foundation for Clinical Higher Education.	International Conference Long-Term Care	From scientific discussion on frailty towards a sustainable future-proof long-term care

Memberships of scientific committees, boards, or editorships

Table 3.1f provides an overview of the most important memberships of scientific committees, boards or editorships. ALTC researcher staff members are actively involved in various (inter-)national scientific committees (e.g. ZONMw; Gezondheidsraad; scientific committees, advisory boards, and associations). Almost all researchers are editors and reviewers for peer-reviewed journals on ageing, nursing and gerontology. Furthermore, colleagues participate in assessment boards of scientific academies in European countries (e.g. Finland, Sweden, Norway, Germany, Slovenia).

Table 3.1f: Most important memberships of scientific committees, boards or editorships (2017-2022 top 10)

Year	Name	Which organisation	Which role
2018-2021	G.Kempen	Dutch Society of Gerontology	President
2018	R. Zijlstra	European Journal of Ageing	Editorial board
2018- current	S. Zwakhalen	European Academy of Nursing Science	Board member treasurer, member
2019	D. Janssen	Dutch committee revising the guideline Palliative care in COPD	Chair
2019	S.Metzelthin	Deutsches Netzwerk für Qualitätsentwicklung in der Pflege (DNQP)	Member of expertgroup that reviews quality standard in nursing
2019	J. Schols	Gezondheidsraad	Member
2019- current	H. Verbeek	Member Board of Directors International Psychogeriatric Association	Board of Directors
2020-current	J. Meijers	Editorial Board Verpleegkunde	Member
2018-2020	J. Hamers	Scientific College of Nursing (Wetenschappelijk College Verpleegkunde, V&VN)	Chairman
2020-current	S.Metzelthin	Dutch Society of Gerontology	Board member

3.2 Relevance to society

The research of our ALTC programme has led to real world changes:

- Policy and law change (i.e. COVID-19 research opening doors in nursing home, physical restraints and involuntary treatment);
- Products like assessment tools and apps to improve daily life, quality of care and support decision-making of staff;
- Intervention programmes to support staff: e.g. increasing physical activity of older people at home or in nursing homes and supporting end-of-life care for people with dementia;
- New educational programmes and teaching methods for all type of staff (ranging from nursing assistants to physicians), attracting young professionals and enabling life-long learning);

3.2.1 Research products for societal target groups

The ALTC programme has developed several products which are used in long-term care. Illustrations are an app to support district nurses and case managers dementia care in their decision-making, in particular focusing on (technological) solutions for individual situations; a TIP-toolbox, which supports nursing staff to implement innovations aimed at improving activity and movement in nursing homes; DEDICATED-method to support staff working in palliative care for people living with dementia, including communication tools and other materials. example <https://dedicatedwerkwijze.nl>. To disseminate findings a fact sheet is created for every research project.

Public events

Table 3.2a. provides a selection of several public events during which ALTC research staff participated. They include e.g. public debates, general public presentations, national and international policy discussions. In addition, contributions have been made to podcasts, webinars and discussion sessions. All illustrate the strong connection between research, and long-term care practice.

Table 3.2a: Public events: lectures/workshops for health care professionals and/or general public/patients (2017-2022 top 10)

Year	Name	Type of event
2018	Irma Everink	Vilans congres "Praktijk en Wetenschap dichter bij elkaar"
2018	Jan Hamers	Kwaliteit van zorg, Symposium Zorgverzekeraars Nederland (25 oktober)
2018	Jolanda van Haastregt	Jaarcongres Geriatrische Revalidatiezorg (GRZ)
2018	Jan Hamers	"20 jaar onderzoek in de Academische Werkplaats Ouderenzorg Zuid-Limburg" Key note op Symposium "Vernieuwing in de Ouderenzorg", Maastricht 14 dec 2018 with 1,050 attendees
2019	Irma Everink	Workshop "Implementeren doe je samen! Geleerde lessen uit de ontwikkeling en implementatie van het zorgpad GRZ" (nationale Wetenschapsdag Samenwerkende Academische Netwerken Ouderenzorg)
2019	Rixt Zijlstra	15 ^e Nationaal Gerontologiecongres - Samen worden we ouder
2020	Sandra Zwakhalen	Geriatriedagen - "Ouderen in de wijk".
2020	Silke Metzelthin	Reablement – het nieuwe toverwoord in de ouderenzorg? Zoek het Uit! Praktijk en wetenschap dichter bij elkaar' Vilans Congres.
2022	Hilde Verbeek	Dynamiek in de ouderenzorg: Hoe de omgeving bijdraagt aan het dagelijks leven. Het grootste Kennisfestival van Nederland. Deventer
2022	Daisy Janssen	Symposium: Ouderengeneeskunde: klaar voor de toekomst. Maastricht

Cohorts based within the Research Line

Cohort/Data base

The research group of Dr. Ruud Halfens / Prof. Dr. Jos Schols (Department of Health Services Research) has initiated in 1998 the 'Landelijke Prevalentiemeting Zorgkwaliteit LPZ', which is an extensive database that health care organisations can use and which will give the users insight in the quality of the care they are giving in the area of frequently occurring problems, such as pressure ulcers, malnutrition, falling, restraining, incontinence and pain (<https://nl.lpz-um.eu/nl>). The LPZ is used in various settings and countries including United Kingdom, Austria, Switzerland and Turkey. The NHS (UK) has awarded the LPZ of one of the NHS innovations in 2018. As a spin-off, the LPZ results in several theses per year.

Dr. Marjolein Cremers has set up the Dutch registry for quality of care in Dutch Emergency Departments.

3 Research Quality and Societal Relevance

Most important societal publications/outputs

Table 3.2b: Most important societal publications of the research programme (2017-2022, top-10)

Year	Publications/outputs
2018	20 jaar AWO-ZL Jubileummagazine www.academischewerkplaatsouderenzorg.nl/jubileummagazine-waardevol-ouder
2018	"Vitaal oud worden? Dat kan in Kerkrade!" - Symposium Seniorenraad Kerkrade, 6 september, Michel Bleijlevens, Sandra Zwakhalen en anderen
2018	Organisatie Symposium naar een toekomstbestendige geriatrische revalidatiezorg. www.academischewerkplaatsouderenzorg.nl/naar-een-toekomstbestendige-geriatrische-revalidatiezorg
2019	"Buitenland is jaloers op goede Nederlandse verpleeghuiscare" Jos Schols, Gezond in Limburg http://bijl.x-cago.net/20190319/public/index.html
2019	Wijkverpleegkundigen nemen de leiding - Ruth Vogel - ZonMw Mediator
2019	Voortdurend verbanden leggen tussen onderzoek en praktijk - Jan Hamers - Senioren Limburg (KBO ledenblad)
2019	Bauernhof statt Altersheim - Bram de Boer; televisie-item over onderzoek zorgboerderij op de ZDF televisie
2020	Aarts S. & Verbeek H. (2020) Blog: 5 handvatten om data in de langdurige ouderenzorg te gebruiken. Zorgvisie
2022	Video "Zo wil je wel oud worden" University of the Netherlands Hilde Verbeek
2022	2022 Covid-19 in de Wijkverpleging. TVZ - Verpleegkunde in Praktijk en Wetenschap Uitgave 5. Sandra Zwakhalen en college verpleegwetenschappers

3.2.2 Use of products by societal groups

Advisory reports

Table 3.2c Advisory reports (2017-2022 top-10)

Year	Name	Advisory report
2017	Jan Hamers e.a.	Review Leidraad Verantwoorde Personeelssamenstelling. Report for the Ministry of Health, Welfare and Sports
2018	Judith Meijers	Dementie Standaard
2018	Judith Meijers	NZA rapport transmurale financiering Palliatieve Zorg
2019	Rebecca Steenaard	ESMO guideline malignant adrenal tumors
2019	Daisy Janssen	Revision Dutch guideline Palliative care in COPD
2019	Silke Metzethin	Deutsches Netzwerk für Qualitätsentwicklung in der Pflege (DNQP). member of expertgroup that reviews quality standard in nursing
2020	Sandra Zwakhalen	Leidraad 'Triage thuisbehandeling versus verwijzen naar het ziekenhuis bij oudere patiënt met (verdenking op) COVID-19' olv Federatie Medisch Specialisten.
2020	Sandra Zwakhalen	Praktijkvariatie indicatiestelling wijkverpleging. Adviesrapport VWS
2020	Daisy Jansen	'Leidraad voor het proces en uniform vastleggen van proactieve zorgplanning (advance care planning, ACP) naar aanleiding van de COVID-19-pandemie.' (2020)
2022	Michel Bleijlevens	Richtlijn Zorg voor ADL

Collaborative projects

Table 3.2d: Collaborative projects implemented with/for professionals, non-scientific organisations, companies or public entities (2017-2022 top-10)

Year	Project	Non-scientific partner organisation
2017	Dedicated	Zuyderland, Vivantes, Envida, Netwerken Hulp bij Dementie Westelijke Mijnstreek en Parkstad en het Netwerk Palliatieve Zorg Westelijke Mijnstreek, Zuyd Hogeschool, Vilans, Alzheimer Nederland, V&VN, IKNL, CZ, Expertisecentrum Palliatieve Zorg MUMC+, Consortium Palliatieve Zorg Limburg en Brabant, en Consortium Propallia.
2017	The bed bath with or without water	Arion group
2018	Trans senior (Marie-Curie International Training Network)	AGE-Europ,e MeanderGroep, Curaviva (Switzerland), Wit-Gele Kruis Vlaanderen
2018	LINC	Cicero, MeanderGroep, Zuyderland, Evolva, Gilde
2018	LEEV: Samen op weg naar persoonsgerichte zorg	Sevagram, MeanderGroep, Mosae, Zuyderland, Envida, Gilde, Trimbos
2019	Ontwikkeling Kwaliteitsstandaard Onvrijwillige zorg en Kwaliteitsstandaard ADL	V&VN
2020	Ruimte voor Zorg: verbeteren van kwaliteit vanuit een relatiegerichte benadering	Centrum Informele Zorgverlening Parkstad Limburg, Cicero Zorggroep, Meanderzorggroep Zuid-Limburg, ROC Gilde Zorgcollege (MBO), Envida, CZ, VWS, LOC, ZiN, IGJ,
2020	Praktijkvariatie in indicatiestelling door wijkverpleegkundigen	V&VN, VWS
2022	Zorgprofessionals aan Zet	Verenso, V&VN, Ministry of Health, ZorgInstituut, LOC, IGJ
2022	Complexe Keten Ouderenzorg	Envida, ZIO, Vitala+

Patents or Spin-offs

The publication by the European Working group for Older People was referred to in two patents: Composition for preventing, alleviating, or treating Sarcopenia comprising D-ribo-2-hexulose as active ingredient Application KR-20220125187-A (2022) and Use of tryptophan metabolites for treating muscle atrophy Grant US-11369595-B2 (2022).

3.2.3 Marks of recognition by societal groups

Our cohort LPZ (National Prevalence Assessment on Care Quality) is an annual recurring assessment of health care quality in institutional care (i.e. hospitals and nursing homes). It is conducted in 5 other countries next to the Netherlands (i.e. Austria, Switzerland, New Zealand, United Kingdom and Turkey). In 2018 the LPZ was elected in the UK as one of the 70 most promising NHS innovations.

Memberships of civil society advisory bodies

Table 3.2f: Memberships of civil society advisory bodies (2017-2022, top-10)

Year	Name	Which advisory body	What kind of membership
2018-2020	G. Kempen	Supervisory Board of Sevagram	Member
2018-2020	G. Kempen	Health Council of the Netherlands (Gezondheidsraad)	Member of the Functioning in daily life of older people Committee
2018- 2022	J. Hamers	Sponsorgroep NZa	Advisory board for NZa
2019	J. van Haastregt	Consortium Geriatric Rehabilitation	This is a Consortium in which MUMC/UM participates together with LUMC, VUMC and Tilburg University. We generate research in the domain of geriatric rehabilitation and give advise to national organisations such as Verenso, ActiZ and VWS.
2019- current	S. Zwakhalen	'Erkenningscommissie ouderenzorg' Vilans	Member
2020-current	H. Verbeek	Council of Medical Sciences (Raad voor Medische Wetenschappen, KNAW)	Member
2020-current	J Meijers	V&VN (Dutch Nursing Association > 100.000 members)	Members council/ supervisory board
2020-current	J. Schols	Health Council (Gezondheidsraad)	Member
2020-2022	J. Hamers	Ministry of Health (VWS)	Advisor Covid-19 Nursing Homes
2022-current	J Hamers	ZorgInstituut	Member of the Board Inspection of Quality of Care of Older People

3 Research Quality and Societal Relevance

3.3 Case studies

We have selected three case studies that show the scientific and societal impact of projects conducted in the research line Ageing and Long-Term Care.

ALTC	<u>“The ban on visitors really had a negative impact on the well-being of nursing home residents”</u> ; <u>COVID-19 monitor in nursing homes</u> ⁰¹	The pandemic has had a huge impact on the work of our Research Line, as the long-term care sector was hit hard: nursing homes were closed, home care was scaled down; the majority of deaths was in older people aged 65 and older. We have set up international leading research into the impact of COVID-19 in nursing homes, on request of the Ministry of Health, Welfare and Sports. We were the first research group worldwide to present empirical evidence that it was safe to open nursing homes for visitors during the COVID-19 pandemic. Positive results from this study of the safety and impact of following national guidelines for nursing home visitors during COVID-19 led the Dutch national government to permit all nursing homes to cautiously allow visitors. Furthermore, it was used in international guideline development for nursing home policy. Our paper has won the Morley Impact award, being the paper with most citations and downloads of the journal in the year 2020. In addition, several scientific papers were written in collaboration with national and international collaborators. The evidence was presented in podcasts, webinars, scientific congresses, used in Dutch policy development and a variety of societal partners.
ALTC	<u>“We can be proud of the fact that Connecting Conversations is still of interest”</u> ; <u>Method to assess experienced quality of care continues to generate enthusiasm among organisations</u> ⁰²	ALTC Connecting Conversations. This project was a great example of creating scientific and societal impact through research. The research team was interdisciplinary, using both experts from within health related disciplines (nursing science, health sciences and old age medicine) and outside health, including customer-centred service science, data science and educational science. Furthermore, it was a transdisciplinary project in which scientists co-created knowledge together with important societal partners throughout the whole research project (e.g. developing the research questions, writing the grant application, developing methodology, collecting data, analysing and interpreting data, dissemination). It has won several prizes (e.g. UM impact prize, nominee for the value-based health care award) and resulted in a method (training, tablet-based application and assessment instrument) to assess quality of care from a client perspective. Finally, we initiated a national consortium of research partners working on narrative methods (including Erasmus University, TRANZO University of Tilburg, Technical University Enschede, Leiden Academy of Vitality and Ageing and Maastricht University).
ALTC	<u>“It’s so important to involve patients in this type of research”</u> ; <u>I-HARP adapted for COPD</u> ⁰³	I-HARP is an initiative of the Maastricht University Medical Centre+ (Expertise Centre of Palliative Care) in collaboration with the Radboud University Medical Centre and Maastricht University. I-HARP strongly illustrates the multidisciplinary collaboration within ALTC as it involves all parties in palliative care, including patients, relatives, relatives of deceased patients, nurses, general practice assistants, cardiologists, general practitioners, elderly care physicians, and palliative care specialists. The collaboration between the RL ALTC of Maastricht University and the Maastricht University Medical Center (MUMC+) is a valuable partnership that bridges academic research and medical expertise for older people. The cocreation and patient preferences that are central elements of this study strengthen the network of partnerships.

⁰¹ | www.maastrichtuniversity.nl/research/caphri/our-research/ageing-and-long-term-care/“-ban-visitors-really-had-negative-impact

⁰² | www.maastrichtuniversity.nl/research/caphri/our-research/ageing-and-long-term-care/“we-can-be-proud-fact-connecting

⁰³ | www.maastrichtuniversity.nl/research/caphri/our-research/ageing-and-long-term-care/“it’s-so-important-involve-patients-type

4 Collaborations, strategic partnerships and infrastructure

Researchers of the ALTC programme have many collaborations with scholars of various backgrounds in the Netherlands as well as abroad, and societal partners on a local, national and international level. Furthermore, several colleagues hold visiting professorships in international universities (i.e. Jan Hamers at the University of Leeds, UK, Judith Meijers at the University of Alberta, Canada; Jos Schols at the Vrije Universiteit Brussels). Here, we highlight the most important and structural collaborations with our partners.

Living lab in Ageing and Long-Term Care

Anchored in the RL is the Living lab in Ageing and Long-Term Care (in Dutch: Academische Werkplaats Ouderenzorg Limburg - AWO-L). The Living lab is a structural collaboration of 25 years between Maastricht University, Zuyd University of Applied Sciences, Gilde Zorgcollege, Vista College and 9 organisations providing Long-Term Care (professional home care and nursing homes covering about 185 care locations, 27.000 staff and 50.000 clients): Meandergroep Zuid-Limburg, Sevagram, Envida, Zuyderland, Cicero, Vivantes, Land van Horne, Proteion and De Zorggroep. Since 2021 it covers the whole province of Limburg. Its mission is to contribute with scientific research to improving i) quality of life of older people and their families; ii) quality of care and iii) quality of work of those working in long-term care. The Living Lab is not a physical space, but a network in the southern part of the Netherlands in which researchers collaborate through continuous discussion with end-users such as older persons and their families, client representatives, professionals, health care directors, policymakers and teachers. The Living Lab collaborates closely on research projects with relevant stakeholders from different domains, depending on the objectives, such as primary care, hospital, mental health services, local municipalities and businesses. Older people and their relatives and representatives have a central role within the Living Lab. Clients and/or their representatives participate directly in each research project, either as a member of the project group or as advisors/consultants throughout the project. On a regular basis (approximately three times a year), a group of client representatives from the nine long-term care organisations advise, reflect on results, and help set future directions as strategic partners. In addition, the Living Lab has a partnership with the Dutch Council for Older People, who advise the Minister of Health, Welfare and Sports directly. In the region, it collaborates within the KIA-ZON initiative.

The Living lab is a model of transdisciplinary research and has two key characteristics:

1 The use of Linking Pins, who hold joint appointments at the University and at long-term care organisations or vocational training institutes. There are two types of Linking Pin roles within each partner organisation - scientific and practice-based - that work as couples in reciprocity with each other. Together the Linking Pins build an infrastructure to stimulate

scientific research within long-term care. Scientific Linking Pins are senior researchers who work for one or two days a week in one of the partner organisations. Their role is to coordinate scientific research and teaching activities, lead a multidisciplinary working group of long-term care professionals, and together with staff and older people assist in identifying problems in practice that need further investigation. The practice-based Linking Pin is an employee of the partner organisation who works for one day a week on scientific research and facilitation of scientific knowledge and innovations in practice.

2 The use of an interdisciplinary partnership that is based on a team science approach. Similarly, to the RL, the staff body involved in the Living lab is interdisciplinary, and includes, for example, Nursing Science, Old Age Medicine, Psychology, Physiotherapy, Social Gerontology, Occupational Therapy and Care of Older People.

Our Living Lab on Ageing and Long-Term Care may be viewed as a best-practice example, and its approach has been adopted by other (inter)national groups. It was a model partner in the Horizon2020 Twining Project ALTHOUR (Assisted Living Technology for the Health Tourism sector), in which its' structure and research was a prototype example of a Living Lab structure to prepare for the set-up of a 'Health Tourism Living Lab' in the Lisbon area (Portugal) by the University of Lisbon. In 2020, we published a paper explaining the model and its blueprint (Verbeek et al., 2020 The living lab in ageing and long-term care: a sustainable model for translational research improving quality of life, quality of care and quality of work J Nutr Health Aging. 2020;24(1):43-47). In total, 4 twin living labs have been established now (UK, Austria, Germany). In addition, The Living Lab collaborates in the national alliance of Living Labs in Long-Term Care (in Dutch: Samenwerkende Academische Netwerken Ouderenzorg).

Collaboration with the province/within the region

Researchers within ALTC have many collaborations within the region, for example with local companies (e.g. Arion) and municipalities. ALTC participated in the "Anders Meten" projects that were performed within Limburg Meet (LIME) and strongly focusing on the empowerment of clients and relation-centredness (e.g. development of Connecting Conversations). LIME connected parties and projects in the region of Limburg. LIME focuses on improving health care in the region through strong collaboration between the province of Limburg, the University of Applied Science Zuyd Hogeschool, Maastricht University and the Brightlands Campuses with health care professionals, health care recipients and the business community. Together with stakeholders in long-term care we developed and evaluated new measurement methods that can be used in the nursing home and the home situation. The results of the measurements will provide concrete starting points for improving the quality of perceived care.

4 Collaborations, strategic partnerships and infrastructure

External PhD Programme with the University of Graz and Applied University of Nursing Science Bern

Prof. Zwakhalen is leading the Maastricht - Graz - Bern Doctoral Programme Nursing Science together with Prof. Schols. It concerns a joint doctoral programme which started in 2000. The doctoral programme was initiated by the LPZ collaborators and is nowadays a matured PhD programme for nurses. PhD candidates regularly meet (4 times a year) and follow a structured programme. It enables nurses with a master's

degree to become a PhD in Nursing Science and allows new talent to further develop. The collaboration with the University of Graz and the University of Applied Science in Bern allows for an exchange of knowledge and expertise with nursing researchers and contributes to the infrastructure of nursing science in Europe. This PhD programme has led to structural joint collaborations, publications and annual dissertations all with high potential to improve nursing care.

5 Trends, SWOT, strategic plans and viability

5.1 Trends, SWOT, and strategic plans

5.1.1 Trends

Due to the ageing of the population and developments in medical technology, the number of older persons with (multiple, chronic) health problems including cognitive disorders such as dementia will increase substantially during the following decades. Nowadays, the proportion of people 65 years of age and older is 14–20% in most Western societies. We expect that this percentage will be nearly doubled in the next three to four decades, which inevitably has consequences and brings substantial challenges for the health care system, in particular for (services and facilities in) long-term care and hospitals. At the same time, expectations in societies about long-term care and quality of care are changing, and an older person's autonomy, preferences and wellbeing are getting more important. In addition, there is a stronger emphasis on the need of interdisciplinary collaboration and the use of technology and data sciences. These trends together indicate that there will

remain challenges in the coming years with respect to (a) adequate support, social care and health services for older people to 'age in place', (b) smooth transitions in the chain of long-term care (home-hospital-rehabilitation-nursing home-hospice), (c) sufficient (nursing) home care for older people according to the highest possible standards and innovative, alternative long-term care environments (d) financial sustainability of health care for older people, and (e) well-equipped professional staff and management who have attractive career paths within ageing health care. These challenges may be within public and policy interest within the next decade. We identify important opportunities for learning and improving the quality of care and evidence-based practice with an increasing emphasis on data and data-informed, shared decision-making processes. The CAPHRI RL Ageing and Long-Term Care may contribute to the development of knowledge that may help to handle these challenges and come up with optimal solutions in close collaboration with the health and long-term care field.

5.1.2 The SWOT analysis

Table 5.1: SWOT analysis of the Research Line - ALTC

Strengths	Weaknesses
<ul style="list-style-type: none"> • Strong regional academic network through the Living Lab in Ageing and Long-Term Care with societal stakeholders, which serves as an international example for citizen science; • Highly visible in advisory boards, public events; • Earning power and output of the RL including the yearly structural funding of the Living Lab in Ageing and Long-Term Care (€900.000 annually); • Collaboration with (inter)national research groups; • Strong participation within the most important national and international conferences on ageing research (e.g. GSA, IAGG, NVG, 'Geriatriedagen'). 	<ul style="list-style-type: none"> • Compared to other Dutch research groups, we have less expertise in and emphasis on social gerontology, geriatric medicine and implementation science as these specific disciplines are lacking in the RL; • Difficult to attract senior researchers living in other Dutch regions for positions in our research group. This difficulty holds especially for staff with different disciplinary backgrounds (e.g. technology, data sciences).
Opportunities	Threats
<ul style="list-style-type: none"> • Increasing local, national and international interest in ageing research due to demographic developments; • High levels of societal impact of research that is conducted within the RL using the transdisciplinary network approach; • Expanding and building on the existing infrastructure of Living Lab in Ageing and Long-Term Care, especially linked to the social (health) domain, policy and health technology assessment, and professional development. 	<ul style="list-style-type: none"> • Span of control of senior staff is challenging, partly due to other roles (as linking pins in long-term care organisations or vocational training institutes); • Although ageing research is booming, (inter)national funding becomes more and more competitive.

5.1.3 Strategic plans

With the above SWOT analysis and the prevailing trends as described above in mind, the following strategic plans are set for the following five to ten years:

1. We aim to further strengthen our transdisciplinary research approach, by actively maintaining our existing networks and set up new collaborations with partners who are becoming increasingly important in the field of long-term care and the social domain, e.g. municipalities, housing associations, project developers, health care entrepreneurs and citizen initiatives. This expanded network will also increase our chances in gaining third-party funding for our scientific research.
2. We aim to continue in leading local and national funding of ageing research projects and search for a diversity of calls in ZonMw and NWO programmes. Furthermore, we will also participate in funding on a European level (e.g. Horizon2020, Marie Curie fellowships), elaborating and strengthening our existing strong international networks.
3. We will try to expand the expertise within the RL by including different disciplines (e.g. on health care technology, social gerontology or labour force capacity in health care) or actively seeking collaboration within and outside CAPHRI. Furthermore, our leading position in nursing science in long-term care needs may benefit from more strong partnerships with nursing science and care for older people in hospitals. Because most of the permanent staff of the RL is also partly involved in senior teaching positions, research themes of the RL will be embedded in the bachelor and master programmes of FHML. This representation may help to further increase interest in ageing issues among students participating in these bachelor and master programmes.
4. Although we have worked substantially on scientific and public exposure of our work in the past, balancing our contributions to scientific meetings, societal meetings, public and scientific publications, Living Lab website, etc. could still be improved. Furthermore, we aim to set up a sustainable science communication infrastructure to increase our societal impact, also by exploring specific career paths for our researchers in this area. We will encourage our researchers to develop skills in order to build the relationships and maintain the network for transdisciplinary research, working as academics in partnerships with societal partners and communicate about this research. This may facilitate alternative or complementary career paths.

5.2 Viability

Ageing and Long-Term Care is a strong and viable research line, organised in a multi-disciplinary way and strongly embedded in the Living Lab in Ageing and Long-Term Care. The development of this research group has been a process of more than 15 years, which means that there is now a strong infrastructure for problem identification, evaluation of the research and implementation of research evidence. Staff members of the Research Line are part-time (mostly 0.2 or 0.3 fte) seconded to organisations providing care of older people in the region for these purposes. This cross-fertilisation has proved to be very productive and successful from both scientific and societal perspectives. As ageing health care issues will remain high on the public agenda, we anticipate that this attention will create sufficient opportunities for the next five to ten years. Furthermore, we should offer new opportunities, since the staff of the RL consists of several young scientists. We support these early- and mid-career researchers by their participation in leadership programs, tailored to individual needs (e.g. Leadership Mentoring in Nursing Research, CaRe Leadership programme); this support and training ensure viability of this RL. In order to further strengthen the RL, our challenges are to find the optimal span of control and to further attract students and young researchers for research on ageing. In addition, we will seek collaboration opportunities to enhance involvement of senior staff from other universities and network partners in conducting scientific research together.



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