

Konsortialavtal

avseende

Vetenskapsrådets
bidrag för infrastrukturen av nationellt intresse

Nationell E-infrastruktur för forskning om åldrande i Sverige

“NEAR”

Vårduniversitet



**Karolinska
Institutet**

Detta Avtal ("**Avtalet**") har ingåtts mellan

- (1) **Karolinska institutet**; org. nr. 202100-2973, 171 77 Stockholm, ("**KI**");
- (2) **Blekinge Tekniska Högskola**, org. nr. 202100-4011, 371 79 Karlskrona ("**BTH**")
- (3) **Göteborgs universitet**; org. nr. 202100-3153, 405 30 Göteborg, ("**GU**");
- (4) **Stiftelsen Högskolan i Jönköping**, org.nr: 826001-7333 Jönköping ("**JU**"),
- (5) **Lunds universitet**, org. nr. 202100-3211, 221 00 Lund, ("**LU**");
- (6) **Umeå universitet**, org. nr. 202100-2874, 901 87 Umeå, ("**UmU**");

nedan var för sig benämnda "**Part**" samt gemensamt "**Parterna**".

1 BAKGRUND OCH SYFTE

- 1.1 Följande konsortialavtal ("**Avtalet**") reglerar Parternas samarbete inom infrastrukturen **Nationell E-infrastruktur för forskning om åldrande i Sverige** (NEAR), som följer av ansökan om finansiering till Vetenskapsrådet daterad den 7 mars 2017 samt Vetenskapsrådets beslut om infrastrukturstöd till en nationell infrastruktur för öppen tillgång till forskningsdata, under utlysningen *Bidrag till infrastruktur av nationellt intresse* (2017-00627). Den nationella infrastrukturen benämns NEAR: Nationell e-infrastruktur för forskning om åldrande i Sverige, (eng: NEAR: The National E-instructure for Aging Research in Sweden). Fortsättningsvis benämns infrastrukturen "**NEAR**".
- 1.2 Parterna är överens om att lojalt verka inom den nationella infrastrukturen NEAR och driva samt förvalta NEAR i enlighet med Ansökan-
- 1.3 Vetenskapsrådet har beslutat om delfinansiering av NEAR:s verksamhet enligt bidragsbeslut av den 27 september 2017 och bidragsvillkor av den 18 december 2017, vilka biläggs så som **Bilaga 1**. Som värduniversitet förvaltar och administrerar KI Vetenskapsrådets bidrag i enlighet med Ansökan, Beslutet, detta Avtal och Styrgruppens beslut.
- 1.4 NEAR:s verksamhet ska bestå av det centrala NEAR-kontoret hos KI ("Infrastrukturkontoret"), Aging Research Center (ARC), Institutionen för Neurobiologi, vårdvetenskap och samhälle. Härutöver kommer den operativa verksamheten följaktligen bedrivas på olika platser över landet: dels vid Värduniversitetet, dels hos Parterna.

2 DEFINITIONER

- 2.1 Med "**Ansökan**" avses Parternas ansökan till Vetenskapsrådet om finansiering enligt bilaga 2.
- 2.2 Med "**Användare**" avses svenska och internationella brukare från akademiska eller icke-akademiska parter samt från den offentliga sektorn, som har tillgång till infrastrukturen genom av Styrgruppens godkända projektansökningar, oavsett om dessa brukare kommer från någon av Parterna eller inte.
- 2.3 Med "**Beslutet**" avses Vetenskapsrådets beslut som beskrivs i punkt 1.3.
- 2.4 Med "**Bidragsvillkoren**" avses Vetenskapsrådets bidragsvillkor för beslutad finansiering enligt Bilaga 1.
- 2.5 Med "**Föreståndaren**" avses den person som är anställd vid Vårduniversitetet och som leder arbetet i enlighet med vad som närmare anges i punkt 3.4.1.
- 2.6 Med "**Infrastrukturkontoret**" avses den grupp som närmare beskrivs under punkt 3.4.2.
- 2.7 Med "**In-kind insats**" avses annan insats än kontantinsats som en Part under detta Avtals giltighet bidrar med för att utveckla, driva och förvalta NEAR och som har godkänts av Infrastrukturkontoret. In-kind insatser kan fullgöras t.ex. genom att Part bidrar med lösa saker i form av förbrukningsartiklar, utrustning eller maskiner eller genom att Part upplåter nyttjanderätt till av Part ägd eller innehavd fast eller lös egendom (inbegriper lokaler och immateriella rättigheter) eller genom att Parts anställda eller medhjälpare fullgör arbetsprestationer.
- 2.8 Med "**Samverkansresultat**" avses information förenad med immateriella rättigheter, som är framtagna för att användas inom NEAR:s infrastruktur, såsom mjukvara och källkoder och som genereras genom Parternas deltagande inom den samverkan som sker enligt detta Avtal. Däremot utgör data och andra Immateriella rättigheter som Part/användare tillför NEAR för att användas i Samverkansresultat inom ramen för brukandet av NEAR inte Samverkansresultat och omfattas inte heller i övrigt av detta Avtal.
- 2.9 Med "**Strategisk plan**" avses den långsiktiga planen för bedrivandet av verksamheten inom NEAR.
- 2.10 Med "**Styrgruppen**" avses det högsta beslutande organet inom NEAR, vilket utgörs av stämmomötet mellan Parterna i enlighet med punkt 3.2.
- 2.11 Med "**Verksamhetsplan**" avses den årliga detaljerade planen för NEAR:s verksamhet och som är en omvandling av den Strategiska planen till operativ verksamhet.
- 2.12 Med "**Vårduniversitet**" avses i enlighet med Vetenskapsrådets beslut om bidrag, KI. Vårduniversitetet intar en för Parternas samverkan central roll såsom varande huvudsaklig ansvarig för samverkan.

3. ORGANISATION

3.1 Övergripande beskrivning

Värduniversitetet har ett övergripande ansvar för NEAR enligt Ansökan och Beslutet. Parterna utövar sitt inflytande över verksamheten genom Styrgruppen (NEAR Stearing Board) som ska agera självständigt relativt Värduniversitetets och vara beslutsfattande gällande verksamhet för NEAR. En föreståndare ska utses som är operativt ansvarig för den löpande verksamheten inom NEAR och som är ordförande i Styrgruppen. Föreståndaren stöds av Infrastrukturkontoret.

3.2 Styrgruppen (Steering Board)

Styrgruppen är NEAR:s högsta beslutande organ. Styrgruppen rapporterar till dekan i Styrelsen för forskning vid Värduniversitetet, till Parterna samt till Vetenskapsrådet.

Parterna accepterar att följa Styrgruppens beslut, vilket dock inte inskränker Parts rätt att påkalla tvistelösning enligt avsnitt 21.

3.2.1 Sammansättning

Styrgruppen ska bestå av en ledamot som är huvudansvarig forskare (Principal Investigator , "PI") för varje NEAR lokal databas/kohort och en representant från KI:s Styrelse för forskning. Värduniversitetet utser ytterligare representant utan formell rösträtt. Parterna ska aktivt verka för en jämn könsfördelning inom Styrgruppen.

Styrgruppen kommer att från 2018 bestå av följande ledamöter: **Karolinska Institutet** (Laura Fratiglioni, Alicja Wolk, Nancy Pedersen, Carin Lennartsson, Anders Wimo, Marianne Schultzberg och Lena Lewin), **Blekinge Tekniska Högskola** (Johan Berglund), **Göteborgs universitet** (Boo Johansson, Ingmar Skoog), **Stiftelsen Högskolan i Jönköping** (Anna K.Dahl Aslan), **Lunds universitet** (Sölve Elmståhl), **Umeå universitet** (Gunnar Malmberg, Lars Nyberg).

Ett uppdrag som ledamot i Styrgruppen gäller för en period om fem verksamhetsår i taget. Ledamot kan omväljas för ytterligare en eller flera mandatperioder. Ett uppdrag som ledamot upphör i förtid om Part, ledamoten själv eller Värduniversitetet, efter att i samråd med Vetenskapsrådet ha fattat beslut härom, anmäler att uppdraget ska upphöra. Anmälan ska göras hos Styrgruppen.

Vid val av ny ledamot sker detta genom att berörd Part nominerar en ny ledamot skriftligen till Värduniversitetet och övriga Parter. Därefter utser Värduniversitetet ledamoten, efter samråd med Parterna och Vetenskapsrådet. Varje ledamot ska anses behörig att företräda den Part han/hon representerar och att hantera, förhandla och besluta i alla ärenden som finns angivna på agendan inför Styrgruppen och som i övrigt anges i punkt 3.2.5.

3.2.2 Ordförande

Professor Laura Fratiglioni ska vara Styrgruppens ordförande ("Ordföranden"). Ny Ordförande kan utses av Vårduniversitetet efter samråd med övriga Parter och Vetenskapsrådet. Ordföranden ska leda Styrgruppens arbete, kalla till sammanträden och i övrigt bevaka att Styrgruppen och Parterna fullgör sina uppgifter.

3.2.3 Sammanträden

Ledamot är skyldig att närvara vid Styrgruppens sammanträden. Ledamot har rätt att framställa förslag till beslut inför Styrgruppen. Förslagen ska framställas skriftligen till Ordföranden i god tid så att detta kan tas in i kallelsen enligt andra stycket nedan. Part som kan visa att Partens eget arbete, kostnader, enskild pågående studie eller verksamhet i övrigt skulle påverkas väsentligt på ett negativt sätt till följd av ett beslut av Styrgruppen har rätt att utöva veto mot det aktuella beslutet eller relevant del av beslutet. Om beslutet finns beskrivet i agendan måste sådant veto utövas under mötet. Om beslutet har lagts till agendan (innan eller efter mötet) eller om beslutet har fattats utan ett möte, måste veto utövas skriftligen genom meddelande till Styrgruppens ordförande inom 14 dagar från det att Part har mottagit meddelande om beslutet.

Ordförande ska sammankalla ledamöterna till Styrgruppen minst två gånger per år. Ordföranden ska kalla till extra Styrgruppen om Part begär det. Kallelse till Styrgruppen ska skickas ut skriftligen senast 3 veckor innan sammanträdet ska äga rum. Kallelsen ska innehålla dagordning som beskriver varje beslutsärende vid Styrgruppen och relevanta underlag.

Varje Part har rätt att skriftligen till Ordförande innan sammanträdet ska äga rum även anmäla tillägg av ärenden till dagordningen. Beslut i sådan tillkommande fråga får enbart fattas om samtliga ledamöter är närvarande vid mötet och bekräftar att de har fått tillfredsställande underlag inför beslutet.

3.2.4 Styrgruppens beslutsfattande

Styrgruppen är behörig att fatta beslut om minst två tredjedelar av antalet ordinarie ledamöter är närvarande. Möten får också hållas på distans med hjälp av konferensteknologi som exempelvis telefon-, Skype videokonferens eller annan typ av telekommunikation.

Varje ledamot har en röst. Styrgruppens beslut fattas i första hand genom konsensus. Om konsensus inte kan uppnås, ska beslut fattas med två tredjedelars majoritet.

Ordföranden ska tillse att protokoll förs vid Styrgruppen där varje beslut tydligt

dokumenteras. Detta ska skickas till samtliga ledamöter inom 30 dagar efter Styrgruppens möte. Protokollet ska undertecknas av den som har varit protokollförare och justeras av Ordföranden (eller av annan ledamot om Ordföranden har fört protokollet) och vid mötet vald justeringsman. Ledamöterna har rätt att få en avvikande mening antecknad till protokollet. Styrgruppens protokoll ska föras i nummerföljd och förvaras på ett betryggande sätt och i enlighet med arkivlagen (1990:782) vid Vårduniversitetet.

3.2.5 Styrgruppens kompetens

Styrgruppen är det högsta beslutande organet inom NEAR och kan, om annat inte framgår av detta Avtal, besluta i alla frågor rörande verksamheten. Styrgruppen ska alltid fatta beslut i följande frågor:

- Beslut om verksamhetens strategiska utveckling, Strategisk plan, Verksamhetsplan och inriktning med målsättning att NEAR ska få den tillgänglighet bland användargrupper som framgår av bidragsvillkoren (Bilaga 1);
- fastställelse av årlig budget;
- tillsammans med Vårduniversitetet ta fram urvalskriterier samt avtal för Användare som reglerar villkoren för nyttjandet av NEAR;
- fastställa policyer för prioritering av tillgång till NEAR, tillgängliggörande av forskningsdata och mjukvara som tas fram vid/med hjälp av NEAR;
- beslut om väsentlig förändring av verksamheten i förhållande till Ansökan och Beslutet, förutsatt att Vetenskapsrådet godkänt eller godkänner en sådan förändring;
- förslag till Parterna om ny parts tillträde till detta Avtal och villkoren härför;
- förslag till Vetenskapsrådet och Vårduniversitetet om Parts utträde eller uteslutning av Part från detta Avtal och villkoren härför;
- beslut om utvecklingsplan; samt
- annat ärende som annars har upptagits i agendan eller framställts enligt punkt 3.2.3.

3.3 **Externa Rådgivande kommittéer (Advisory Boards)**

Styrgruppen ska utse tre rådgivande kommittéer (också benämnd "Advisory Boards") som bör sammanträda med Styrgruppen minst två gånger per verksamhetsår för att följa upp och ge råd kring Parternas samverkan med beaktande av den vetenskapliga och internationella utvecklingen inom det relevanta verksamhetsområdet. Styrgruppen har rätt att fatta beslut om hur många

och vilka ledamöter kommittén ska bestå av samt de närmare formerna för kommitténs arbete.

Styrgruppen kan fatta beslut om att resekostnader ska betalas till kommittéledamöterna. Ett arvode för deltagande i den externa rådgivande kommittén utgår inte.

3.4 Vårduniversitets ansvar

Vårduniversitetet åtar sig att ombesörja administrationen av samverkan, i den mån det inte ankommer på Styrgruppen, Föreståndaren eller Infrastrukturkontoret.

Vårduniversitetet ansvarar för att hålla Vetenskapsrådet underrättad om omständigheter som väsentligt försenar eller förhindrar genomförandet av Verksamhetsplanen eller den Strategiska planen.

Vårduniversitetet är värd för den operativa stödjande verksamheten i form av Infrastrukturkontoret. Infrastrukturkontoret ska stödja NEAR så att de vetenskapliga målen uppnås med kompetenser i form av databasexpertis, publikationsstöd, samt kompetens för att ge stöd i etiska och legala frågor. Infrastrukturkontoret har en grundbemanning som vid behov kan utökas för att möta av Styrgruppen uppsatta vetenskapliga mål.

3.4.1 Föreståndaren

Vårduniversitetet ska efter samråd med Vetenskapsrådet utse Föreståndaren. Vårduniversitetet utser Prof. Laura Fratiglioni som Föreståndare. Föreståndarens mandatperiod ska vara fem år i taget såvida inte Vårduniversitetet beslutar annat i det enskilda fallet.

Föreståndaren ska leda verksamheten vid Infrastrukturkontoret. Föreståndaren bevakar i övrigt att Infrastrukturkontoret fullgör de uppgifter som den är anförtrodd med. Rollen innebär att ansvara för den övergripande samordningen samt att inhämta och framlägga förslag till förändringar av Verksamhetsplan och Strategisk plan för beredning inför Styrgruppen beslut. Föreståndaren ansvarar för att verksamheten vid infrastrukturen sker i samklang med den övergripande inriktningen enligt ansökan och beviljat stöd från Vetenskapsrådet.

3.4.2 Infrastrukturkontoret

Infrastrukturkontoret ska finnas vid Vårduniversitetet och utgörs av en stab med relevant kompetens för att stödja infrastrukturen.

Infrastrukturkontoret ska genomföra Vårduniversitetets övergripande åtagande för infrastrukturen, inhämta och sammanställa underlag från Parterna inför uppföljning, prioritering och rapportering.

Infrastrukturkontoret ska stödja Föreståndaren administrativt för att nå de gemensamt prioriterade målen för "NEAR". Infrastrukturkontoret ska således:

- lämna förslag till Styrgruppen för årsbudget, Verksamhetsplan och Verksamhetsberättelse;
- fortlöpande bedöma NEAR:s resursnyttjande samt ha löpande uppsikt över resultatenhets ekonomiska situation, följa upp fastställd budget och se till att organisationen är utformad så att medelsförvaltningen och de ekonomiska förhållandena i övrigt kontrolleras på ett betryggande sätt;
- svara för att upprätta och vid behov revidera skriftliga instruktioner som är nödvändiga inom NEAR:s verksamhet och följa upp att dessa efterlevs;
- hålla Parterna underrättade om omständigheter som väsentligt försenar eller förhindrar genomförandet av Verksamhetsplanen eller den Strategiska Planen;
- lämna förslag till Styrgruppen om eventuell uteslutning av Part vid Parts avtalsbrott som inte har rättas på ett tillfredsställande sätt enligt 14.1;
- bereda och lämna förslag till Styrgruppen rörande avvecklingsplan; samt
- verkställa fastställd avvecklingsplan.

4. EKONOMISKA ÅTAGANDEN

- 4.1 Vetenskapsrådet lämnar bidrag till verksamheten i enlighet med Beslutet för åren 2018-2022. Vetenskapsrådets bidrag består av kontanta medel som utbetalas till Vårduniversitetet i enlighet med Beslutet. Vårduniversitetet ska förvalta och använda medlen samt vidaretransferera medlen till Parterna i enlighet med Beslutet och Ansökan. Vårduniversitetet ska hålla beloppet avskilt och låta det disponeras för Parternas räkning av Styrgruppen.
- 4.2 Parters ekonomiska åtaganden skall fullgöras genom In-kind insatser och/eller kontantinsatser för drift av de lokala databaserna vid Parternas lärosäten i enlighet med Ansökan. Part kan inte avräkna värdet av fullgjord In-kind insats mot utlovad kontantinsats. Parternas betalning av kontantinsatser ska fullgöras fortlöpande i enlighet med Styrgruppsbeslut, den Strategiska planen, årlig budgetplan och detta Avtal.
- 4.3 Part ansvarar för att Partens kostnader inte överskrider beslutad budget. Solidariskt ansvar föreligger således inte.
- 4.4 Användare som vill nyttja resurser för forskningsprojekt kommer att få betala en av Styrgruppens beslutad projektavgift som delvis täcker infrastrukturkostnaderna. Styrgruppen får besluta om lägre projektavgifter alternativt ingen avgift för huvudansvarig forskare och brukare som är anknutna till huvudansvarig forskare vid respektive Part.

5 PARTERNAS SAMARBETE

5.1 Parternas ansvar

- 5.1.1 Så länge finansieringen från Vetenskapsrådet består åtar sig Parterna att under avtalstiden lojalt samverka inom NEAR och genomföra de uppgifter som framgår av Ansökan och bidragsvillkor, samt beslut av Styrgruppen i enlighet med detta Avtal. Varje Part ansvarar för sina respektive lokala databaser och för den fortsatta insamlingen och underhållet av data. Uppgifterna ska utföras i enlighet med gällande lagar och föreskrifter. Varje Part ska tillse att övriga Parter får den information som behövs för verksamheten och för fullgörande av Parternas skyldigheter.
- 5.1.2 Enligt bidragsvillkoren är Vårduniversitetet, såsom medelsförvaltare ansvarig för redovisning och rapportering av NEAR:s verksamhet i förhållande till Vetenskapsrådet. Parterna ska underlätta detta genom att ge Vårduniversitetet tillgång till ekonomisk redovisning rörande stödet från Vetenskapsrådet och om Parts verksamhet enligt detta Avtal. Parterna ska tillhandahålla nödvändigt administrativt stöd till Vårduniversitetet för att detta ska kunna fullgöra uppföljning och rapportering av NEAR:s verksamhet inom två (2) veckor från förfrågan från Vårduniversitetet.
- 5.1.3 Vårduniversitetet åtar sig att ombesörja administrationen av samverkan, i den mån det inte ankommer på annan enligt detta Avtal.

5.2 Tillgång till Data

NEAR ska, enligt Vetenskapsrådets beslut, förvaltas av ett Vårduniversitet men förutsätter insatser från övriga universitet. På Vårduniversitetet finns ett Infrastrukturkontor där stödfunktioner avseende infrastrukturen finns samlad. Insamling och förvaltning av data sker fortsättningsvist hos Parterna.

Parterna är överens om att infrastrukturens syfte är att NEAR ska vara en nationell infrastruktur för både nationella och internationella högkvalitativa forskningsprojekt.

Infrastrukturen och de lokala databaserna ska administreras av Parterna med säker lagring och spårbarhet av dess känsliga data och användning av data enligt dataskyddsförordningens (GDPR) krav.

Parterna är överens om att Infrastrukturkontoret ska granska ansökningarna från både nationella och internationella forskare men det är ledamot/PI som ansvarar för de berörda databaserna som ser till att tillgången till data godkänns av respektive Part.

Parterna är också överens om att NEAR ska vidareutvecklas genom uppgradering till en dynamisk databasarkitektur. Ursprunglig data ska stanna kvar i de lokala databaserna där de samlas in. Vidare ska en ny nätverksportal skapas med centrala loggar.

6 SAMVERKANSRESULTAT

- 6.1 Samverkansresultat ägs av den Part som genererat Samverkansresultatet eller, om så följer av lag eller överenskommelse, upphovsmannen vid den Parten. De Samverkansresultat som genererats av flera Parter ägs av dessa och/eller dessas upphovsmän gemensamt. De lokala NEAR-databaserna/kohorterna som Part (eller dess forskare) innehar eller disponerar och som har utvecklats eller förvärvats innan detta Avtal träffades och som fortlöpande kommer att kompletteras och utökas under avtalstiden är inte Samverkansresultat utan kommer fortsättningsvis att tillhöra den Part som utvecklar dem.
- 6.2 Varje Part ska se till att inom NEAR skapade Samverkansresultat som har betydelse för verksamheten inom NEAR och som Parten eller dess anställda eller medhjälpare genererat får utnyttjas av samtliga Parter för verksamheten inom NEAR och för egna icke-kommersiella ändamål kostnadsfritt och så länge som verksamheten bedrivs av Parten.
- 6.3 All publicering ska ske enligt vetenskaplig praxis och följa eventuella villkor som finns för Bidraget.
- 6.4 Om Parter behöver träffa överenskommelser mellan varandra eller med tredje part avseende rättigheter till Samverkansresultat ska detta regleras skriftligt i ett separat avtal.

7 RAPPORTERING

7.1 Rapportering till Vetenskapsrådet

Värduniversitetet ansvarar för rapporter och löpande information till Vetenskapsrådet enligt Bidragsvillkoren. Parterna åtar sig att förse Föreståndaren och Värduniversitetet med underlag för sådana rapporter och i övrigt bistå Värduniversitetet så att rapporteringsskyldigheten kan fullgöras på ett adekvat sätt.

7.2 Rapportering till Parterna

- 7.2.1 Infrastrukturkontoret svarar för att Parterna hålls underrättade om omständigheter som väsentligt försenar eller förhindrar genomförandet av verksamheten.
- 7.2.2 Infrastrukturkontoret ska tillse att fastställd budget skickas till samtliga Parter för kännedom.
- 7.2.3 Infrastrukturkontoret ska varje år tillse att alla Parter får del av en årlig Verksamhetsberättelse för NEAR.

8 INSYN OCH REVISION

8.1 Upplyningsplikt

8.1.1 Vårduniversitetet, Föreståndaren och Infrastrukturkontoret ska, om någon Part begär det, lämna upplysningar om verksamheten inom NEAR, om upplysningen bedöms kunna lämnas utan risk för skada för Part och det inte finns hinder p.g.a. sekretess eller tvingande reglering.

8.1.2 Part har alltid upplysningsplikt i förhållande till såväl Vårduniversitetet, Föreståndaren som Infrastrukturkontoret, beträffande förhållanden som rör den NEAR -verksamhet som denne bedriver.

8.2 Insyn i redovisning

Part ska alltid själv eller genom auktoriserad revisor ges tillfälle att ta del av räkenskaper och andra handlingar som rör NEAR:s verksamhet hos Part. Om det kan ske utan oskäligen kostnader eller besvär, ska Vårduniversitetet och/eller Infrastrukturkontoret på begäran hjälpa Parten med den utredning som behövs för ändamålet och tillhandahålla erfordrade kopior.

8.3 Vetenskapsrådets utvärdering

Part ger Vetenskapsrådet rätt att utvärdera och att få insyn i NEAR- verksamheten som bedrivs hos respektive Part i enlighet med vad som föreskrivs i bidragsvillkoren.

9 PARTS FÖRHÅLLANDE TILL ANSTÄLLDA OCH ANDRA MEDHJÄLPARE

Part ansvarar gentemot övriga Parter för sina anställda och för konsulter, underleverantörer och andra anlitade medhjälpare såsom för sig själv till den del Parten är huvudman för den aktuella verksamheten. Om flera Parter gemensamt anlitar en medhjälpare svarar endast de Parterna solidariskt för medhjälparen.

10 JÄV

Vid handläggning av ärenden och beslut som angår NEAR ska Part iaktta sin respektive tillämplig lagreglering angående jäv (förvaltningslagen [1986:223]).

11 SEKRETESS

I Parternas verksamhet såväl som för detta Avtal, tillämpas offentlighets- och sekretesslagen (2009:400). Vid tillämpningen av Offentlighets- och Sekretesslagen utgör Parterna separata enheter.

12 AVTALSTID

12.1 Detta Avtal träder ikraft när samtliga Parter har behörigen undertecknat det. Avtalet gäller under den tid bidragsbeslutet från Vetenskapsrådet gäller och till dess slutrapport godkänts.

12.2 Parterna ska senast 12 månader innan Vetenskapsrådets tilldelningsbeslut upphör, inleda samtal om huruvida samverkan ska förlängas och inleda

diskussioner med Vetenskapsrådet kring villkoren för eventuellt fortsatt bidrag. Om tilldelningsbeslutet inte förlängs eller annan finansiering erhålls ska avveckling ske enligt fastställd avvecklingsplan. Infrastrukturkontoret ska upprätta en slutrapport över verksamheten. Slutrapporten ska tillställas övriga Parter för yttrande och skickas till dessa i sin slutliga form.

13 FRÅNTRÄDANDE OCH UTESLUTNING

- 13.1 Part som vill frånträda detta avtal i förtid ska anmäla detta till Infrastrukturkontoret. Styrgruppen ska därefter, efter godkännande av Vetenskapsrådet, besluta om när sådant frånträde kan äga rum och formerna härför (varvid utträdande part inte har rösträtt). Det åligger part att fullgöra samtliga sina förpliktelser fram till det datum då utträde kan ske enligt Parternas överenskommelse, varvid förpliktelserna ska fullgöras till den del det belöper på tiden innan utträdet.
- 13.2 Efter förslag från Styrgruppen enligt punkt 3.2., får Vårduniversitetet och Vetenskapsrådet gemensamt fatta beslut om uteslutning av Part om Parten väsentligt åsidosätter sina skyldigheter enligt detta Avtal, Bidragsvillkoren (**Bilaga 1**) eller annat åtagande, eller annars viktig grund föreligger.
- 13.3 Samverkan under detta Avtal ska fortsätta mellan övriga Parter utan hinder av att en eller flera Parter har frånträtt Avtalet eller blivit utesluten.

14 AVTALSBROTT

- 14.1 Part som bryter mot detta Avtal är på begäran av drabbad Part skyldig att vidta rättelse och fullgöra sina skyldigheter om fullgörelse rimligen kan påfordras.
- 14.2 Avtalsbrott ska åberopas inom skälig tid från att det upptäcktes eller borde upptäckts (reklamation). Avtalsbrott får dock åberopas även om reklamation inte har skett, om den kontraktsbrytande Parten har handlat uppsåtligt eller grovt vårdslöst.
- 14.3 Om flera Parter drabbats samfällt av avtalsbrottet får krav på fullgörelse eller rättelse framföras av Parterna samfällt eller av Infrastrukturkontoret. Envar drabbad Part får för övriga Parter framföra reklamation för samtliga drabbade Parter räkning. Envar drabbad Part får framföra skadeståndsanspråk. Kopia av reklamation ska alltid skickas till Vårduniversitetet.
- 14.4 Part ska under avtalstiden fortsätta att fullgöra sina förpliktelser även om vederbörande anser att annan Part begått avtalsbrott, såvida Infrastrukturkontoret inte beslutar annat för att avvärja risk för skada.

15 AVVECKLING

- 15.1 Parterna får, efter samråd med Vetenskapsrådet, besluta om förtida upphörande av NEAR:s verksamhet och detta Avtal. En avvecklingsplan för verksamheten ska finnas enligt Vetenskapsrådets bidragsvillkor. Det åligger Styrgruppen att anta en avvecklingsplan på förslag från Infrastrukturkontoret. Infrastrukturkontoret ska kontinuerligt hålla avvecklingsplanen uppdaterad och föreslå Styrgruppen

eventuella justeringar vid behov. Avveckling ska, med beaktande av vad som anges nedan, alltid ske i enlighet med den fastställda avvecklingsplanen.

- 15.2 Medel som Part har tillförts men som inte har förbrukats vid Avtalets upphörande ska återbetalas till Vårduniversitetet. Ersättning för värdet av fullgjorda In-kind insatser utgår inte. Part har rätt att av de övriga Parterna erhålla ersättning för skäliga avvecklingskostnader. Ansvaret för avvecklingskostnader fördelas mellan Parterna i enlighet med avvecklingsplanen. Part kan enligt denna punkt aldrig bli skyldig att erlægga mer än sitt totala åtagande att göra kontantinsatser.
- 15.3 Oavsett vem som enligt Avsnitt 6 äger Samverkansresultat är Parterna eniga om att det – i linje med de intentioner och målsättningar som ligger till grund för Vetenskapsrådets bidrag till nationella forskningsinfrastrukturer – ligger i svensk forsknings intresse att de infrastrukturer som byggs upp kan fortleva och vidareutvecklas. Mot denna bakgrund är Parterna eniga om att för det fall Parternas samverkan enligt detta avtal ska avvecklas ska:
- Parterna ha nyttjanderätt för fortsatt forskning och utbildning till Samverkansresultat;
 - Äganderätten till Samverkansresultat som har finansierats med Vetenskapsrådets bidrag ska samlas hos Part/Parter som kommer att driva hela eller del av NEAR:s verksamhet vidare.

16 ÖVERLÅTELSE

Part får inte överlåta, pantsätta eller på liknande sätt upplåta sakrätt till rättighet enligt detta Avtal, om inte skriftligt samtycke av samtliga övriga Parter föreligger. Part får inte heller utan sådant samtycke sätta annan i sitt ställe.

17 ANSVARSBEGRÄNSNING

- 17.1 Part ansvarar inte i förhållande till annan Part för indirekta skador eller följdskador, inklusive egendomsskador, skador genom produktionsbortfall, utebliven vinst, immaterialrättslig förlust eller skada genom intrång i annans rätt, eller annan förmögenhetsskada eller ideell skada, till följd av eller med anledning av detta Avtal, annat än om sådan skada har orsakats uppsåtligt eller genom grov vårdslöshet
- 17.2 För övriga skador utöver vad som nämns i punkten 17.1 ovan är Parts sammanlagda ansvar begränsat till ett skäligt belopp med hänsyn tagen till skadans art samt verksamhetens art och ekonomiska omfattning. Skadeståndsskyldigheten gäller endast i den omfattning sådant skadeanspråk omfattas av befintliga försäkringar och sammanlagt maximalt det försäkringsbelopp som sådana försäkringar täcker.

18 FORCE MAJEURE

- 18.1 Om Parts fullgörande av sina åtaganden enligt detta Avtal väsentligen försvåras eller förhindras på grund av hinder utanför Partens kontroll som Parten inte

skäligen kunde förväntas ha räknat med vid Avtalets ingående och vars följder Parten inte heller skäligen kunde ha undvikit eller övervunnit, ska detta utgöra grund för befrielse från ansvar för dröjsmål och från skadestånd och andra påföljder.

- 18.2 Den Part som underlåter att fullgöra en skyldighet av sådana skäl som anges i punkt 18.1 ska omgående underrätta Infrastrukturkontoret. Består hindret i mer än trettio (30) dagar, får Vårduniversitetet efter Vetenskapsrådets godkännande fatta beslut om uteslutning enligt punkt 13.2, varvid Parten frånträder Avtalet med omedelbar verkan utan vidare förpliktelser för någon Part.

19 INGEN FÖRETRÄDARRÄTT ELLER BOLAG

Parterna bekräftar att förevarande Avtal utgör ett konsortialavtal och att Parterna inte genom detta Avtal får rätt att företräda varandra gentemot tredje man. Inte heller bildas genom detta Avtal någon joint venture, agentur, enkelt bolag eller annan form av formell affärsförbindelse eller juridisk person. Parterna får endast nyttja annan Parts namn, närings- eller varukännetecken efter uttryckligt samtycke.

20 ÄNDRINGAR OCH TILLÄGG

Eventuella ändringar och/eller tillägg till detta Avtal ska, för att vara bindande, avfattas skriftligen och vara undertecknade av behöriga företrädare för samtliga Parter.

21 TVISTELÖSNING

- 21.1 Parterna åtar sig att försöka lösa tvister i anledning av detta Avtal genom förhandlingar. Om en meningsmotsättning uppstår som inte kan lösas inom tjugo (20) arbetsdagar av personer på operativ nivå hos inblandade Parter, får berörd Part hos övriga berörda Parter påkalla att förhandlingar ska inledas mellan personer från de berörda Parternas verkställande ledningar eller motsvarande.
- 21.2 Om inblandade Parter misslyckas med att finna en förhandlingslösning inom 20 arbetsdagar (eller inom annan tid som de skriftligen enar sig om) ska tvisten hänskjutas till regeringen för slutligt och bindande avgörande. Om tvisten avser förhållande mellan Part/Parter som är statlig myndighet och Part som inte är statlig myndighet ska tvisten i stället hänskjutas till domstol.

22 FULLSTÄNDIG REGLERING OCH RANGORDNING

- 22.1 Avtalet består av denna avtalstext, Vetenskapsrådets bidragsvillkor (**Bilaga 1**), och Parternas ansökan till Vetenskapsrådet (**Bilaga 2**). I den mån innehållet i denna avtalstext, Ansökan och Bidragsvillkoren strider mot varandra har bidragsvillkoren företräde. I den mån innehållet i Ansökan och innehållet i denna avtalstext strider mot varandra har innehållet i denna avtalstext företräde.
- 22.2 Inga andra skriftliga eller muntliga åtaganden och utfästelser som föregått Avtalet utgör innehåll i detta Avtal.

Avtalet har upprättats i sex original, varav ett exemplar ska förvaras hos respektive Part.

Karolinska Institutet

Stockholm, datum:

Signatur:

A handwritten signature in blue ink, appearing to read 'Ole Petter Ottersen', written over a horizontal line.

Ole Petter Ottersen

Rektor

Blekinge Tekniska Högskola

Ort, datum: *Karlskrona 2018-07-26*

Signatur:



Anders Hederstierna
Rektor

Göteborgs universitet

Ort, datum:

Göteborg, 2/5 2018

Signatur:

A handwritten signature in blue ink, appearing to read 'Eva Wiberg', written over a horizontal line.

Eva Wiberg
Rektor

Stiftelsen Högskolan i Jönköping

Ort, datum:

Jönköping 2018-05-07

Signatur:

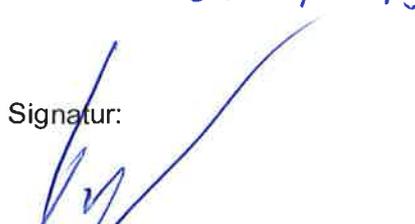


Agneta Marell
Rektor

Lunds universitet

Ort, datum: LUND, 31/5

Signatur:



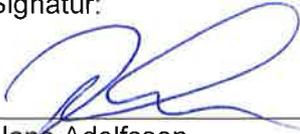
Torbjörn von Schantz
Rektor

Umeå universitet

Ort, datum:

Umeå 180424

Signatur:

A handwritten signature in blue ink, appearing to be 'Hans Adolfsson', written over a horizontal line.

Hans Adolfsson
Rektor

Särskilda villkor för bidrag till infrastruktur av nationellt intresse avseende NEAR

För beslut om bidrag från Vetenskapsrådet gäller rådets generella villkor. För infrastrukturer av nationellt intresse gäller, utöver de generella villkoren 2017 (DNR: 2016-07127), även särskilda villkor. De särskilda villkoren har fastställts av Vetenskapsrådets generaldirektör den 2017-12-18. Vid en eventuell konflikt mellan de generella villkoren och de särskilda villkor som har meddelats för ett beslut har de särskilda villkoren för beslutet företräde.

Definitioner

I Vetenskapsrådets generella villkor för bidrag till forskning eller forskningsstödande verksamhet definieras ett antal ord och begrepp. När de generella villkoren används tillsammans med de särskilda villkoren för infrastrukturbidrag ska betydelsen av vissa definitioner ändras enligt nedan:

Projektledare Rektor vid medelsförvaltaren.

Sökande Synonymt med medelsförvaltaren.

Projekt Infrastrukturen.

När de generella bidragsvillkoren använder begreppen *forskning*, *forskningsändamål* och liknande avses för infrastrukturbidrag istället *infrastrukturen*, *ändamålet med infrastrukturen osv.*

I de särskilda villkoren används även definitionerna med nedan angiven betydelse:

Infrastruktur En infrastruktur möjliggör forskning av hög kvalitet genom att tillhandahålla utrustning, tjänster, data och liknande, i enlighet med Vetenskapsrådets villkor. Infrastrukturens verksamhet ska bedrivas som en organisatoriskt och ekonomiskt avskild enhet vid medelsförvaltaren.

Lärosäte Utöver svenska universitet och högskolor, inkluderas även andra svenska myndigheter med forskningsuppdrag.

Rektor Utöver rektorer vid svenska lärosäten inkluderas även myndighetschefer vid svenska myndigheter med forskningsuppdrag.

1. Om bidragsbeslutet

Bidraget är beslutat inom ramen för utlysningen *Bidrag till infrastruktur av nationellt intresse 2017*.

2. Infrastrukturens verksamhet

I Vetenskapsrådets generella villkor för bidrag till forskning eller forskningsstödande verksamhet gäller inte avsnitten 2.2 och 2.6. I avsnitt 2.10 gäller endast punkt sex och sju, d.v.s. "årligen lämna in ekonomisk åiterrapportering enligt Vetenskapsrådets anvisningar, samt använda bidraget enligt i beslutet angivna villkor samt svara för administration av verksamheten."

Infrastrukturens syfte är att främja och underlätta svensk äldreforskning, öka kvalitet och generaliserbarhet av forskningsresultat samt att intensifiera internationella samarbeten.

2.1 Vetenskapsrådets bidrag

Kostnader som täcks av Vetenskapsrådets bidrag ska i lärosätets redovisning vara särskiljbara från lärosätets övriga transaktioner.

Det av Vetenskapsrådet beslutade bidraget är fördelat på kostnader för drift respektive vetenskaplig utrustning eller upphandlade tjänster enligt nedan. Externt upphandlade tjänster redovisas separat i tabell 2.1.b och hanteras med samma villkor som vetenskaplig utrustning.

	2018	2019	2020	2021	2022
Drift	17 430 000 SEK	19 048 000 SEK	21 366 270 SEK	18 793 246 SEK	17 947 000 SEK

Tabell 2:1.a Vetenskapsrådets bidrag för drift.

Bidragsperioden, tillika dispositionstiden, för bidraget till drift är 5 år. Bidragsperioden startar den 20180101 och slutar den 20221231.

	2018	2019	2020	2021	2022
Vetenskaplig utrustning					
IT platform	20 000 SEK	120 000 SEK	220 000 SEK	320 000 SEK	380 000 SEK
Software	25 000 SEK				
Totalt	45 000 SEK	145 000 SEK	245 000 SEK	345 000 SEK	405 000 SEK
Upphandlade tjänster					
External support - SUNET	0	300 000 SEK	300 000 SEK	300 000 SEK	300 000 SEK
External support - SNIC	0	0	0	0	500 000 SEK
External support – MAELSTROM	400 000 SEK	400 000 SEK	200 000 SEK	200 000 SEK	100 000 SEK
External support – SND	300 000 SEK	200 000 SEK	200 000 SEK	100 000 SEK	100 000 SEK
Training OG	180 000 SEK	50 000 SEK	50 000 SEK	50 000 SEK	50 000 SEK
Totalt	880 000 SEK	950 000 SEK	750 000 SEK	650 000 SEK	1 050 000 SEK

Tabell 2.1.b Vetenskapsrådets bidrag till vetenskaplig utrustning och upphandlade tjänster.

Det slutliga bidragsbeloppet för vetenskaplig utrustning och upphandlade tjänster fastställs efter den ekonomiska slutredovisningen av bidraget. Om kostnader för vetenskaplig utrustning eller upphandlad tjänst, understiger det av Vetenskapsrådet beviljade bidraget ska outnyttjat bidrag återbetalas till Vetenskapsrådet.

2.2 Medelsförvaltarens åtaganden

Medelsförvaltaren ansvarar för att nödvändiga resurser för att genomföra verksamheten i Bilaga 1 (*Infrastrukturens verksamhet*) ställs till infrastrukturens förfogande och används i enlighet med respektive moduls beskrivning i ansökan samt Rådet för Forskningens Infrastrukturens beslut.

Medelsförvaltaren ansvarar vidare för att:

- det finns avtal mellan alla medlemmar i konsortiet där deras inbördes åtaganden, villkor och annat av betydelse för samarbetet regleras. Avtalet ska vara förenligt med Vetenskapsrådets villkor för bidraget, samt finnas på plats då utbetalning av bidraget påbörjas.
- alla medlemmar i konsortiet uppfyller Vetenskapsrådets villkor för bidraget.
- infrastrukturens verksamhet bedrivs på ett ändamålsenligt och kostnadseffektivt sätt,
- omgående meddela Vetenskapsrådet om verksamheten vid infrastrukturen inte längre kan bedrivas i enlighet med villkoren.

- bidrag till infrastrukturen, från andra än Vetenskapsrådet, inte har villkor eller bindningar som påverkar infrastrukturens objektivitet, oberoende eller tillgänglighet.
- den forskning som stöds av infrastrukturen inte har villkor eller bindningar som påverkar infrastrukturens objektivitet, oberoende eller tillgänglighet.
- verksamheten bedrivs i enlighet med gällande lagstiftning och förordningar samt att nödvändiga tillstånd finns.
- en avvecklingsplan finns. Avvecklingsplanen ska beskriva hur infrastrukturen kommer att hantera en situation när Vetenskapsrådets stöd avvecklas. Planen ska adressera hur tidigare gjorda investeringar, insamlade prover och data o.s.v. ska tillvaratas på ett strukturerat och ändamålsenligt sätt.
- NEAR under bidragsperioden ska ansluta sig till metadataverktyget Register Utiliser Tool, RUT. Samarbetet kommer att initieras av Vetenskapsrådet och regleras i särskild överenskommelse.

2.3 Medlemmar i konsortiet

Följande lärosäten eller institutioner med forskningsansvar ingår i konsortiet för NEAR:

- Karolinska institutet
- Blekinge tekniska högskola
- Göteborgs universitet
- Jönköpings universitet
- Lunds universitet
- Umeå universitet

Om konsortiets sammansättning ändras ska detta meddelas till Vetenskapsrådet, samt ett nytt avtal mellan medlemmarna upprättas. För förändring av konsortiets sammansättning gäller vad som stadgas i 4.2 Bidragsperiod och dispositionsrätt.

2.4 Rapportering av verksamhet

Rapportering till Vetenskapsrådet sker enligt nedan:

- strategisk plan ska inkomma till Vetenskapsrådet senast den 15:e juni 2018
- verksamhetsplan ska inkomma till Vetenskapsrådet senast den 30:e april 2018. Därefter årligen för nästkommande år senast den 15:e november
- verksamhetsberättelse för föregående år ska årligen inkomma till Vetenskapsrådet senast den 15:e april, med start 2019
- nyckeltal för föregående år ska rapporteras årligen till Vetenskapsrådet senast den 15:e april. Nyckeltal rapporteras i mall som tillhandahålls av Vetenskapsrådet
- lista över vetenskapliga publikationer som producerats med hjälp av data från infrastrukturen.

Med strategisk plan avses ett dokument som ska beskriva infrastrukturens planerade verksamhet och utveckling, inklusive större investeringar, under minst en femårsperiod framåt i tiden.

Den strategiska planen ska ange mål och en långsiktig handlingsplan för jämställdhet i användning, styrning och annan verksamhet vid infrastrukturen.

Verksamhetsplanen ska innehålla en plan för att uppnå/bibehålla jämställdhet i användning, styrning och annan verksamhet vid infrastrukturen.

All återrapportering sker enligt instruktioner från Vetenskapsrådet.

2.5 Utvärdering

Vetenskapsrådet kan vid behov genomföra en utvärdering av infrastrukturen under bidragsperioden. Syfte, tidpunkt och former för utvärderingen fastställs av Vetenskapsrådet och meddelas medelsförvaltaren senast två månader innan utvärderingen startar.

2.6 Ange Vetenskapsrådet som finansiär

Vid information om infrastrukturen ska Vetenskapsrådets stöd nämnas. Vid publicering och annan spridning av resultat från forskning som möjliggjorts av infrastrukturen ska detta anges genom att infrastrukturens namn, samt driftsbidragets diarienummer vid Vetenskapsrådets anges. Vid publicering av vetenskapliga originalartiklar ska detta anges under rubriken *Acknowledgements*¹ eller motsvarande rubrik. Denna skyldighet gäller såväl infrastrukturens personal som forskare som använder infrastrukturen.

2.7 Tillgång till infrastrukturen

Infrastrukturen ska vara öppet tillgänglig, vilket innebär att användarna ska beviljas tillgång till infrastrukturen genom en transparent process baserad på vetenskaplig excellens, samt att användarna ska erhålla adekvat stöd för att nyttja infrastrukturen.

2.8 Tillgängliggörande av forskningsdata m.m.

Forskningsdata och mjukvara som tas fram vid infrastrukturen ska göras öppet tillgängliga så snart det är möjligt.

Prover som samlas in vid infrastrukturen ska göras tillgängliga så snart det är möjligt.

3. Ledning och styrning

Medelsförvaltaren ansvarar för att utse en styrgrupp för infrastrukturen, efter samråd med Vetenskapsrådet.

3.1 Styrgruppens sammansättning

Styrgruppen ska vara brett nationellt förankrad samt ha en jämn könsfördelning.

3.2 Styrgruppens uppdrag

Styrgruppen ska:

- besluta i strategiska frågor rörande infrastrukturens verksamhet (inklusive vetenskap, ekonomi och organisation), t.ex. genom att fastställa budget, verksamhetsplan, verksamhetsberättelse, strategisk plan och avvecklingsplan.
- fastställa policyer för infrastrukturens verksamhet, t.ex. för:
 - prioritering av tillgång till infrastrukturen,
 - tillgängliggörande av forskningsdata och mjukvara som tas fram vid/med hjälp av infrastrukturen,
 - tillgängliggörande av prover som samlas in vid infrastrukturen
 - kommersiell användning av resultat som tagits fram vid infrastrukturen.

¹ Exempel på text som kan användas: "We acknowledge INFRASTRUCTURE for provisioning of facilities and experimental support and we would like to thank x, y and z for assistance. INFRASTRUCTURE receives funding through the Swedish Research Council under the grant no xxxx-yyyyy."

4. Finansiella bestämmelser

Andra stycket under avsnitt 3.1, samt hela avsnitt 3.2 i *Vetenskapsrådets generella villkor för bidrag till forskning eller forskningsstödjande verksamhet* ska inte gälla.

4.1 Förvaltning av bidraget

Bidraget får endast användas för drift och vetenskaplig utrustning/upphandlade tjänster i infrastrukturen samt utveckling och test av funktionalitet, vilket ska framgå av Bilagan *Infrastrukturens verksamhet*. Verksamhet som inte framgår av Bilagan *Infrastrukturens verksamhet* kan ingå efter skriftlig överenskommelse med Vetenskapsrådet.

Bidraget får inte användas som finansiering av medverkan i EU-projekt om detta inte särskilt överenskommit. Bidraget får inte heller användas för doktorandlön, utbildningsbidrag, forskarskola, konferensbidrag, forskarutbyte, resebidrag för forskare som använder infrastrukturen, eller liknande.

4.2 Dispositions rätt och bidragsperiod

För att betydande ändringar av bidragets disposition ska tillåtas, t.ex. delvis ändrad inriktning av verksamheten eller organisatoriska förändringar, krävs en skriftlig framställan från medelsförvaltaren till Vetenskapsrådet. Vetenskapsrådet kan efter prövning och inom ramen för beslutet om bidrag bevilja ändringar.

4.2.1 Bidrag för drift

Den del av bidraget som avser driftskostnader betalas ut månadsvis och får endast disponeras under bidragsperioden, tillika dispositionstid (anges under 2.1).

4.2.2 Bidrag till vetenskaplig utrustning och upphandlad tjänst

Utbetalning av bidrag för vetenskaplig utrustning och upphandlade tjänster sker månadsvis och kostnaderna redovisas i slutredovisningen. Det slutliga bidragsbeloppet fastställs efter den ekonomiska slutredovisningen.

Vetenskapsrådet har rätt att följa upphandlingsarbetet. Om upphandlingen inte kan slutföras inom utsatt tid ska en ansökan om förlängd tid för upphandling vara Vetenskapsrådet tillhanda senast en månad innan redovisningstillfället.

Vid inköp av kommersiellt tillgänglig utrustning ska medelsförvaltaren göra ett samlat inköp.

Tullfrihet ska sökas för utrustning som finansieras med bidrag från Vetenskapsrådet.

4.3 Förtida avveckling av bidraget

Avsnitt 4.1.2 i *Vetenskapsrådets generella villkor för bidrag till forskning eller forskningsstödjande verksamhet* ska inte gälla.

Om villkoren för utlysningen enligt utlysningstexten inte längre är uppfyllda kan Vetenskapsrådet besluta om förtida avveckling av bidraget.

4.3.1 Bidrag för drift

Om kostnader för drift, vid tidpunkten för beslut om förtida avveckling av bidraget, understiger det av Vetenskapsrådet beviljade bidraget för drift ska outnyttjat bidrag återbetalas till Vetenskapsrådet.

4.3.2 Bidrag för vetenskaplig utrustning

Om Vetenskapsrådet beslutar om förtida avveckling av bidraget ska pågående upphandling av vetenskaplig utrustning avbrytas och outnyttjat bidrag till vetenskaplig utrustning återbetalas till Vetenskapsrådet.

4.4 Redovisning av bidraget

4.4.1 Bidrag till drift

En ekonomisk redovisning av föregående års bidrag till drift ska årligen inkomma till Vetenskapsrådet senast den 15:e april. Den första redovisningen sker 2019 För detta används den blankett som Vetenskapsrådet tillhandahåller.

En ekonomisk slutredovisning av driftsbidraget sker senast den 15:e april året efter att bidragsperioden avslutats.

4.4.2 Bidrag till vetenskaplig utrustning och upphandlad tjänst

Bidrag till vetenskaplig utrustning och upphandlade tjänster ska redovisas, inklusive kopior på fakturor eller avtal med leverantörer, till Vetenskapsrådet enligt den blankett som Vetenskapsrådet tillhandahåller. Redovisning av bidraget ska inkomma till Vetenskapsrådet senast den 2023-04-15.

Baserat på den ekonomiska slutredovisningen av utrustning fastställs det slutliga bidragsbeloppet.

4.4.3 Revisorsintyg

Om Vetenskapsrådets totala bidrag till infrastrukturens verksamhet under den aktuella bidragsperioden uppgår till fem miljoner kronor eller mer ska ett revisorsintyg från auktoriserad/godkänd revisor bifogas till den årliga ekonomiska redovisningen, samt till den ekonomiska slutredovisningen. Revisorsintyg ska även bifogas från övriga konsortiemedlemmar om de tar emot minst fem miljoner per år av bidraget. Revisorsintyg från internrevisor accepteras.

I revisorsintyg intygar revisor att redovisade kostnader för projektet hämtats ur lärosätets redovisning, att kostnaderna har uppkommit under den bidragsperiod som framgår av beslutet, att kostnaderna är verifierade (styrkta) och att lärosätets redovisningsrutiner är utformade i enlighet med god redovisningssed.

4.5 Återbetalning av outnyttjat bidrag

4.5.1 Återbetalning av outnyttjat bidrag till drift

Om kostnader för drift, i slutredovisningen, understiger det av Vetenskapsrådet beviljade bidraget för drift ska outnyttjat bidrag återbetalas till Vetenskapsrådet.

4.5.2 Återbetalning av outnyttjat bidrag till vetenskaplig utrustning eller upphandlad tjänst

Om kostnader för vetenskaplig utrustning eller upphandlad tjänst, i slutredovisningen, understiger det av Vetenskapsrådet beviljade bidraget ska outnyttjat bidrag återbetalas till Vetenskapsrådet.

5. Byte av medelsförvaltare

Byte av medelsförvaltare kan ske efter beslut av Vetenskapsrådet. Anhållan om att byta medelsförvaltare ska undertecknas av rektor vid medelsförvaltaren, den tilltänkta medelsförvaltaren, samt rektorerna vid alla lärosäten som är medlemmar i konsortiet.

Bilaga 1: Infrastrukturens verksamhet

Infrastrukturens verksamhet är i enlighet med det som finns beskrivet i ansökan, med undantag för följande som endast delvis finansieras:

- Modul 5: 5.7-5.9. ("NEAR coordinator", "NEAR data-use supervisor" samt "Cost for data delivery to the users")
- Modul 6: 6.25 ("Data collection JU")
- Modul 7: 7.1 och 7.3 ("NEAR communicator" samt "Courses and conferences")

Bilaga 2: Nyckeltal för årlig återrapportering av infrastrukturens verksamhet.

Följande nyckeltal ska återrapporteras till Vetenskapsrådet enligt instruktion. Observera att formuleringarna nedan är preliminära och att den exakta ordalydelsen kommer bestämmas innan första återrapporteringsdatumet. Nyckeltal markerade med * ska fördelas inom kategorierna män/kvinnor, nationella/internationella & interna/externa (med avseende på konsortium eller motsvarande), .

- Antal unika användare av infrastrukturen.* */obligatorisk/*
- Antal unika användare per ämnesområden (ange SCB-koder på tresiffernivå). */obligatorisk/*
- Antal anställda vid infrastrukturen fördelat på kvinnor respektive män. *(nationella infrastrukturer)*
- Antal unika användare som är akademiska forskare respektive övriga. */"Övriga" kan delas upp ytterligare i industriella/privata användare, landsting eller annan offentlig verksamhet. /obligatorisk/*
- Antal unika användare per funktionalitet i infrastrukturen. */används vid behov om infrastrukturen tillhandahåller moduler/tjänster med vitt skilda funktioner/tillämbart för NEAR först efter 5 år*
- Antal vetenskapliga artiklar och patent som infrastrukturen bidragit till. */om tillämbart/*
- Antal dataset som tagits fram vid infrastrukturen och som gjorts öppet tillgängliga (inklusive lista med unika identifierare för dataseten). */används vid behov/*
- Antal ansökningar om tillgång till infrastrukturen, samt antal beviljade ansökningar.* */obligatoriskt/*
- Antal ansökningar om prover från infrastrukturen, samt antal utlämningar.* */om tillämbart/*
- Antal ansökningar om dataleverenser från infrastrukturen, samt antal utlämningar.* */om tillämbart/*



Ansökan

Utkast	Karolinska Institutet
Information om projektledare	
Namn: Karin Dahlman-Wright	Dr-examen: 1991-04-25
Födelsedatum: 19611009	Akademisk titel: Professor
Kön: Kvinna	Arbetsgivare: Ingen nuvarande arbetsgivare
Medelsförvaltare: Karolinska Institutet	
Hemvist: NVS (Institutionen för neurobiologi, vårdvetenskap och samhälle)	
Information om ansökan	
Utlysningsnamn: Forskningsinfrastruktur Infrastruktur av nationellt intresse 2017	
Bidragsform: Forskningsinfrastruktur	
Sökt inriktning: Infrastruktur av nationellt intresse	
Ämnesområde utlysning: FI	
Projekttitel (svenska): NEAR: Nationell e-infrastruktur för forskning om åldrande i Sverige	
Projektstart: 2018-01-01	Projektslut: 2025-12-31
Sökt beredningsgrupp: FI-BU	
Klassificeringskod: 30502. Gerontologi, medicinsk/hälsovetenskaplig inriktning (Samhällsvetenskaplig inriktn.under 50999)	
Nyckelord: Aging, Epidemiology, Swedish databases, Prevention, Health	
Sökta medel	
År:	2018 2019 2020 2021 2022 2023 2024 2025
Belopp:	18 354 700 20 142 900 23 559 700 20 344 500 19 401 500 19 378 700 21 370 000 19 974 100

Beskrivande information

Medverkande Organisationer*

The following **six Swedish universities** are participating in the NEAR initiative.

Karolinska Institutet (KI). NEAR is coordinated by KI, one of the most prestigious medical universities in Europe. Aging is one of the profile research areas at KI, and eight databases included in NEAR are located there. Major resources for aging research available at the university are: 1) the Aging Research Center (ARC), established in 2000 as a collaboration between KI and Stockholm University; 2) the Swedish Dementia Registry (SveDem), a national quality register on dementia disorders started in 2007; and 3) the Strategic Research Area in Epidemiology (SfoEpi), supported by VR, an initiative to integrate the unique resources for epidemiological research available in Sweden.

Blekinge Institute of Technology (BTH). One database (SNAC-B) included in NEAR is located at BTH. BTH is among the world's most outstanding higher education institutions within software engineering and sustainable development. Research is conducted in the fields of engineering, IT, spatial planning, industrial economics and health sciences. Distinguishing research areas in health sciences include aging and gero-technology.

Göteborg University (GU). Two databases included in NEAR are located at GU. Several well-known research groups in the field of aging operate at GU, most of them participating in the Center for Aging and Health (AgeCap). AgeCap's ultimate goal is to strengthen older people's ability to make choices that improve their overall well-being and participation in society.

Jönköping University (JU). One database (GENDER) included in NEAR is located at JU, Institute of Gerontology. A valuable resource at JU is the Aging Research Network – Jönköping (ARN-J) that is a multidisciplinary research group that aims to increase knowledge and understanding of aging and the role of older people in society.

Lund University (LU). One database included in NEAR is located at LU. The valuable resources at LU include 1) the Center for Aging and Supportive Environments (CASE), a Forte center of excellence in research on aging that focuses on environments that support health, activity, and participation; 2) the VR-funded Swedish National Graduate School for Competitive Science on Aging and Health (SWEAH) with the goal is to provide a multidisciplinary learning environment; and 3) the SFO Epihealth center of excellence for epidemiological research.

Umeå University (UmU). Two databases included in NEAR are located at UmU, Betula and SHARE. One major resource at UmU is the Center for Demographic and Aging Research (CEDAR). Established in 2015, CEDAR is a multidisciplinary center for research on demographic changes and aging. CEDAR hosts large research programs (including a Linnaeus grant and Forte programs) and various population databases.

Infrastrukturens namn (svenska)*

NEAR: Nationell e-infrastruktur för forskning om åldrande i Sverige

Infrastrukturens namn (engelska)*

NEAR: The National E-infrastructure for Aging Research in Sweden

Abstract (engelska)*

With this application, we seek support to build and run the National E-infrastructure for Aging Research (NEAR) after a 2-year planning phase supported by VR. Initially, we will integrate datasets from 15 major longitudinal, population-based projects on aging located at 6 Swedish universities. NEAR will empower aging research in Sweden and contribute to identifying sustainable intervention strategies for better health and care for older people. Implementation includes 7 modules: 1) organization, management, and policy; 2) building the technical platform; 3) database documentation; 4) data harmonization; 5) access procedures and user support; 6) database update and enrichment; and 7) promoting and expanding NEAR. Each module includes 2-5 specific tasks whose deliverables, staff, and time plan are predefined. The added value of NEAR includes the broad, multidisciplinary research perspective that cannot be achieved with the individual databases; the increased sample size and variation, which enhance representativeness and generalizability; and a critical mass of data that opens new research avenues and supports innovation. The availability of such a large collection of medical and social data and the scientific excellence of the NEAR founders will reinforce the international profile of Swedish aging research, promote new multidisciplinary collaborations, and support the development of a new generation of well-qualified researchers in this expanding field.

Populärvetenskaplig beskrivning (svenska)*

Den demografiska utvecklingen mot en åldrande befolkning utgör en grundläggande förändring som kommer att medföra betydande utmaningar inom en rad olika samhällsfunktioner under 2000-talet. Sverige har idag en av världens äldsta befolkningar. En femtedel är över 65 år och drygt 5 procent är över 80 år. Andelen i riktigt hög ålder ökar i allt snabbare takt och i den åldersgruppen återfinns flest personer med kognitiva och fysiska funktionshinder. En åldrande befolkning leder även till ett ökat antal personer med kroniska sjukdomar, vilket i sin tur ökar behovet av insatser från samhället och familjen. Detta betonar behovet av att kartlägga effektiva och hållbara strategier för att uppnå både ett längre och ett friskare liv. Att identifiera tidigare biomedicinska, sociala och beteendemässiga faktorer för att förstå sambandet med kognitiva och fysiska funktionshinder senare i livet är således av yttersta vikt för att främja en komprimering av sjuklighet och funktionshinder i ett åldrande samhälle.

Sverige har sedan 1970-talet en tradition av att studera åldrandet och hälsa med hjälp av populationsbaserade studier och idag är Sverige internationellt framstående när det gäller bland annat forskning om demenssjukdomar. Den rådande kompetensen inom socialgerontologi, geriatrik, genetik, epidemiologi och folkhälsa tillsammans med tillgången till populationsbaserade studier skapar en högkvalitativ potential för att etablera en nationell infrastruktur för innovativ äldreforskning i Sverige.

Genom det tvååriga planeringsstödet från VR har vi nu möjlighet att ansöka om ekonomiskt stöd för att bygga och driva den *Nationella E-infrastrukturen för äldreforskning* (NEAR). Syftet är att främja och underlätta svensk äldreforskning, öka kvalitét och generaliserbarhet av forskningsresultat samt att intensiviera internationella samarbeten. Inledningsvis är vårt mål att integrera flera nationella longitudinella populationsbaserade projekt om åldrande och hälsa. Följande kriterier ska uppfyllas för att få ingå i infrastrukturen: 1) Studiedesignen ska vara prospektiv och populationsbaserad, 2) studiepopulationens ålder ska i regel vara 50 år och äldre, 3) datainsamlingen ska ha godkänt etiskt beslut från den lokala etikprövningsnämnden och 4) projektets kvalitet ska garanteras genom att uppvisa forskningsresultat som ökar vår förståelse av åldrande, hälsa och vård av äldre personer. Idag är 15 databaser vid sex svenska universitet inkluderade i NEAR. Vår önskan är att inom en snar framtid göra det möjligt för ytterligare databaser att ansluta till NEAR.

NEAR kommer att bestå av sju moduler. 1) Organisation, ledning och policyutveckling 2) byggandet av den tekniska plattformen, 3) dokumentation av data, 4) harmonisering av data, 5) gemensamma regler och verktyg för tillgång till data och användarstöd, 6) uppdatering och komplettering av databaser och 7) förutsättningar för infrastrukturens expansion. För varje modul anger vi tre till fem specifika uppgifter, vad som kommer att levereras, ansvarig personal och tidsplan. NEAR kommer att ledas av en styrgrupp, en operativ grupp samt av ledningen för de lokala databaserna. Ansvariga har till uppgift att bestämma mål och prioriteringar, definiera databasinfrastrukturen, tillhandahålla lösningar för dataharmonisering och dokumentation av tillgänglig data. Infrastrukturens webbsida är aktiv (www.near-aging.se) och ett nyhetsbrev planeras.

NEAR skapar särskilda förutsättningar för nya innovativa forskningsfrågor och tvärvetenskaplig forskning. Ett större studiepopulationsurval förbättrar representativiteten och generaliserbarheten samt bidrar med den datamängd som förutsätts för att stödja innovation. NEAR kommer att vara en rik dataresurs för forskning och utbildning inom äldreområdet som sträcker sig över en mängd vetenskaper såsom bland annat folkhälsa, geriatrisk epidemiologi, gerontologi, neurovetenskap, psykologi, socialt arbete, sociologi och vårdvetenskap. Tillgången till en infrastruktur med högkvalitativa uppgifter om både biomedicinska och sociala faktorer kommer att, tillsammans med den vetenskapliga kompetensen som grundarna av NEAR har, främja tvärvetenskapliga samarbeten och möjliggöra för utbildning och utveckling av en ny generation kvalificerade forskare inom området. Vidare bidrar NEAR till att den svenska äldreforskningens internationella profil och anseende bibehålls och stärks.

Nationell/Internationell infrastruktur*

Medel söks för Nationell infrastruktur (Sverige)

Område/Infrastruktur*

Område: Infrastruktur för forskning som använder sig av individdatabaser inom medicin och samhällsvetenskap
Infrastrukturer inom detta område: Utvärdering Genom Uppföljning, UGU; European social survey, ESS-S and ESS-ERIC; International Social Survey Program, ISSP; The Survey of Health, Ageing and Retirement in Europe, SHARE-S and SHARE-ERIC; Swedish Longitudinal Occupational Survey of Health, SLOSH; Svenska Mammografikohorten, SMC; The longitudinal Swedish national study on ageing and care in Kungsholmen, SNAC-K

Infrastrukturens mål och verksamhet

Redogörelse för etiska överväganden*

We are fully aware that ethical and legal issues are extremely important in the implementation of NEAR, and these issues have been carefully discussed during the planning phase. Ethical and legal issues in the national infrastructure are complex because of the sensitive nature not only of the data itself and data collection, but also of data transfer and sharing among different owners and users in the implementation of NEAR.

The new data protection regulations in academic research in the EU are yet to be implemented nationally. The proposed act suggested in the investigation "Unik kunskap genom registerforskning: SOU 2014:45", currently being processed, is also important for NEAR. These uncertainties mean that not all details regarding legal and ethical aspects of NEAR can be defined at this stage. We will prioritize the development of full policies on a broad range of ethical and legal issues relevant to the national infrastructure as part of NEAR's operational plan (see "NEAR-Description and Operationalization"). This task will be accomplished with the support of the Ethical Advisory Board that will follow all NEAR activities during, at minimum, the first eight years of the e-infrastructure.

At this stage, the following ethical issues related to data collection, integration, linkage, and access have been considered:

First, for a database to be part of NEAR, ethical approval for the original data collection must have been granted by a central or regional ethical review board (Dnrs and all ethical approval documents will be provided at the outset of the project), and informed consent (oral, written, or both) must have been collected from the participants or proxies prior to data collection.

Second, an infrastructure such as NEAR cannot be reviewed in accordance with the Swedish Ethical Review Act (2003:460); only the specific research projects that will be performed using the data in the infrastructure can be reviewed in this way. Thus, additional ethical approval will be requested from the appropriate ethical review boards (*etikprövningsnämnd*) for each internal or external research project that will use NEAR data from the cohorts in the infrastructure.

Third, written data transfer agreements and data collector agreements (*personuppgiftsbiträdesavtal*) will be signed for all appropriate data transfers and sharing.

Fourth, the way we handle sensitive personal data is crucially important not only from ethical and legal perspectives, but also to maintaining and expanding our databases. The sustainability of the cohorts in NEAR relies on people's willingness to participate in the studies, which in turn depends upon the confidence they have in our work. Thus, security measures will be taken to protect personal data. Special attention will be devoted to data transfer and sharing nationally and internationally, and all data will be pseudonymized by removing all identifiable personal information before the data are transferred and released for use. Data from individuals who are deceased will still be handled as "personal data".

Fifth, we will also secure data storage into the overall data security and protection policy. Detailed measures and regulations will be fully discussed and developed.

Finally, all users of the infrastructure data will be required to follow the Ethical Principles for Medical Research Involving Human Subjects developed for the medical community by the World Medical Association (Declaration of Helsinki) and the ethical guidelines of the Swedish Council for Research in the Humanities and Social Sciences: the principles of autonomy and integrity, the rule of consent, and the use of research.

I projektet ingår hantering av persondata

Ja

I projektet ingår djurförsök

Nej

I projektet ingår humanförsök

Nej

NEAR: The National E-infrastructure for Aging Research in Sweden.

Scientific plan

1 PRIMARY PURPOSE AND INCLUDED DATABASES

The primary purpose of our initiative is to build and run a *National E-infrastructure for Aging Research* (NEAR; <http://near-aging.se/>) by integrating the existing databases from 15 major population-based studies on health in aging in Sweden, thus facilitating aging research in Sweden, fostering international collaboration, and enhancing the quality of research and generalizability of research findings. Ultimately, by empowering aging research in Sweden, NEAR will contribute to identifying sustainable intervention strategies that will help us achieve better health and care for older people.

Why an infrastructure on aging research? The demographic transition toward an older population in the past half century poses tremendous long-term societal challenges in Sweden and globally. Sweden has one of the highest proportions of older people in the world: about one-fifth of our population is 65 years or older, and the oldest-old (age 85+) are the fastest growing segment of the population. Although we now live longer and healthier lives, the aging of the population is leading to an increasing number of people with chronic disorders and functional dependence, which greatly impacts families and societies. Understanding how social, biomedical, and behavioral factors relate to later-life health conditions is of utmost relevance when we aim to compress disability and morbidity into a short period toward the end of life. Such compression is crucial not only for individuals but also to reduce the economic and societal burden of late-life disability and morbidity.

Beginning as early as the 1970s, several population-based studies on health and aging were implemented in Sweden. Indeed, Sweden has a long tradition of community-based studies on aging and mental health and is one of the leaders in the research field of dementia and other mental disorders in older people worldwide. Sweden's high level of competence in social gerontology, geriatric epidemiology, public health, and other aging-related disciplines, together with the availability of numerous population-based studies, provides the ideal basis for establishing a national infrastructure like NEAR.

1.1 Databases included in NEAR (<http://near-aging.se/Databases.html>).

At the moment, NEAR consists of 15 databases, including three databases already supported by VR as national infrastructures (Table 1). All databases share the following characteristics:

- Data are derived from population-based longitudinal projects, well known nationally and internationally, which include more than 180,000 people over age 50;
- Participants are older adults who have been assessed by direct interview or/and clinical examination and followed up a minimum of seven years to a maximum of 40 years;
- All projects have received ethical approval at each phase of assessment as described in detail in the attachment on ethical considerations;
- The extraordinary number of studies (more than 500) derived from the databases have already generated relevant knowledge on health and health care in aging.

NEAR will be a **dynamic infrastructure** for the following reasons:

- It is based on ongoing exchanges with the local databases and with the external users;
- It will be constantly developed, as it is designed to be project-driven; and
- It will be enriched in the future by a) collection of new data in the ongoing included projects, b) incorporation of more datasets from other longitudinal studies, and c) linkage with registers such as clinical quality registers (SveDem, SeniorAlert), hospital-based registers (GEDOC), or national registers (the Swedish Prescribed Drug Register).

Table 1. Databases from the 15 population-based longitudinal studies included in NEAR

PI	Description
L Nyberg Umeå University	<i>Betula Project</i> (http://www.org.umu.se/betula/) aims to trace memory changes during adult life and old age (30+ years) and identify risk factors for cognitive decline and early preclinical signs of dementia. It started in 1988 with participants from Umeå, northern Sweden, who were examined every 5 years on 6 occasions [1]. N=4445; follow-up=30 years
G Malmberg Umeå University	<i>Survey of Health, Ageing and Retirement in Europe-Sweden (SHARE)</i> (www.share-project.org) aims to analyze the interplay between economic, health, and social factors in shaping older people's living conditions and health. Longitudinal surveys of 110,000 people aged 50+ from 21 European countries [2]. In Sweden, it included 3053 people followed up for 12 years .
L Fratiglioni Karolinska Institutet	<i>Kungsholmen Project (KP)</i> (www.kungsholmenproject.se) focused on the development and social consequences of dementing disorders. All registered inhabitants aged 75+ in Kungsholmen, Stockholm, were examined at baseline (1987-1989) and re-examined every 3 years until 2000 [3]. N=1810; follow-up=13 years
L Fratiglioni & A Wimo Karolinska Institutet	<i>Swedish National study on Aging and Care in Kungsholmen (SNAC-K)</i> (www.snac-k.se) & <i>Swedish National study on Aging and Care in Nordanstig (SNAC-N)</i> (www.snacnordanstig.se). Kungsholmen and Nordanstig are two of the 4 centers included in a national project to improve health and care of adults 60+ years. They started 2001-2004 with medical, psychological, and social assessment of the participants who were followed with same protocol every 3-6 years [4]. N=~4500 and 766; follow-up=16 years
Lennartsson & J Fritzell Karolinska Institutet	<i>Swedish Panel Study of Living Conditions of the Oldest Old (SWEOLD)</i> (www.sweold.se/start.htm) aims to investigate the impact of early and midlife factors on late-life health. Surveys on national samples in 1992, 2002, 2004, 2011, and 2014 included a variety of living conditions and health indicators. Linkage with the Swedish Level of Living Survey provides over 45 years of longitudinal data [5]. N=~3700; follow-up=over 40 years
NL Pedersen Karolinska Institutet	<i>Screening Across the Lifespan of Twins (SALT)</i> (http://ki.se/en/research/the-swedish-twin-registry) & <i>Swedish Adoption/Twin Study of Aging (SATSA)</i> (www.maelstrom-research.org/mica/study/satsa). Both aim to study the origins of individual differences in aging, including environmental and genetic factors. <i>SALT</i> includes ~45,000 twins aged 40+ identified via the Swedish Twin Registry, screened 1998-2002 and followed up in 2005-2008. <i>SATSA</i> includes 2018 twins aged 50+ followed every 3 years since 1984 [6].
A Wolk Karolinska Institutet	<i>Swedish Mammography Cohort study (SMC)</i> (http://ki.se/en/imm/unit-of-nutritional-epidemiology): a female cohort aged 40+ (n=~61,400) started in 1987 in central Sweden and followed in 1997 & 2008. <i>Cohort of Swedish Men study (COSM)</i> : a male cohort aged 55+ (~50000) started in 1997 in central Sweden and followed in 2008. SMC and COSM aim to study the association between lifestyle, genetic factors, morbidity, and mortality in middle-aged and elderly people [7].
B Johansson Göteborg University	<i>Origins of variance in the Old-Old (OCTO-Twin)</i> (http://ki.se/en/meb/octo-twin) aims to explore genetic and environmental bases of heterogeneity in the oldest-old. 351 twin pairs aged 79-98 from the Swedish Twin Registry, were clinically assessed on 5 occasions at 2-year intervals from 1991-1994 to 1999-2002 [8]. Follow-up=10 years
I Skoog Göteborg University	<i>Gothenburg Population Studies</i> (http://agecap.gu.se/english/research) aim to explore interplay between genetic, biological, and psychosocial factors and their influence on mental health in old age. The cohorts are representative of older populations from young-old to oldest-old (H70, H85, H95+) in Gothenburg [9]. N=~2400; follow-up=40+ years
AD Aslan Jönköping University	<i>Gender Differences in Health Behaviour and Health among Elderly (GENDER)</i> (www.maelstrom-research.org/mica/study/gender) aims to study the origins of individual differences of unlike-sex twin pairs in the aging process. 249 unlike-sex twin pairs born in 1906-1925 in Sweden were evaluated in 1995-1997, followed by two additional in-person waves at 4-year intervals [10].
J Berglund Blekinge I. Technology	<i>Swedish National study on Aging and Care in Blekinge (SNAC-B)</i> (http://tblekinge.se/snac). Blekinge is one of the 4 centers included in the national SNAC project started 2001-2004 in southern Sweden [4]. N=1402; follow-up=16 years
S Elmståhl Lund University	<i>Swedish National study on Aging and Care in Skåne (SNAC-S)</i> (www.med.lu.se/klinvetmalm/geriatrik/gott_aaldrande_i_skaane). Skåne is one of the 4 centers included in SNAC. SNAC-S started 2001-2004 in southern Sweden [4]. N=2391; follow-up=16 years

2 AGING RESEARCH: STATUS OF THE FIELD AND FUTURE CHALLENGES

Aging is a life-long process of progressive changes. The functional capacity of biological system peaks in early adulthood and then progressively declines, but strong evidence indicates that health and functioning status in older people are largely determined by lifelong exposures and actions. Decades of research, including studies using the NEAR databases (Table 2), have led to three major contributions that also represent the **three major challenges** of the field in the coming decades. With NEAR, we can address these challenges with high-quality data of unique depth and breadth.

Table 2. Major scientific contributions from the participating databases

<p><i>Betula Project</i>: This longitudinal project revealed a markedly later onset of age-related memory change than that suggested by cross-sectional data. It also demonstrated great heterogeneity in memory-aging profiles and linked such variability to genetic, lifestyle, and brain characteristics [1, 11].</p> <p><i>Gothenburg Population Studies (H70, H85 and H95+)</i>: These studies provided pioneering evidence linking vascular risk factors to vascular dementia and Alzheimer's disease. A further novel contribution is a better understanding of the role of midlife factors (obesity, hypertension, and high cholesterol) in late-life health conditions such as stroke, dementia, and depression [9, 12].</p> <p><i>KP</i>: This project uncovered the relevance of psychosocial factors in dementia, showing that a socially, physically, and mentally active lifestyle together with low vascular burden partly counteracts the genetic risk for dementia. These factors prolonged life by 5 years in people aged 75+ and protected people from multimorbidity and disability [3, 13].</p> <p><i>OCTO-Twin Study</i>: This project has shown the relevance of preserved cognitive function for survival, well-being, and physical capacity in the old-old (age 80+). Although the effect of genetic background is strong, even identical twins age differently [14].</p> <p><i>SALT</i>: The project is one of the few in the world that could quantify the genetic and environmental influences in 1) common chronic disorders of older people and 2) individual changes in physical and cognitive functioning through the lifespan. SALT also made pioneering contributions on the relevance of diabetes and inflammation in neurodegeneration [15].</p> <p><i>SATSA</i>: Data from this dataset have greatly contributed to our understanding of how genetic and environmental factors work together to influence physical and mental health [16].</p> <p><i>SHARE-Sweden</i>: This project has explored the consequences of different welfare regimes on aging, the role of informal and formal care across Europe, feelings of loneliness in different European regions, and impact of physical activities on depression in older people [2].</p> <p><i>SMC and COSM</i>: The greatest contributions of COSM and SMC have been in the field of nutrition and cancer, especially breast and prostate cancer. As the cohorts aged, we are able to investigate physical activity and diet in relation to health and survival of older people [7, 17].</p> <p><i>SNAC</i>: SNAC-K showed that dementia incidence and disability have declined in the last 2 decades. SNAC-B revealed the importance of dental health in older people and its relationship with cognition. SNAC-S showed the need for different cut-offs in several biological tests in 70+ old people. The estimated costs of formal and informal care of people with dementia from SNAC-N have been used by WHO and the Swedish National Board of Health and Welfare. Finally, several studies from SNAC-K and SNAC-N have shown the extent of inappropriate drug use and inequalities in drug treatment related to socioeconomic status in older adults [18, 19].</p> <p><i>SWEOLD</i>: Studies with SWEOLD have shed light on 1) the relevance of living conditions and family connections to well-being and healthy aging and 2) health inequality in older people by gender, education, and socioeconomic position in Sweden. Research on health trends and midlife determinants has underlined the need for using multiple health indicators and a life-course approach [5, 20].</p>
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Challenge 1: Health in aging is a complex, multidimensional, dynamic process.

Developing a disease may greatly affect health of older people, but measures of morbidity alone are insufficient to capture the complexity of health; functioning must also be taken into account. Rather than absence of diseases, health is a state of social, physical, and psychological well-being that allows people to live actively in accordance with their needs and preferences. However, our current knowledge about health in aging concerns only single dimensions of health and interpersonal differences confound our understanding of intrapersonal changes. Little is known about variations in individual health. Health trajectories can significantly complement the conventional measures of health outcomes by providing information related to how health evolves over time. *NEAR has the potential to fill this gap.*

Challenge 2: Multidomain determinants of health in aging. Poor health is not a necessary consequence of surviving to older age. A number of contextual, biographical, and biological drivers lead to important variations in older people's health trajectories, such as exercise, nutrition, social engagement and support, stress levels, occupation experiences, and allostatic mediators. Strong evidence supports the hypothesis that single or aggregated determinants from biomedical, environmental (social and physical) and psychological domains impact health in old age, but we still lack evidence on the interplay among the domains. *NEAR provides a unique opportunity to explore health of the older people in relation to various determinants, their interaction and changes with time.*

Challenge 3: Lifelong experiences and trajectories. We have ample evidence that as we age, our health status and risks for diseases are the outcomes of different life events starting at gestation and involving other life periods such childhood, adolescence, and adulthood. The life course approach has become mainstream in social sciences and epidemiology, but robust knowledge on the interrelationships between social and biological factors over the life course is still largely wanting. *NEAR has the potential to provide major contributions to this topic.*

3 NEAR: NATIONAL INTEREST AND ADDED VALUE

NEAR fulfills the 6 criteria established by VR to define an infrastructure of national interest:

- Be of broad national interest. Sweden has one of the oldest populations in the world, which underscores the urgent need for investing in aging research. NEAR will focus on aging, health, and care to identify intervention strategies for living longer and healthier lives.
- Provide conditions for world-leading aging research. A multidisciplinary perspective is needed in aging research. By harmonizing 15 datasets from medical and social fields, NEAR will include information on social gerontology, public health, biomedicine, and care science. The availability of multidisciplinary data in such a large population makes NEAR unique.
- Be exploited by several research teams or by users involved in high-quality research projects. Our current experience from the individual databases suggests that NEAR will be used by national and international researchers, health care professionals, government agencies, the industrial sector, and international organizations, as the infrastructure can provide unique information for aging research, policy and development, and innovation.
- Be of a large sample size and national coverage of older populations that make it impossible for individual research teams to manage. NEAR includes older populations from almost all parts of Sweden. The large sample size allows carrying out subgroup analyses, provides nationally representative data, and supports methods development.
- Be subject to a long-term plan. Long-term planning includes continuous expansion by adding new data collected in the individual databases, including additional databases, linking NEAR with various registers, and interacting with related international

infrastructures. We will be able to trace societal changes, time trends, and generational differences in health conditions in older population.

- Be open and easily accessible to researchers, industry, and other users, and be subject to an accessibility plan. It is in our interest to make NEAR available to researchers and other users once the infrastructure is established and we will develop detailed policy regarding accessibility, rules, and procedures for using NEAR. We aim to find solutions to facilitate and guarantee open access for all users while taking the ethical and legal aspects of sensitive personal data into account.

3.1 Added value

- The infrastructure will allow researchers from multiple disciplines, including social gerontology, biomedicine, public health, epidemiology, psychology, health economics, and care science to study a broad range of issues related to health in aging. This broad range of data cannot otherwise be provided by any of the individual databases.
- NEAR will promote not only data sharing, but most importantly, the sharing of different competences from medical, psychological, and social fields. This will be crucial to developing a new generation of highly and uniquely qualified researchers and to creating multidisciplinary networks.
- Specific research questions (e.g., on the societal burden and time trends of diseases, health determinants, and health care-related issues) can be addressed in nationally representative samples, and the generalizability of findings will be greatly improved.
- The inclusion of databases such as SHARE provides the opportunity to compare findings in European countries with different institutional and socio-cultural contexts.
- NEAR will benefit aging research by substantially increasing sample size and statistical power. Sample size and power are major limitations of most studies on individual-based care or gene-environment interactions for various health outcomes in old age.
- Along with the increased power, NEAR's nationwide coverage will allow researchers to capture the diversity of health in older adults in Sweden with regard to gender, education, socioeconomic position, living areas, living conditions, and earlier life events.
- Access to multidisciplinary data will make the field of aging research more attractive not only to researchers already working in the field, but also to clinical and basic scientists. In Sweden, only a limited number of basic scientists now work in aging research.
- NEAR will strengthen individual research groups' ability to find international collaborators and to recruit students and researchers from abroad.
- By ensuring the future development of aging research in Sweden and providing a critical mass of data, NEAR will further consolidate Sweden's leading international position in the research area of aging, health, and care.

4 SCIENTIFIC OBJECTIVES AND PLANNED PROJECTS

Our **vision** is that NEAR will provide important contributions to our understanding of social, biomedical, and psychological aspects of the aging process in relation to people's social and physical contexts across the entire lifespan. We can achieve this goal by coordinating the existing research on aging, health, and social care at the national level; integrating the databases already available in the various geographic areas and disciplines; and facilitating the use of such integrated, multidisciplinary information through the improved access provided by the new national infrastructure NEAR.

Scientific objectives. At least 5 scientific objectives can be achieved in NEAR's first 8 years:

1. Provide high-quality database resources for investigating determinants, pathways, and underlying biological mechanisms of common diseases (e.g., cardiovascular disease,

- stroke, and dementia) and health conditions (e.g., multimorbidity, frailty, cognitive decline, and functional dependence) in older people;
2. Provide high-quality database resources for investigating public health-related issues in aging, such as national burdens and time trends of common diseases and health conditions;
 3. Provide data for assessing and planning health care for older people by encouraging linkage to other registries;
 4. Provide scientific evidence to design intervention strategies to improve health, medical, and social care and quality of life for older people; and
 5. Provide reliable data for addressing issues of social inequality in aging and health.

4.1 Five research projects

In line with the five objectives, we have identified five research projects for which NEAR can provide the necessary data starting in year 3:

Project I: Exploring health trajectories in aging to better identify people at higher risk of severe negative outcomes and care services utilization. To achieve not only longer but also healthier lives, we need to assess individuals' health holistically going beyond the simple absence of diseases and trace their trajectories of health and functioning. NEAR will give us the opportunity to 1) include clinical diagnoses, physical and cognitive dysfunction, and disability and 2) monitor health changes at the individual level. Deterioration in older people's health may follow different trajectories from first biological changes to disease onset, functional loss, disability, and ultimately, death. The integration of several datasets will give us the opportunity to identify new pathways to healthier lives in old age.

Project II: The complex interrelationship between psychiatric and neurodegenerative disorders in older adults. Neuropsychiatric disorders are common in older adults, yet their effects on aging-related disorders are not well understood. Both sleep disturbance and depression could be risk factors for or early symptoms of cognitive decline and dementia or may interact with genetic factors (e.g., *APOE*) to prompt clinical expression of neurodegenerative disorders. NEAR will provide rich information on sleep and depression along with repeated measures of cognition and rigorous diagnosis of dementia over a long follow-up period. The enhanced power of the combined datasets will give us the ability to investigate how depression and sleep disturbances are related to dementia subtypes (even less common ones), and whether these psychiatric conditions are potential surrogate markers for preclinical stages of neurodegenerative diseases.

Project III: Not only in the genes. Gene-environment interplay explains why older adults age differently. Healthy behaviors and stimulating lifestyles may counteract the deleterious effects of genetic susceptibility and aging-related brain lesions. People with high brain reserve due to lifelong exposure to several protective factors have lower risk of cognitive decline and dementia than those with lower brain reserve despite similar levels of vascular and amyloid burden. Similarly, genetic vulnerabilities interact with a variety of environmental exposures to contribute to individual differences in aging. With NEAR, we can 1) explore how physical and mental health is affected by the interplay of genes and environment, 2) identify genetic vulnerabilities whose detrimental effects are preventable when combined with a particular environmental exposure, and 3) identify those who may potentially benefit from intervention.

Project IV: Identification of neuroimaging biomarkers in brain aging. The brain-maintenance theory states that relative lack of brain pathology is the primary determinant of successful memory aging. Brain maintenance can be measured at different "levels", including the integrity of brain grey and white matter with magnetic resonance imaging (MRI). Several databases in NEAR include detailed measures of memory and MRI, which offers a unique opportunity to test key predictors of the brain-maintenance theory and many other questions

on the relationship between brain integrity and cognitive function. The increased power provided by NEAR enables us to explore the role of genes and lifestyles.

Project V: Life course dynamics leading to social inequalities in health at old age.

Inequalities in health between older people of different socioeconomic position (e.g., education, occupation, and income) are large and often grow over time. Differences in disability-free life expectancy are even larger than differences in life expectancy. Although such disparities are found in almost all countries, an intriguing question is the extent to which welfare policies influence these differences. Thanks to the inclusion of SHARE in NEAR, we will be able to carry out cross-cultural studies on older adults in Europe, relating health conditions to socioeconomic status and welfare policies. Finally, NEAR will not only examine how events and social circumstances over the life course are interrelated and lead to health inequalities in old age, but also specifically focus on social-biological transitions.

5 POTENTIAL USERS

We will develop full policies for sharing NEAR data with internal and external users while taking into account not only quality of the proposals but also ethical and legal issues due to the presence of sensitive personal data in our datasets (see attachment “*NEAR: Description and Operationalization*”). NEAR will be a unique data resource for numerous academic and non-academic users from Sweden and abroad. We expect the following users:

- *National users.* NEAR can be used by researchers to investigate medical and social issues related to aging, by students for their master’s and PhD projects, by industrial actors for designing and developing medical and health care devices, and by health and social care organizations for planning and improving care services.
- *International users.* In Europe, NEAR can be a useful resource for graduate programs such as the summer school on epidemiological methods organized annually by Harvard University and KI. Furthermore, several participating datasets are already included in international multicenter studies or consortia (see “*NEAR: Description and Operationalization*”). NEAR will further support and facilitate these international exchanges. Finally, researchers and health professionals from North America and the Asia-Pacific region (Japan, China, and Australia) have already expressed interest in Swedish aging data for cross-cultural comparisons.
- *Government agencies.* National data are critically important for assessing and monitoring the health and care needs of the older population. NEAR can be used to guide resource allocation, plan the organization of health care, develop public health policies, and optimize health care and social services.
- *International organizations.* International professional organizations such as WHO, the World Stroke Organization, and Alzheimer’s Disease International will also be interested in using NEAR to help develop global policies and guidelines.
- *Industry and other private organizations.* Several actors in the private sector, both non-profit organizations and businesses, are becoming increasingly interested in aging. The information available in NEAR will help them develop new services (social innovation) and products that can help older people achieve healthier lives.

5.1 Expected number of users and their research fields

It is difficult to estimate an exact number of future users of NEAR. On the basis of the current situation, we anticipate that researchers from multiple research fields will take advantage of the infrastructure: public health and epidemiology, gerontology, geriatric medicine, social science, psychology, care science, neuroscience, and genetics. One way to estimate the number of potential users is via the use of the databases included in NEAR. They are currently used by various groups for research, education, and policy development and by

international partners as part of national and international consortia. The databases are involved in over 20 international consortia, and used by ~100 academic institutions, and ~20 non-academic institutions.

6 RELEVANCE IN THE SHORT AND LONG TERM

Scientific relevance. The outstanding scientific track records of the participating PIs guarantee that the new infrastructure will be of high scientific caliber. Their diverse backgrounds provide the multidisciplinary perspective needed to ensure integrated research and high-impact findings. From a public health perspective, NEAR will contribute to identifying strategies to delay the onset of chronic conditions (e.g., multimorbidity, dementia, and disability) and mitigate their consequences. It has the potential to identify biological markers for early detection of diseases common among older adults, which can lead to early intervention and effective treatments. From a clinical point of view, research using NEAR will provide evidence to improve current guidelines for clinical practice. From a social care perspective, research derived from NEAR will facilitate the development of person-centered care and the integration of medical and social care services.

Significance for the scientific field in the long term. The scientific relevance of NEAR will increase as data from new follow-ups of the participating cohorts as well as new cohorts are added. Also, data harmonization will enhance the quality, accessibility, and usefulness of the data, which will lead to new research avenues, new analytical approaches, and innovative findings. The sample size in NEAR will be large enough to incentivize and facilitate the development of new methods for data collection using modern IT applications.

Societal relevance. WHO and the G8 industrialized nations have identified dementia and disability as a global public health priority. In line with their recommendations, NEAR seeks to identify intervention strategies to delay onset and progression of these disorders to help reduce their societal burden. In addition, NEAR will enable us to quantify the future economic and societal burden of age-related disorders and provide evidence for policymakers to better allocate resources and optimize care.

Relevance for national and international innovation. NEAR has great potential to contribute to innovation by enhancing our knowledge and its implementation in the public health, clinical, and private sectors. It can contribute to social innovation by providing scientific evidence regarding the integrated delivery of care services. NEAR will give us the opportunity to develop new biomarkers and treatments for specific diseases that can lead to clinically relevant innovations. Additionally, NEAR can be used to develop and validate specific applications to predict and monitor not only disorders such as dementia and multimorbidity but also drug treatments. These web-based tools can be used by patients, thus enhancing people's participation in health care, from prevention to long-term care and rehabilitation.

Contribution to competence development. The NEAR co-founders are all well-known researchers in the field of aging who come from different backgrounds and are active at six major universities in Sweden. This diversity provides the inspiring and interactive environment necessary to generate novel contributions and stimulate future research. NEAR will provide a platform for scientific exchange and communication among PhD students, postdocs, and junior researchers, and thus help educate and train younger generations of aging researchers in Sweden. Via their collaboration with the National Graduate School for Aging Research (SWEAH) at Lund University (already supported by VR), the NEAR co-founders will develop a plan for using the infrastructure in education.

7 REFERENCES. SEE ATTACHED FILE-KEY REFERENCES

NEAR: The National E-infrastructure for Aging Research in Sweden

Description and operationalization

As reported in the scientific plan, our ultimate goal is to improve the health, care, and well-being of older people by optimizing a national integration of the major Swedish longitudinal, population-based projects on the health and care of older people. The new *National E-infrastructure for Aging Research* (NEAR) will initially include 15 databases derived from longitudinal cohort studies in different geographical areas in Sweden and currently available at six universities. NEAR will facilitate the use of this existing large-scale collection of medical and social data by improving access and harmonizing the data. This in turn will enhance the quality and generalizability of aging research in Sweden, promote new national and international collaboration, reinforce the international profile of Swedish aging research, and support the development of a new generation of qualified researchers.

To achieve these aims, we propose the 8-year plan described in the following seven modules:

Module 1. Creating an organization that will efficiently steer NEAR and ensure the direct participation of all the databases involved.

Module 2. Building a national database with a dynamic design and an architecture that ensures data quality by preserving the autonomy and independence of the local projects. An electronic platform will run the network interface to receive queries, aggregate and distribute data, and maintain centralized logs of NEAR usage.

Module 3. Documenting the baseline and follow-up information collected in the 15 projects, including data collection procedures, coding, and cleaning.

Module 4. Harmonizing data from the 15 datasets, which cover multidimensional medical, biological, social, and environmental information.

Module 5. Facilitating access to and pooling of the population-based datasets, which will increase the number of national and international users. This also includes helping users conduct meta-analyses or other integrated methods when harmonization is problematic.

Module 6. Maintaining and complementing the databases with follow-up data and enriching the existing databases by collecting new data.

Module 7. Expanding NEAR by linking it to other registers, including other Swedish population-based projects, and participating in international consortia.

1 ORGANIZATION AND LEADERSHIP

NEAR is located at the Aging Research Center (ARC), NVS department, Karolinska Institutet (KI). NEAR is led by a **Steering Board** (SB) appointed by the six members of the consortium (KI; the universities of Umeå, Jönköping, Gothenburg, and Lund; and the Blekinge Institute of Technology). All the activities will be carried out by the **Operational Group** (OG) in collaboration with the local NEAR databases (Figure 1).

The SB includes one representative for each of the NEAR databases: L Fratiglioni (chair); J Fritzell, N Pedersen, A Wolk, and A Wimo from KI; G Malmberg and L Nyberg from Umeå University; AD Aslan from Jönköping University; I Skoog and B Johansson from Gothenburg University; S Elmståhl from Lund University; and JS Berglund from the Blekinge Institute of Technology. The SB will determine NEAR policies and guarantee that the infrastructure is developed and run in line with the goals and values expressed in the application. The SB will establish the OG, whose members will be appointed by KI following the standard recruitment process. The SB will support the OG, which will implement NEAR policies and assist in reviewing user applications in case of controversy.

The **Advisory Boards** (ABs) include a) a **Societal AB** that will oversee the development, implementation, and evaluation of NEAR activities with regard to societal needs; b) a

Scientific AB that will help the SB formulate its scientific and strategic organization to ensure high quality research and facilitate, expand, and reinforce the international profile of NEAR; and c) an **Ethical AB** that will help the SB fulfill ethical requirements. The SB will appoint the members of the ABs. The ABs and SB will meet biennially.

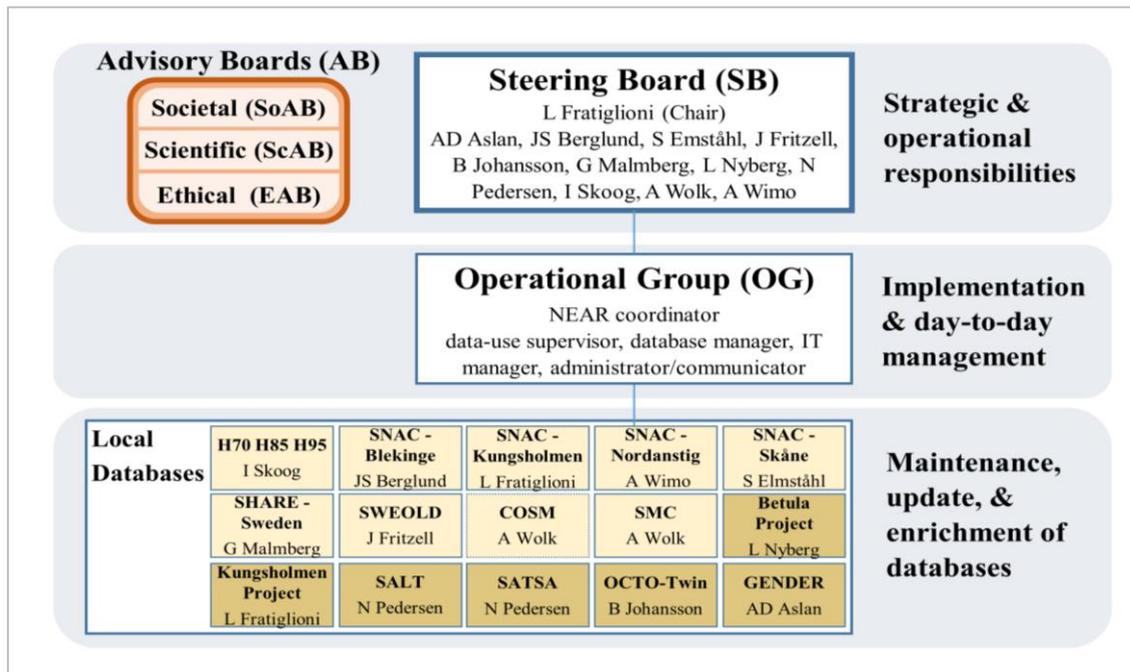


Figure 1. Organizational structure of NEAR. Local databases: for abbreviations see Table 1 in the *Scientific Plan*. Darker color indicates those projects whose follow-up is completed.

The OG will support the SB by establishing objectives, allocating resources, and developing the strategies and policies needed to start and run NEAR. The OG will also implement the policies formulated by the SB. The OG consists of:

- A coordinator (70% the first 4 years, then 50%) who organizes the OG's activities, communication between the SB and the OG, and communication between the OG and the local database managers. During the 2016-17 coordination phase, G Santoni, who has a background in engineering and is a PhD student at ARC, has acted as coordinator;
- A data-use supervisor (D Rizzuto, PhD in aging research; 50% the first 4 years, then 30%), in charge of developing the user policy for NEAR (to be approved by the SB). She will support the coordinator in finalizing documentation of the databases (Module 3) and initial harmonization (Module 4). When NEAR is established, she will review the quality, feasibility, and ethics of the projects submitted by NEAR users and obtain permission from the local databases to provide data as requested by the users;
- An information technology (IT) manager (100%), who will implement the e-infrastructure and the data access. The IT manager will be responsible for all the IT needs;
- A database manager (100%) who supports the local databases that do not have a database manager and interacts with the other local database managers to finalize documentation and harmonization;
- A communicator (100%) who develops and updates the NEAR web interface; writes reports on NEAR activities; and organizes meetings, workshops, and educational events to facilitate the use and expansion of NEAR.

Local databases. The principal investigator (PI) of each longitudinal project, together with their database managers, will be responsible for maintaining, upgrading, and enriching the databases with the same high quality of documentation and data collection undertaken prior to

the creation of NEAR. Three of the 15 Swedish databases included in NEAR belong to infrastructures already selected by the Swedish Research Council (VR) as infrastructures of national interest (SHARE-Sweden, SMC, and SNAC-K). The local databases included in NEAR are shown in Figure 1 and briefly described in Table 1 in the *Scientific Plan*.

2 PLANNED ACTIVITIES

The planned activities will achieve the major objectives of NEAR, integrating the local databases in an efficient way while retaining their strength and data quality. The added value of NEAR is described in the *Scientific Plan*.

Overview

The main frame of NEAR architecture (Figure 2) is designed to meet the following requirements: 1) maintain high data quality by creating a dynamic database architecture in which the original data remain at the local centers where they have been and will be collected; 2) create a single network portal to receive and distribute queries, aggregate and distribute data, and maintain centralized logs of users; and 3) promote NEAR by increasing the number of national and international users.

The OG will coordinate the interface between NEAR databases and the users. The primary data will be stored in the local databases and pooled by the OG database manager only after request and local database approval. The amount of extra memory allocation needed in NEAR will be limited and depend on the number of user requests, as the data are kept centrally only for harmonization. Copies of the harmonization algorithm will be stored centrally.

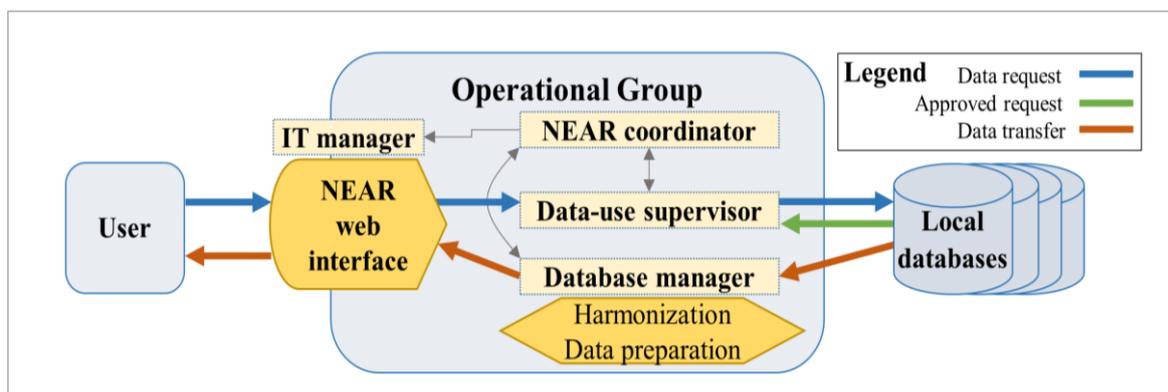


Figure 2. Architecture of the NEAR e-infrastructure.

Figure 2 shows the procedure for obtaining data from NEAR, which includes the following steps: 1) The user **selects** the variables from the e-codebook on the NEAR web interface. Users will be able to sort variables by subject, study type, and other categories and to select the list of variables needed. They will be able to select variables pertaining to a specific subpopulation (i.e., people living in the community). The list of selected variables is temporarily stored on the website. 2) The user **requests** the data (blue arrow in Figure 2) by entering information about co-applicants and their affiliations, research project title, ethical permission details, and research plan. 3) The data-use supervisor **reviews** the request to verify that the application is complete, relevant, feasible, and ethical. 4) The PIs of the local databases **approve** the request (green arrow in Figure 2). 5) The database manager **creates** a specific dataset that includes the variables from the local databases (red arrow). 6) The variables are **harmonized** by the NEAR coordinator and database manager (if not previously harmonized). 7) The user **accesses** the final dataset via data transfer or remote use (red arrow in Figure 2). The user can track the status of his/her request throughout the process.

To increase the number of NEAR users, the OG will further develop NEAR's existing website (www.near-aging.se). All information the external users need will be posted on the website,

including a) organizational structure and financial supporters of NEAR, b) description of the longitudinal projects included in NEAR with links to their websites, and c) an interactive e-codebook, where information about the variables is presented in the simplest possible configuration and additional information is available through expandable menus.

Use policy

It is our policy and in our interest to make the NEAR database available to all researchers once data collection and processing are concluded. The data are open to other users, too, if ethical and legal requirements are fulfilled. Users can be from Sweden or from abroad.

Availability of data. The SB will write a policy that will be available on our homepage (www.near-aging.se). The policy will take into account the purpose of the data request (scientific, public health, innovation), the qualifications of the user, the quality and feasibility of the research plan, and approval by a Swedish ethical committee.

User support. Potential users will receive up-to-date information about NEAR.

- The NEAR **Newsletter** will target mainly researchers, geriatricians, and clinical staff working with older people as well as policy makers at the municipal and county levels. The newsletter will report new developments and most relevant findings derived from NEAR;
- NEAR **Workshops** will provide an open forum to which all centers and NEAR users will be invited to present results and discuss methods related to longitudinal population-based studies. The groups will also discuss pertinent topics such as previous data collection, methods of achieving high participation, and their experiences as NEAR users;
- The NEAR **homepage** will provide information to the scientific community. Here, researchers, external collaborators, and current and potential users can easily find information on NEAR data (cohorts included in the e-infrastructure, codebooks, and the variable list) and use policy. The forms (available in English and Swedish) needed to apply for data will be available on the homepage, as will a list of articles in scientific journals, book chapters, and public health documents based on NEAR data;
- **Training and user support.** The OG will support and guide the users throughout the whole process of data pooling. Once a year, the OG will organize a **NEAR Day** for users to optimize the use of the infrastructure.

Collaboration with other large database infrastructures

All local databases already collaborate extensively with national and international consortia. NEAR will take advantage of the existing networks to open new collaborations beneficial to all members of the consortia. Below is a selection of current collaborations between one or more NEAR databases and other large infrastructures.

National level

- SHARE-Sweden, SMC, and SNAC-K, three of the databases in NEAR, are already supported by VR as infrastructures of national relevance. This means that NEAR is an initiative devoted to integrating highly relevant infrastructures;
- SALT, SATSA, OCTO-TWIN, and GENDER, four other databases included in NEAR, derive from the National Twin Register;
- SWEOLD is a subsample of a larger nationally representative survey of the total adult population in Sweden-the Swedish Level of Living Survey (LNU). LNU is one of the longest longitudinal studies in the world. It began in 1968 and, with its subsequent waves, provides multidimensional, longitudinal data on individuals over nearly five decades.

International level

- *In the Nordic countries*, we have already established contact with the large Icelandic Age, Gene/Environment Susceptibility (AGES)-Reykjavik Study and other large Finnish cohorts.

- *In Europe*, at least one of the NEAR databases collaborates with: a) the English Longitudinal Study of Ageing (*ELSA*); b) the European Social Survey (*ESS*) and International Social Survey Programme; c) *21st Century EURODEM*, a working group on neurodegeneration with 8 participating EU countries; d) the European Study of Cohorts for Air Pollution Effects (*ESCAPE*), which involves more than 30 EU cohort studies and investigates the effects of air pollution on health; e) the European database *PERADES*: Defining Genetic and Polygenic Risk for Alzheimer Disease; f) GEnetics of Healthy Aging (*GEHA*), which aims to identify genes involved in healthy aging and longevity; g) the Psychiatric Genomics Consortium (*PGC2*), which conducts meta- and mega-analyses of genome-wide genomic data on psychiatric disorders; h) the Enhancing NeuroImaging Genetics through Meta-Analysis (*ENIGMA*) Consortium; i) Waist Circumference and Mortality – Natl. Institute for Public Health and the Environment, the Netherlands, which includes 29 cohorts and more than 58,000 older people; j) multiple consortia in cancer research, including EPIC, which recently started a research line on aging; and k) *NorCanTwin* and the Consortium on Interplay of Genes and Environment across Multiple Studies, which include all the European twin registries.
- *Outside Europe*: a) Several NEAR databases are affiliated with the Integrative Analysis of Longitudinal Studies of Aging (*IALLSA*), whose aim is to evaluate the reproducibility of results from longitudinal and life course studies; b) the International Consortium of Centenarian-Dementia studies, which includes studies from Europe and the United States; c) *SHARE-Sweden* is part of the large *European SHARE* that in 2011 became a European Research Infrastructure Consortium (*ERIC*), which extends our international collaboration beyond *SHARE-Europe* since comparable surveys also exist in the United States, South Korea, and China; and finally, d) some databases are part of the WHO Study on Aging and Global Health.

3 CONSTRUCTION, DEVELOPMENT, AND USE OF NEAR BY MODULE

The full implementation of NEAR is divided into seven modules that define the activities needed to develop and run the e-infrastructure envisioned in Figure 2. Each module includes several tasks, requires staff, and needs a specific budget. The timeline for the operationalization of the modules is reported in Figures 3 and 4.

Module 1. Organization, management, and policy in NEAR: four tasks

Task 1. Deliveries: Organization. *Responsible:* SB's members. *Time:* Feb-June 2018.

The SB's members are listed on page 1 and in Figure 1. The SB will finalize the organizational structure of NEAR by appointing the AB's members and recruiting the OG's staff. The NEAR coordinator and the data-use supervisor have been identified. The database manager, IT manager, and communicator will be recruited. The IT and database managers should a) be familiar with various database program languages, b) understand computer programming, c) have experience working with a variety of statistical software, d) have experience with database management, and e) be familiar with problems of network security. The communicator should a) have experience in administering complex projects, and b) understand computer programming and html/webpage creation.

Task 2. Deliveries: NEAR policies. *Responsible:* SB's members. *Time:* Feb-June 2018.

The SB will outline the policies that will form the backbone of the entire infrastructure. The SB's members will meet in person and via tele-conferences to define the policies. The policies will regulate the creation of a flexible and dynamic infrastructure that can be run easily and efficiently while maintaining constant control of quality and ethics. The aim is to ensure scientific integrity, transparency, accountability, and stewardship without limiting NEAR use, innovation activities, translational research, new collaborations, or integration with other

infrastructures. The policies will be used by the OG and local databases when they create and maintain NEAR.

Task 3. Deliveries: NEAR architecture. *Responsible:* SB's members. *Time:* Jan-Mar 2019. The SB will review, finalize, and approve the NEAR architecture (Figure 2) proposed by the OG as described in Module 2.

Task 4. Deliveries: NEAR updates. *Responsible:* SB & AB's members. *Time:* whole period. The SB will meet twice a year. In 2018, the SB will meet the EAB to discuss any ethical requirements that must be met before implementing NEAR, and in particular, before creating the data access procedures. Starting in 2019, the SB will hold yearly meetings with the ScAB and the SoAB.

Module 2. Building the architecture and the technical platform of NEAR: four tasks

Task 1. Deliveries: contacts with external supporters. *Responsible:* NEAR coordinator. *Time:* Jan-May 2018.

The IT manager, database manager, and NEAR coordinator will meet representatives of the external infrastructures that will provide technical support during NEAR implementation.

Task 2. Deliveries: Design of NEAR architecture. *Responsible:* OG. *Time:* Jul-Dec 2018. To implement the architecture depicted in Figure 2, the OG will evaluate how to achieve compatibility across the 15 datasets. The IT and database managers and the NEAR coordinator will ascertain the differences in data storage methods, variable identification, and coding at the participating centers. Specifically, the OG will a) ensure that all participating centers have compatible hardware and software, b) evaluate the security requirements at each site to determine the steps needed for data transfer between the individual centers and the database management group, c) explore other steps needed to establish a simple and efficient Internet-based meta-database, and d) consult with local database managers during the development of the e-codebook. At the same time, the OG will design/define the NEAR architecture to be finalized and approved by the SB.

Task 3. Deliveries: NEAR web platform for user browsing of metadata (data about data). *Responsible:* IT and database managers. Support from Maelstrom. *Time:* Jan-Dec 2019. The IT manager will further develop the NEAR webpage (www.near-aging.se) to create a web platform that contains, in a homogeneous format, all the metadata that will be collected in Module 3. The IT and database managers will update the NEAR website with information about the e-infrastructure, the organizational structure of NEAR, and a description of the single studies and develop an e-codebook that contains the information about all the variables in each study. The e-codebook will be interactive, sortable, and have expandable levels of information. NEAR's users will thus be able to browse the material collected in the e-codebook; i.e., metadata and a list of variables in NEAR. This task is also fundamental to the smooth implementation of Module 4. During this task, the IT manager will evaluate the need for specific (e.g., Structured Query Language; SQL) software for database management.

Task 4. Deliveries: NEAR web platform for user data access. *Responsible:* NEAR coordinator. Support from Maelstrom. *Time:* Jan 2020- 2025. The maintenance and upgrade of the NEAR web platform will continue after 2025. The OG will upgrade the NEAR web interface to allow data access and requests from external users. This task will follow the user procedures described in Module 5. Together with external supporters, the NEAR coordinator and the OG managers will propose procedures for creating the web-based user interface and propose the software needed to harmonize and distribute the data. Specifically, the OG will a) create a program that translates the e-codebook variables to study-specific codebook variables; b) develop the process for requesting, collecting, and providing data as depicted in Figure 2 (in particular, develop a query system for data retrieval from each center, leaving the local databases in full control of data access and request); c)

develop a software program that automatically renders the retrieved data uniform by creating a variable containing a predefined anonymous identification number for each participant, creating a variable with the identification code of each study, and merging the datasets; d) assure that the information about the user will be securely stored; and e) create a secure archive of the ongoing, closed, and rejected requests. Other requirements may be added after/during Module 5 completion. This task will require a secure server and new computers and software.

Module 3. Database documentation: four tasks

Module 3 is interconnected with Module 2 and provides the basis for Module 4.

Task 1. Deliveries: NEAR procedures for maintaining local databases. *Responsible:* NEAR coordinator. Support from SND. *Time:* Feb-Aug 2018.

The OG (IT and database managers) will interact with the local database managers to outline the procedures for maintaining the completed and ongoing databases. The NEAR managers will meet, personally or via tele-conference, with the local database and IT managers to evaluate differences in database management and compare the content of the databases (type of variables, collection procedure, and coding). During this period, the OG will meet regularly with external experts (Statistics Sweden [SCB] and the Swedish National Data Service [SND]) for consulting and suggestions.

Task 2. Deliveries: uniform local metadata and NEAR documentation. *Responsible:* NEAR coordinator. Support from SND. *Time:* May 2018-Feb 2019.

The main outcome of this task is to produce comparable and correctly classified metadata in the local databases and in NEAR. The local database managers will implement the procedures derived in Task 1, if not yet in place. The NEAR database manager will work closely with the local database managers to review the existing meta-database and ensure that the description is consistent across different databases. The NEAR manager, following the procedures developed in Task 1, will create metadata documentation for NEAR and ensure the databases' documentation is produced in accordance with NEAR procedures. In particular, she/he will ensure that all documentation is in English; that there are codebooks for each data collection wave and records of any change across data collection waves (e.g., changes in lab references, measurement methods); and that there is a description of the reference population, a description of the sample, a baseline non-participation rate, and an attrition description. Note that, although uniform local metadata and NEAR documentation will be completed in February 2019, maintenance of documentation will be ongoing throughout the eight years.

Task 3. Deliveries: Documentation of existing linkage to registry. *Responsible:* NEAR and local database managers. *Time:* May 2018-Feb 2019.

The local database managers and NEAR manager will make an inventory of the registry linkage already available locally (type of registry, date of last request).

Task 4. Deliveries: NEAR-Register Utilizer Tool (RUT) interoperability. *Responsible:* IT and database managers. Support from RUT IT. *Time:* Oct 2018 onward.

The IT and database managers will evaluate solutions for rendering NEAR metadata documentation interoperable with RUT (www.registerforskning.se) for register research. RUT is a new tool for searching and analyzing metadata and registers. RUT contains and links metadata about Swedish registers. NEAR will gain great advantage by making NEAR e-infrastructure interoperable with the RUT system, as this will expand the scientific potential of NEAR. This task might affect Module 2, Tasks 3 and 4.

Module 4. Harmonization of the NEAR databases: three tasks

The great potential of NEAR comes from the ability to harmonize the data already collected.

Task 1. Deliveries: OG training. *Responsible:* coordinator and data use supervisor. Support from Maelstrom. *Time:* Jan-May 2018.

The coordinator and the supervisor will attend courses at Maelstrom in Canada to obtain additional experience in retrospective database harmonization.

Task 2. Deliveries: procedures for data harmonization (subject to review). *Responsible:* coordinator and data-use supervisor. Support from Maelstrom. *Time:* Jul 2018-Mar 2019. Harmonization of the NEAR databases is project-specific, and the harmonization process is driven by the research questions that the investigators/users are interested in studying. We will start by harmonizing the variables necessary to implement the projects described in the scientific plan. The OG will explore all possible methods of harmonizing data to establish simple and efficient harmonization procedures and necessary documentation for harmonization reproducibility. Although the harmonization is project-specific, the procedures are generalizable across the projects.

Task 3. Deliveries: harmonized data and documentation. *Responsible:* NEAR coordinator. Support from Maelstrom. *Time:* Apr 2019 onward.

Harmonization will be an ongoing activity that is performed on demand (when a research project is approved). To harmonize data, we will follow six steps:

- 1) Define research question, objectives, and protocol. To achieve clear and precise data harmonization, the request should include a research plan with clearly defined aims. The NEAR data-use supervisor will evaluate the scientific relevance of the proposed project and its harmonization potential. The coordinator will assist in this process and assure that harmonization follows the required procedures and that documentation is provided.
- 2) Assemble information as described in Module 3.
- 3) Define harmonization potential. The set of core variables targeted for harmonization is incorporated in DataSchemas and documented. The DataSchema defines common format measures to be derived with data from participating studies. Developing a DataSchema requires a balance between uniformity and acceptance of certain level of heterogeneity across studies. Some statistical methods (i.e., Item Response Theory methods, cross-walk methods) allow harmonization at a level above item-level raw data. This process often requires that DataSchema are finalized following an iterative process.
- 4) Assess the quality of variables included in the DataSchema and provide a common format for the data. Most of this step is accomplished by activities described in Modules 2 and 3.
- 5) Estimate the quality of the harmonized dataset: establish quality control procedures that include verification of the algorithms or statistical models applied and generation of basic quality checks and descriptive statistics.
- 6) Disseminate and preserve final harmonization products. Investigators/users not directly involved in the harmonization process must have access to comprehensive documentation on the harmonization procedures applied. The users will be able to fully understand and/or evaluate the steps and decisions made to produce the harmonized data.

Module 5. Data access procedures and user support: three tasks

Task 1. Deliveries: data access procedures. *Responsible:* SB. *Time:* Jul 2018-Mar 2019.

The data-use supervisor, with support from the SB, will develop the data access procedures in accordance with local database policies and NEAR policies. The procedures will determine the technical platform of the web interface (Module 2) and will include a detailed description of: a) how to submit a research proposal to NEAR; b) the NEAR internal approval process; c) the review process for ethical permits; d) how to track the approval process and how to provide a record of this process after its completion; e) the timeline for the data access process (project approval, data harmonization); f) the cost of data access (the fee will cover NEAR data processing and management); g) possible formats of the data to be provided to the users; h) authorship, copyright, and intellectual property rights; i) NEAR acknowledgment; and j) user support.

Task 2. Deliveries: user support. *Responsible:* OG. *Time:* Apr 2019 onward.

With the NEAR structure almost complete, the OG will start to provide user support to explain data access, resolve technical issues, and help users perform meta-analyses or analyses of integrated data. User support service is often overlooked, especially in e-infrastructures where observational studies are included, although this is often the first factor that limits access or restrains users from requesting data.

Task 3. Deliveries: NEAR performance metrics. *Responsible:* data-use supervisor. *Time:* Apr 2019 onward.

The data-use supervisor and NEAR coordinator will outline measures to quantify NEAR's scientific impact in Sweden and internationally and to track the use, impact, and results of the research projects that have used data from NEAR databases. Feedback from NEAR users will be encouraged.

Module 6. Maintenance, update, and enrichment of the databases: two tasks

Task 1. Deliveries: local database maintenance. *Responsible:* local database manager or/and NEAR database manager. *Time:* 2018 onward.

Six databases included in NEAR (the Betula Project, GENDER, KP, Octo-Twin, SATSA, and SALT) have already completed data collection. For these databases, the NEAR database manager or the local database manager, if present, will perform database maintenance and review/update the existing documentation.

Task 2. Deliveries: new data collection and updated documentation. *Responsible:* PIs. *Time:* 2018 onward.

Nine databases in NEAR are still ongoing. The local database manager and PIs will continue to ensure that the data collection satisfies the same high standards used in NEAR so far. The NEAR coordinator will guarantee that: a) original paper questionnaires and bio-samples (when available) are securely stored, and a storage management plan is in place; b) electronic data are stored in accordance with NEAR standards, or if needed, proper storage methods are provided by NEAR; c) main information about the databases is accessible through the Internet; and d) procedures for quality assurance, user accessibility, and database management are outlined to take the different needs of the local databases into consideration.

Module 7. Promoting and expanding NEAR: five tasks

Task 1. Deliveries: NEAR courses for users. *Responsible:* OG. *Time:* 2019 onward.

The OG will develop courses where potential and current NEAR users can learn about NEAR, the documentation provided, and the harmonization process. Other courses will be developed on demand. The OG will also prepare an educational plan in collaboration with the National Graduate School on Aging and Health (SWEAH).

Task 2. Deliveries: NEAR expansion. *Responsible:* NEAR coordinator. *Time:* 2019 onward.

First, NEAR will expand via linkage to national registries. The database manager will update NEAR documentation with registry linkage when needed. Second, the NEAR coordinator, supported by the SB, will strive to expand the number of databases included in NEAR by integrating other population-based longitudinal studies of high quality, such as the GERontological Regional DAtabase and resource center (GERDA) in Umeå. Furthermore, other possible cohorts to include are those that originally were established to study health-related problems not linked to aging but whose study populations have now aged and become suitable for aging research (like the SMC and COSM longitudinal studies, which originally targeted cancer).

Task 3. Deliveries: communication with the public. *Responsible:* NEAR communicator. *Time:* 2019 onward.

The communicator will update the webpage and write newsletters and scientific reports. Together with the data-use supervisor and NEAR coordinator, the communicator will list the

major reports derived from NEAR. The communicator will also write articles for the general public (nonscientific world).

Task 4. Deliveries: new collaborations. *Responsible:* SB. *Time:* 2020 onward.

On the basis of existing collaborations, the SB will plan future collaborations to establish a network with other similar database infrastructures inside and outside Sweden.

In Sweden

1. The Swedish National Graduate School for Competitive Science on Ageing and Health (*SWEAH*) to integrate the scientific activity of NEAR with a well-structured educational plan. *SWEAH* is supported by the VR, and several of the applicants in NEAR (JS Berglund, I Skoog, B Johansson, L Fratiglioni) are involved in the school.
2. The European Social Survey – Sweden (*ESS-S*) in Umeå. *ESS* is a cross-national survey that has been conducted across Europe since 2001. *ESS-S* is one of the VR infrastructures of relevant national interest.
3. The Swedish Longitudinal Occupational Survey of Health (*SLOSH*) from Stockholm University. *SLOSH* is a prospective study on work environment and health and is a VR infrastructure of national interest.
4. The national SNAC Care System database infrastructure for medical and social care use from the Stockholm Gerontology Research Center, KI, Lund University, and the Blekinge Institute of Technology.
5. Clinical and quality registries such as SveDem for dementia cases, Senior-Alert for people at risk of falls, and registries from memory clinics could provide relevant information for NEAR.

In Europe

1. One co-founder of NEAR (J Fritzell) is PI of Social Inequalities in Ageing (SIA): Health, Care and Institutional Reforms in the Nordic Welfare Model, one of the five Nordic consortia funded by the NordForsk Programme on Health and Welfare (organized by the Nordic Council of Ministers). Exchange between the two infrastructures, NEAR and SIA, will benefit both.
2. Two co-founders (L Fratiglioni and I Skoog) are already part of the EU-*EPPiDem* study, funded by the EU Joint Programme – Neurodegenerative Disease Research (JPND), and co-founder N Pedersen is part of the JPND co-funded project *ADAGE: Alzheimer's Disease pathology within the ageing physiology*.
3. Possible future collaborations with clinical infrastructures might include consortia under development, such as Multimodal preventive trials for AD: towards multinational strategies (*MIND-AD*) and European Prevention of Alzheimer's dementia (*EPAD*).

Outside Europe

1. Collaboration between ARC/KI and National University of Singapore is being discussed in the field of aging research and is supported by both universities. Future collaborations include sharing data from both sides (i.e., the Singapore Longitudinal Aging Study).
2. Extend the collaboration with the University of Sydney and Monash University in Australia to include the NEAR database and collaborate with the Australian National University's Centre for Research on Ageing, Health and Wellbeing to validate the accuracy of risk scores for dementia and other disorders (Australian National University AD Risk Index [ANU-ADRI]).
3. A relevant potential collaboration is with the Canadian Longitudinal Study on Aging (*CLSA*), a large, national, long-term study that will follow 50,000 people between the ages of 45 and 85 for at least 20 years.

Task 5. Deliveries: kick-off & workshops. *Responsible:* NEAR-communicator. *Time:* yearly. The NEAR communicator will organize the kick-off meeting to celebrate the “start” of NEAR. The yearly workshops will be attended by all NEAR members and staff. NEAR users

will be invited to present preliminary results and discuss methods related to longitudinal population-based studies. The workshop will be the relevant forum for discussing new methods of data collection, how to increase the participation rate, and how to improve NEAR.

4 TIME PLAN

We plan to build and implement NEAR during the first 4-year period as reported in the Gantt chart in Figure 3. During this initial period, NEAR will provide the first harmonized data for the five projects described in this application (see *Scientific Plan*). After this first harmonization, in the second 4-year period (Figure 4), NEAR will be completely open to external users. During this period, the major activity will be promoting and enlarging NEAR. We plan to include other datasets from longitudinal projects, increase collaboration with other databases/infrastructures, and increase the number of NEAR users. Update, maintenance, and enrichment of the local databases will cover both periods.

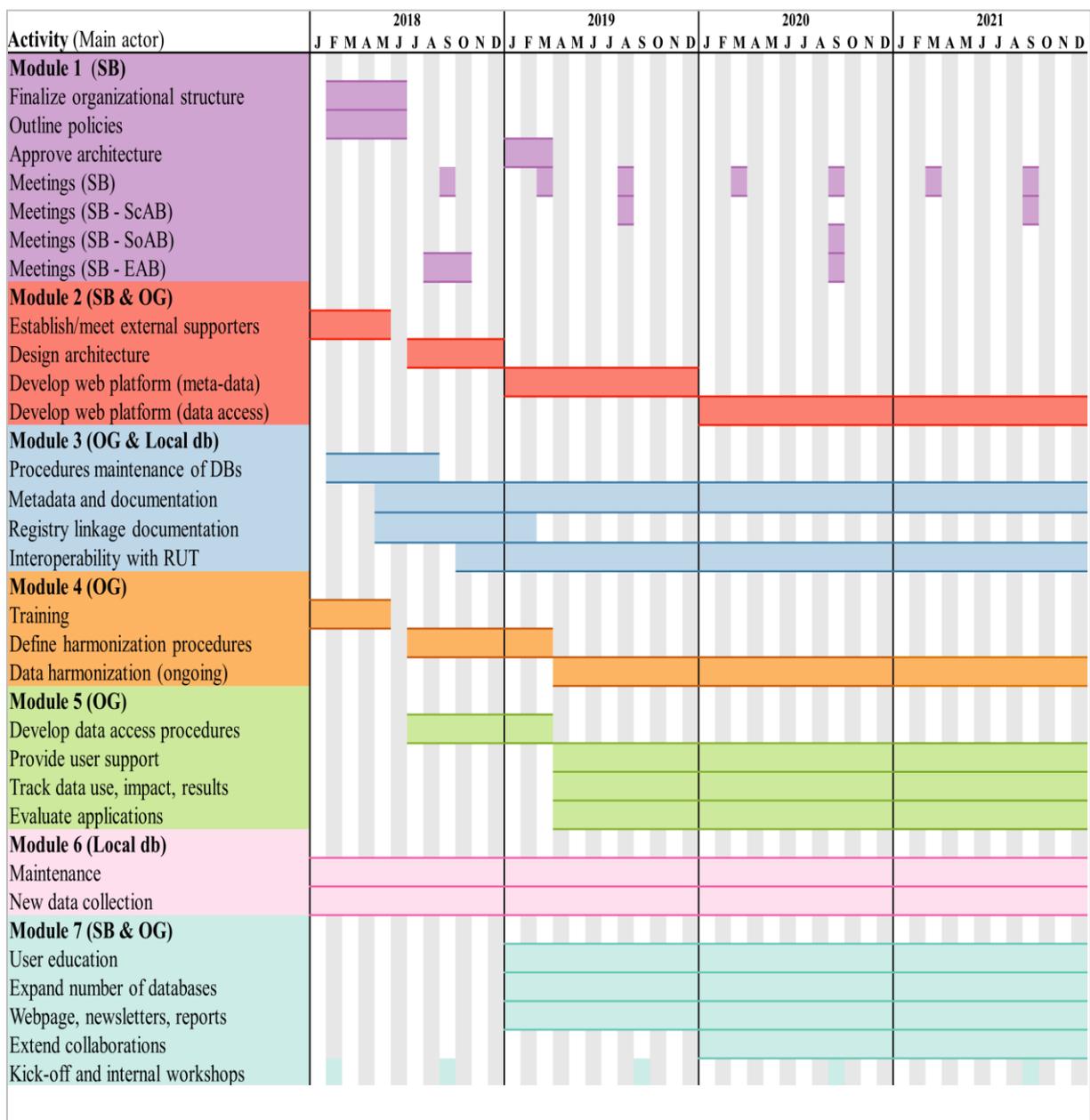


Figure 3. Gantt chart of the first four years: design, operationalization, and implementation of NEAR (2018-21).

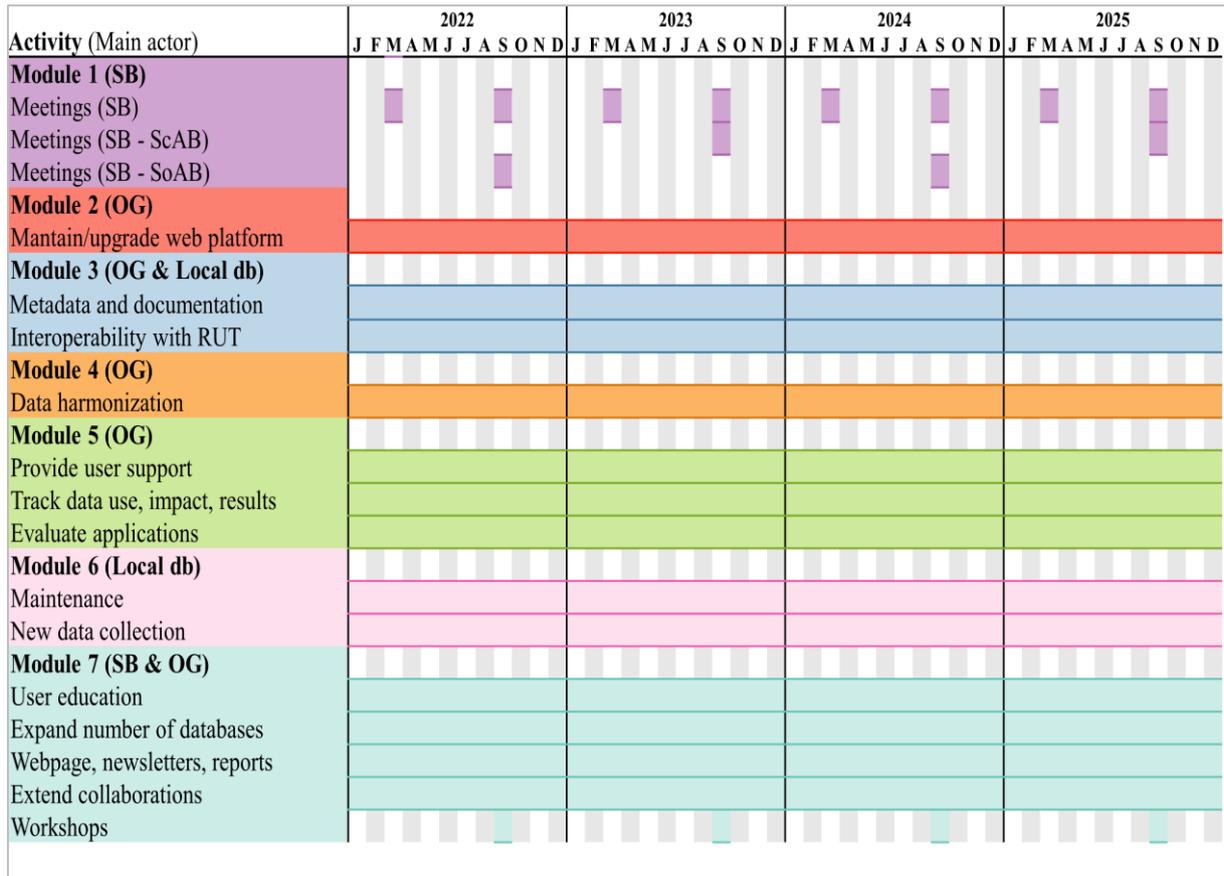


Figure 4. Gantt chart of the second four-year period: finalization and running of NEAR (2022-25).

Abbreviations: SB= Steering Board, AB: Advisory Board, ScAB: Scientific AB, SoAB: Societal AB, EAB: Ethical AB, OG= Operational Group, Local db= local databases, RUT= Register Utiliser Tool.

5 SWOT AND RISK ANALYSIS

NEAR is characterized by strengths and opportunities but also weaknesses and threats. A summary of the SWOT analysis is reported in Figure 5.

Strengths. The primary purpose of our initiative is to build a national e-infrastructure based on 15 databases that include *high-quality data* and have already generated relevant contributions to understanding the aging, health, and care of older adults. NEAR will bring together many of *excellent research groups* in the aging field in Sweden, all with a strong background and experience in setting up large observational, longitudinal studies. Furthermore, NEAR benefits from the applicants’ varied expertise in geriatric medicine, neurology, genetics, psychiatry, psychology, epidemiology, public health, statistics, and IT. These factors provide a strong basis for the successful completion of NEAR.

Weaknesses. All the centers included in NEAR have extensive experience in managing large administrative, genetic, pharmaceutical, and disease-specific datasets and in building flexible and expandable databases. However, the harmonization of several databases is a new endeavor for the group. To help ensure success, the documentation and harmonization of NEAR data will be supported by the Maelstrom Research Group and SND.

Opportunities. Our initiative will promote and facilitate *aging research* in Sweden, increase international exchange and collaboration, enhance research quality and the generalizability of research findings, and help educate a new generation of researchers. The ultimate goal of our

unified efforts is to identify effective and *sustainable intervention strategies* for achieving better health and care for older people.

Threats. The great potential of NEAR is tightly linked to both the high quality of the data collected and their continuous maintenance. Quality and maintenance can only be achieved if the local databases have budgets sufficient to cover their needs. The lack of sufficient funds might jeopardize the entire NEAR infrastructure in the long run. Further, during NEAR implementation, the OG might encounter unexpected technological problems and security issues. Lastly, NEAR success will be undermined if the number of users is small.

		Favorable	Unfavorable
Internal	Strengths	<ul style="list-style-type: none"> • High quality databases • Principal investigators with excellent research background and experience in setting up large observational studies • Large research network 	<ul style="list-style-type: none"> • Limited experience in e-infrastructure technology • Need for external expertise for harmonization • Complex data and different use of standards for documentation
	Weaknesses		
External	Opportunities	<ul style="list-style-type: none"> • Create an international hub for aging research • Increase interest in aging research • Enable high-impact research that influences public policies and contributes to the advancement of science 	<ul style="list-style-type: none"> • Local databases do not receive financial support or withdraw from the infrastructure • Limited use by researchers • Technology issues • Security problems
	Threats		

Figure 5. SWOT analysis for NEAR.

Risk analysis

Event 1 - Turnover of NEAR leaders. *Probability:* high. *Impact:* medium. *Strategy:* some of the members of the SB will retire during the 8-year period. During the 8-year plan, the members will find the best candidates to replace retiring members of the SB. Some strong internal candidates have already been identified.

Event 2 - Recruiting. *Probability:* very low. *Impact:* medium. *Strategy:* at least three members of the OG must be recruited during the first year. Delay in their recruitment (beyond July 2018) would affect Modules 2 and 3. Module 2 would be postponed, but the other members of the OG have enough expertise in database management to perform the first-year tasks in Module 3.

Event 3 - Withdrawal of some cohorts. *Probability:* very low. *Impact:* medium. *Strategy:* enlarge the infrastructure by including new cohort studies.

Event 4 - Long or difficult harmonization process. *Probability:* medium. *Impact:* high. *Strategy:* rely on the support of experienced external infrastructures, especially at the outset of the harmonization. Contact has been already established with Maelstrom Research. With their help, we can also find alternative strategies, such as metadata analyses.

Event 5 - Low number of users. *Probability:* very low. *Impact:* high. *Strategy:* the number of internal users (researchers in the studies included in NEAR) and their collaborators is large enough to provide a sufficient number of users for the 8-year time plan.

Event 6 - Not enough funding. *Probability:* low. *Impact:* high. *Strategy:* All PIs of the local databases have successful track records of research grants and financial support from co-

fundings, as documented in the current budget. At the moment, there is no reason to expect different outcomes in the future. A key issue here is the VR support to this application.

Event 7 - No new databases or collaborations. *Probability:* very low. *Impact:* low. *Strategy:* NEAR already includes most of the longitudinal projects on aging in Sweden. This means that NEAR would not be highly affected if no new databases are included during the 8-year plan. We foresee it as quite unlikely that the well-known members of the SB, who have broad networks in the field of aging research, will not achieve new collaboration with the infrastructures mentioned in this application.

6 EXTERNAL SUPPORT FOR NEAR - Interface with other infrastructures

The implementation of NEAR will be made possible, less expensive, quicker, and of higher quality by integrating the expertise of other national and international infrastructures in its development. In Tables E1 and E2 (see attachments), we summarize the external IT support needed to implement NEAR and its cost by year. Below, we enumerate the external infrastructures that NEAR has already contacted for support in creating the e-infrastructure.

The Swedish National Database Service (SND, www.snd.gu.se/en).

SND supports databases to preserve, organize, maintain, and disseminate data for the purpose of research. SND will provide training to the members of NEAR's OG on the correct and best way to classify metadata (Module 2, Task 1). Moreover, SND will help the OG develop NEAR procedures for maintaining local databases (Module 3, Task 1). Finally, eleven of the databases included in NEAR, and NEAR itself, are already registered in the SND catalogue. This is crucial to the reliable and fast implementation of Module 3, Task 2 (creating uniform local metadata and NEAR documentation).

Maelstrom Research (www.maelstrom-research.org).

Maelstrom Research is a non-profit Canadian group that aims to develop tools and resources that facilitate data harmonization and co-analysis across studies. Four of the 15 datasets in NEAR (GENDER, H70, KP, and SHARE-S) are already described in the Maelstrom repository, and five (COSM, OCTO-Twin, SATSA, SMC, SNAC-K) are both described in and have their variables classified in Maelstrom. This last step in particular makes it already possible for users to browse variables included in different databases and compare the availability, wording, and labeling across studies. Maelstrom will help the OG derive an online classification of all databases' variables and support the creation of the user web-interface (Module 2, Tasks 2-4) through the use of Maelstrom open source software Opal and Mica. Because Maelstrom has great experience harmonizing data and has accomplished data harmonization of great quality, Maelstrom's support will be fundamental in Module 4. Their support will be large at the beginning (2018-21) but will decrease as the OG accumulates experience and the infrastructure is consolidated (2022-25).

Swedish National Infrastructure for Computing (SNIC, www.snic.vr.se)

SNIC provides a set of resources and user support for large-scale computation and data storage. Most importantly for NEAR, SNIC provides support for IT issues faced by e-infrastructures. The NEAR IT manager will develop a secure server for handling data at ARC (Module 2, Task 4) that will comply with NEAR security policies (outlined by the SB). If unexpected technical problems should arise, the IT manager will consult with SNIC technical coordinators. Moreover, from year 5, we will need to rent space at SNIC for high performance computing to analyze GWAS and MRI data (see "Computation" and "Storage," Table E1).

The Swedish University Computer Network (SUNET, www.sunet.se)

SUNET provides high-speed Internet access to academic institutions in Sweden. All universities involved in NEAR are already connected through SUNET. NEAR will take

advantage of this stable and secure connection to obtain encrypted data transfer and secure connections between the central and local databases. Moreover, through KI, we will provide a 2-factor authentication method for user data access. SUNET will support NEAR during the development phase in Module 2.

The Register Utiliser Tool (RUT, www.registerforskning.se).

We plan to establish collaboration with RUT, a new tool for searching and analyzing metadata and national registers. The tool facilitates the identification and exploration of registers and register variables. It will provide access to structured information on variables that have associated metadata in the registers connected to the tool. NEAR will gain great advantage by making its e-infrastructure interoperable with RUT.

7 CURRENT STATUS OF NEAR AFTER 1.3 YEARS OF COORDINATION

A VR grant for infrastructure coordination enabled us to begin planning NEAR in 2016 (Figure 6).

The co-founders kicked off the project in February 2016. At that meeting, the PIs discussed the future action plan and strategy for NEAR. The PI's and the database managers of the local databases met again in May 2016 and via tele-conferences several other times (Nov 2016, Jan and Feb 2017).

In the meantime, to make NEAR visible to the public, the coordinator has developed a webpage (www.near-aging.se) where information about the infrastructure, its databases, and upcoming events is always updated.

All the PIs have been actively engaged in outlining and finalizing the present grant application for the 2017 VR call for infrastructures.

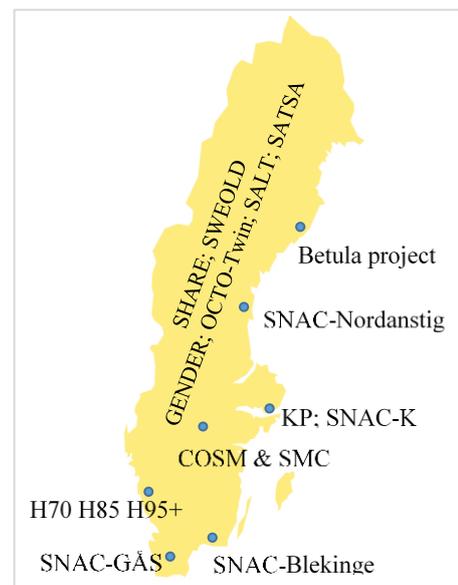


Figure 6. Location of the cohorts of older adults included in the

The OG has also contacted national and international infrastructures that could provide technical and operational support during the implementation phase. The group has met in person with the representatives of the SND, SNIC, and SUNET and via tele-conference with Maelstrom Research. During the meetings, the group presented the NEAR infrastructure and discussed possible architectural solutions with the operational support groups.

The four SNAC centers have already begun harmonizing their databases and creating a prototype of NEAR e-infrastructure. In particular, the NEAR coordinator and the database managers of the four centers have met monthly to tabulate, compare, and create a harmonized common database of locally stored data. Moreover, they have developed prototype software for data harmonization and user access.

Finally, several PIs of the local databases have already collaborated by analyzing pooled data from some of the databases. One of these research projects involved data from the Gothenburg Birth Cohort studies, Kungsholmen project, and Finnish *CAIDE* to explore the relationship between apolipoprotein E (*APOE*) genotype, education, and dementia over a decade. Finally, the four SNAC centers have already completed studies using pooled data on formal and informal care, dementia occurrence, and social service use.

Table E1. NEAR’s need of external support from e-infrastructures

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Computation	None	None	None	None	“Big data” analysis	Same as Year 5	Same as Year 5	Same as Year 5
Storage		One server with: 2 CPUs Disk space 1 Tb 8 Gb RAM	One server with similar characteristics as Year 1	One server with similar characteristics as Year 1	10 Tb for HPC	Same	Same	Same
Advanced user								
Network		2-factor authentication All communication encrypted Location Sweden OptoSunet	Same	Same	Same	Same	Same	Same

Table E2. Cost estimation for NEAR’s need as listed in Table E1 (SEK)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Computation					100000	100000	100000	100000
Storage		200000	200000	200000	5000000	5000000	5000000	5000000
Advanced user								
Network		100000	100000	100000	200000	200000	200000	200000
NEAR equipment (depreciation not included)	200000	500000	500000	500000	200000	200000	200000	200000
Total	200000	800000	800000	800000	1000000	1000000	1000000	1000000

Budget och forskningsresurser

Driftskostnader

Driftskostnader		Beskrivning	2018	2019	2020	2021
1	Module 1	Organization, management and policy in NEAR	1 165 800	1 170 800	1 178 100	1 185 500
2	Module 2	Building the architecture and the technical platform of NEAR	830 300	1 211 600	1 233 700	1 254 600
3	Module 3	Database documentation	3 585 400	3 611 300	3 233 500	3 428 700
4	Module 4	Harmonization of NEAR databases	2 743 100	3 666 500	3 488 800	3 441 200
5	Module 5	Data access procedures, use, and user support	371 400	457 600	468 600	479 700
6	Module 6	Maintenance, update and enrichment of the databases	8 162 300	8 171 600	12 033 000	8 512 400
7	Module 7	Promoting/expanding	1 451 400	1 708 500	1 679 000	1 697 400
Totalt			18 309 700	19 997 900	23 314 700	19 999 500
		2022	2023	2024	2025	Totalt
1		1 192 900	1 199 000	1 206 500	1 215 000	9 513 600
2		1 891 800	1 913 900	1 937 300	1 960 600	12 233 800
3		2 798 800	2 734 700	2 792 500	2 992 900	25 177 800
4		2 619 900	2 679 100	2 738 000	2 797 700	24 174 300
5		239 900	246 100	252 100	257 100	2 772 500
6		8 413 100	8 301 100	10 207 900	8 584 200	72 385 600
7		1 840 100	1 859 800	1 880 700	1 901 600	14 018 500
Totalt		18 996 500	18 933 700	21 015 000	19 709 100	160 276 100

Avskrivningar utrustning

Avskrivning	Beskrivning	2018	2019	2020	2021	
1	Module 2	IT platform+ software	20 000	120 000	220 000	320 000
2	Module 2	Personal Computers	25 000	25 000	25 000	25 000
Totalt		45 000	145 000	245 000	345 000	

	2022	2023	2024	2025	Totalt
1	380 000	420 000	330 000	240 000	2 050 000
2	25 000	25 000	25 000	25 000	200 000
Totalt	405 000	445 000	355 000	265 000	2 250 000

Total budget*

Specificerade kostnader	2018	2019	2020	2021	2022
1 Driftskostnader	18 309 700	19 997 900	23 314 700	19 999 500	18 996 500
2 Avskrivningar utrustning	45 000	145 000	245 000	345 000	405 000
3 Total projektkostnad	18 354 700	20 142 900	23 559 700	20 344 500	19 401 500

	2023	2024	2025	Totalt, sökt	Annan kostnad	Total kostnad
1	18 933 700	21 015 000	19 709 100	160 276 100	200 075 000	360 351 100
2	445 000	355 000	265 000	2 250 000	0	2 250 000
3	19 378 700	21 370 000	19 974 100	162 526 100	200 075 000	362 601 100

Budget*

Se nästa sida för bilaga.

1 Compilation	Costs	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
1.1	Module 1 - Organization, management and policy in NEAR	22 719	3 621	3 668	3 741	2 268	2 303	2 337	2 374	2 408
1.2	Module 2 - Building the architecture and the technical platform of NEAR	14 804	915	1 397	1 519	1 640	2 337	2 399	2 332	2 266
1.3	Module 3 - Database documentation	34 452	4 712	4 724	4 311	4 613	4 000	3 945	3 913	4 235
1.4	Module 4 - Harmonization of the NEAR databases	26 681	3 053	3 967	3 796	3 757	2 943	3 010	3 044	3 112
1.5	Module 5 - Data access procedures, use, and user support	23 873	421	508	1 969	3 480	3 240	4 746	4 752	4 757
1.6	Module 6 - Maintenance, update and enrichment of the databases	226 055	29 884	29 932	30 688	26 626	26 550	26 544	29 010	26 820
1.7	Module 7 - Promoting/expanding	14 019	1 451	1 709	1 679	1 697	1 840	1 860	1 881	1 902
1	Sum total costs:	362 601	44 058	45 904	47 702	44 081	43 213	44 841	47 305	45 499

2 Compilation	Revenues - Contributions	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
2.1	Vetenskapsrådet (This proposal, to Prisma)	162 526	18 355	20 143	23 560	20 345	19 402	19 379	21 370	19 974
2.2	Consortium member - Karolinska Institutet (KI)	18 408	2 515	2 552	3 045	1 852	1 901	2 029	2 477	2 037
2.3	Consortium member - Lund University (LU)	19 679	2 487	2 521	2 553	2 407	2 416	2 422	2 431	2 442
2.4	Consortium member - Blekinge Tekniska Högskola (BTH)	916	230	195	176	60	62	63	65	66
2.5	Consortium member - Gothenburg University (GU)	5 297	831	839	839	550	554	558	562	565
2.6	Consortium member - Umeå University (UmU)	13	7	7	0	0	0	0	0	0
2.7	Consortium member - Jönköping University (JU)	662	135	138	139	47	49	50	51	52
2.8	KI-other funders: Stiftelsen Äldrecentrum; Region Gävleborg & Municipality of Nordanstig	46 080	5 760	5 760	5 760	5 760	5 760	5 760	5 760	5 760
2.9	LU-other funders: Ministry of Social Affairs & Region Skåne	7 262	3 631	3 631	0	0	0	0	0	0
2.10	BTH-other funders: Ministry of Social Affairs	21 600	2 700	2 700	2 700	2 700	2 700	2 700	2 700	2 700
2.11	GU-other funders: EU, Forte; Alzhiemrfonden & Hjärnfonden	56 000	7 000	7 000	7 000	7 000	7 000	7 000	7 000	7 000
2.12	UmU-other funders: EU (Lifebrain) & KAW (Wallenberg scholar)	3 158	409	418	430	360	369	380	389	403
2.13	JU-other funders	0	0	0	0	0	0	0	0	0
2	Sum Contributions (VR, consortium and other funders):	341 601	44 058	45 904	46 202	41 081	40 213	40 341	42 805	40 999

3 Compilation	Revenues - User fees	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
3.1	User fees Module 5	21 000	0	0	1 500	3 000	3 000	4 500	4 500	4 500
3	Sum estimated revenues from user fees:	21 000	0	0	1 500	3 000	3 000	4 500	4 500	4 500
2+3	Sum estimated total revenues :	362 601	44 058	45 904	47 702	44 081	43 213	44 841	47 305	45 499

Module 1	Organization, management and policy in NEAR	Cost item	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
M 1.1	5 Steering Board Members - KI (Chair: 30% per 3y + 20% per 5y; Other: 15% per 3y + 5% per 5y)	Salary+LKP'	7 512	1 332	1 353	1 389	654	670	688	705	721
M 1.2	1 Steering Board Member - LU (15% per 3y + 5% per 5y)	Salary+LKP'	1 218	247	251	258	88	90	92	95	97
M 1.3	2 Steering Board Members - GU (15% per 3y + 5% per 5y)	Salary+LKP'	2 076	420	428	439	150	154	158	162	165
M 1.4	2 Steering Board Members - UmU (15% per 3y + 5% per 5y)	Salary+LKP'	912	156	158	162	83	85	87	89	92
M 1.5	1 Steering Board Member - BTH (15% per 3y + 5% per 5y)	Salary+LKP'	830	167	171	176	60	62	63	65	66
M 1.6	1 Steering Board Member -JU (15% per 3y + 5% per 5y)	Salary+LKP'	657	133	136	139	47	49	50	51	52
M 1.7	Steering Board meetings (Travel and accommodation - 2/3 per year)	Other	2 400	300	300	300	300	300	300	300	300
M 1.8	Advisory Boards meetings (Including international guests - 1 per year)	Other	1 200	150	150	150	150	150	150	150	150
M 1.9	NEAR communicator 20%	Salary+LKP'	1 299	150	152	156	160	164	168	172	177
M 1.10	NEAR coordinator 10%	Salary+LKP'	725	84	86	88	90	92	93	95	97
M 1.11	Rent of premises / NEAR staff	Premises	2 520	315	315	315	315	315	315	315	315
M 1.12	Indirect costs	Indirect costs	1 370	167	168	169	171	172	173	175	176
Compilation 1.1	Sum estimated costs, this Module:		22 719	3 621	3 668	3 741	2 268	2 303	2 337	2 374	2 408

y=years

Module 2	Building the architecture and the technical platform of NEAR	Cost item	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	
M 2.1	IT support - KI	Salary+'LKP'	320	40	40	40	40	40	40	40	40	
M 2.2	NEAR IT manager 80%	Salary+'LKP'	5 197	600	609	625	640	656	672	689	706	
M 2.3	NEAR database manager 10%	Salary+'LKP'	649	75	76	78	80	82	84	86	88	
M 2.4	External support - SUNET	Other	2 100	0	300	300	300	300	300	300	300	
M 2.5	External support - SNIC	Other	2 000	0	0	0	0	500	500	500	500	
M 2.6	Equipment: IT platform & software - NEAR and local databases	Depreciation	2 050	20	120	220	320	380	420	330	240	
M 2.7	Equipment: PC - NEAR and local databases	Depreciation	200	25	25	25	25	25	25	25	25	
M 2.8	Indirect costs	Indirect	2 288	155	227	231	235	354	358	362	367	
Compilation 1.2			Sum estimated costs, this Module:	14 804	915	1 397	1 519	1 640	2 337	2 399	2 332	2 266
			of which are depreciable costs:	2 250	45	145	245	345	405	445	355	265

Module 3	Databases documentation	Cost item	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	
M 3.1	4 Database managers -KI - (Average 36% per person/ yearly)	Salary+'LKP'	8 270	1 204	1 217	876	988	1 022	934	947	1 082	
M 3.3	1 Study manager - KI - 20%	Salary+'LKP'	1 205	90	92	94	196	200	205	110	218	
M 3.4	1 Database manager - LU - 40%	Salary+'LKP'	3 204	372	381	387	396	404	412	421	431	
M 3.5	1 Database manager - BTH - 5%	Salary+'LKP'	130	86	44	0	0	0	0	0	0	
M 3.6	2 Database managers - GU - (Avarage 28% per person/ yearly)	Salary+'LKP'	8 588	1 041	1 047	1 057	1 067	1 078	1 089	1 099	1 110	
M 3.7	1 Project manager - UmU - 10%	Salary+'LKP'	496	56	58	60	62	62	64	66	68	
M 3.8	1 Research nurse - UmU - 10%	Salary+'LKP'	504	56	58	60	62	64	66	68	70	
M 3.9	1 Database manager - JU - 25%	Salary+'LKP'	1 502	173	176	181	185	190	194	199	204	
M 3.10	NEAR coordinator (20% yearly/ year 1-4 + 10% yearly/year 5-8)	Salary+'LKP'	1 079	169	171	176	180	92	95	97	99	
M 3.11	NEAR database manager (80% yearly/year 1-4 + 20% yearly/year 5-8)	Salary+'LKP'	3 156	600	609	624	640	164	169	173	177	
M 3.12	NEAR IT manager 20%	Salary+'LKP'	1 299	150	152	156	160	164	168	172	177	
M 3.13	Indirect costs	Indirect	5 019	716	719	639	677	560	549	561	599	
Compilations 1.3			Sum estimated costs, this Module:	34 452	4 712	4 724	4 311	4 613	4 000	3 945	3 913	4 235
			of which are depreciable costs:									

Module 4	Harmonization of NEAR-databases	Cost item	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	
M 4.1	5 Database managers -KI - (Average 15% per person/year)	Salary+'LKP'	4 521	392	762	779	799	431	442	453	464	
M 4.2	1 Database manager - LU - (Average 20% per year)	Salary+'LKP'	1 928	175	314	321	329	191	195	200	203	
M 4.3	1 Database manager - BTH - (Average 15% per year)	Salary+'LKP'	836	87	141	144	148	76	78	80	82	
M 4.4	2 Database managers - GU - (Average 38% per person/ yearly)	Salary+'LKP'	2 919	247	503	515	528	271	278	285	292	
M 4.5	1 Database manager - UmU- (Average 15% per year)	Salary+'LKP'	2 145	236	287	294	303	262	269	243	251	
M 4.6	1 Database manager - JU - (Average 15% per year)	Salary+'LKP'	818	69	141	144	148	76	78	80	82	
M 4.7	NEAR coordinator - (20% yearly/years 1-4 + 10% yearly/years 5-8)	Salary+'LKP'	1 079	169	171	176	180	92	95	97	99	
M 4.8	NEAR database manager - (10% yearly/years 1-4 + 70% yearly/years 5-8)	Salary+'LKP'	2 691	75	76	78	80	574	588	602	618	
M 4.9	NEAR data use supervisor - (20% yearly)	Salary+'LKP'	1 622	187	190	195	200	205	210	215	220	
M 4.10	External support- MAELSTROM Research	Other	1 600	400	400	200	200	100	100	100	100	
M 4.11	External support- SND	Other	1 200	300	200	200	100	100	100	100	100	
M 4.12	Training - NEAR coordinator & Data use supervisor	Other	530	180	50	50	50	50	50	50	50	
M 4.13	Indirect costs	Indirect	4 792	536	732	700	692	515	527	539	551	
Compilations 1.4			Sum estimated costs, this Module:	26 681	3 053	3 967	3 796	3 757	2 943	3 010	3 044	3 112
			of which are depreciable costs:									

Module 5	Data access procedures, use, and user support	Cost item	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	
M 5.1	5 Steering Board Members - KI (3 days per year per person)	Salary+LKP'	52	26	26							
M 5.2	1 Steering Board Member - LU (3 days per year)	Salary+LKP'	6	3	3							
M 5.3	1 Steering Board Member - BTH (3 days per year)	Salary+LKP'	3	2	2							
M 5.4	2 Steering Board Members - GU (3 days per year per person)	Salary+LKP'	21	11	11							
M 5.5	2 Steering Board Members - UmU (3 days per year per person)	Salary+LKP'	13	7	7							
M 5.6	1 Steering Board Member - JU (3 days per year)	Salary+LKP'	5	2	2							
M 5.7	NEAR coordinator 10%	Salary+LKP'	731	84	86	88	90	92	95	97	99	
M 5.8	NEAR data-use supervisor (30% per 4 years + 10% per 4 years)	Salary+LKP'	1 523	218	286	293	300	103	105	108	110	
M 5.9	Cost for data delivery to the users - estimation	Other	21 000	0	0	1 500	3 000	3 000	4 500	4 500	4 500	
M 5.10	Indirect costs	Indirect costs	519	69	86	88	90	45	46	47	48	
Compilation 1.5			Sum estimated costs, this Module:	23 873	421	508	1 969	3 480	3 240	4 746	4 752	4 757
			of which are depreciable costs:									

Module 6	Maintenance, update and enrichment of the databases	Cost item	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	
M 6.1	4 Database managers -KI (Average 38% per y per person)	Salary+LKP'	23 737	2 992	2 880	2 996	3 089	2 826	2 858	3 176	2 920	
M 6.2	1 Database assistant -KI - 100%	Salary+LKP'	5 548	637	674	664	680	697	714	732	750	
M 6.3	1 Lab technician - KI - 50%	Salary+LKP'	2 639	305	309	317	325	333	341	350	359	
M 6.4	Data collection (MD, nurses, psychologists) - KI	Salary+LKP'	40 048	4 528	4 456	7 462	4 468	4 474	4 480	5 686	4 494	
M 6.5	1 Study manager - KI - 50%	Salary+LKP'	3 283	303	311	799	227	233	325	836	249	
M 6.6	Lab test -KI	Other	1 938	120	250	254	256	260	262	266	270	
M 6.7	Biobank -KI	Other	1 600	200	200	200	200	200	200	200	200	
M 6.8	Update National Register - KI	Other	250	0	0	0	0	150	0	0	100	
M 6.9	Premises - KI	Premises	256	32	32	32	32	32	32	32	32	
M 6.10	1 Database manager -LU - 40%	Salary+LKP'	2 362	275	281	285	292	298	304	310	317	
M 6.11	1 Database assistant -LU - 80%	Salary+LKP'	4 284	499	509	519	530	541	551	562	573	
M 6.12	1 Lab technician - LU - 40%	Salary+LKP'	8 687	1 010	1 029	1 051	1 072	1 096	1 119	1 143	1 167	
M 6.13	Data collection (MD, nurses, psychologists) -LU	Salary+LKP'	19 735	5 229	5 238	1 615	1 610	1 572	1 530	1 489	1 452	
M 6.14	Lab test -LU	Other	664	83	83	83	83	83	83	83	83	
M 6.15	Biobank -LU	Other	1 336	167	167	167	167	167	167	167	167	
M 6.16	1 Database manager - BTH - 50%	Salary+LKP'	2 800	350	350	350	350	350	350	350	350	
M 6.17	1 Lab technician - BTH - 20%	Salary+LKP'	960	120	120	120	120	120	120	120	120	
M 6.18	Data collection - BTH	Salary+LKP'	21 600	2 700	2 700	2 700	2 700	2 700	2 700	2 700	2 700	
M 6.19	Lab test -BTH	Other	240	30	30	30	30	30	30	30	30	
M 6.20	2 research nurses - GU - 100%	Salary+LKP'	10 000	1 250	1 250	1 250	1 250	1 250	1 250	1 250	1 250	
M 6.21	Data collection - GU	Other	56 000	7 000	7 000	7 000	7 000	7 000	7 000	7 000	7 000	
M 6.22	1 Database manager - GU - 20%	Salary+LKP'	911	105	107	109	112	115	118	121	124	
M 6.23	1 Project manager - UmU - 10%	Salary+LKP'	572	58	59	61	62	64	65	100	103	
M 6.24	1 Research nurse - UmU - 20%	Salary+LKP'	1 113	127	129	133	137	141	145	148	153	
M 6.25	Data collection - JU	Salary+LKP'	800	100	100	100	100	100	100	100	100	
M 6.26	NEAR coordinator - 10%	Salary+LKP'	731	84	86	88	90	92	95	97	99	
M 6.27	Indirect costs	Indirect	13 961	1 580	1 582	2 303	1 644	1 626	1 605	1 962	1 658	
Compilations 1.6			Sum estimated costs, this Module:	226 055	29 884	29 932	30 688	26 626	26 550	26 544	29 010	26 820
			of which are depreciable costs:									

Module 7	Promoting/ expanding	Cost item	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	
M 7.1	NEAR communicator - 80%	Salary+'LKP'	5 197	600	609	625	640	656	672	689	706	
M 7.2	Kick-off and annual workshop (1 per year)	Other	2 000	250	250	250	250	250	250	250	250	
M 7.3	Courses and conferences	Other	1 200	100	100	100	100	200	200	200	200	
M 7.4	Webpage, newsletters, and reports	Other	400	80	80	40	40	40	40	40	40	
M 7.5	Operational meetings	Other	1 200	150	150	150	150	150	150	150	150	
M 7.6	National Registers costs	Other	1 400	0	200	200	200	200	200	200	200	
M 7.6	Indirect costs	Indirect	2 622	271	320	314	317	344	348	352	356	
Compilations 1.7			Sum estimated costs, this Module:	14 019	1 451	1 709	1 679	1 697	1 840	1 860	1 881	1 902
			of which are depreciable costs:									

Compilation 4	Existing resources which the consortium makes available to the infrastructure	Total Value	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
4.1	SNAC-K database with 16-year follow-up	112 000								
4.2	KP database with 13-year follow-up	52 000								
4.3	SALT database with 10-year follow-up	8 000								
4.4	SATSA database with 32-year follow-up	60 000								
4.5	SMC database with 20-year follow-up	182 000								
4.6	COSM database with 11-year follow-up	133 000								
4.7	SWEOLD database - over 40-year follow-up	20 000								
4.8	SNAC-N database with 16-year follow-up	20 000								
4.9	SNAC database with 16-year follow-up	144 668								
4.10	SNAC-B database with 16-year follow-up	37 000								
4.11	H70/KVUS/H85/H95+ database - over 40-year follow-up	170 000								
4.12	Octo-Twin database with 10-year follow-up	7 000								
4.13	Betula database database with 30-year follow-up	120 150								
4.14	SHARE -database with 12-year follow-up	na								
4.15	Gender database with 8-year follow-up	7 000								
4	Total value of existing resources (is only shown here and is not part of contributions, revenues or costs):	1 072 818								

NEAR: The National E-infrastructure for Aging Research in Sweden

Budget specification

As shown in the four tables of the budget (so-called compilations), most of the cost of NEAR derives from the maintenance, update, follow-up, and enrichment of the local databases. Without this opportunity, NEAR will be an “infrastructure of the past,” as it will only include data collected in past decades in Sweden. Although these resources are highly valuable, both from a scientific (see key references) and economic (see table-compilation 4) perspective, the lack of future data collection will hamper any further development of NEAR.

The total cost of NEAR is more than double the sum we seek from VR. Without matching funds from the universities and other co-funders, it will be impossible to collect and use such a large amount of clinical, biological, and social data. The full implementation of NEAR is based on seven modules. Each module includes several tasks that require staff, equipment, consultancy, and running expenses.

Module 1 - Organization and management

The organization, expansion, and correct functioning of NEAR and the development of policies and procedures for the e-infrastructure are guaranteed by the Steering Board (SB), which consists of the 12 PIs of the 15 datasets participating in NEAR. The cost of their salaries is covered by the six universities, members of the consortium.

The requested budget to VR includes: 1) expenses for the SB’s meetings (2 to 3 per year) and the Advisory Board’s meetings (1 per year), including economy travel tickets and a one- or two-night stay; 2) 20% of the salary for the NEAR communicator; 3) 10% of the salary for the NEAR coordinator; and 4) premises for NEAR staff, including the five members of the Operational Group (OG).

Module 2 - Building the technical platform

The requested budget covers the salary of the IT manager (80%), the database (DB) manager (10%), and the cost of IT support from SUNET and SNIC. SNIC’s role will start after 2021, when the platform will be ready to use big data (MRI and genetic data). The budget includes the purchase of one personal computer for each database included in NEAR, software to homogenize the databases (i.e., Oracle), and the required licenses.

Module 3 - Database documentation

In Module 3, the NEAR and local DB managers will determine shared procedures for maintaining the databases and will render their local metadata uniform. This module will be the foundation for harmonizing the data (Module 4). The costs in Module 3 will primarily include the salaries of the local DB or study managers. The remaining budget concerns the NEAR coordinator who facilitates local-level work, and the IT manager who supports both local DB and NEAR coordinators. The varying percentages of staff cost depend on the amount and type of data collected in the respective datasets. Local databases with ongoing large data collection will require a higher percentage of work than smaller or completed databases.

Module 4 - Data harmonization

During the first four years of Module 4, part of the budget will cover the support provided by Maelstrom that is crucial to data harmonization. Other costs include: 1) the salaries of the NEAR coordinator and supervisor who work together with Maelstrom to define the harmonization procedure during the first two years; 2) salary of the NEAR DB manager who then join the group to perform the actual harmonization. After the first four years, the requested budget is mainly for

the salaries of the NEAR and local DB managers. A smaller amount is asked for the central coordination and supervision.

Module 5 - Data access and user support

The requested budget for the first two years of Module 5 is needed to cover the development of user access procedures. The NEAR supervisor will outline the procedures and discuss them with the SB, which will finalize them. When the procedures are in place, the NEAR supervisor's time will be devoted to reviewing user applications. From this point forward, users will pay NEAR to use the data. The user fees have been estimated conservatively and expressed as an average fee of 300 tsek per request. This average cost takes into account number and nature of the data (biological vs questionnaire-based data) and the type of users (public vs private sector). After the first two years, NEAR's coordinator and supervisor will monitor NEAR's performance and validate the usefulness of user support. After the first four years, user procedures should be in place and the workloads of the NEAR supervisor and coordinator can be reduced.

Module 6 - Maintenance and follow-up of the local databases

The costs associated with Module 6 concern the maintenance of the six local databases that are already completed (the Betula Project, GENDER, KP, Octo-Twin, SATSA and SALT). This will require less than 20% of the time of the local database manager. Completed databases without a local DB manager cost very little to maintain, and the NEAR DB manager can perform this task. For the other nine ongoing databases, the costs are for collecting new data and updating documentation. Please note that the costs associated with some databases are higher because of variation in the amount and type of data collected. The universities or other co-funders cover more than two-thirds of these costs.

Module 7 - Expansion of NEAR

This module is dedicated to promoting and expanding NEAR. The costs in this module consist of 80% of the salary of the communicator and the activities she/he will organize. She/he will update the webpage and write newsletters and scientific reports. The communicator will also organize the kick-off meeting in 2018 and the subsequent annual workshops. She/he will organize courses to spread the know-how accumulated by the NEAR OG to other researchers and infrastructures in Sweden and abroad. The cost of updating NEAR by linking it with national registers is included in this module.

Please note that:

- a) SHARE is one of the infrastructures participating in NEAR. Since SHARE is also applying as a stand-alone applicant and as a member of the SWEEP consortium, its costs for data collection and communication are not included in this proposal. However, SHARE's participation in NEAR depends on full funding from VR as requested in the stand-alone application.
- b) Each university and department accounts for a different percentage of the indirect costs: KI 23%-26%, Lund 20%, BTH 35%, GU 25%, UmU 21.5%, and JU 44%.
- c) The budget includes an average annual salary raise of 2.5%.
- d) The matching funds from the universities and the contribution of other co-funders for years 5-8 are estimated based on the current situation.
- e) Table-compilation 4 reports the resources already available for NEAR at the six universities. We consider the previously collected data to be the most important resource.

NEAR: The National E-infrastructure for Aging Research in Sweden.

Key references & CVs

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7. Harris, H, Bergkvist L and Wolk A. Vitamin C intake and breast cancer mortality in a cohort of Swedish women. *British journal of cancer*, 2013, 109(1): p, 257-264
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CURRICULUM VITAE – LAURA FRATIGLIONI

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Tel: (+46) 8 690 5818; **Fax:** (+46) 8 6906889; **E-mail:** Laura.Fratiglioni@ki.se

High degrees

- 1977 BA in Medicine, University of Florence, Italy (1997 in Sweden)
- 1981 Specialist in Neurology, University of Florence, Italy (1997 in Sweden)
- 1993 PhD in Geriatric Epidemiology, Karolinska Institutet, Stockholm
- 1997 Associate professor, Karolinska Institutet, Stockholm
- 2000 Professor, Karolinska Institutet, Stockholm

Current Positions

- 2017-present Head of Medical sector at Aging Research Center (ARC)
- 2001-present Professor at the Aging Research Center, Karolinska Institutet
- 2000-present Research Leader, Stockholm Gerontology Research Center
- 1999-present Senior physician, Geriatric Medicine, Karolinska University Hospital

Previous Positions

- 2007-2016 Director of Aging Research Center (ARC), KI, Stockholm
- 2009-2015 Director of the National Graduate School for Aging Research
- 2001-2006 Co-Director of Aging Research Center, Karolinska Institutet
- 2001-2005 Head of the Division of Geriatric Epidemiology, Dept of NEUROTEC, KI
- 2000-2001 Lecturer (Associate Professor) position at the Dept of NEUROTEC, KI
- 1996-1999 Research Scientist position at the Division of Geriatric Medicine, KI
- 1982-1989 Assistant Professor, Neurological Clinic, University Hospital of Florence

Publications

362 articles in peer-reviewed journals, 32 book chapters, and 13 reports. 45208 citations by Jan 2017; h-index= 100 (according to *google scholar*)

Supervision

Current main supervisor of 2 PhD students, and co-supervisor of 6 PhD students.

Previous main supervisor of 15 PhD students.

Main supervisor of 12 Post-doc students.

Current research project leadership

- 2016-present PI of infrastructure NEAR
- 2015-present KI- Steering committee EIT-health
- 2012-present Leader of 4 European projects (NEW-AGE, MPI-AGE, Co-STREAM, EIT-Care)
- 1999-present Principal Investigator “The SNAC-Kungsholmen Study (SNAC-K)”
- 1999-present Member of the steering group in the national study SNAC
- 1996-present Scientific Coordinator of the Kungsholmen Project on Aging & Dementia

Previous research project leadership (latest)

- 2005-2015 Core leader & member of the Steering Committee - “Swedish Brain Power”
- 2010-2012 Cost of brain disorders in Europe 2010: Leader of the Dementia panel

Prizes

- 2014 Italian Society of Gerontology and Geriatrics – “Enrico Greppi’s prize”
 2013 Lifetime Achievement Award from the American Alzheimer’s Association
 2011 Wajlit och Eric Forsgrens prize for AD researcher - Umeå University
 2010 Sohlberg's Nordic Prize in gerontology; Sofiahemmet-Research and Education prize in dementia research
 2009 Karolinska Institutet Folksams prize in epidemiologic research
 2008 The Swedish Society of Medicine – “Inga Sandeborg’s prize”
 2001 Italian Society of Neurology - Award “In memory of Prof L Amaducci”

Awards & Honors

- 2011 FAS mid-term evaluation of ARC: ‘Excellent’
 2011 KI - ERA evaluation (international panel): grading ‘Outstanding’
 2010-15 The Karolinska Institutet - Distinguished Professor Award
 2000-04 Medical Research Council - Sweden – 4-year position as PhD student
 1996-99 Medical Research Council - Sweden – 4-year Research Scientist position

Commissions of Trust in Sweden

- 2012-present Member of the Research Board, Karolinska Institute
 2013-14 Member of the Faculty board- Karolinska Institute
 2013 Chair of the Board for national infrastructure ESS/SHARE
 2010-11 Chair of the Panel-Public Health, Swedish Research Council-Medicine
 2009-12 Member of the Scientific Advisory Board - Statens Folkhälsoinstitut
 2008-present Reviewer for L och H Ostermans Foundation at the Karolinska Institutet
 2007-10 Expert member, Social Council, Socialdepartementet
 2006-10 Expert reviewer for the Swedish Research Council in Medicine (VR)
 2006-12 Expert member- Söderström-Königska Sjukhemmet-The Sw. Medical Society
 2003-07 Expert reviewer in the Priority Committee-Public Health, FAS

International activities

- 2011-13 Member-IOC / Canadian Longitudinal Study on Aging
 2010-13 Member- Scientific Advisory Committee of the JPND in Europe
 2009-13 Member - Advisory Board of 2 European Projects
 2009-12 Member / Scientific Board, Fondation de Maladie d’Alzheimer, France
 2007-08 Expert reviewer - National Public Health Institutes in France & Germany
 2000-present Reviewer for several Journals (Lancet; Lancet Neurology, BMJ, Am J Epi)
 2004-07 Senior Member, Maxnet Aging Research Network, Max Planck Institute

Current major research grants

	<i>Title</i>	<i>Period</i>	<i>Amount TSEK</i>
Forte-program	Aging trough life	2017-19	3 000/year
VR-Infrastruct.	SNAC-K database	2016-17	2 000/year
VR-projects	Aging without dementia	2017-20	1 000/year
VR-program	Body-mind connection	2014-17	3 400/year
Forte	FAS Center KI-SU ARC	2011-16	12 000/year
EU-project	CoSTREAM	2016-20	1 000/year

KP AND SNAC-K – PI: LAURA FRATIGLIONI

1. Rizzuto D, Orsini N, Qiu C, Wang HX, [Fratiglioni L](#). Lifestyle, social factors, and survival after age 75: population based study. *BMJ* 2012; 345: e5568.
2. Ferrari C, Xu WL, Wang HX, Winblad B, [Fratiglioni L](#). How can elderly APOE ε4 carriers remain free from dementia? *Neurobiol Aging* 2013; 34(1): 13-21
3. Lambert J et al (consortium). Meta-analysis of 74,046 individuals identifies 11 new susceptibility loci for Alzheimer's disease. *Nat Genet* 2013; 45(12): 1452-8.
4. Qiu C, von Strauss E, Bäckman L, Winblad B, [Fratiglioni L](#). 20-year changes in dementia occurrence suggest decreasing incidence in central Stockholm, Sweden. *Neurology* 2013; 80(20):1888-94.
5. Beelen R et al. - ESCAPE consortium. Effects of long-term exposure to air pollution on natural cause mortality: an analysis of 22 European cohorts within the multi-center ESCAPE project. *The Lancet* 2014; 383(9919): 785-95.
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7. Pantzar A, Laukka EJ, Atti AR, Fastbom J, [Fratiglioni L](#), Bäckman L. Cognitive deficits in unipolar old-age depression: a population-based study. *Psychol Med* 2014; 44(5): 937-47.
8. Qiu C, [Fratiglioni L](#). A major role for cardiovascular burden in age-related cognitive decline. *Nat Rev Cardiol* 2015; 12(5): 267-77
9. Angleman SB, Santoni G, von Strauss E, [Fratiglioni L](#). Temporal Trends of Functional Dependence and Survival Among Older Adults From 1991 to 2010 in Sweden: Toward a Healthier Aging. *J Gerontol A Biol Sci Med Sci* 2015; 70(6): 746-52.
10. Wu YT, [Fratiglioni L](#), Matthews FE, Lobo A, Breteler MM, Skoog I, Brayne C. Dementia in Europe: epidemiological evidence and implications for policy making. *Lancet Neurol* 2016;15:116-24.
11. Xu WL, Pedersen NL, Keller L, Kalpouzos G, Wang HX, Graff C, Winblad B, Bäckman L, [Fratiglioni L](#). HHEX_23 AA Genotype Exacerbates Effect of Diabetes on Dementia and Alzheimer Disease: A Population-Based Longitudinal Study. *PLoS Med*. 2015;12(7): e1001853.
12. Wang R, [Fratiglioni L](#), Laukka EJ, Lövdén M, Kalpouzos G, Keller L, et al. Effects of vascular risk factors and APOE ε4 on white matter integrity and cognitive decline. *Neurology* 2015; 84: 1128-35.
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15. Hooshmand B, ..., [Fratiglioni L](#). Association of Vitamin B12, Folate, and Sulfur Amino Acids With Brain Magnetic Resonance Imaging Measures in Older Adults: A Longitudinal Population-Based Study. *JAMA Psychiatry*. 2016;73(6):606-13
16. Winblad B, et al. Defeating Alzheimer's disease and other dementias: a priority for European science and society. *Lancet Neurol* 2016;15(5):455-532.
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CURRICULUM VITAE – JOHAN FRITZELL**Address**

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Education

1991: Filosofie doktor, Phd, in Sociology. Dissertation title: Not solely by the Market: Income distribution in Sweden.

1994: Docent (associate professor), in Sociology, Stockholm.

Current positions

2002 - : Professor of Sociology at CHESS, SU and KI (on leave since 2014).

2014 - : Professor of Social Gerontology and head of section, ARC, KI and SU

2016 - : Director at Aging Research Center (ARC), KI and SU.

Previous positions

1991-97: assistant professor and, senior researcher, Swedish Institute for Social Research (SOFI)

1991-98: operative director of the 1991 Swedish Level of Living Project.

1/7 1997—30/6 1998: acting Professor of Sociology (especially level of living) at SOFI.

1999-2001: full-time commission member of the Swedish Government Welfare Commission (*Kommittén Välfärdsbokslut*).

2005-2011: research director at the Institute for Futures Studies, Stockholm.

Supervising experience (only completed ph.d. level listed)

M Nermo (2000), M Hultin (2001), M Rostila (2008), R Keller Celeste (2010), S Fritzell (not related) (2011), G Olsson (2016).

National appointments (selected). Member of:

2003-11: “docenturnämnden” at the Faculty of Social Sciences, Stockholm Univ.

2004-08: the research ethics board, Swedish National Board of Health and Welfare.

2005-07: the Swedish Council for Sustainable Development, appointed by Swedish Government.

2006-11: the scientific council for the Swedish Social Insurance Agency (FK).

2007-12: the board of Swedish Council for Working Life and Social Research (FAS).

2009-12: the international expert panel for Marie Curie- COFAS international post-doc program, Swedish Council for Working Life and Social Research (FAS).

2010: External reviewer for a new Director at CEFOS, Gothenburg University.

2013-16: and chair of the international expert panel for Marie Curie-COFAS2 international post-doc program, Swedish Council for Health, Working Life and Welfare (FORTE).

The board for CEDAR, Umeå University.

Opponent or thesis examination committee member for doctoral theses at Gothenburg University, KI, Royal Institute of Technology, SU, Umeå University.

International appointments (selected)

Member of the board of the Luxembourg Income Study *asbl*. (Swedish representative)

1998-2001: member of scientific expert panel IRISS-C/I Large Scale Facility CEPS/INSTEAD Luxembourg.

2000-2005: national expert of the European Union network COST A15.

2003-04: external reviewer for a Professorship at the Danish Institute for Social Research & Univ of Copenhagen.

Member of scientific expert group for the yearly price “the Aldi Hageaars Memorial Award”.

2006-2011: member of RECOWE, Network of Excellence, 6th EU Framework Programme.

2010- : member - associate expert and Country team leader of GINI (Growing Inequalities’ Impacts), project within the 7th EU Framework Programme.

2012- : member of DRIVERS. Project within the 7th EU Framework Programme.

2009-2012: member of the Steering Committee for European Science Foundation Networking Programme: The European Children Cohorts Network (EUCCONET).

2013-2014: International Evaluation team of THL (National Institute for Health and Welfare, Finland), appointed by the Ministry of Social Affairs and Health, Finland.

2013-2015: member of the International Scientific Advisory Committee for the LIFE study.

2014- : National expert and coordinator (2015) to the *European Social Policy Network (ESPN), European Commission*.

2015- : member, and vice chair, of the International Scientific Advisory Board for *the Joint Programming Initiative, More Years Better Lives*.

Opponent and examination committee member for doctoral theses at European University Institute (EUI), Firenze, Helsinki University, Oslo University, Turku University.

Expert member of international organizations: Academy of Finland, Belgian Science Policy,

Crises Management Initiative, Danish National Institute for Social Research, Danish Social

Science Research Council, Estonian Research Council, European Science Foundation,

Foundation for Baltic and East European Studies, Israel Science Foundation, Ludwig Boltzmann

Institutes, Nordic Council of Ministers, United Nations Research Institute for Social

Development, World Health Organisation.

Referee for international scientific journals

Acta Sociologica, BMC Public Health, Demographic Research, Economic J, European J Public

Health, European Sociological Review, Gerontology, International J Behavioral Medicine,

International J Epidemiology, International J Social Welfare, J European Social Policy, J

Scandinavian Studies in Criminology and Crime Prevention, Manchester School, Research on

Aging, Scandinavian J Public Health, Social Forces, Social Science Research, Social Science &

Medicine, Sociology of Health and Illness.

Grants and experiences of leading national or international collaboration projects.

PI of several national Swedish research projects founded by: the Swedish Council of Social

Research (SFR), the Swedish Council for the Humanities and Social Sciences (HSFR), the Bank

of Sweden Tercentenary Foundation (RJ), the Swedish Council for Working Life and Social

Research (FAS) the Swedish Social Insurance Agency (FK), FORTE, Welfare and the Swedish

Research Council (VR). Since 2007 I have led two international research programs in

collaboration Brazil granted by the Swedish Foundation for International Cooperation in

Research and Higher Education (STINT). Co-PI (with O Lundberg) to the NEWS-project:

“Välfärds och jämlikhetspolitik I Sverige och Norden – långsiktig betydelse för folkhälsan” in

collaboration with Sir M Marmot and the WHO:s Commission on social determinants of health.

Swedish team leader for the FP7-programme GINI. PI for 2 large Nordic Projects “Inequality

impacts” funded by the Joint Committee for Nordic Research Councils for the Humanities and

the Social Sciences (NOS-HS) (~440,000€) and the SIA (Social Inequalities of Ageing) funded

by NordForsk, (~3.25 Million€).

Bibliometric parameters (January 2017) - based on Google Scholar (or Harzing’s Publish or

Perish, same output). Total number of citations: Citations 3922 (since 2012 1683); H index 32.

SWEOLD – PI: JOHAN FRITZELL

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2. Mortensen L, ..., Fritzell J. (2016) Shape of the association between income and mortality. A cohort study of Denmark, Finland, Norway and Sweden in 1995 and 2003 BMJ Open 2016;6: e010974.
3. Rehnberg J, Fritzell J. The shape of the association between income and mortality in old age: a longitudinal Swedish national register study. Soc Sci Med: Population Health 2016, 2.
4. Agahi N, Fors S, Fritzell J, Shaw BA. (2016) Smoking and physical inactivity as predictors of mobility impairment during late life: Exploring differential vulnerability across education level in Sweden. Journal of Gerontology: Social Sciences. doi:10.1093/geronb/gbw090
5. Sundberg L, Agahi N, Fritzell J, Fors S. (2016) Trends in health expectancies among the oldest old in Sweden, 1992–2011. Eur J Public Health. pii: ckw066. [Epub ahead of print]
6. Olsson G, Fritzell J. A multilevel study on ethnic and socioeconomic school stratification and health-related behaviors among students in Stockholm. J Sch Health 2015 85(12):871-9.
7. Fritzell J et al. (2015) Absolute or relative? A comparative analysis of the relationship between poverty and mortality, Int J Public Health 60, 101-110.
8. Nelson, K., Fritzell, J. (2014) Welfare states and population health: The role of minimum income benefits for mortality. Social Science & Medicine: 112: 63-71.
9. Rostila M, Fritzell J. (2014) Mortality differentials by immigrant groups in Sweden: The contribution of socioeconomic position. Am J Public Health: 104(4):686-95.
10. Eklund, J.M., Fritzell, J. (2014) Keeping delinquency at bay: The role of the school context for impulsive and sensation-seeking adolescents. Eur J. Criminol 11:682-701.
11. Fritzell J, et al. (2014) "Sweden: Increasing income inequalities and changing social relations", in Nolan B et al. Changing Inequalities and Societal Impacts in Rich Countries: Thirty Countries' Experiences. Oxford: Oxford University Press.
12. Fritzell, J., (2014) "Health inequality and social justice", pp. 339-352 in The Routledge International Handbook of Social Justice (M. Reisch, ed.). London: Routledge.
13. Kvist J., Fritzell J., Hvinden B., Kangas O. (eds.) (2012) Changing Social Equality, The Nordic welfare model in the 21st century. Bristol. Policy Press, 2012 (3 chapters therein).
14. Rostila M, Kölegård ML, Fritzell J (2012) "Income inequality and self-rated health in Stockholm, Sweden. A test of the 'income inequality hypothesis' on two levels of aggregation", Soc Sci Med, 74: 1091-1098, 2012.
15. Celeste RK, Nadanovsky P, Fritzell J. (2011) Trends in socioeconomic disparities in oral health in Brazil and Sweden. Community Dent Oral Epidemiol, 39: 204–212, 2011.
16. Fritzell, J. Ritakallio, V-M. (2010) Societal shifts and changed patterns of poverty, International Journal of Social Welfare, 19: S25-S41, 2010.
17. Lennartsson, C., Silverstein, M, Fritzell, J. (2010) "Time-for-money exchanges between older and younger generations in Swedish families", Journal of Family Issues, 31: 189-210.
18. Modin B. Fritzell, J. The long arm of the family: Are parental and grandparental earnings related to young men's body mass index and cognitive ability? Int J Epidemiol 2009 38.
19. Lundberg O. ... Fritzell J. The role of welfare state principles and generosity in social policy programmes for public health: an international comparative study. Lancet 2008,372:1633-40.
20. Fritzell, J.; Lundberg, O. (eds.) (2007) Health inequalities and welfare resources: Continuity and change in Sweden. Bristol: Policy Press (and 4 chapters therein).

CURRICULUM VITAE - NANCY L. PEDERSEN**Address**

Department of Medical Epidemiology and Biostatistics (MEB), Karolinska Institutet, Box 281, SE-171 77 Stockholm, Sweden

Tel.: (46) 8-524 87418; **e-mail:** Nancy.Pedersen@ki.se

Education

1974 University of Minnesota, B.A. (Magnum cum laude)

1977 University of Colorado, M.A.

1980 University of Colorado, Ph.D. (psychology, specialty: behavioral genetics; minor: developmental psychology, biochemistry). Title: Genetic and Environmental Factors for Usage of Common Drugs; Advisor: G.E. McClearn

Current Positions

1999- Professor of Genetic Epidemiology at the Department of Medical Epidemiology and Biostatistics, Karolinska Institutet

1997- Adjunct Research Prof., Department of Psychology, University of Southern California

Professional Positions

2008-2011 Vice Dean of Research, Karolinska Institutet

2006-2007 Chair, Department of Medical Epidemiology and Biostatistics, Karolinska Institutet

2000-2005 Deputy Chair, Dept. of Medical Epidemiology and Biostatistics, Karolinska Institutet

1999 Senior Lecturer in Genetic Epidemiology, Dept. of Medical Epidemiology and Biostatistics, Karolinska Institutet

1998-1999 Researcher (Forskartjänst), Karolinska Institutet

1995-1999 Division Head, Div of Genetic Epidemiology, Inst. of Environmental Medicine, KI

1989 Docent (Associate Professor) in behavior genetics, Karolinska Institutet

1989-1996 Senior Research Scientist and Affiliate Associate Professor, Center for Developmental and Health Genetics, The Pennsylvania State University

1988-1997 Research Associate Professor, Dept of Psychology, Univ. of Southern California

1986-1990 Adjunct Assistant Professor and Senior Research Associate of Human Development, College of Human Development, The Pennsylvania State University

1982-1986 Research Associate, College of Human Development, Penn State University

1980-1988 Project Director, Department of Environmental Hygiene, Karolinska Institutet

1980-1982 Research Associate, Inst. for Behavioral Genetics, University of Colorado, Boulder

1979-1980 Statistical Software Consultant, University of Colorado Computing Center, Boulder

1977-1978 Guest Researcher, Department of Environmental Hygiene, Karolinska Institutet

1976-1980 Research Assistant, Institute for Behavioral Genetics, University of Colorado

1975 (Summer) Research Assistant, Behavioral Biology Laboratory, University of Hawaii

1973-1974 Instructor, Honors Program, University of Minnesota

Honors and awards

2014 Dobzhansky Memorial Award, Behavior Genetics Association

2009 Distinguished Professors Award, Karolinska Institutet

2007 The James Shields Memorial Award for Twin Research in Behavioural Genetics

2007 Distinguished Career Contribution to Gerontology, Gerontological Society of America

2007 Aston-Gottesman Lecture, University of Virginia

2004 Honorary doctorate "doctor honoris causa", Jönköping University

2002 Fellow, Gerontological Society of America

Professional Activities (Selected)

- 2016-2018 BSS Member-At-Large, Gerontological Society of America
 2016 Jury Member: FWO Odysseus program, Research Fund – Flanders, Belgium
 2015 Reviewer: MRC-UK
 2015- Member of The Nobel Assembly at Karolinska Institutet
 2015- Board Member: “Bedre Helse” Program, Norwegian Research Council
 2014- Board Member: Alberta’s Tomorrow Project Advisory Board
 2014- Board Member: German National Cohort International Advisory Board
 2014- Board Member: CESSDA International Advisory Board
 2014- Board Member: Council for Research Infrastructure, Swedish Research Council
 2014- Chair of the International Advisory Board: Farr Institute and UK Health Informatics Research Network
 2013-2014 Member: Science Europe – Medical Committee
 2013 External reviewer: German National Cohort, for Helmholtz Association, Germany
 2013 Reviewer: Special emphasis panel – NIDDK
 2013 External reviewer: Professor in Gerontology, Jönköping University
 2013- Member: Wellcome Trust Peer Review College
 2012, 2013 External reviews, MRC (UK) – CFS/ME Panel, Wellcome Trust
 2012 External reviewer Professor and Senior Lecturer in Health Science Statistics, Gothenburg University
 2011 External reviewer: Research Council of Norway: National Review: Panel on Public Health and Health-related research

Other Activities

- Keynote speaker at international conferences 17 times
 Invited speaker at international conferences 47 times
 Invited colloquia at other universities (Erasmus 2 times, Harvard 2 times, Univ. of Southern California 2 times, Univ. of Uppsala 2 times, KTL/Univ. of Helsinki, Stockholm University)
 Special task force NIH/NIA: Aging and Genetic Epidemiology (1999); Mortality and change (2005)
 Symposium organizer or participant at international conferences 45 times

Publications

560 manuscripts published or in press in refereed journals; H-Index = 80

Graduate Student Supervision

Primary Thesis Adviser: 13; Thesis Co-Adviser: 21, Supervision of Post docs: 19
 Principal Examiner (opponent): 8, Committee Memberships (Betygsnämnd): 37

Current Research Support (As PI)

Period	Title	Funder	Amount
2010-15	Gene-Environment interplay of social contexts and aging-related outcomes	NIA/NIH R01 AG037985	\$3,863,118
2013-18	Aging and Health	FORTE Nr 2013-2292	18,000,000 SEK
2013-17	Aging and Health	Swedish Research Council	13,844,000 SEK
2011-17	Parkinson’s Disease: Genes, Environments and their Interplay	Swedish Research Council	8,050,000 SEK
2015-19	PROPAG-Ageing (PI of subcontract)	EU-H2020 Grant 634821	€901,232
2015-18	ADAGE (PI of subcontract)	JPND/Swedish Research Council	4,265,120 SEK

SALT AND SATSA – PI: NANCY PEDERSEN

1. Finkel D, Ernsth-Bravell M, Pedersen NL. Temporal Dynamics of Motor Functioning and Cognitive Aging. *J Gerontol A Biol Sci Med Sci*. Jan 2016;71(1):109-116.
2. Reynolds CA, Gatz M, Christensen K, et al. Gene-Environment Interplay in Physical, Psychological, and Cognitive Domains in Mid to Late Adulthood: Is APOE a Variability Gene? *Behav Genet*. Jan 2016;46(1):4-19.
3. Seetharaman S, Andel R, McEvoy C, Dahl Aslan A, Finkel D, Pedersen NL. Blood glucose, diet-based glycemic load and cognitive aging among dementia-free older adults. *J Gerontol A Med Sci*. 2015;70(4):471-479.
4. Finkel D, Andel R, Pedersen NL. Gender Differences in Longitudinal Trajectories of Change in Physical, Social, and Cognitive/Sedentary Leisure Activities. *J Gerontol B Psychol Sci Soc Sci*. Sep 13 2016.
5. Bokenberger K, Strom P, Dahl Aslan AK, et al. Association Between Sleep Characteristics and Incident Dementia Accounting for Baseline Cognitive Status: A Prospective Population-Based Study. *J Gerontol A Biol Sci Med Sci*. Jul 11 2016.
6. Karlsson IK, Bennet AM, Ploner A, et al. Apolipoprotein E ϵ 4 genotype and the temporal relationship between depression and dementia. *Neurobiol of Aging*. 2015;36:1751-1756.
7. Tucker-Drob EM, Reynolds CA, Finkel D, Pedersen NL. Shared and unique genetic and environmental influences on aging-related changes in multiple cognitive abilities. *Dev Psychol*. 2014;50(1):152-166.
8. Davies G, Harris SE, Reynolds CA, et al. A genome-wide association study implicates the APOE locus in nonpathological cognitive ageing. *Mol Psychiatry*. 2014;19:76-87.
9. Reynolds CA, Zavala C, Gatz M, et al. Sortilin receptor 1 predicts longitudinal cognitive change. *Neurobiol of Aging*. 2013;34:1710.e1711-1710.e1718.
10. Emery CF, Finkel D, Pedersen NL. Pulmonary function as a cause of cognitive aging. *Psychol Sci*. 2012;23(9):1024-1032.
11. Eriksson UK, Bennet AM, Gatz M, Dickman PW, Pedersen NL. Nonstroke cardiovascular disease and risk of Alzheimer disease and dementia. *Alzheimer Dis Assoc Disord*. Jul-Sep 2010;24(3):213-219.
12. Brommelhoff JA, Gatz M, Johansson B, McArdle JJ, Fratiglioni L, Pedersen NL. Depression as a risk factor or prodromal feature for dementia? Findings in a population-based sample of Swedish twins. *Psychol Aging*. Jun 2009;24(2):373-384.
13. Gatz M, Reynolds CA, Fratiglioni L, et al. Role of genes and environments for explaining Alzheimer's disease. *Arch Gen Psychiatry*. 2006;63:168-174.
14. Kendler KS, Gatz M, Gardner CO, Pedersen NL. A Swedish national twin study of lifetime major depression. *Am J Psychiatry*. 2006;163:109-114.
15. McClearn GE, Johansson B, Berg S, et al. Substantial genetic influence on cognitive abilities in twins 80 or more years old. *Science*. 1997;276:1560-1563.

CURRICULUM VITAE – ALICJA WOLK**Address**

Unit of Nutritional Epidemiology, Institute of Environmental Medicine, Karolinska Institutet, Nobels väg 13, Box 210 SE-171 77 Stockholm Sweden

Tel: +46 8 524 86170, **mobile:** 070 5567101; **e-mail:** Alicja.Wolk@ki.se

Education

1974 MSc in Human Nutrition, Warsaw Agricultural University, Poland

1987 Clinical Epidemiology, National Institute of Food and Nutrition, Warszawa, Poland
Title: Individualized dietary counseling in type 2 diabetes, Supervisor: Prof. Barbara Cybulska

1985-87 Pre-postdoc, Karolinska Institutet

Professional preparation

1995-97 Visiting Scholar, Harvard School of Public Health, Boston, USA

1992 Associate Professor (Docent) of Nutritional Epidemiology, Dept of Cancer Epidemiology Uppsala University, Sweden

1987 Guest researcher, Karolinska Institutet

1987 Dr Med Sci/PhD in Human Nutrition/Clinical Epidemiology, Warsaw, Poland

1974 MSc in Human Nutrition (5-y program, incl. toxicology and biochemistry), University of Life Sciences (SGGW) Warsaw, Poland

Academic/Professional Appointments

2014- Vice- Chairman of Institute of Environmental Medicine, KI

2001- Professor at Karolinska Institutet (KI), 100% research

2008-13 Coordinator of Epidemiology (5 Units) at Institute of Environmental Medicine (IMM), KI

2002- Head of Nutritional Epidemiology Unit, Department of Environmental Medicine (IMM/KI)

2001 Full Professor of Nutritional Epidemiology, Dept. of Medical Epidemiology & Biostatistics, KI

1998-99 Director of PhD studies (Studierektor), Dept. Medical Epidemiology & Biostatistics, KI

1989-94 Senior Researcher, Cancer Epidemiology, Uppsala University

1988 Senior lecturer in Human Nutrition, Uppsala University

1978-87 PhD- student and researcher, Dept. of Epidemiology, Natl. Inst of Food & Nutrition, Warsaw, Poland

Tutoring experience

Supervision of 27 PhDs - two were awarded prizes for a) the best Swedish PhD thesis in epidemiology (2009);

b) Chorafas prize for the best PhD at KI (2006); *Supervision* of 23 Postdoctoral researchers.

International networks in academia (ongoing)

- EUROPA-University of Cambridge, UK (BCAC -the Breast Cancer Association Consortium-genetics)
- Institute of Cancer Research, London, UK (PRACTICAL-the Prostate Cancer Consortium – genetics)
- IARC/WHO, Lyon and NCI, USA (KIDney cancer -RISK consortium, genetics)
- Oxford University, Cancer Epidemiology Unit, UK (Consortium on Breast, Endometrial and Ovarian Cancers)
- Norwich University, UK and Helsinki University, Finland (EU-project -- Molecular Targets Open for Regulation by the gut flora – New Avenues for improved Diet)
- University of Birmingham, UK (Bladder Cancer Network (IBCN))

- National Institute for Public Health and the Environment, the Netherlands (Consortium on Waist Circumference and Mortality)
- Network of Cohorts in Europe and the United States, coordinated from Hellenic Health Foundation, Athens, Greece (CHANCES the Consortium on Health and Ageing)
- National Cancer Institute, Milan, Italy (STOP SMOKE Consortium)
- USA-Harvard Medical School (Pooling Project on Diet and Cancer)
- Deaconess Hospital, Prevention of Cardiovascular Diseases Unit, Boston, USA (Heart Failure)
- American Cancer Society (Consortium on Obesity, Physical Activity and Mortality)
- Memorial Sloan-Kettering Cancer Center (Epidemiology of Endometrial Cancer Consortium)
- Mailman School of Public Health, Columbia University, New York, USA (Pancreas Cancer)
- National Cancer Institute, Bethesda, (NCI Consortium of Large Prospective Cohorts)
- National Cancer Institute, Bethesda (OCAC - Ovarian Cancer Consortium- genetics)
- University of South. California (CORECT – Colorectal Cancer Consortium- genetics)

Other merits of relevance and awards

- 2014- Member of AcademiaNet-Outstanding Female Academics in Europe -administered in Germany (*nominated by the Swedish Research Council*)
- 2010-14 Distinguished Professor Award at Karolinska Institutet
- 2007-12 Strategic Research Award at Karolinska Institutet
- 2007 *Ranked as 1st of many applicants for Professorship in Preventive Medicine, Uppsala University*
- 1999-05 Senior Cancer Investigator Award (*6 års Senior Forskartjänst, Cancerfonden*)
- 1993-99 Cancer Investigator Award (*6 år Forskarassistent, Cancerfonden*)
- 1991-92 Junior Cancer Investigator Award (*2-år Vetenskaplig experttjänst, Cancerfonden*)
- National expert in diet and cancer questions for the Swedish Cancer Foundation.

Commissions of trust (selected)

- 2014 External evaluator (ERA) of MRC Epidemiology, Cambridge University, UK
- 2013 External evaluator (ERA) of Cancer Epidemiology Research, Oxford University, UK
- 2009- Member, Expert Committee on Food and Nutrition, the Swedish Royal Academy of Science (KVA)
- 2009-12 Member, Expert Committee, the Swedish Food Agency/Livsmedelsverket (SLV)
- 2009-14 Member of the Scientific Board, NutriNet-Santé Centre, University Paris 13, France
- 2008 External evaluator (ERA) of Cancer Epidemiology, Oxford University, UK
- 2008-11 Member, Steering Committee for Strategic Cancer Grants, the Research Council of Norway
- 2008-9 External evaluator (ERA) of Center for Epidemiology and Public Health, Paris, France
- 2006- National expert in Diet and Cancer research field for the Swedish Cancer Foundation
- 2006-10 Expert Committee, the Swedish Council on Technology Assessment in Health Care (SBU)
- 2006-09 Member of the Scientific Board, Swedish Cancer Foundation
- 2004 External evaluator (ERA) of Department of Epidemiology, Tampere University, Finland

Citations

published over 600 scientific papers (*as Kuskowska-Wolk before 1992*), cited 29,000 times according to Web of Science (H-index 88) in many prestigious medical journals. She is a member of the prestigious international “AcademiaNet - Outstanding Female Academics” (*nominated by the Swedish Research Council*)

COSM AND SMC – PI: ALICJA WOLK

1. Wolk A, et al. Insulin-like growth factor I and prostate cancer - a population-based case-control study. *J Natl Cancer Inst* 1998;90:911-5.
2. Wolk A, et al. Long-term intake of dietary fiber and decreased risk of coronary heart disease among women. *JAMA* 1999;281:1998-2004.
3. Wolk A, et al. Can measurements of IGF-1 and IGFBP-3 improve the sensitivity of prostate-cancer screening? *LANCET* 2000;356:1902-1903.
4. Wolk A, et al. Long-term fatty fish consumption and renal cell carcinoma incidence in a prospective cohort of women. *JAMA* 2006;296:1-6.
5. Larsson CS, Orsini N, Wolk A. Vitamin B6 and risk of colorectal cancer: a meta-analysis of prospective studies. *JAMA* 2010 ;303:1077-83
6. Berrington de Gonzalez A, Hartge P, Cerhan JR, Flint AJ, ..., Weiderpass E, Willcox BJ, Wolk A, Zeleniuch-Jacquotte A, Willett WC, Thun MJ. Body-mass index and mortality among 1.46 million white adults. *N Engl J Med* 2010;363:2211-9.
7. Larsson SC, Virtamo J, Wolk A. Chocolate consumption and risk of stroke in women. *J Am Coll Cardiol* 2011;58:1828-9.
8. Rajaraman P, ... Wolk A, et al. Genome-wide association study of glioma and meta-analysis. *Hum Genet* 2012;131:1877-88.
9. Stackelberg O, Björck M, Larsson SC, Orsini N, Wolk A. Fruit and vegetable consumption and risk of abdominal aortic aneurysm. *CIRCULATION* 2013;128:795-802.
10. Harris HR, ... Wolk A. The Swedish mammography cohort and the cohort of Swedish men: study design and characteristics of two population-based longitudinal cohorts. *OA Epidemiology* 2013;1:16.
11. Åkesson A, Larsson SC, Discacciati D, Wolk A. Low-risk diet and lifestyle habits in the primary prevention of myocardial infarction in men: a population-based prospective cohort study. *J Am Coll Cardiol* 2014;64:1299-306.
12. Rautiainen S, Lindblad BE, Morgenstern R, Wolk A. Total antioxidant capacity of the diet and risk of age-related cataract: a population-based prospective cohort of women. *JAMA Ophthalmol* 2014;132:247-52.
13. Cuzick J, ..., Wolk A. Prevention and early detection of prostate cancer. *LANCET ONCOL* 2014;15:e484-e492.
14. Stackelberg O, Björck M, Larsson SC, Orsini N, Wolk A. Alcohol consumption, specific alcoholic beverages, and abdominal aortic aneurysm. *CIRCULATION* 2014;130:646-52.
15. Kitahara CM, Flint AJ, Berrington de Gonzalez A, ... Visvanathan K, White E, Wolk A, Zeleniuch-Jacquotte A, Hartge P. Association between class III obesity (BMI of 40-59 kg/m²) and mortality: a pooled analysis of 20 prospective studies. *PLoS Med* 2014; 11.
16. Bouvard V, ..., Wolk A, et al. Carcinogenicity of consumption of red and processed meat. *LANCET ONCOL* 2015;16: 1599-600.
17. Moore SC, Lee IM, Weiderpass E, ..., Van Dusen R, Wolk A, Matthews CE, Patel AV. Association of Leisure-Time Physical Activity With Risk of 26 Types of Cancer in 1.44 Million Adults. *JAMA Intern Med* 2016;176:816-25.
18. Bellavia A, Larsson SC, Wolk A. Fish consumption and all-cause mortality in a cohort of Swedish men and women. *J Intern Med* 2017;281:86-95.
19. Steinhaus DA, ... Wolk A, Mittleman MA. Chocolate intake and incidence of heart failure: Findings from the Cohort of Swedish Men. *Am Heart J* 2017;183:18-23.
20. Wolk A. Potential health hazards of eating red meat. *J Intern Med* 2017;281:106-122.

CURRICULUM VITAE—ANDERS WIMO**Address**

Department of Neurobiology, Care Sciences and Society (NVS), H1, Division of Neurogeriatrics, Novum Pl 5 14157 Huddinge, Sweden

Tel.: +46 652 36600; **e-mail:** Anders.Wimo@ki.se

Current positions

1991- General Practitioner, Bergsjö-Harmånger (Hälsingland)
 2007- Adjunct Professor, Department of Neurobiology, care sciences and society, Karolinska Institutet, Stockholm

Previous positions

1995 Associate professor, department of Family Medicine, Umeå University, Sweden
 1999-2000 Clinical lecturer, Primary health Care of Hälsingland
 1999-2007 Researcher, Karolinska Institutet

Awards, Commissions

- Medical Products Agency on drug treatment of dementia (1994, 2002, and 2008)
- Swedish Ministry of Social affairs, Dementia report (2003)
- Swedish Council on Technology Assessment in Health Care (SBU). Dementia project, finalized 2008.
- National Board of Health and Welfare (Socialstyrelsen : several expert commissions, i.a. National guidelines for dementia care, finalized 2010, update ongoing 2017
- Chair of steering committee, SNAC project (Swedish study on Aging and Care) ongoing
- SNAC-Nordanstig, Principal Investigator, ongoing
- Member of steering committee SveDem (Swedish quality register) ongoing
- European Alzheimer's Disease Consortium (EADC) health economics group ongoing
- EU-projects: Previous: Consensus technical paper on cognitive impairment, Euofamcare, RightTimePlaceCare, EuroCoDe, Alcove. Ongoing: ActifCare, MIND-AD

Supervision

PhD-Candidates and postdocs: 12 (3 main supervisor, 9 co-supervisor)

Citations

Verified publications **157** **2017-02-15**

Citation indicators for Original Articles or Review Articles (130 in total). Based on Web of Science only.

Total number of citations	4658
Field Normalized Citation Score Average	2.39
Total Field Normalized Citation Score	236.21
Field Normalized Share of Top Publications	16.2%
Sum of Latest Known Journal Impact Factor	511.27

Scientific publications 2011 in total >150

SNAC-NORDANSTIG – PI: ANDERS WIMO

1. Wimo et al. The magnitude of dementia occurrence in the world. *Alzheimer Dis Assoc Disord* 2003.
2. Klarin I, Wimo A, Fastbom J. The association of inappropriate drug use with hospitalisation and mortality : a population-based study of the very old. *Drugs Aging* 2005;22(1):69-82.
3. ... Wimo. The amount of informal and formal care among non-demented and demented elderly persons - results from a Swedish population based study. *Int J Geriatr Psychiatry* 2005.
4. Sjölund BM, Nordberg G, Wimo A, von Strauss E. Morbidity and physical functioning in old age: differences according to living area. *J Am Geriatr Soc.* 2010 Oct;58(10):1855-62.
5. A Wimo, et al. The economic impact of dementia in Europe in 2008—cost estimates from the Eurocode project. *Int J Geriatr Psychiatry* 2011; 26:825-32.
6. Zhang ... Wimo. Cost-Effectiveness of a Health Intervention Program with Risk Reductions for Getting Demented: Results of a Markov Model in a Swedish/Finnish Setting. *J Alzheimers Dis.* 2011.
7. Sköldunger A ... Wimo A. Mortality and treatment costs have a great impact on the cost-effectiveness of disease modifying drugs in Alzheimer's disease. *Curr Alzheimer Res.* 2013
8. Prince M, Bryce R, Albanese E, Wimo A, Ribeiro W, Ferri CP. The global prevalence of dementia: A systematic review and metaanalysis. *Alzheimers Dement.* 2013;9(1)
9. Wimo A et al. Alzheimer Disease International. The worldwide economic impact of dementia 2010. *Alzheimers Dement.* 2013 Jan;9(1):1-11.e3.
10. Nordström P, Religa D, Wimo A, Winblad B, Eriksson M. The use of cholinesterase inhibitors and the risk of myocardial infarction and death: a nationwide cohort study in subjects with Alzheimer's disease. *Eur Heart J.* 2013 Jun 4. [Epub ahead of print]
11. Wimo A, et al. The GERAS Study: a prospective observational study of costs and resource use in community dwellers with Alzheimer's disease in three European countries--study design and baseline findings. *J Alzheimers Dis.* 2013 Jan 1;36(2):385-99.
12. Wimo A, Ballard C, Brayne C, Gauthier S, Handels R, Jones RW, Jonsson L, Khachaturian AS, Kramberger M. Health economic evaluation of treatments for Alzheimer's disease: impact of new diagnostic criteria. *J Intern Med.* 2014 Mar;275(3):304-16. PMID: 24605810
13. Sköldunger A, Fastbom J, Wimo A, et al. Impact of Inappropriate Drug Use on Hospitalizations, Mortality, and Costs in Older Persons and Persons with Dementia: Findings from the SNAC Study. *Drugs Aging.* 2015 Aug;32(8):671-8. PMID: 26232101
14. Wimo A, et al. Cohort Effects in the Prevalence and Survival of People with Dementia in a Rural Area in Northern Sweden. *J Alzheimers Dis.* 2015
15. Winblad B, ... Wimo A, Zetterberg H. Defeating Alzheimer's disease and other dementias: a priority for European science and society. *Lancet Neurol.* 2016 Apr;15(5):455-532.
16. ... Wimo How to deal with missing longitudinal data in cost of illness analysis in Alzheimer's disease-suggestions from the GERAS observational study. *BMC Med Res Methodol.* 2016.
17. Wimo A, et al. The worldwide costs of dementia 2015 and comparisons with 2010. *Alzheimers Dement.* 2016 Aug 29. pii: S1552-5260(16)30043-7. [Epub ahead of print]
18. Wimo A, et al. The societal costs of dementia in Sweden 2012 - relevance and methodological challenges in valuing informal care. *Alzheimers Res Ther.* 2016;8(1):59.
19. Wimo... Formal and Informal Care of Community-Living Older People: A Population-Based Study from the Swedish National Study on Aging and Care. *J NutrHealthAging.* 2017.
20. Gustavsson A, ... Wimo A. Current issues and future research priorities for health economic modelling across the full continuum of Alzheimer's disease. *Alzheimers Dement.* 2017.

CURRICULUM VITAE - BOO JOHANSSON**Address**

Department of Psychology, University of Gothenburg, Haraldsgatan 1 , 41314 Göteborg.

Tel.: +46 31 786 1656; **E-mail:** boo.johansson@psy.gu.se

Education and other training

- 1995 Specialist Diploma in Clinical Psychology
- 1990 Docent (Assoc. prof), Psychology, Univ. of Gothenburg
- 1985 Ph.D in psychology, Dept. of Psychology, University of Gothenburg
- 1982 Licensed clinical psychologist, Swedish National Board of Health and Welfare
- 1982 MSc; Clinical Psychology Univ.of Gothenburg
- 1975 BA in psychology, Uppsala University

Positions

- 2001-present Professor of Psychology, especially geropsychology, Department of Psychology, University of Gothenburg and Professor of Geropsychology, Institute of Gerontology, University College of Health Sciences, Jönköping
- 1993-2010 Adj. Professor, Department of Biobehavioral Health, College of Health & Human Development, Penn State University, USA
- 1987-2007 Associate Professor, Institute of Gerontology, University College of Health Sciences, Jönköping
- 1986 Post-doc (“forskarassistent”), Department of Applied Psychology, University of Gothenburg
- 1985-1987 Senior Researcher, Inst. of Gerontology, University College of Health Sciences, Jönköping; Research Associate, Dept. of Geriatric Medicine, University of Gothenburg
- 1975-1985 Research Psychologist, Institute of Gerontology, University College of Health Sciences, Jönköping

Affiliations, Experiences and Professional Networks

- 2002 - present Deputy Ass. Head of Dept./Director of postgraduate education (Third Cycle/PhD-program)
- 2012-2015 Chair of the University Post-Graduate Board, University of Gothenburg; 2006-08 Deputy Ass. Dean for Research and Graduate Studies, Faculty of Social Sciences, Univ. of Gothenburg.

Board member

- 2015-present Chair of The Scientific Advisory Board, Center for Healthy Ageing, Univ. of Copenhagen
- 2014-present Steering board member, Centre for Aging and Health
- 2014-present Board Member, Swedish National Committee for Psychological Sciences within the Royal Swedish Academy of Sciences
- 2008-present Advisory board member, Danish Aging Research Center, Denmark
- 2008-present Advisory board member, Kavli Research Center for Ageing and Dementia, Norway
- 2007-present Steering board member, EpiLife Centre at the University of Gothenburg
- 2012-2014 Elected member of steering board, Vårdalinstitutet
- 2008-2016 Regional Board for Ethical Vetting, Gothenburg (government appointed)
- 1998-2009 Steering board member, Aging Research Center (ARC), Stockholm

Scientific organizations and professional memberships

Swedish Society for Geropsychologists, SGF (first president) within the Swedish Psychological Association; Swedish Society for Neuropsychologists
 The Swedish Gerontological Society (SGS); American Psychological Association (APA)
 The Gerontological Society of America (Fellow status)
 The Behavior Genetics Association, BGA; International Society for Twin Studies, ISTS.
 Scientific President of the Nordic Gerontological Federation (NGF, 2014-2016 present/Associate president 2016-2018))
 President of the Nordic Congress of Gerontology (2014)
 Upcoming president of the IAGG-ER, International Association of Gerontology and Geriatrics Congress – European Region, 2019 in Gothenburg.

Research networks and Infrastructures

Own research group: ADA-Gero (psy.gu.se/forskning/forskargrupper/aldrande). The ADA-Gero group is member of the Global Aging Research Network (GARN), the IALSA network, the AgeCap Centre for Ageing and Health, and EpiLife center for epidemiological studies on mental health and physical health interaction over the life course, Univ. of Gothenburg.

Scientific journals*Editorial board member*

Aging and Mental Health (2001-), European Journal of Ageing – Social, Behavioural and Health Perspectives (2006-), Geropsych-The Journal of Gerontopsychology and Geriatric Psychiatry (2010-).

Reviewer

Int. Psychogeriatrics; Psychology and Aging; J. Applied Gerontology; Aging-Clinical and Experimental Research; J. Gerontology: Psych. Sci.; Scand. J. Psychology; J. Aging & Health; Exp. Aging Research; Aging and Mental Health; Scand. J Rehab. Med.; European J Ageing– Social, Behavioural and Health Perspec.; Journal Affective Disord.; Neuropsychology (APA); Int. J Aging and Human Develop.; Scand. J Primary Health Care; Research on Aging; Mechanisms of Ageing and Development; Psychological Med.

Reviewer of research grants and proposals

Scientific Board, County of Jönköping, Swedish Foundation for Int. Cooperation in Research and Higher Education (STINT), Riksbankens Jubileumsfond (RJ; Bank of Sweden Tercentenary Foundation), FAS/Forte - Swedish Council for working life and social research, VR - The Swedish Research Council, Nordea Fund, Iceland Research Fund, EU-JPI proposals.

PI – current main research support

Decisions of and for elderly in need of support in everyday life: Prerequisites and barriers for wellbeing and autonomy. Swedish Council for Working Life and Social Research (FAS/Forte: 2012-0175).

Transition and entrance into aging, focusing on psychological health before and following retirement. Swedish Council for Working Life and Social Research (FORTE: 2013-2291).
 The Forte AgeCap Center on Aging and Health Swedish Council for Working Life and Social Research (FORTE: 2013-2300).

Bibliometrics

According to Publish Perish Query date: 2017-02: Papers: 295, Citations11326; h-index: 58

OCTO-TWIN – PI: BOO JOHANSSON

1. Better Cognition in New Birth Cohorts of 70 Year Olds, But Greater Decline Thereafter. Thorvaldsson V, Karlsson P, Skoog J, Skoog I, Johansson B. *J Gerontol B Psychol Sci Soc Sci*. 2017 Jan;72(1):16-24.
2. Latent growth models matched to research questions to answer questions about dynamics of change in multiple processes.
3. Muniz-Terrera G, Robitaille A, Kelly A, Johansson B, Hofer S, Piccinin A. *J Clin Epidemiol*. 2016 Sep 14. pii: S0895-4356(16)30408-5. doi: 10.1016/j.jclinepi.2016.09.001.
4. Associations Between Fine Motor Performance in Activities of Daily Living and Cognitive Ability in a Nondemented Sample of Older Adults: Implications for Geriatric Physical Rehabilitation. Fauth EB, Schaefer SY, Zarit SH, Ernsth-Bravell M, Johansson B. *J Aging Health*. 2016 Jun 22. pii: 0898264316654674. [Epub ahead of print].
5. Trajectories of Personality Traits Preceding Dementia Diagnosis. Yoneda T, Rush J, Berg AI, Johansson B, Piccinin AM. *J Gerontol B Psychol Sci Soc Sci*. 2016 Mar 4. pii: gbw006. [Epub ahead of print].
6. Independent and interactive impacts of hypertension and diabetes mellitus on verbal memory: A coordinated analysis of longitudinal data from England, Sweden, and the United States. Kelly A, Calamia M, Koval A, Terrera GM, Piccinin AM, Clouston S, Hassing LB, Bennett DA, Johansson B, Hofer SM. *Psychol Aging*. 2016 May;31(3):262-73. doi: 10.1037/pag0000078.
7. I forgot when I lost my grip-strong associations between cognition and grip strength in level of performance and change across time in relation to impending death. Praetorius Björk M, Johansson B, Hassing LB. *Neurobiol Aging*. 2016 Feb;38:68-72. doi: 10.1016/j.neurobiolaging.2015.11.010.
8. Gene-Environment Interplay in Physical, Psychological, and Cognitive Domains in Mid to Late Adulthood: Is APOE a Variability Gene? Reynolds CA, Gatz M, Christensen K, Christiansen L, Dahl Aslan AK, Kaprio J, Korhonen T, Kremen WS, Krueger R, McGue M, Neiderhiser JM, Pedersen NL; Interplay of Genes and Environment across Multiple Studies (IGEMS) consortium. *Behav Genet*. 2016 Jan;46(1):4-19. doi: 10.1007/s10519-015-9761-3.
9. Same Ages, Same Genes: Same Brains, Same Pathologies?: Dementia Timings, Co-Occurring Brain Pathologies, ApoE Genotypes in Identical and Fraternal Age-matched Twins at Autopsy. Iacono D, Volkman I, Nennesmo I, Pedersen NL, Fratiglioni L, Johansson B, Karlsson D, Winblad B, Gatz M. *Alzheimer Dis Assoc Disord*. 2016 Apr-Jun;30(2):178-82. doi: 0.1097/WAD.0000000000000114.
10. The role of cognitive reserve on terminal decline: a cross-cohort analysis from two European studies: OCTO-Twin, Sweden, and Newcastle 85+, UK. Cadar D, Stephan BC, Jagger C, Johansson B, Hofer SM, Piccinin AM, Muniz-Terrera G. *Int J Geriatr Psychiatry*. 2016 Jun;31(6):601-10. doi: 10.1002/gps.4366.
11. Differential Impact of Neurofilament Light Subunit on Cognition and Functional Outcome in Memory Clinic Patients with and without Vascular Burden. Rolstad S, Berg AI, Eckerström C, Johansson B, Wallin A. *J Alzheimers Dis*. 2015;45(3):873-81. doi: 10.3233/JAD-142694.
12. Birth cohort differences in fluid cognition in old age: comparisons of trends in levels and change trajectories over 30 years in three population-based samples. Karlsson P, Thorvaldsson V, Skoog I, Gudmundsson P, Johansson B. *Psychol Aging*. 2015 Mar;30(1):83-94. doi: 10.1037/a0038643.

CURRICULUM VITAE – INGMAR SKOOG

Address

Department of Psychiatry and Neurochemistry at Institute of Neuroscience and Physiology, University of Gothenburg. Su Sahlgrenska, 41345 Göteborg.

Tel. +46 31-343 8640; **e-mail:** ingmar.skoog@gu.se

Education and degrees

2001-11-01 Professor in Psychiatry

1993: PhD in Medical Science/Psychiatry. Mental Disorders in the Elderly. A Population Study in 85-year-olds. Supervisors: J-O Ottosson, L Nilsson.

1993-08-25 Specialist in general psychiatry

1985-05-02 M.D

1983-01-20 Examined physician ("Läkarexamen")

Current position

Professor in Psychiatry, especially Social Psychiatry and Epidemiology, since 2001 (~70% for research). Director for the Centre for Ageing and Health (AgeCap) at the Univ of Gothenburg since 2013, and leader of the research group Epinep.

Professional positions

1994-1996 Part-time post doc Duke University

1997-1999 Johns Hopkins University on Cashe County study (supervisor Prof J Breitner)

1996 Associate professor ("docent").

1985- M.D. at the Sahlgrenska University Hospital.

1987-1992 Clinical Tutor, Dept of Psychiatry, Sahlgrenska Hospital.

1995-1999 Researcher (post-doctoral level) at the Swedish Medical Research Council.

1998-1999 Substitute lecturer.

2000-2001 Researcher (post-doctoral level) Institute of Clinical Neurosciences

1984 (Feb. - Aug.) Interruption of research: Parental leave.

Supervision

Ph.D. (10 students): O Aevansson (1998). S Palsson (2000). M Olafsdottir (with Prof. J Marcusson, Dept of Geriatric Medicine, Univ. of Linköpings) (2001). S Östling (2004). A Börjesson (2008). S Sacuiu (2009). B Karlsson (2013). N Beckman (2015). T Gislason (2015). D Jaraj (2016). Current: 6 registered Ph.D. students (J Nilsson, M Ribbing, I Freden, T Rydberg, J al-Jannar, L Rydberg).

Ph.D co-supervisor of 8 students.

Post-doctor (18 students): M Waern 2001-07, M Liebetrau 2000-05, S Palsson 2001-08, X Guo 2003-now, S Östling 2004-08, P Olesen 2008-10, E Billstedt 2008-12, A Börjesson 2008-12, S Sacuiu 2009-, H Falk 2012-, M Luppä 2012, X Zhi 2011-12, P Gudmundsson 2012-, L Johansson 2012-, H Hörder 2014-, M Mellqvist 2014-, N Beckman 2015-, R Sigström 2015-

Scientific awards

2014: First in the ALF-evaluation of clinical medical research in Gothenburg

2015: fourth among grants from the Medical Science Branch of the Swedish Research Council.

2001: Zenith Fellows Award (240000 USD), Alzheimer's Association, USA (1st outside North America).

2002: the Danish Strömngren Award in Psychiatry.

2006: Inga Sandeborgs award from the Swedish Medical Society.

2013: Senior Award by the International College of Geriatric Psychoneuropharmacology. Honorary Trevor Howell lecture at the British Royal Geriatric Society. Honorary lecture at the British Royal College of Geriatric Psychiatry.

Scientific production

254 papers in peer-reviewed scientific journal (114 last 8 years, mean IF 5.327), 99 reviews and book chapters, >250 published abstracts. Eleven papers with Editorials or Commentaries in their respective journals; one Editorial in the New England J Medicine, and 7 reviews in the Lancet.

Invited speaker at scientific meetings

Invited speaker to 220 international scientific meetings since 1996, including plenary talks at the Congress of Alzheimer's disease, the Lancet conferences of Dementia (Edinburgh) and HRT (Milan). Invited as a panelist at the Nobel Week Dialogue in Stockholm, December 2014.

Citations

H-index: 57 Web of Science; 72 Publish or Perish; and 60 Scopus. Published works have been cited 12,500 times since 1993. In 2015, 1080 cited articles according to Web of Science. Most cited first-author paper: 1050 times. 27 papers are cited more than 100 times.

Referee commissions

I have had appointments as peer-reviewer for more than 50 international scientific journals including Lancet, Lancet Neurology, New England Journal of Medicine, British Medical Journal, Archives of General Psychiatry, Editor Triage Editor Am J Ger Psychiatry, Associate Editor in International Psychogeriatrics, Neuroepidemiology, and European Journal of Psychiatry. Editorial Board in Cerebrovascular Diseases. Peer reviewer for international research councils or other grant agencies Swiss National Science Foundation, British Medical Research Council, Alzheimer's Association USA, Netherlands Council for Medical and Health Research, British Alzheimer's Society, Canadian Institutes of Health Research, Canadian Foundation for Innovation, The Wellcome Trust, UK, French Research Council.

Other activities

Diagnostic criteria: Consultant and reviewer for DSM-5, the new diagnostic criteria for mental disorders issued by the American Psychiatric Association, and for new diagnostic criteria for vascular cognitive disorders (the VASCOG criteria for vascular dementia) 2014.

Advisor to the National Institute of Health (NIH)-National Institute of Neurological Disorders and Stroke (NINDS)'s Stroke Progress Review Group meeting in Denver July 2001.

Workgroups: Women and Alzheimer's disease for the National Institute on Ageing (NIA)/ NIH USA; Diagnostic criteria for Vascular Cognitive Impairment for the NIA / NIH in Washington 2005. The only person outside UK when the British Association for Psychopharmacology made a consensus statement regarding clinical use of drugs for dementia.

Steering boards of International Federation of Psychiatric Epidemiology, European Psychiatric Association's Section of Epidemiology, World Psychiatric Association's Section of Epidemiology, International Neuropsychiatric Association and VasCog.

Advisory boards: The NIHR Biomedical Research Centre for Mental Health and Biomedical Research Unit for Dementia at South London and Maudsley NHS Foundation Trust and the Institute of Psychiatry, King's College London, 2010-, CoLaus/PsyCoLous Study, Lausanne, Switzerland 2005-, Cashe County Study, Logan, Utah, USA 1994-2005, Asian Society Against Dementia 2016-, the French National, Fondation Plan Alzheimer 2016-

Grants: Since 2001, more than 180 000 TSEK in grants, mainly from the Swedish Research Council (Vetenskapsrådet), the Swedish Research Council for Health, Working Life and Welfare (FAS), ALF-grants, Hjärfonden, and four grants from the US Alzheimer Association.

H70, H85, H95+ - PI: INGMAR SKOOG

1. Skoog I, Nilsson L, Palmertz B, Andreasson L-A, Svanborg A. A population-based study of dementia in 85-year-olds. *New Engl J Med* 1993; 328:153-158
2. Skoog I. Sex and Swedish 85-year-olds. *New Engl J Med* 1996;334:1140-1141
3. Skoog I, Lernfelt B, Landahl S, Palmertz B, Andreasson L-A, Nilsson L, Persson G, Odén A, Svanborg A. A 15-year longitudinal study on blood pressure and dementia. *Lancet* 1996;347:1141-1145.
4. Skoog I et al. Suicidal feelings in a population sample of non-demented 85-year-olds. *Am J Psychiatry* 1996;153:1015-1020.
5. Skoog I et al. Apolipoprotein E in cerebrospinal fluid in 85-year-olds. Relation to dementia, apolipoprotein E polymorphism, cerebral atrophy, and white-matter lesions. *Arch Neurol* 1997;54.
6. Ostling S, Skoog I. Psychotic symptoms and paranoid ideation in a nondemented population-based sample of the very old *Arch Gen Psychiatry* 2002;59:53-59.
7. Gustafson D, Rothenberg E, Blennow K, Steen B, Skoog I. An 18-year follow-up of overweight and risk of Alzheimer disease. *Arch Intern Med.* 2003;163:1524-8.
8. Börjesson Hansson A, Edin E, Gislason T, Skoog I. The prevalence of dementia in 95-year-olds. *Neurology.* 2004;63:2436-8
9. Rockwood K, ... Skoog I. Long-term risks of death and institutionalisation of elderly people in relation to deficit accumulation at age 70. *J Am Ger Soc* 2006;54:975-9.
10. Liebetrau M, Steen B, Skoog I. Depression as a risk factor for the incidence of first-ever stroke in 85-year-olds. *Stroke* 2008;39:1960-5.
11. Beckman N, Waern M, Gustafson D, Skoog I. Secular trends in self reported sexual activity and satisfaction in Swedish 70 year olds: cross sectional survey of four populations, 1971-2001. *Brit Med J* 2008; 337:151–154.
12. Johansson L, ... Skoog I. Mid-Life Psychological Stress and Risk of Dementia: A 35-Year Longitudinal Population Study. *Brain* 2010;133(Pt 8):2217-24.
13. Sacuiu S, Gustafson D, Sjögren M, Guo X, Östling S, Johansson B, Skoog I. Secular changes in cognitive predictors of dementia and mortality in 70-year-olds. *Neurology* 2010; 75(9).
14. Mielke MM, ..., Skoog I, Gustafson DR. The 32-year relationship between cholesterol and dementia from mid- to late-life. *Neurology* 2010;75(21):1888-95.
15. Joas E, Bäckman K, Gustafson D, Ostling S, Waern M, Guo X, Skoog I. Blood pressure trajectories from midlife to late life in relation to dementia in women followed for 37 years. *Hypertension.* 2012 Apr;59(4):796-801. doi: 10.1161/HYPERTENSIONAHA.111.182204.
16. Jaraj D, Rabiei K, Marlow T, Jensen C, Skoog I, Wikkelsö C. Prevalence of Idiopathic Normal Pressure Hydrocephalus. *Neurology* 2014;82(16):1449-54.
17. Johansson L, Xinxin Guo, Duberstein PR, Hällström T, Waern M, Östling S, Skoog I. Midlife personality and risk of Alzheimer's disease and distress: a 38 year follow-up. *Neurology.* 2014 Oct 21;83(17):1538-44. Epub 2014.
18. Kern S, Mehlig K, Kern J, Zetterberg H, Thelle D, Skoog I, Lissner L, Blennow K, Börjesson-Hanson A. The distribution of Apolipoprotein E genotype over the adult lifespan and in relation to birth origin. *Am J Epidemiol.* 2015 Feb 1;181(3):214-7
19. Skoog I et al. A 9-year prospective population-based study on the association between the *APOE ε4* allele and late- life depression in Sweden. *Biol Psychiatry* 2015; 78(10):730-6.
20. Kern J, ... Skoog I, Östling S. Calcium supplementation and risk of dementia in women with cerebrovascular disease. *Neurology.* 2016; 87(16):1674-1680

CURRICULUM VITAE—GUNNAR MALMBERG**Address**

Centre for Demographic and Ageing Research, Umeå University, SE-90187 Umeå, Sweden

Tel.: +46 90 786 54 95; **e-mail:** gunnar.malmberg@umu.se,

Positions since 1995

Assistant, Department of Geography, Umeå university,	1982
Doctoral Student, Umeå university,	1983 -1988
Research Assistant, Umeå university,	1990-1994
Senior Lecturer, Umeå university,	1995 – 2002
Associate Professor in Social and Economic Geography, Umeå university,	1997
Director, Analysis Division, Institute for Growth Policy Studies (ITPS),	2001- 2003
Professor at the Department of Social and Economic Geography, Umeå Univ.	2002 -
Director of the research unit, Centre for Demographic and Ageing Resarch,	2015 -

Academy memberships and Awards

Royal Swedish Academy of Science, member since 2012 in Class 5

Royal Skyttean Academy Award for young and successful researchers, 1997

Academic exams

BA, Lund university, Human Georaphy,	1981
PhD in Human Geography, Umeå university,	1988

Academic assignments

- Country team leader, Sweden *Survey of Health Ageing and Retirement in Europe*
- Chair of the Board of the Demographic Database, Umeå University 2012 –2015
- Chair of the board of Centre for Regional Science (CERUM) 2002 – 2008
- Member of the Board of the *Research Council for Working Life and Social Sciences (FAS)* 2007-2012
- Chair of the Committee for Labour Market Research, *Research Council for Working Life and Social Sciences (FAS)* 2007 – 2012
- Member of the “Steering Committee for Population Commission of the International Geographical Union (IGU)”

Selection of external research grants

Research foundations	Projects	SEK
Riksbankens jubileumsfond	” De nya utvandrarerna”	1 460 000
SIDA/Sarec	”Getting ready for life”	851 000
Vetenskapsrådet	”Varför bor de flesta kvar? ”	1 770 000
SIDA/Sarec	“Traditional medicine”	900 000
FORMAS (co-applicant)	”När arbetsmarknaden spelar roll”	1 575 000
VINNOVA (co-applicant)	”Rörlighet och näringslivsdynamik”	1 560 000
FAS (co-applicant)	”Invandrarföretagande och gentrifiering”	1 500 000
SIDA/Sarec	”Moving to Health”	1 000 000
FAS	”De östeuropeiska svenskarna”	2 400 000
Vetenskapsrådet	”Bort från periferin”	2 430 000
Vetenskapsråd. (co-applicant)	“Ageing and Living Conditions”	80 000 000
Vetenskapsrådet(co-applicant)	“Ojämlighet och hälsa i hög ålder”	3 000 000
Riksbankens jubileumsfond	“Family network, life style and health”	2 900 000

Vetenskapsrådet	“SHARE” wave 5	14 000 000
Forte	”Paths to Healthy and Active Ageing”	18 000 000
Vetenskapsrådet	“SHARE” wave 6 and 7	34 000 000
Forte (co-applicant)	“Elderly immigrants	2 900 000
Forte (co-applicant)	“Moving out from the city”	2 880 000

Editorial boards

Population Space and Place

Cybergeo – European Geographical Journal

Referee commissions for international journals, including:

Geografiska Annaler, Population Space and Place, Demography, Demographic Research, Migration Letters, Scandinavian Journal of Public Health, Environment and Planning A, International Migration, Journal of Health and Place, European Journal of Spatial Development, International Sociology, Transactions of the Institute of British Geographers, Global Health Action.

International conferences**Main organizer of**

- International Conference on Mobility and Successful Ageing, Umeå, 2009
- “Data for longitudinal ageing research”, conference co-organised with National Institute of Ageing, Umeå
- 6th International Conference on Population Geographies, Umeå, 2011

Keynote speaker

- *Empty Country and Lively Cities? Spatial Differentiaion in the Face of Demographic Change*. International conference, Leibniz Gemeinschaft, Berlin, May 7-8, 2009.

Guest lectures at universities abroad

Universidade de Lisboa, 1994, York University, Toronto 1997, Universität der Bundeswehr, Hamburg, 1998, Universidad Nacional Autonoma de Nicaragua, Leon 2004 and 2013, Köpenhamns universitet, 2006, University of Tartu, 2009, Jacobs University, Bremen, 2010, National Institute for Ageing, Washington D.C. 2011, Centre for Population Change, Edinburgh 2011, University of Ulster, 2012, St Andrews 2014, Vienna Institute of Demography, Wien 2015, Queen’s University, Canada 2016.

PhD supervision:

Johan Håkansson (2000), Karina Nilsson (2001), Gunilla Jonsson (2004), Linda Helgesson (2006), Emma Lundholm (2007), Mark Collinson (2009), Susanne Hjort (2009), Rikard Eriksson (2009), Damdouane Khouangvichit (2010), Madeleine Eriksson (2010), Kabmanivanh Phouxay (2010), Anna Hjälms (2011), Linda Sandberg (2011), Jenny Olofsson (2012), Anne Ouma (2013), Cecilia Gustafsson (2015).

SHARE-SWEDEN – PI: GUNNAR MALMBERG

1. Avendano M, Glymour MM. Stroke disparities in older Americans: is wealth a more powerful indicator of risk than income and education? *Stroke* 2008;39(5):1533-40.
2. d'Uva TB, O'Donnell O, van Doorslaer E. Differential health reporting by education level and its impact on the measurement of health inequalities among older Europeans. *Int J Epidemiol* 2008;37(6):1375-83.
3. Espelt A, Borrell C, Rodríguez-Sanz M, Muntaner C, Pasarín MI, Benach J, Schaap M, Kunst AE, Navarro V. Inequalities in health by social class dimensions in European countries of different political traditions. *Int J Epidemiol* 2008;37(5):1095-105.
4. Allin S, Masseria C, Mossialos E. Measuring socioeconomic differences in use of health care services by wealth versus by income. *Am J Public Health* 2009;99(10):1849-55.
5. Avendano M, Glymour MM, Banks J, Mackenbach JP. Health disadvantage in US adults aged 50 to 74 years: a comparison of the health of rich and poor Americans with that of Europeans. *Am J Public Health* 2009;99(3):540-8.
6. Maselko et al. The intersection of sex, marital status, and cardiovascular risk factors in shaping stroke incidence: results from the health and retirement study. *J Am Geriatr Soc* 2009.
7. Santos-Eggimann B, et al. Prevalence of frailty in middle-aged and older community-dwelling Europeans living in 10 countries. *J Gerontol A Biol Sci Med Sci* 2009;64(6).
8. Romero-Ortuno R, et al. A frailty instrument for primary care: findings from the Survey of Health, Ageing and Retirement in Europe (SHARE). *BMC Geriatr* 2010.
9. Glymour MM, Maselko J, Gilman SE, Patton KK, Avendaño M. Depressive symptoms predict incident stroke independently of memory impairments. *Neurology* 2010;75(23).
10. Skirbekk V, Loichinger E, Weber D. Variation in cognitive functioning as a refined approach to comparing aging across countries. *Proc Natl Acad Sci U S A* 2012;109(3):770-4.
11. Romero-Ortuno R, Kenny RA. The frailty index in Europeans: association with age and mortality. *Age Ageing* 2012;41(5):684-9.
12. Moon JR, Capistrant BD, Kawachi I, Avendaño M, Subramanian SV, Bates LM, Glymour MM. Stroke incidence in older US Hispanics: is foreign birth protective? *Stroke* 2012;43(5).
13. Siegrist J, Lunau T, Wahrendorf M, Dragano N. Depressive symptoms and psychosocial stress at work among older employees in three continents. *Global Health* 2012;8:27.
14. Choi KS et al. Participation in productive activities and depression among older Europeans: survey of Health, Ageing and Retirement in Europe (SHARE). *Int J Geriatr Psychiatry* 2013.
15. Börsch-Supan A, Brandt M, Hunkler C, Kneip T, Korbmayer J, Malter F, Schaan B, Stuck S, Zuber S. Data Resource Profile: The Survey of Health, Ageing and Retirement in Europe (SHARE). *Int J Epidemiol* 2013;42(4):1-10.
16. Edvinsson S, et al. Do unequal societies cause death among elderly? A study of the health effects of inequality in Swedish municipalities, 2006. *Global Health Action* 2013.
17. Listl S, Watt RG, Tsakos G. Early life conditions, adverse life events, and chewing ability at middle and later adulthood. *Am J Public Health* 2014;104(5):e55-61.
18. Djundeva M, Mills M, Wittek R, Steverink N. Receiving instrumental support in late parent-child relationships and parental depression. *J Gerontol B Psychol Sci Soc Sci* 2014 Sep 23.
19. Leist AK, Hessel P, Avendano M. Do economic recessions during early and mid-adulthood influence cognitive function in old age? *J Epidemiol Community Health* 2014;68:151-8.
20. Chatterji S, Byles J, Cutler D, Seeman T, Verdes E. Health, functioning, and disability in older adults--present status and future implications. *Lancet* 2015 Feb 7;385(9967):563-75.

CURRICULUM VITAE—LARS NYBERG**Address**

Department of Radiation Sciences and Integrative Medical Biology, Umeå University, SE-901 87 Umeå.

Tel.: +46 70 609 27 75; **e-mail:** lars.nyberg@umu.se

Current and select past academic appointments and qualifications

January 2006–Professor of Neuroscience (Medical Faculty, Umeå University)
 2012-2017 Torsten & Ragnar Söderberg’s Research professorship in medicine
 2001- Director of Umeå Centre for Functional Brain Imaging (UFBI)
 1999-2005 Professor of Psychology at Umeå University and Researcher in Neuropsychology (supported by the Swedish Research Council)
 2007–2011 Guest Professor (II) in Bergen, Norway
 2012– Guest Professor (II) in Oslo, Norway
 1994-1995 Post-doc Rotman Research Institute, Toronto, Canada
 1993 PhD, Psychology, Umeå University
 1996 Docent, Psychology, Umeå University
 1986-1989 Basic University Studies, Clinical Psychology Program, Umeå University, Sweden.

Supervision

PhD = 22 (completed as main & co-supervisor), *Post-doc* (past & current) = 10.

Awards

- Member of The Royal Swedish Academy of Sciences (2008, Member 1574)
- KA Wallenberg Scholar (2009, 2016)
- Mångbergs Prize in Neural Sciences, Umeå University, Sweden (2008)
- Gustafsson Prize in medicine from The Royal Swedish Academy of Sciences (2007).
- Brain Research Interactive Young Investigator Award (2002).
- Award from the Royal Skytteanska Society to ‘eminent young researchers’ (1994).
-

Commission of trust - current and past

- Medlem Umeå Universitetsstyrelse 2016 --
- Ordinarie ledamot anställnings- och docentnämnden, MedFak, UmU (2014- 16)
- Ledamot av Hjärnfondens vetenskapliga råd (2013-15)
- Ledamot i medicinska fakultetsnämnden, UmU (2012-14)
- Ledamot i forskningsnämnden, med fak, UmU (2012-14)
- Ledamot av styrelsen för NevroNOR, Norge (2006-07)
- Medlem av Centrum för Idrottsforskning styrelse (2006-08)
- Beredningsgrupp Vetenskapsrådet (2003-05)

Scientific Productivity (<http://scholar.google.se/citations?user=n5D6GtsAAAAJ&hl=sv>)

- Total: >200 original peer-reviewed papers
- Total number of citations: >22 600
- Top cited paper > 3400 citations
- H-index = 67

Select Major Grant Support

- 2017 *Lifebrain*. Horizon 2020 EU, Nyberg PI for Umeå node (Total = 10 million EURO/5yrs).
- 2016 *Wallenberg Scholar (renewal)*. From Knut och Alice Wallenbergs stiftelse (15 M SEK).
- 2013 *Cognition, brain, and aging (COBRA): A longitudinal multimodal imaging study*. Lars Nyberg PI. From Swedish Science Council (5 M SEK; 1M/year, 2013-17).
- 2013 *Human Brain Project* (EU flagship project). 1/80 groups (Nyberg PI *working memory*).
- 2012 Torsten & Ragnar Söderberg's Research professorship in medicine (15 M SEK, 2013-17) from the *Royal Swedish Academy of Sciences*.
- 2010 *Metabolic Markers for Neurodegenerative diseases*. Marklund, S., Nyberg L., Forsgren, L., Moritz, T., Antti, H. EP-foundation (40 M SEK, 2010-14).
- 2010 Cognitive and motor functions in health and disease during the life span. Joint strategic grant KI-UmU from Swedish Science Council; L Nyberg PI for Umeå University.
- 2010 *Early cognitive markers of dementia*. From King Gustaf V:s and Queen Victoria's Freemason Foundation (1 M SEK; 2010-14)
- 2010 *Swedish Brain Power* (PI, Bengt Winblad; Nyberg leader for Neuropsychology core), support from Knut & Alice Wallenberg Foundation (20 M/year, 5 yrs).
- 2009 *Wallenberg Scholar*. From Knut och Alice Wallenbergs stiftelse (15 M SEK).
- 2007 *Cognitive neuroscience: Aging, genetics, memory and executive functions*. Long-term support to leading scientist from the Swedish Science Council (1 M SEK/year, 5 yrs).
- 2007 *Research-dedicated magnetic resonance imaging (MRI) scanner at Umeå University*. From Knut och Alice Wallenbergs stiftelse (18.5 M SEK).
- 2006 *Ageing and Living Conditions 2006-2015*: Anders Brändström, Lars Nyberg *et al*. Linneaus grant from the Swedish Science Council (total 80 M SEK).
- 2005 *Memory, genetics, brain imaging and early diagnostics*. (2005-2010). L-G Nilsson, L Nyberg, M Larsson, L Lannfelt. Support from the Swedish Science Council to Strong Research Environment – *Betula Project* (22 M SEK).
- 2005 Nordic Centre of Excellence Programme in *Cognitive Control* (2005-2010). Lars Nyberg (principal investigator, PI). Supported by NOS-HS. (20 M SEK).

THE BETULA PROJECT – PI: LARS NYBERG

1. Adams, H. et al. (in press). Novel genetic loci underlying human intracranial volume identified through genome-wide association. *Nature Neuroscience*.
2. Nyberg, L. et al. (2016). Dopamine D2 receptor availability is linked to hippocampal-caudate functional connectivity and episodic memory. *Proceedings of the National Academy of Sciences, USA*, 113, 7918-23.
3. Walhovd, KB., et al. (2016). Neurodevelopmental origins of lifespan changes in brain and cognition. *Proceedings of the National Academy of Sciences, USA*, 113, 9357-62.
4. Ikram, M. A., ..., Nyberg, L., ..., Huentelman, M. (2016) Novel genetic loci associated with hippocampal volume. *Nature Communications*.
5. Eriksson, J., Vogel, E. K., Lansner, A., Bergström, F., & Nyberg, L. (2015). Neurocognitive architecture of working memory. *Neuron*, 88, 33-46.
6. Hibar, D. P. et al. (2015). Common genetic variants influence human subcortical brain structures. *Nature*, 520, 224-229.
7. Davies, G. et al. (2015). Genetic contributions to variation in general cognitive function: a meta-analysis of genome-wide association studies in the CHARGE consortium (N=53 949). *Molecular Psychiatry*, 20, 183-192.
8. Salami, A., Pudas, S., & Nyberg, L. (2014). When More Becomes Less: Elevated Hippocampal Resting-State Connectivity Underlies Deficient Neurocognitive Function in Aging. *Proceedings of the National Academy of Sciences, USA*, 111, 17654-17659.
9. Pudas, S., ... Nyberg, L. (2013). Brain characteristics of individuals resisting age-related cognitive decline over two decades. *Journal of Neuroscience*, 33, 8668-8677.
10. Josefsson, M., de Luna, X., Pudas, S., Nilsson, L.-G., Nyberg, L. (2012). Genetic and lifestyle predictors of 15-year longitudinal change in episodic memory. *Journal of the American Geriatric Society*, 60, 2308-2312.
11. Nyberg, L., et al. (2012). Memory aging and brain maintenance. *Trends in Cognitive Science*, 16, 292-305.
12. Ekman U, ... Nyberg L. (2012). Functional brain activity and presynaptic dopamine update in patients with Parkinson-s disease and mild cognitive impairment: a cross-sectional study. *Lancet Neurology*, 11.
13. Bäckman, L., Nyberg, L., et al. (2011). Effects of working-memory training on striatal dopamine release. *Science*, 333, 718.
14. Nyberg, L., et al. (2010). Longitudinal evidence for diminished frontal-cortex function in aging. *Proceedings of the National Academy of Sciences, USA*, 107, 22682-22686.
15. Dahlin, E., Stigsdotter Neely, A., Larsson, A., Bäckman, L., & Nyberg, L. (2008). Transfer of learning after updating training mediated by the striatum. *Science*, 320, 1510-1512.
16. MacDonald SWS, Nyberg L, Bäckman L. Intra-individual variability in behavior: links to brain structure, neurotransmission and neuronal activity. *Trends in Neurosciences* 2006 29.
17. Lind J, ... Nyberg L. (2006). Reduced functional brain activity response in cognitively intact apolipoprotein ε4 carriers. *Brain*, 129,1240-1248.
18. Nyberg L, et al. Neural correlates of training-related memory improvement in adulthood and aging. *Proceedings of the National Academy of Sciences, USA*, 2003, 100, 13728-13733.
19. Cabeza, R., & Nyberg, L. (2000). Imaging cognition II: An empirical review of 275 PET and fMRI studies. *Journal of Cognitive Neuroscience*, 12, 1-47.
20. Nyberg, L., McIntosh, A.R., Houle, S., Nilsson, L.-G., & Tulving, E. (1996). Activation of medial temporal structures during episodic memory retrieval. *Nature*, 380, 715-717.

CURRICULUM VITAE—ANNA K. DAHL ASLAN**Address**

Institute of Gerontology, School of Health Sciences, 551 11 Jönköping

Tel.: +46 36 101 324; **mobile:** +46 761 714 118; **e-mail:** daan@ju.se

Degrees

- Associate Professor (gerontology), School of Health Sciences, Jönköping University, 2013
- Ph.D. Gerontology, School of Health Sciences, Jönköping University, 2009
- Body Mass Index, Cognitive Ability, and Dementia - Prospective associations and methodological issues in late life
- B.A. Psychology, Växjö University (currently Linneaus University), 2003

Postdoctoral Research

2011-2014 Department of Medical Epidemiology and Biostatistics, Karolinska Institutet, Sweden.

2011-2014 Centre for Cognitive Ageing and Cognitive Epidemiology, University of Edinburgh (4.5 months in total).

Appointments

- Research leader of Aging Research Network – Jönköping (ARN-J) (together with Ingemar Kåreholt), 2015-
- Future Leader of Aging Research in Europe (FLARE) II fellow – 2011-2014
- Member of the board of Swedish Gerontological Association (Sveriges Gerontologiska Sällskap), 2011-2013

Grants

SEK	Year	Grant (as Principal Investigator)
2.100.000	2016-2018	Causes and consequences of body fat changes across the adult life span. VR
75.000	2013	Understanding fat mass changes in old age by studying epigenetics. Funded by the Geriatric Foundation at Karolinska Institutet
50.000	2013	Unravelling the Obesity Paradox – A Multifactorial Longitudinal Approach. Loo and Hans Österman's foundation
137.950	2013-2014	FLARE2 postdoctoral research visit at Center for Cognitive Ageing and Cognitive Epidemiology. Totally 5.5 months during (FAS Dnr 2013-1203).
2.400.000	2011-2014	Post-doc funding. Weight trajectories and health in late life: a life course perspective. Future Leaders of Ageing Research in Europe (FLARE), funded by Swedish Council for Working Life and Social Research (FAS Dnr 2010-1852)
1.360.000	2010	Post-doc funding, Longitudinal associations between changes in weight, cognitive functions, and dementia. Funded by Swedish Council for Working Life and Social Research (FAS Dnr 2010-0704). (Cancelled since June 30th due to other funding accepted, see above).
250.000		Smaller grants (<50.000 SEK), such as from Eva and Oscar Ahréns foundation, Karolinska Institutet's funds, etc.

SEK	Year	Grant (as Co-Investigator)
18.000.000	2014-2019	Program funding: Buffering effects of lifestyle and the environment on healthy aging – a lifespan approach. FORTE. PI: N Pedersen
12.000.0000	2014-2017	Program funding: Health development in late life - Towards a functional care of older people with multiple illnesses and disabilities through understanding patterns of change and their causes. VR. PI: N Pedersen.
1.080.000	2014-2017	Funding for doctoral student: Shift work and sleep disruption as contributors to cognitive decline and dementia. Funded by Karolinska Institutet. PI: N Pedersen.
960.000	2012-2015	Funding for doctoral student. Understanding co-morbidities among late-onset disorders: the pleiotropic role of specific genes. Funded by Karolinska Institutet for doctoral students. PI: Nancy Pedersen.

Supervision of students

Main supervisor of doctoral students (finished): Jenny Hallgren (2016, JU)

Co-supervisor of doctoral students (finished): Sofi Fristedt (2013, JU)

Co-supervisor of doctoral students (current): Kathleen Bokenberger (KI), Malin Ericsson (KI), Brittany Bannon (UCR)

Supervisor of M.Sc. (finished): Kathleen Bokenberger (2012, KI)

Publications and presentations

In total 32 peer review publications, and 6 under review. Four book chapters, of which single author on one. About 60 oral and poster presentations at national and international conferences, chair twice, organizer twice, and invited lecturer five times.

Reviewer assignments

Age and Ageing, BioMed Central, Health Psychology, Aging and Mental Health, International Journal of Obesity, Journal of Aging and Health, Behavior Genetics, European Journal of Cardiovascular Nursing

Bibliometric

H-index 10, i10-index 18, according to google scholar

GENDER – PI: ANNA A DAHL

1. Franz CE, Finkel D, Panizzon MS, Spoon K, Christensen K, Gatz M, ... Pedersen NL. Facets of subjective health from early adulthood to old age. *J Aging Health*, 2016.
2. Karlsson IK, et al. (2015). Apolipoprotein E ϵ 4 genotype and the temporal relationship between depression and dementia. *Neurobiology of aging*, 36(4), 1751-1756.
3. Fauth EB, et al. (2014). Comparing changes in late-life depressive symptoms across aging, disablement, and mortality processes. *Developmental psychology*, 50(5), 1584.
4. Fristedt S, Dahl AK, Wretstrand A, Björklund A, Falkmer T. (2014). Changes in community mobility in older men and women. A 13-year prospective study. *PloS one*, 9(2), e87827.
5. Reynolds CA, Zavala C, Gatz M, Vie L, Johansson B, Malmberg B, Pedersen NL. Sortilin receptor 1 predicts longitudinal cognitive change. *Neurobiology of aging*, 2013.
6. Song C, et al. (2013). Genetic variants from lipid-related pathways and risk for incident myocardial infarction. *PloS one*, 8(3), e60454.
7. Pedersen NL, Christensen K, Dahl AK, et al. (2013). IGEMS: The consortium on interplay of genes and environment across multiple studies. *Twin Research and Human Genetics* 16.
8. Dahl, A. K et al. (2013). Body mass index, change in body mass index, and survival in old and very old persons. *Journal of the American Geriatrics Society*, 61(4), 512-518.
9. Hong MG, et al. (2012). Genome-wide and gene-based association implicates FRMD6 in alzheimer disease. *Human mutation*, 33(3), 521-529.
10. Reynolds CA, Gatz M, Pedersen NL, Prince JA. (2011). An assessment of CETP sequence variation in relation to cognitive decline and dementia risk. *Int J Mol Epidemiol Genet*, 2(2).
11. Ram N, et al. (2010). Aging, disablement, and dying: Using time-as-process and time-as-resources metrics to chart late-life change. *Research in Human Development*, 7(1), 27-44.
12. Reynolds, C. A., Hong, M. G., Eriksson, U. K., Blennow, K., Johansson, B., Malmberg, B., ... Prince, J. A. (2010). Sequence variation in SORL1 and dementia risk in Swedes. *Neurogenetics*, 11(1), 139-142.
13. Reynolds, C. A., Hong, M. G., Eriksson, U. K., Blennow, K., Wiklund, F., Johansson, B., ... Gatz, M. (2010). Analysis of lipid pathway genes indicates association of sequence variation near SREBF1/TOM1L2/ATPAF2 with dementia risk. *Human molecular genetics*, 19(10).
14. Johansson L, Sidenvall B, Malmberg B, Christensson L. Who will become malnourished? A prospective study of factors associated with malnutrition in older persons living at home. *J Nutr Health Aging*, 2009 13(10), 855-861.
15. Dahl A, et al. (2007). Identification of dementia in epidemiological research: a study on the usefulness of various data sources. *Aging clinical and experimental research*, 19(5), 381-389.
16. Read S, Pedersen NL, Gatz M, Berg S, Vuoksimaa E, Malmberg B, ...McClearn GE. Sex differences after all those years? Heritability of cognitive abilities in old age. *J Gerontol B Psychol Sci Soc Sci*, 2006.
17. Evrin, P. E., Nilsson, S. E., Öberg, T., Malmberg, B. (2005). Serum Creactive protein in elderly men and women: Association with mortality, morbidity and various biochemical values. *Scandinavian journal of clinical and laboratory investigation*, 65(1), 23-31.
18. Takkinen S, Gold C, Pedersen NL, Malmberg B, Nilsson S, Rovine M. (2004). Gender differences in depression: a study of older unlike-sex twins. *Aging & mental health*, 8(3).
19. Jansson M, Gatz M, Berg S, Johansson B, Malmberg B, McClearn GE, ...Pedersen NL. Gender differences in heritability of depressive symptoms in the elderly. *Psychol Med*, 2004.
20. Gold, C. H., Malmberg, B., McClearn, G. E., Pedersen, N. L., & Berg, S. (2002). Gender and health a study of older unlike-sex twins. *J Gerontol B Psychol Sci Soc Sci*, 57(3).

CURRICULUM VITAE—JOHAN BERGLUND

Address

Blekinge Institute of Technology, Department of Health Science, 371 79 Karlskrona, Sweden

Tel.: +46 734 223530; **e-mail:** johan.sanmartin.berglund@bth.se

Degrees

- 2002 Associate professor in General Medicine, Lunds University
- 1996 PhD, Faculty of Medicine, Lund University, Lund, Sweden.
- 1994 Specialty in General Medicine, Karlskrona, Sweden
- 1990 Medical doctor (MD), Växjö. Sweden
- 1988 Medical practitioner, Faculty of Medicine, Lund University, Lund

Current position

Professor in Public Health. Department of Health Science, Blekinge Institute of Technology
 Director/senior consultant Clinical Research Center, Clinical Research Center, Blekinge Centre of Competence, Sweden

Awards

- Astra LM, Swedish General Medicine Fellowship 1991 & 1992.
- Bayer, Swedish General Medicine Fellowship 1994.
- Orion-Farmos, Swedish General Medicine Fellowship 1994.
- The Swedish Society of Medicine; Olof Johannisson prize for important research 1996.
- The Domagk award 1997.
- Eklund foundation 2016.

Teaching

Lecturer at Lund University, Blekinge Institute of Technology and Mid Sweden University – in basic, advanced and research levels of education:

- Public Health
- Health Promotion
- Epidemiology
- Health Communication
- Research methodology
- Applied Health Technology

Main research areas:

- Public Health
- Ageing and Care
- Infectious diseases
- Applied Health Technology - Gerontechnology

Publications

117 peer-reviewed articles published in international journals.

More than 200 presentations and invited speeches / moderator nationally and internationally.

Google Scholar 2479 citations, H-index 25, i10-index 44 (feb 2017)

Reviewer for 10 scientific journals.

Supervisor / Grants

11 completed doctoral degree (PhD) and 12 ongoing PhD-students.

Received average amount of external research funding last 5 years, >5 million SEK/y.

SNAC-BLEKINGE – PI: JOHAN BERGLUND

1. Bengtsson VW, Persson GR, Berglund J, Renvert S. A cross-sectional study of the associations between periodontitis and carotid arterial calcifications in an elderly population. *Acta Odontol Scand*. 2016;74(2):115-20.
2. Berner J, ..., Elmståhl S, Berglund J. Factors influencing Internet usage in older adults (65 years and above) living in rural and urban Sweden. *Health Informatics J*. 2015;21(3):237-49
3. Bratt AS, Stenström U, Rennemark M. The role of neuroticism and conscientiousness on mortality risk in older adults after child and spouse bereavement. *Aging Ment Health*. 2016;20(6):559-66.
4. Dahl M, Allwood CM, Rennemark M, Hagberg B. The relation between personality and the realism in confidence judgement in older adults. *Eur J Ageing* 2010;7(4):283-91.
5. Fagerström C, Hellström A. Sleep complaints and their association with comorbidity and health-related quality of life in an older population in Sweden. *Age Mental Health* 2011;15.
6. Halling A, Berglund J. Association of diagnosis of ischaemic heart disease, diabetes mellitus and heart failure with cognitive function in the elderly population. *Eur J Gen Pract* 2006;12.
7. Lilje SC, Skillgate E, Anderberg P, Berglund J. Negative psychosocial and heavy physical workloads associated with musculoskeletal pain interfering with normal life in older adults: cross-sectional analysis. *Scand J Public Health*. 2015 Jul;43(5):453-9
8. Lindwall ... Berglund et al. Depression and exercise in elderly men and women: findings from the Swedish National study on Aging and Care (SNAC). *J Aging Phys Act* 2007
9. Naseer M, Forssell H, Fagerström C. Malnutrition, functional ability and mortality among older people aged ≥ 60 years: a 7-year longitudinal study.. *Eur J Clin Nutr*. 2016;70(3).
10. Nilsson H, Berglund J, Renvert S. Tooth loss and cognitive functions among older adults. *Acta Odontol Scand*. 2014 Nov;72(8):639-44.
11. Persson GR, Berglund J, Persson RE, Renvert S. Prediction of hip and hand fractures in older persons with and without a diagnosis of periodontitis. *Bone* 2011;48:552-6.
12. ... Berglund et al. Prevalence and predictors of falls and dizziness in people younger and older than 80 years of age - A longitudinal cohort study. *Arch Gerontol Ger* 2013.
13. Rennemark M, Berggren T, Berglund J. Relationship between work-status and leisure lifestyle at the age of 60 years old. *Eur J Ageing* 2006;3:82-8
14. Rennemark M, Lindvall M, Halling A, Berglund J. Relationships between physical activity and perceived qualities of life in old age. Results from the Swedish SNAC-study. *Aging and Mental Health* 2009;13(1):1-8
15. Rennemark M, Berglund J. Decreased cognitive functions at the age of 66, as measured by the MMSE, associated with having left working life before the age of 60: results from the SNAC study. *Scand J Public Health*. 2014 May;42(3):304-9.
16. Renvert S, Berglund J, et al. Osteoporosis and periodontitis in older subjects participating in the Swedish National study of Aging and Care (SNAC-Blekinge). *Acta Odont Scand* 2011.
17. Renvert S, Persson RE, Persson GR. Tooth loss and periodontitis in older individuals: results from the Swedish Study of Aging and Care. *J Periodont* 2013;84(8):1134-44.
18. Selan S, Hellström A, Fagerström C. Impact of nutritional status and sleep quality on hospital utilisation in the oldest old with heart failure. *J Nutr Health Aging*. 2016;20(2):170-7
19. Stjernberg L, Halling A, Berglund J. Age and gender effect on the use of herbal medicine products and food supplements by the elderly. *Scand J Prim Health Care* 2006;24:50-5.
20. Wranger ... Berglund Pain among older adults from a gender perspective: findings from the Swedish National Study on Aging and Care (SNAC-Blekinge). *Scand J Public Health*. 2016.

CURRICULUM VITAE—SÖLVE ELMSTÅHL

Address

Department of Health Sciences, Division of Geriatric Medicine, Lund University, Malmö, SE-205 02, Malmö, Sweden

Tel.: +46 40 39 1320; **e-mail:** solve.elmstahl@med.lu.se

Qualifications

- University Medical Degree (läkarexamen) (MD), University of Lund, 1982
- Doctor of Medical Science (medicine doktor) (PhD) University of Lund, 1987 Title "Hospital nutrition in geriatric long-stay medicine. Dietary intake, body composition and the effects of experimental changes".
- Authorization to practise the medical profession as physician (läkarlegitimation) in Sweden by the National Swedish Board of Health and Welfare, 1985.
- Licensed to practice Geriatric Medicine (specialistkompetens i geriatrik), Authorization from the National Swedish Board of Health and Welfare, 1990.
- Appointed as Associate professor (docent) in Geriatric Medicine, University of Lund, 1991.

Clinical positions

- Senior physician in Geriatric Medicine since 1991 at the Clinic of Geriatric Medicine, (Geriatriskt utvecklingscentrum) Malmö University Hospital
- Appointed Director of the Clinic of Geriatric Medicine, Skåne University Hospital 1997-present

Academic positions

- Full professor of Geriatric Medicine, Lund University 2001-present
- Senior Lecturer of Geriatric Medicine, Lund University 1995-2000.
- Acting professor of Geriatric Medicine, Lund University 1991-1994
- Head of the Division of Geriatric Medicine at the Depts. Community Medicine and Health Sciences since 1995 – present
- Acting Head of the Department of Community Medicine 1997-2004
- Acting Head of Department of Health Sciences 2005-2015
- Director of the Research platform on Elderly, at the National Vårdal Institute, since the start of the Institute 2002 - 2006, comprising 15 PhD students and about 30 different research projects.
- Appointed as Scientific Advisor in Geriatric Medicine and geriatric rehabilitation for the Swedish National Board of Health and Welfare, 2000 - present.
- Appointed as Scientific member of the National scientific committee (The National Expert Group on Diet, Physical activity and Health) by the National Food Administration, Sweden, 1993-2006.
- Appointed as Scientific member of the Board Lund University Centre for Research on Handicap and Rehabilitation (HAREC) and the Board for Centre for Aging Research, Malmö, 2003-2009
- Appointed by the Swedish government as Scientific member in the Regional Ethical Committee, Lund, 2004 - 2015.
- Appointed as Scientific member of the Swedish Council on Technology Assessment in Health Care (SBU), Medicinska Rådet, 2006 - 2011.
- Appointed by the Swedish government as scientific member in the Regional Ethical Committee, Lund, 2004 - 2016.

Research

- PI of the following RCTs: a) a care model of stroke; b) two RCT on effects of monochromatic UV light on improved ulcer healing; c) effects of ondansetron on dementia and d) a caregiver model with psychosocial education, the first Scandinavian study with a 5-year follow up.
- PI of studies on geriatric nutrition related to the association between micronutrients and osteoporosis and development and assessment of different dietary methods.
- Co-applicant for the study Malmö Kost Cancer (MDCS, n=28 098) (1989 and ongoing) with focus on fractures and biomarkers in collaboration with Göteborg and Umeå University.
- PI of the ongoing prospective cohort study “Gott Åldrande i Skåne” (GÅS), part of the Swedish national study on Aging and Care (SNAC), supported by the Ministry of Social Affairs, Vårdal Foundation, Forte, and Swedish Research Council.
- PI of the Ageing and ethnicity cohort followed for 30 years (n=742 668) in collaboration with Linné University. A geriatric epidemiological research study on the influence of gender, ethnicity and residential place on morbidity, cause of death and mortality.
- PI of the longitudinal cohort study Men born 1914, followed since 1982.
- One of the co-applicants for CASE, the Centre for Ageing and Supportive Environments, established in 2007 as one out of two national centers of excellence for research on ageing with 10-year funding from the Swedish Council for Working Life and Social Research
- PI and coordinator of EpiHealth Epi-Old cohort aiming to reach about 200 000 older people in collaboration with L Lind, Uppsala University established within the EpiHealth framework at LU and UU, and member of the Board of EpiHealth - the Centre for Epidemiology and Health, Lund and Uppsala University, established in 2009.

Past and present supervision of doctoral students as main supervisor

H Östberg 1992; L Annerstedt 1995; UM Emilsson (main supervisors R Eliasson-Lappilainen and S Elmståhl deputy supervisor), 1998; A Siennicki- 2000;

M Persson 2002; S Andren 2006; B Albin 2006; F Reinprecht 2006; H Ekström 2009; M Wadman 2009, Å Enkvist 2013; M Stenhagen 2014; B Dahlrup 2015; L Sandin Wrangler

Ongoing: supervisor for 12 PhD students J Axelsson; E Bramell-Risberg; V Denvall; A Kragh; L Furuäng; M-C Overton; K Werner; T Lindberg, N Natarajan, J Luoto, D Lindström, T Månsson

Scientific collaboration

Post-doctoral students with collaboration P Montnemery, 2001-2015; A Siennicki-Lantz 2001-present; E Nordell 2008- present; S Andren 2006-2010; B Albin Linne University (former Växjö University) 2006-2014; K Hjelm Linköping University 2001-present; H Ekström 2009-present

Publications, external examiner, refereeing

About 270 peer reviewed publications in the area of geriatric medicine, cognition and geriatric nutrition. External examiner for academic degrees of Ph.D. Past and present refereeing include J Internal Medicine, Eur J Nutrition, Int J Epidemiology, Scand J Caring Sciences, Age Aging, J Rehab Med, J Am Ger Soc, Eur J Ageing.

Main applicant with VR funding 2014/2016 of 16.9 milj SEK.

SNAC-SKÅNE – PI: SÖLVE ELMSTÅHL

1. Elmståhl S et al. Caregiver's burden of patients three years after stroke assessed by a novel caregiver burden scale. *Archives of Physical Medicine and Rehab* 1996; 77: 177-82.
2. Elmståhl S, Gullberg B. Bias in diet assessment methods - consequences of collinearity on sample size calculations and exposure variables. *Int J Epidem* 1997; 26: 1071-9.
3. Elmståhl S, Rosén I. Postural hypotension and EEG variables predicts cognitive decline. Results from a 5-year follow-up of healthy elderly women. *Dementia*, 1997; 8: 180-187.
4. Elmståhl S et al. Increased incidence of fractures in middle-aged and elderly men with low intakes of phosphorus and zinc. *Osteoporosis International*, 1998, 8:333-40.
5. Elmståhl S, et al. Dysphagic treatment improve nutritional conditions in stroke patients with swallowing dysfunction. *Dysphagia*, 1999; 14; 61-66.
6. Bianchini F, Elmståhl S, et al. Oxidative DNA damage in human lymphocytes: correlations with plasma levels of α -tocopherol and carotenoids. *Carcinogenesis*, 2000: 21 321-4.
7. ... Elmståhl et al. Hypertension and changes of cognitive function in 81-year old men. A 13-year follow-up of the population study "Men born in 1914", Sweden. *J Hypertension* 2003.
8. ... Elmståhl S, et al. Monochromatic phototherapy – a new way of treating chronic pressure ulcers? A double-blind, randomised placebo-controlled study on the efficacy and safety of monochromatic phototherapy in elderly patients. *Aging Clin Exp Res* 2003; 15: 259-263.
9. ... Elmståhl S. Family caregivers' subjective experiences of satisfaction in dementia care: aspects of burden, subjective health and sense of coherence. *Scand J Caring Sciences* 2005.
10. Albin B, Hjelm K, Ekberg J, Elmståhl S. Mortality among 742 668 foreign and native-born Swedes 1970-1999. *European J Public Health*, 2005; 15(5):511-7.
11. Ekström H, Ivanoff SD, Elmståhl S. Restriction in social participation and lower life satisfaction among fractured in pain. Results from the population study "Good Ageing in Skåne". *Archives of Gerontology and Geriatrics*, 2008;46(3):409-24.
12. Axelsson J, ..., Elmståhl S. Low ambulatory blood pressure is associated with lower cognitive function in healthy elderly men. *Blood Pressure Monitoring* 2008; 13: 269-275.
13. Christensson A, Elmståhl S. Estimation of the age-dependent decline of glomerular filtration rate from formulas based on creatinine and cystatin C in the general elderly population. *Nephron Clinical Practice*, 2011; 117 (1) c40-50. Epub 2010.
14. ...Elmståhl What factors affect life satisfaction among the oldest-old? *Arch G Geriatr* 2012
15. Bramell-Risberg ... Elmståhl S. Separate physical tests of lower extremities and postural control are associated with cognitive impairment. Results from the general population study Good Aging in Skåne (GÅS-SNAC). *Clinical Interventions in Aging*, 2012;7:195-205.
16. ...Elmståhl. Falls in the general elderly population: A 3- and 6-year follow-up of risk factors using data from the longitudinal population study Good Ageing in Skåne *BMC Geriatr*. 2013
17. Elmståhl S, Widerström E. Orthostatic intolerance predicts mild cognitive impairment: incidence of mild cognitive impairment and dementia from the Swedish general population cohort Good Aging in Skåne. *Clin Interv Aging*. 2014;9:1993-2002.
18. Gavrilidou NN, Pihlsgård M, Elmståhl S. Anthropometric reference data for elderly Swedes and its disease-related pattern. *Eur J Clin Nutr*, 2015 May 20.
19. Luoto J Elmståhl S, Wollmer P, Pihlsgård M. Incidence of Chronic Obstructive Pulmonary Disease in subjects 65-100 years of age. *Eur Respir J*. 2015 Dec 17. pii: ERJ-00635-2015.
20. Kragh-Ekstam A, Elmståhl S. Does use of fall-risk-increasing medication have impact on mortality in older hip fracture patients? - A population-based cohort study, *Clinical Interventions in Aging*, 2016; 11: 489-96.



Stödjobrev ansökan infrastruktur av nationellt intresse

Karolinska Institutet stödjer ansökan om bidrag till **NEAR: Nationell infrastruktur för forskning om åldrande**. Om ansökan beviljas av Vetenskapsrådet är Karolinska Institutet beredda att:

- ingå i det föreslagna konsortiet (endast nationell infrastruktur)
- ta ansvar för den verksamhet som beskrivs i ansökan samt de finansiella åtagandena och/eller andra åtaganden som anges för Karolinska Institutet i ansökan.

Om Vetenskapsrådet beslutar att bevilja ansökan på en lägre nivå än vad som anges i ansökan avser Karolinska Institutet att i god anda föra konstruktiva diskussioner med Vetenskapsrådet och de övriga medverkande lärosätena/organisationerna för att **NEAR** ska bli en infrastruktur till gagn för svensk forskning.

Genom att underteckna stödjobrevet bekräftas att innehållet i ansökan och budget är korrekt och att den beskrivna verksamheten sker i enlighet med gällande lagstiftning.

Karin Dahlman-Wright
Vikarierande rektor

Stödbrev ansökan infrastruktur av nationellt intresse

Blekinge Tekniska Högskola (BTH) stödjer ansökan om bidrag till The National E-infrastructure for Aging Research in Sweden (NEAR). Om ansökan beviljas av Vetenskapsrådet är BTH beredd att

- ingå i det föreslagna konsortiet
- ta ansvar för den verksamhet som beskrivs i ansökan samt göra de finansiella och/eller andra åtaganden som anges för BTH i ansökan.

Om Vetenskapsrådet beslutar att bevilja ansökan på en lägre nivå än vad som anges i ansökan avser BTH att i god anda föra konstruktiva diskussioner med Vetenskapsrådet och de övriga medverkande lärosätena/organisationerna för att NEAR ska bli en infrastruktur till gagn för svensk forskning.

Genom att underteckna stödbrevet bekräftas att innehållet i ansökan och budget är korrekt och att den beskrivna verksamheten sker i enlighet med gällande lagstiftning.



Underskrift rektor

2017-02-27

Datum

Blekinge Tekniska Högskola



UNIVERSITETSLEDNINGENS STAB

Stödjobrev ansökan infrastruktur av nationellt intresse

Göteborgs universitet stödjer ansökan om bidrag till National E-infrastructure on Aging Research (NEAR). Om ansökan beviljas av Vetenskapsrådet är Göteborgs universitet beredda att

- ingå i det föreslagna konsortiet
- ta ansvar för den verksamhet som beskrivs i ansökan samt göra de finansiella och/eller andra åtaganden som anges för Göteborgs universitet i ansökan.

Om Vetenskapsrådet beslutar att bevilja ansökan på en lägre nivå än vad som anges i ansökan avser Göteborgs universitet att i god anda föra konstruktiva diskussioner med Vetenskapsrådet och de övriga medverkande lärosätena/organisationerna för att NEAR ska bli en infrastruktur till gagn för svensk forskning.

Genom att underteckna stödjobrevet bekräftas att innehållet i ansökan och budget är korrekt och att den beskrivna verksamheten sker i enlighet med gällande lagstiftning.

Göteborg 2017-03-01

Pam Fredman
Rektor Göteborgs universitet



JÖNKÖPING UNIVERSITY
School of Health and Welfare

Dnr:

STÖDJEBREV

Ansökan infrastruktur av nationellt intresse

JÖNKÖPING UNIVERSITY stödjer ansökan om bidrag till The National E-infrastructure for Aging Research in Sweden (NEAR). Om ansökan beviljas av Vetenskapsrådet är JÖNKÖPING UNIVERSITY beredda att:

- ingå i det föreslagna konsortiet (endast nationell infrastruktur)
- ta ansvar för den verksamhet som beskrivs i ansökan, samt göra de finansiella och/eller andra åtaganden som anges för JÖNKÖPING UNIVERSITY i ansökan

Om Vetenskapsrådet beslutar att bevilja ansökan på en lägre nivå än vad som anges i ansökan, avser JÖNKÖPING UNIVERSITY att i god anda föra konstruktiva diskussioner med Vetenskapsrådet och de övriga medverkande lärosätena/organisationerna för att The National E-infrastructure for Aging Research in Sweden (NEAR) ska bli en infrastruktur till gagn för svensk forskning.

Genom att underteckna stödjbrevet bekräftas att innehållet i ansökan och budget är korrekt och att den beskrivna verksamheten sker i enlighet med gällande lagstiftning.

JÖNKÖPING UNIVERSITY

Rektors kansli

Mats Jägstam
Prorektor

2017-02-23

Datum

Stödjobrev ansökan infrastruktur av nationellt intresse (medverkande lärosäten inklusive medelsförvaltaren)

Lunds universitet stödjer ansökan om bidrag till **National E-infrastructure for Aging Research in Sweden (NEAR)**. Om ansökan beviljas av Vetenskapsrådet är Lunds universitet beredda att

- ingå i det föreslagna konsortiet (endast nationell infrastruktur)
- ta ansvar för den verksamhet som beskrivs i ansökan samt göra de finansiella och/eller andra åtaganden som anges för Lunds universitet i ansökan.

Om Vetenskapsrådet beslutar att bevilja ansökan på en lägre nivå än vad som anges i ansökan avser Lunds universitet att i god anda föra konstruktiva diskussioner med Vetenskapsrådet och de övriga medverkande lärosätena/organisationerna för att **NEAR** ska bli en infrastruktur till gagn för svensk forskning.

Genom att underteckna stödjobrevet bekräftas att innehållet i ansökan och budget är korrekt och att den beskrivna verksamheten sker i enlighet med gällande lagstiftning.



Underskrift rektor

Lunds universitet

2017-03-01

Datum



UMEÅ UNIVERSITET

Till den/det berör

Stödjbrev ansökan infrastruktur av nationellt intresse

Umeå universitet stödjer ansökan om bidrag till **National e-infrastructure on Aging Research (NEAR)**. Om ansökan beviljas av Vetenskapsrådet är Umeå universitet beredda att

- ingå i det föreslagna konsortiet
- ta ansvar för den verksamhet som beskrivs i ansökan samt göra de finansiella och/eller andra åtaganden som anges för Umeå universitet i ansökan.

Om Vetenskapsrådet beslutar att bevilja ansökan på en lägre nivå än vad som anges i ansökan avser Umeå universitet att i god anda föra konstruktiva diskussioner med Vetenskapsrådet och de övriga medverkande lärosätena/organisationerna för att **National e-infrastructure on Aging Research (NEAR)** ska bli en infrastruktur till gagn för svensk forskning.

Genom att underteckna stödjbrevet bekräftas att innehållet i ansökan och budget är korrekt och att den beskrivna verksamheten sker i enlighet med gällande lagstiftning.

A handwritten signature in black ink, appearing to be 'Hans Adolfsson'.

Hans Adolfsson
Rektor

Umeå 2017-03-01

Kopia till:
Kristoffer Lindell
Registrator

CV

CV - Karin Dahlman-Wright

Namn: Karin Dahlman-Wright
Födelsedatum: 19611009
Kön: Kvinna
Land:Sverige

Dr-examen: 1991-04-25
Akademisk titel: Professor
Arbetsgivare: Ingen nuvarande arbetsgivare

Alla cv-sektioner är avstängda för Dahlman-Wright, Karin på den här ansökan.

Publikationer

Publikationer - Karin Dahlman-Wright

Namn: Karin Dahlman-Wright
Födelsedatum: 19611009
Kön: Kvinna
Land:Sverige

Dr-examen: 1991-04-25
Akademisk titel: Professor
Arbetsgivare: Ingen nuvarande arbetsgivare

Publikationer är avstängt för Dahlman-Wright, Karin på den här ansökan.

Registrera

Villkor

Ansökningar där en organisation är sökande signeras automatiskt vid registrering av ansökan.

Signering av den sökande innebär en bekräftelse av att:

- uppgifterna i ansökan är korrekta och följer Vetenskapsrådets instruktioner
- eventuella bisysslor och kommersiella bindningar har redovisats för medelsförvaltaren och att det där inte framkommit något som strider mot god forskningssed
- nödvändiga tillstånd och godkännanden finns vid projektstart, exempelvis avseende etikprövning
- den beskrivna forskningen, anställningen och utrustningen kan beredas plats under den tid och i den omfattning som anges i ansökan
- medelsförvaltaren godkänner kostnadsberäkningen i ansökan
- den forskning som utförs inom projektet bedrivs i enlighet med svensk lagstiftning