



National E-infrastructure on Aging Research in Sweden

Funded by



Vetenskapsrådet

In collaboration with



Alexander Darin-Mattsson

PhD, NEAR database coordinator

What is NEAR?

- An infrastructure for aging research
- An online interactive database and platform

What does NEAR do?

- Document existing databases in a coherent way
 - Present all the information about included databases
 - Create and hand out data sets for specific research project (harmonization)
 - If wanted, support with data management and analyses
 - Research in five different projects
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Our vision

Identify effective and sustainable intervention strategies for better health and more effective care of older population

Why NEAR?

NEAR

- *offers high-quality data*
- *is a large database with many participants and detailed information*
- *have great geographical cover of Sweden*
- *data have long follow-up*



Why NEAR?

NEAR can address the three major challenges currently present in aging research

1. Health in aging is a complex, multidimensional, dynamic process
2. Multidomain determinants of health in aging
3. Lifelong experiences and trajectories





- **Seven Universities:**

1. Karolinska Institutet (KI)
2. Blekinge Institute of Technology (BTH)
3. Gothenburg University (GU)
4. Jönköping University (JU)
5. Lund University (LU)
6. Umeå University (UmU)
7. Uppsala University (UU)

- **15 databases**

Databases included

15 population-based longitudinal projects well known nationally and internationally projects that have already generated relevant knowledge on health and health care in aging

More than **180,000** people aged **50+ years**

Direct interview or/and **clinical examination**

- ✓ Demographics, Lifestyle, and psychosocial factors
- ✓ Common and complex diseases
- ✓ Cognitive tests
- ✓ Type of sample: peripheral blood, saliva, serum, plasma
- ✓ Brain imaging and cerebrospinal fluid

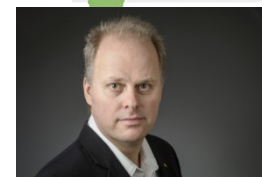
Follow-up of a minimum of **7 years** to a maximum of **40 years**





SWEOLD

PI: C Lennartsson



Betula project

PI: L Nyberg



SNAC-Nordanstig

PI: A Wimo

SNAC-Kungsholmen & KP

PI: L Fratiglioni



SNAC-Blekinge

PI: JS Berglund



SNAC-GÅS

PI: S Elmståhl



SHARE-Sweden

PI: G Malmberg

GENDER

PI: AD Aslan



COSM & SMC (SIMPLER)

PI: K Michaëlsson & A Wolk



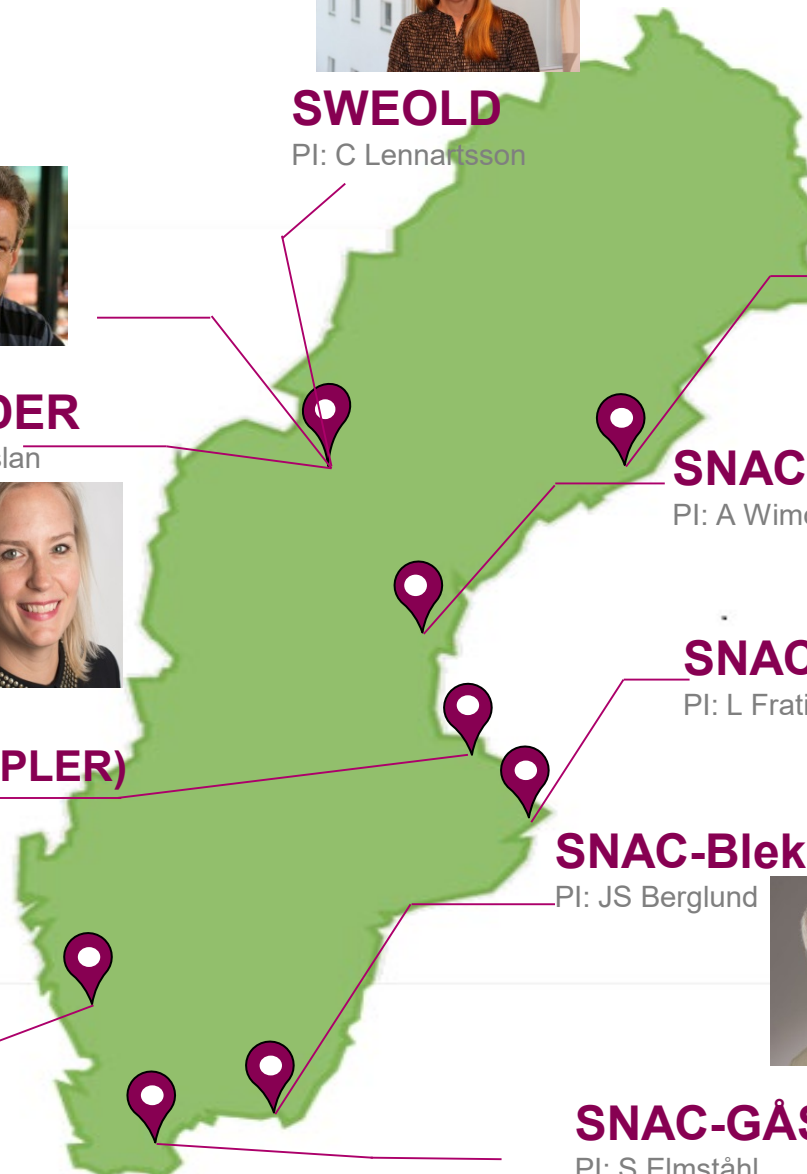
OCTO-Twin

PI: L Hassing



H70 & H85+ & H95+

PI: I Skoog



	N	Age	Socio-economic	Lifestyle Habits	Health Assessments	Genetic data	Blood sample	Imaging markers
H70, H80, H95+	4 100	70+	✓	✓	✓	✓	✓	✓
Betula	4 445	25-90	✓	✓	✓	✓	✓	✓
COSM	48 850	55+	✓	✓	✓	✓	✓	
SMC	61 433	60+	✓	✓	✓	✓		
KP	1 810	75+	✓	✓	✓	✓	✓	
SNAC-K	3 363	60+	✓	✓	✓	✓	✓	✓
SNAC-N	766	60+	✓	✓	✓		✓	
SNAC-GÅS	2931	60+	✓	✓	✓		✓	
SNAC-B	1 402	60+	✓	✓	✓		✓	
SALT	45 000	40+	✓	✓	✓	✓	✓	
SATSA	2 018	26-93	✓	✓	✓	✓	✓	
GENDER	1 843	69-88	✓	✓	✓	✓	✓	
Octo-Twin	702	79-98	✓	✓	✓	✓	✓	
SWEOLD	3 053	75+	✓	✓	✓			
SHARE	4 000	50+	✓	✓	✓			

Potential NEAR users

- ✓ **National users.** Master, PhD & postdoc students, health and social care organizations, and industrial actors.
- ✓ **International users.** Graduate programs and consortia
- ✓ **Government agencies.** Resource allocation, planning health care organization, developing public health policies.
- ✓ **International organizations.** WHO, the World Stroke Organization, and Alzheimer's Disease International.
- ✓ **Industry and other private organizations.** Both non-profit organizations and businesses.

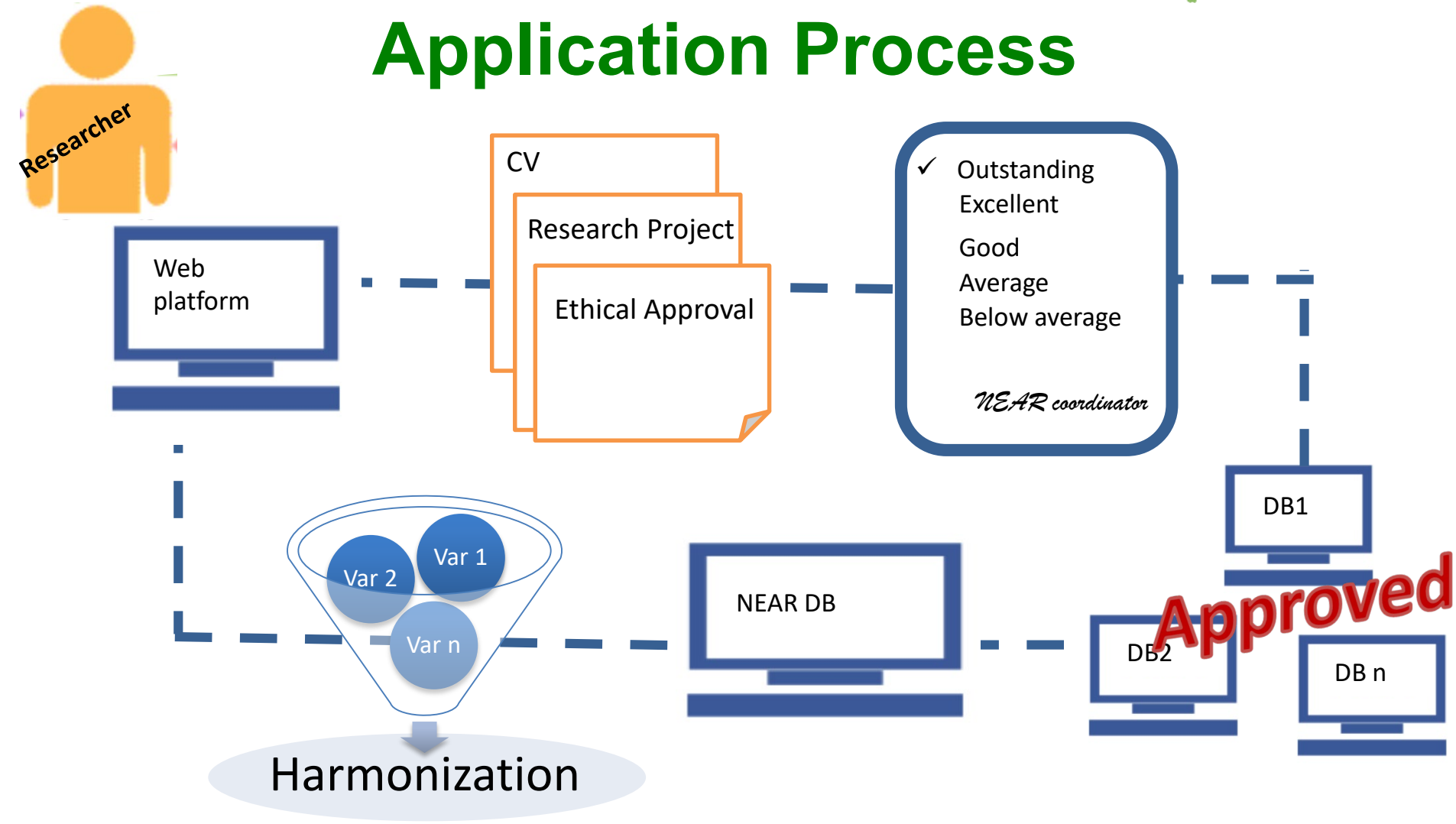


Provide high-quality data for scientific as well as public health utilization

- ✓ Investigate determinants, pathways, and underlying biological mechanisms of diseases & health conditions;
- ✓ Investigate public health-related issues in aging-national burdens and time trends of diseases & health conditions;
- ✓ Assess and plan health care for older people;
- ✓ Design intervention strategies to improve health, medical, and social care and quality of life;
- ✓ Address issues of social inequality in aging and health.



Application Process





Projects within NEAR

Project I: Explore health trajectories to identify people at higher risk of severe negative outcomes.

Project II: The complex interrelationship between psychiatric and neurodegenerative disorders in older adults.

Project III: Gene-environment interplay explains why older adults age differently.

Project IV: Identification of neuroimaging biomarkers in brain aging.

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



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Project IV: Identification of neuroimaging biomarkers in brain aging.

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



Thank you for your attention!

Please visit www.near-aging.se

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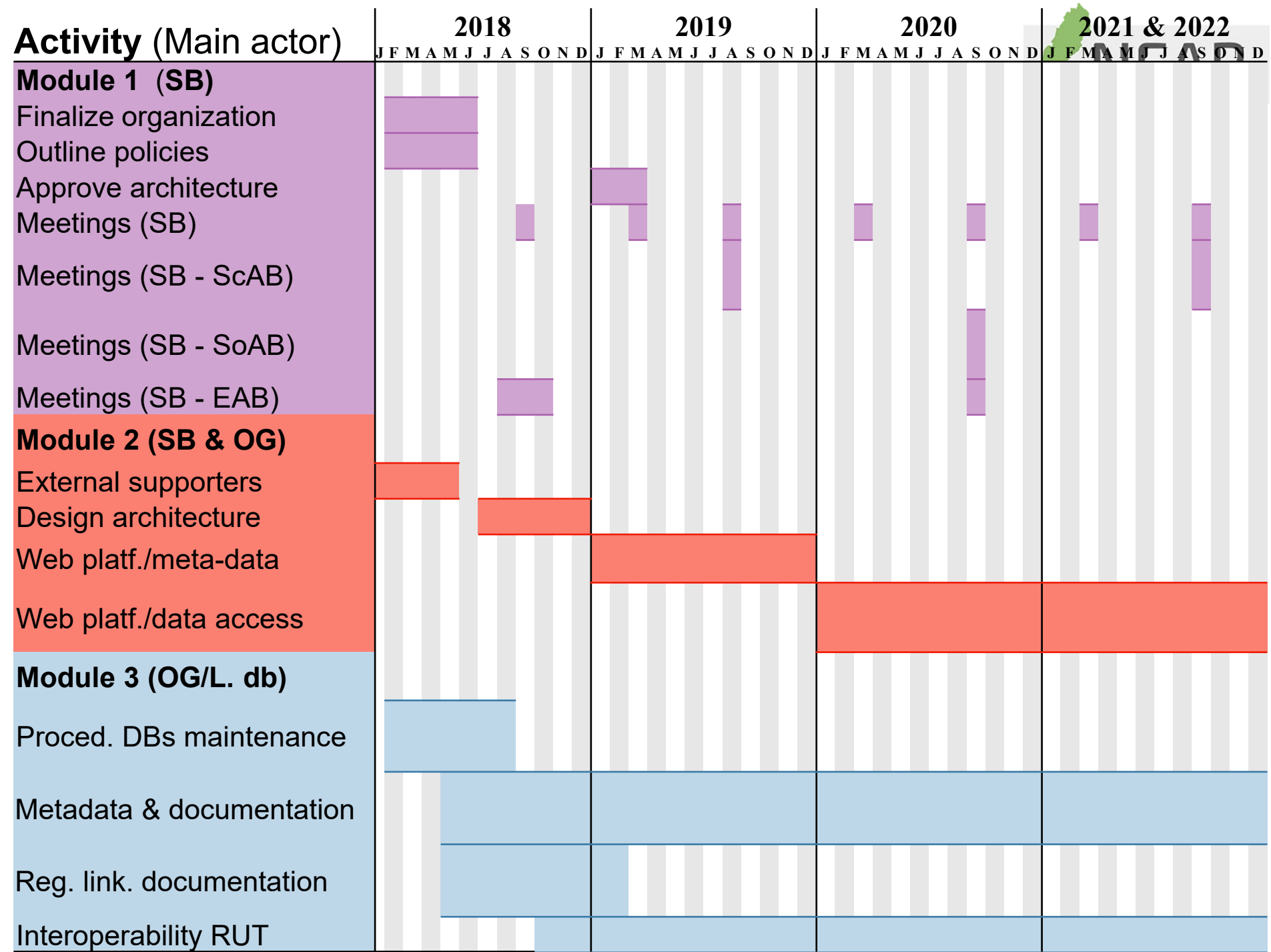
Project manager
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Scientific communicator
Linnea **Sjöberg**
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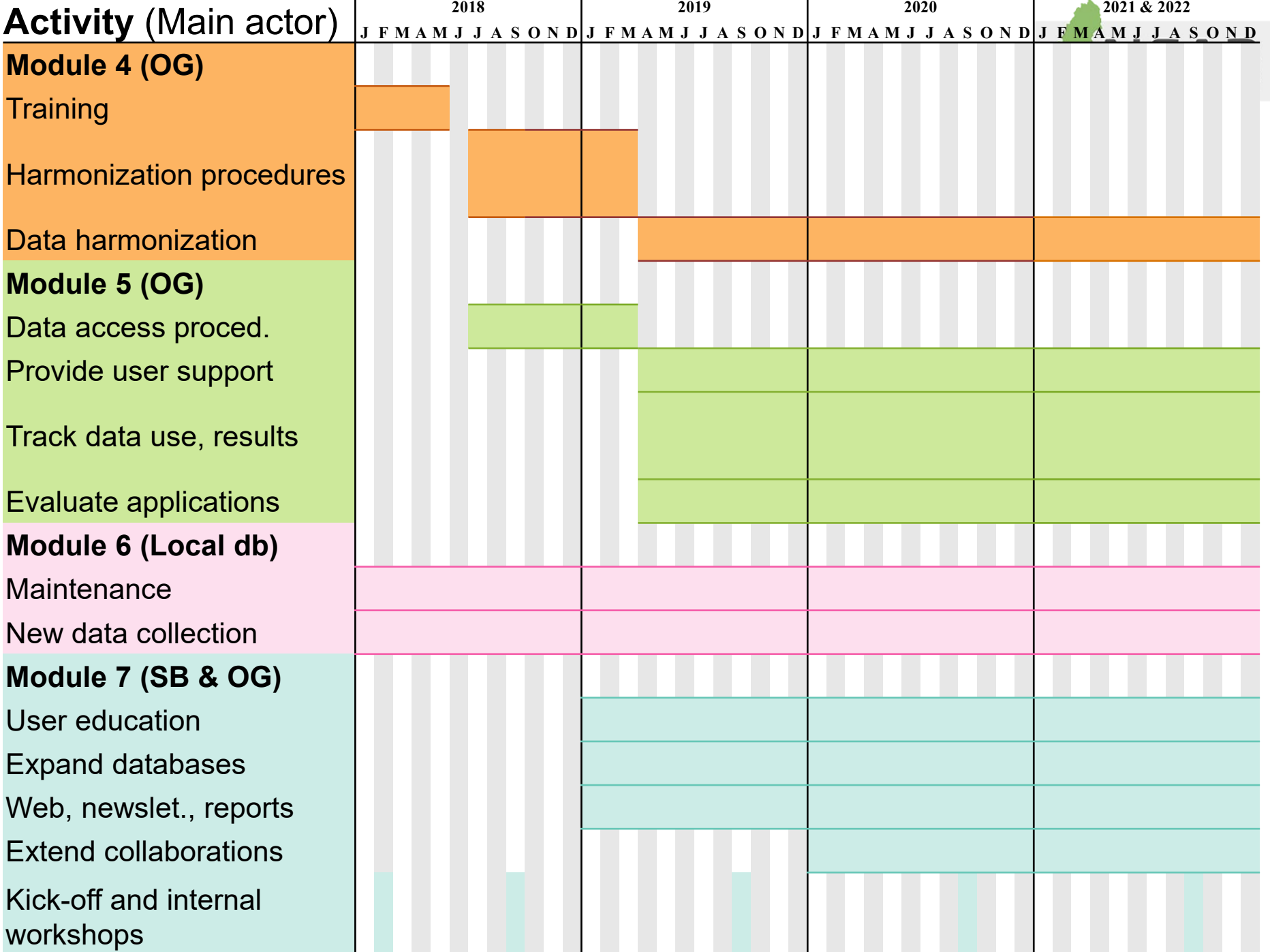
Database manager
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Activity (Main actor)



How does NEAR start??



Project I: Exploring health trajectories in aging to better identify people at higher risk of severe negative outcomes and care services utilization.

Project II: The complex interrelationship between psychiatric and neurodegenerative disorders in older adults.

Project III: Not only in the genes. Gene-environment interplay explains why older adults age differently.

Project IV: Identification of neuroimaging biomarkers in brain aging.

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

Who are the potential NEAR users??

- **National users.** Master, PhD & postdoc Students, health and social care organizations for planning and improving care services, industrial actors for designing and developing medical and health care devices
 - **International users.** Graduate programs and consortia
 - **Government agencies.** Resource allocation, planning health care organization, developing public health policies
 - **International organizations.** WHO, the World Stroke Organization, and Alzheimer's Disease International to help develop global policies and guidelines.
 - **Industry and other private organizations.** Both non-profit organizations and businesses, are becoming increasingly interested in aging
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Aim:

Provide high-quality data for scientific as well as public health utilization



1. Investigate determinants, pathways, and underlying biological mechanisms of diseases & health conditions;
 2. Investigate public health-related issues in aging-national burdens and time trends of diseases & health conditions;
 3. Assess and plan health care for older people by encouraging linkage to other registries;
 4. Design intervention strategies to improve health, medical, and social care and quality of life;
 5. Address issues of social inequality in aging and health.
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Why NEAR?

NEAR can address the 3 major challenges currently present in Aging Research

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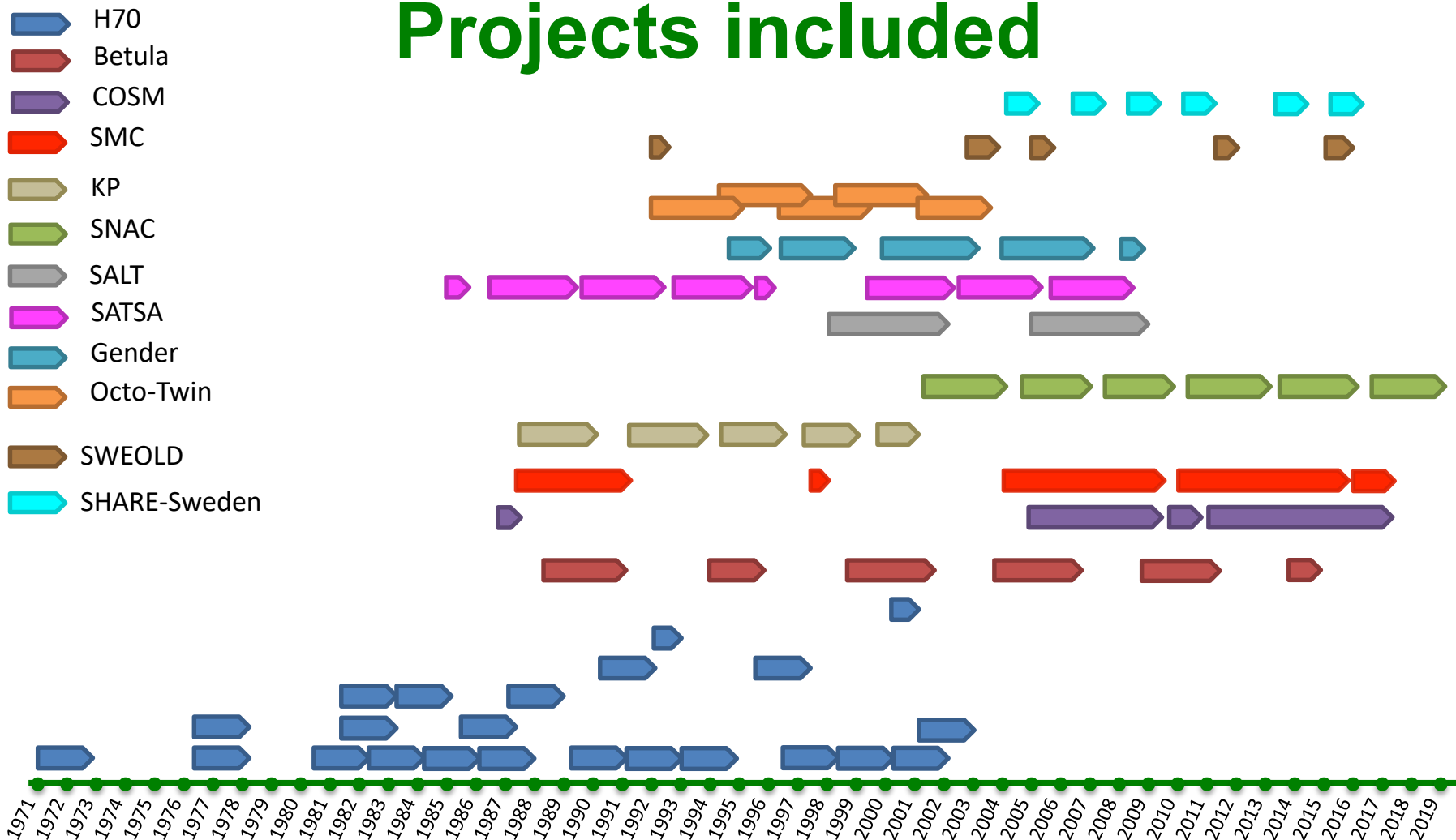
NEAR – Added values

1. Broad range of issues related to health
 2. Sharing of different competences
 3. National representative samples
 4. Comparing figures in Europe- SHARE
 5. Capturing diversity
 6. Clinical and basic science
 7. International collaboration and graduated education
 8. Consolidating Swedish Aging Research internationally
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NEAR = dynamic infrastructure

- 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
 - It will be enriched in the future by
 - collection of new data_in the ongoing included projects,
 - incorporation of more datasets
 - linkage with registers (SveDem), hospital-based registers (GEDOC), or national registers (the Swedish Prescribed Drug Register).
-

Projects included



Documentation



Database	Status	Estimated finishing time
Betula	Sent to Maelstrom	
COSM	Done	
GENDER	Done	
H70, H85, H95+, KVUS	2 biggest cohorts done	Spring 2020
KP	Sent to Maelstrom	
OCTO-Twin	Done	
SALT	Done	
SATSA	Done	
SHARE-Sweden	Done	
SMC	Done	
SNAC-B	Sent to Maelstrom	
SNAC-K	Half wave 5 and wave 6 not done	January 2020
SNAC-S	Sent to Maelstrom	
SNAC-N	2 forms left to do	January 2020
SWEOLD	Done	

<https://www.maelstrom-research.org/mica/network/near>



Multistudy Integrative Research Conference in Cambridge

2019-09-21

NEAR's Project coordinator Debora Rizzuti and Database manager Alexander Darin Mattsson participated in "Optimising Multistudy Integrative Research", a conference held at the Wellcome Genome Center, Cambridge, UK at 18-20 September. Themes ranged from approaches for multistudy analyses, to challenges and solutions related to heterogeneity, data sharing, and measurement harmonization. Researchers from several prominent programmes like IALSA, ATHLOS and IGEMS shared experiences and presented their results.



Conferences



Multistudy Integrative Research Conference in Cambridge

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