



Karolinska  
Institutet

# Cancer Research KI



# **KAROLINSKA INSTITUTET IN BRIEF**

# History of Karolinska Institutet (KI)



**1810**  
KI is founded by King Karl XIII on 13 December 1810 as an "academy for the training of skilled army surgeons".



**1937**  
Nanna Svartz is appointed professor at KI, becoming Sweden's first state-employed female professor.



**1955**  
Hugo Theorell becomes KI's first Nobel Laureate, receiving the Nobel Prize in Physiology or Medicine.



**1997**  
KI is granted official status as a university.



**2010**  
KI celebrates its 200th anniversary.



**2019**  
Strategy 2030, the strategic plan that will be the guiding light until 2030 is decided.

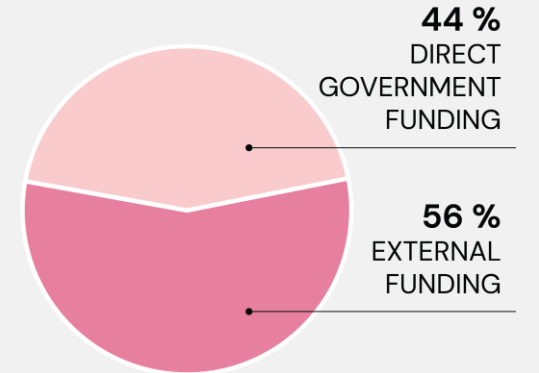
# Karolinska Institutet – in a nutshell (2023)



- One of the world's foremost medical universities
- Sweden's single largest centre of medical academic research
- From basic to clinical research, epidemiology and care sciences



**>7600** publications/year  
**>6700** full-time students  
**>2000** Ph.D. students  
**341** Professors  
**329** Doctoral Degrees  
**21** Departments  
**5** Hospitals  
**2** Campuses

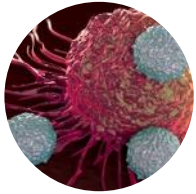


**8.4 SEK billion**

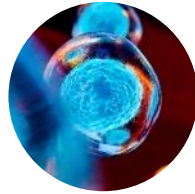
# KI – Solna and Flemingsberg campuses



# Example of research areas at KI



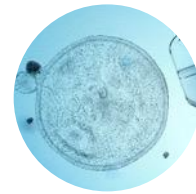
**Cancer and  
Haematology**



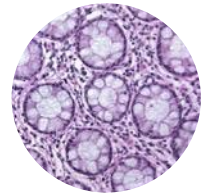
**Cell, Molecular and  
Structural Biology**



**Circulation and  
Respiration**



**Developmental Biology,  
Reproductive, Regenerative  
and Reparative Medicine**



**Endocrinology and  
Metabolism**



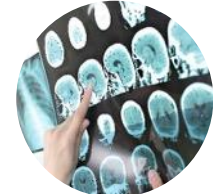
**Epidemiology and Public  
Health Sciences**



**Healthcare  
Sciences and  
Ageing**



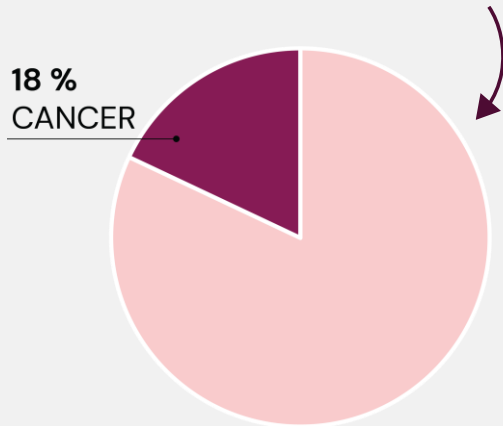
**Infection, Inflammation,  
Immunology and  
Microbiology**



**Neuroscience and  
Mental Health**

# Healthcare at Karolinska University Hospital in numbers (2023)

In-patient beds **1 071**

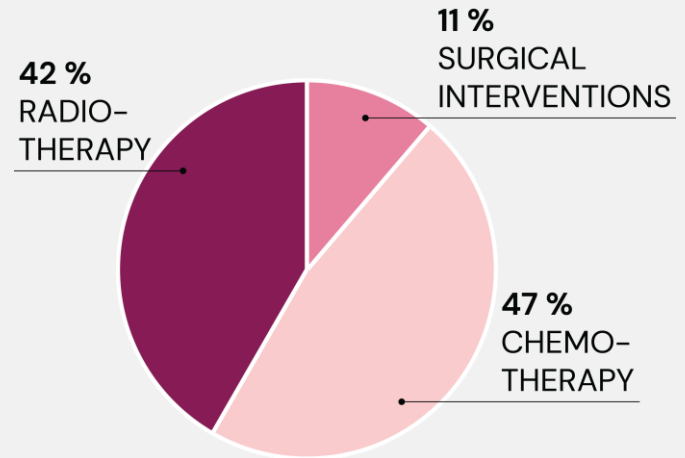


Out-patient visits  
**403 249** in cancer

Cancer clinical trials  
(Phase I-III):

- **2923** patients
- **190** trials open for inclusion
- **429** ongoing trials
- **58** new trials opened during the year

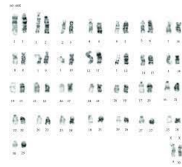
Regimens delivered in cancer **> 110 000**



# Cancer research at KI

## a brief history

RADIUMHEMETS  
FORSKNINGSFONDER



SciLifeLab

Karolinska Institutet  
KAROLINSKA  
Karolinska Comprehensive Cancer Center

**1910**

Inauguration of Radiumhemmets forskningsfonder

**1940**

Torbjörn Caspersson: RNAs role in protein synthesis

**1940**

The "banding technique", a way of identifying individual chromosomes developed by Gharton/Killander/Zeck

**1960**

Eva and Georg Klein laid the foundations for modern cancer immunology

**1968**

Lars Leksell develops and launches the world's first gamma knife, a stereotactic device first used in the treatment of brain tumors

**1975**

Identification of NK cells by Rolf Kiessling

**1975**

First Bone Marrow transplant (Huddinge Hospital)

**2010**

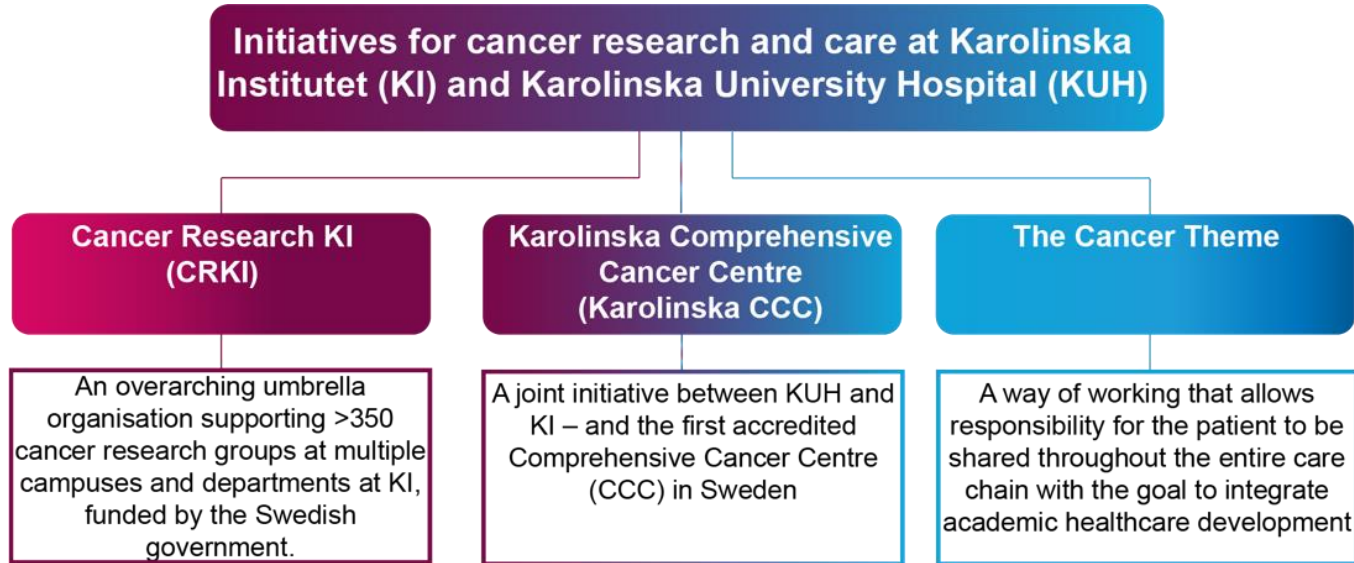
Establishment of SciLifeLab – a national infrastructure for molecular technologies

**2020**

Karolinska Comprehensive Cancer Centre: OECl accreditation



# The cancer research landscape at KI and Karolinska University Hospital





# THE CANCER RESEARCH KI VISION

*To aid in the generation of new scientific discoveries that can be rapidly translated into clinical practice for the benefit of patients and society.*

# The Cancer Research KI network history



**1996**

First cancer network initiated at KI



**2003**

KICancer network



**2009**

The Swedish Government priorities 20 strategic research areas (incl. cancer)



**2015**

Out of 43 strategic research areas, StratCan got increased funding



**Cancer Research KI**

**2019**

The **StratCan** and the **KICancer** network joined forces

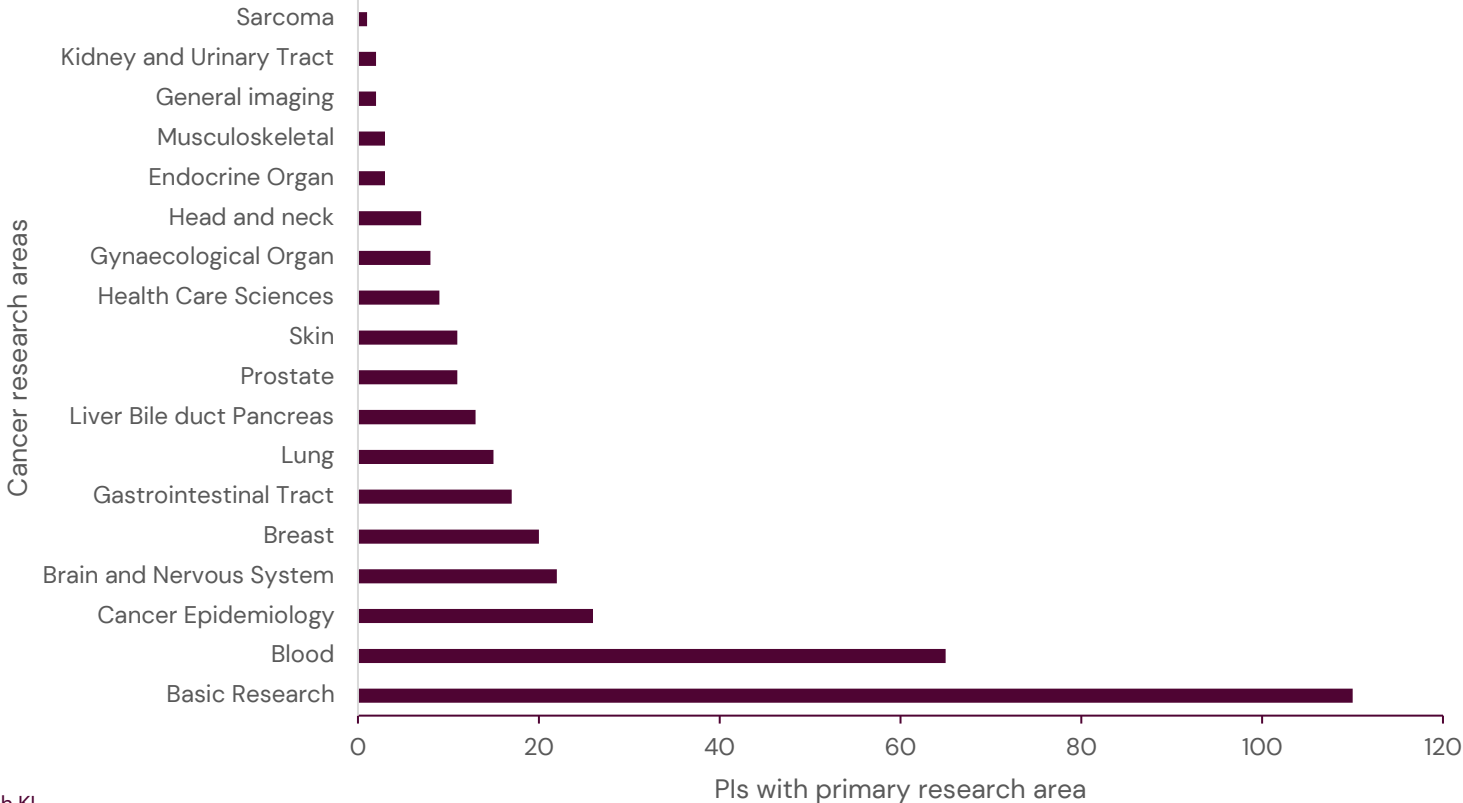




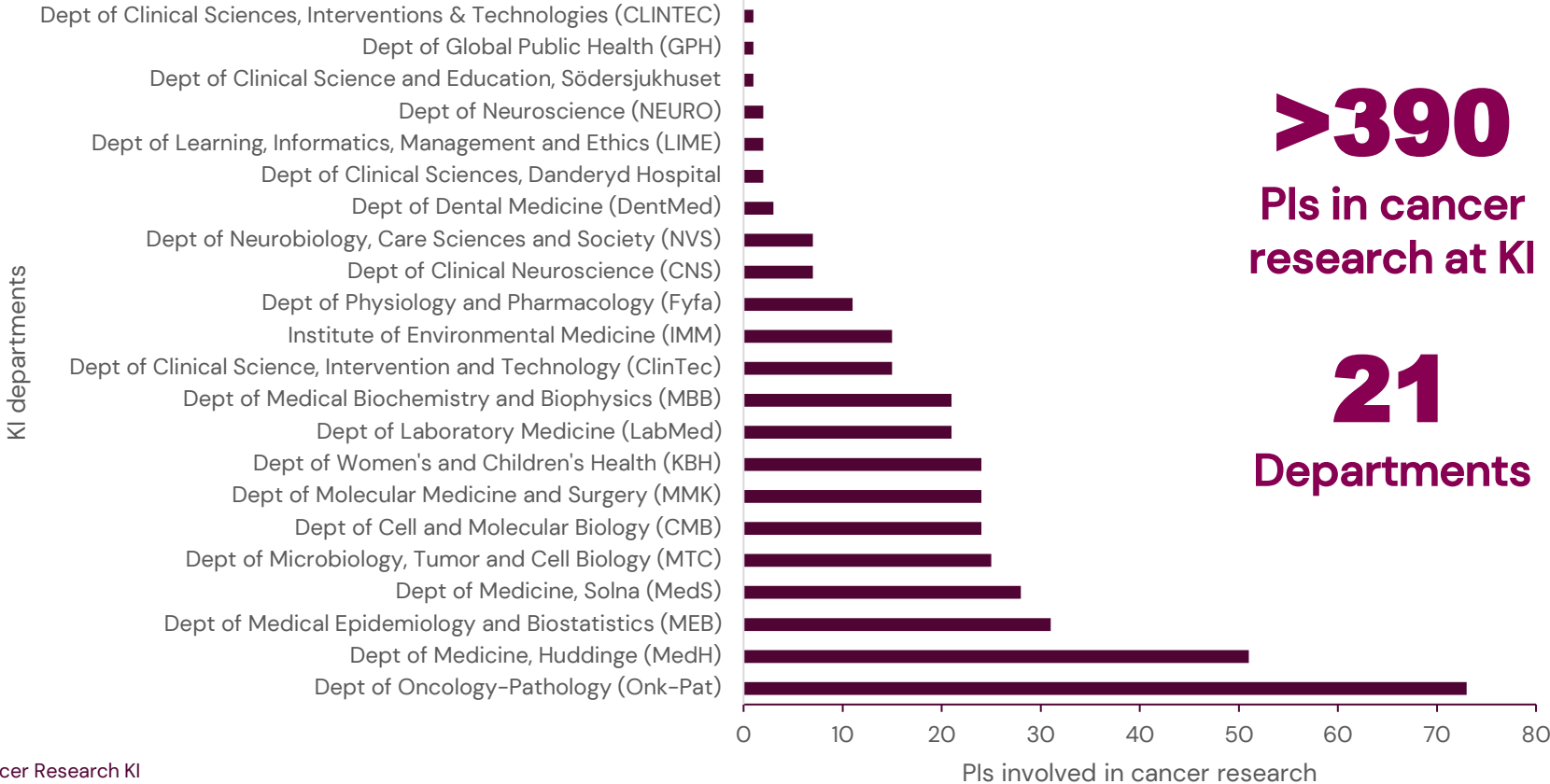
# Cancer Research at KI

*All cancer researchers*

# Distribution of cancer research and care



# Cancer research at all KI departments in the database

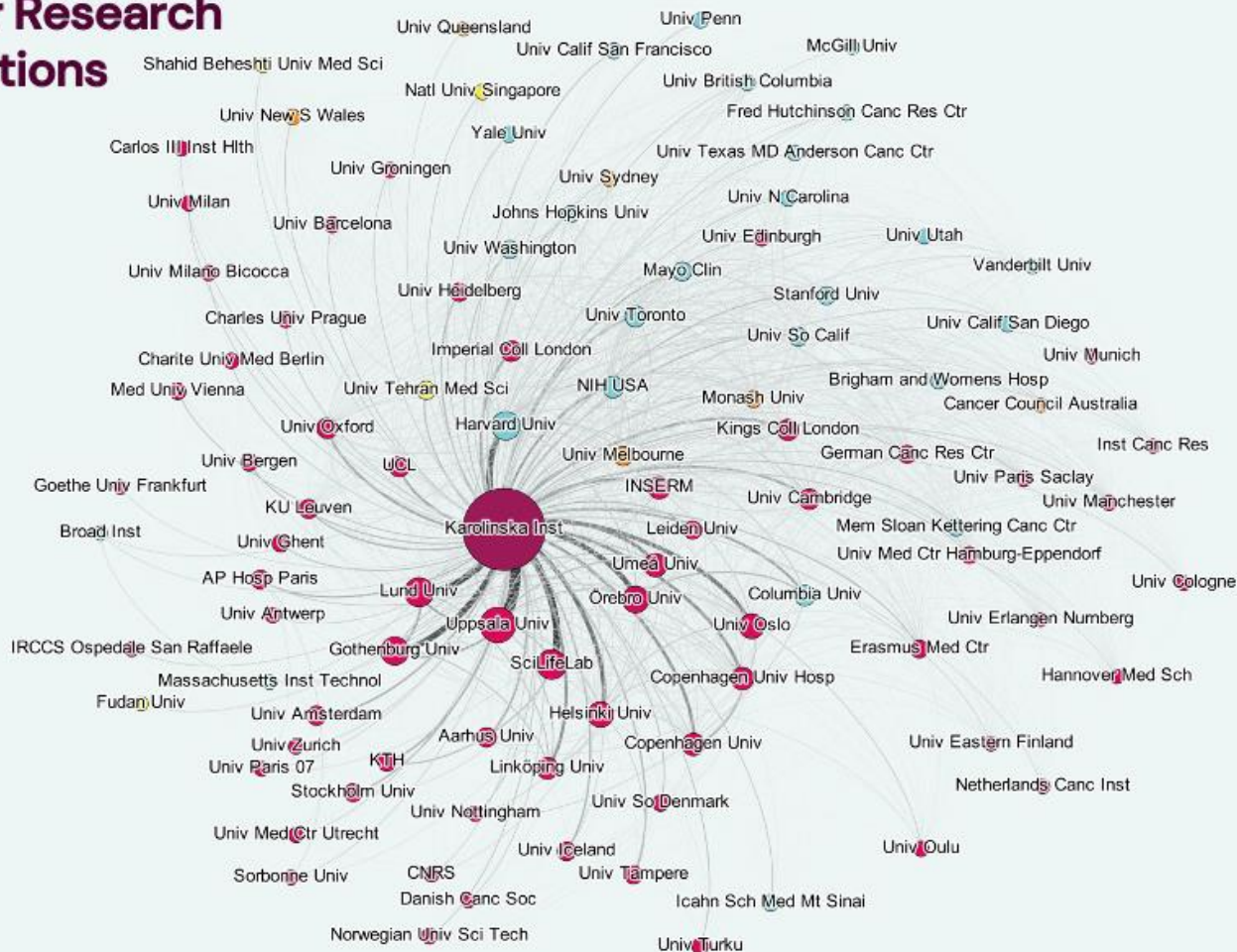


# Tema Cancer and Cancer Research

## KI copublication organisations

### 2021–2023

100 organisations have been included (organisations with at least 59 publications). Edges are shown between organisations with at least 14 co-publications.

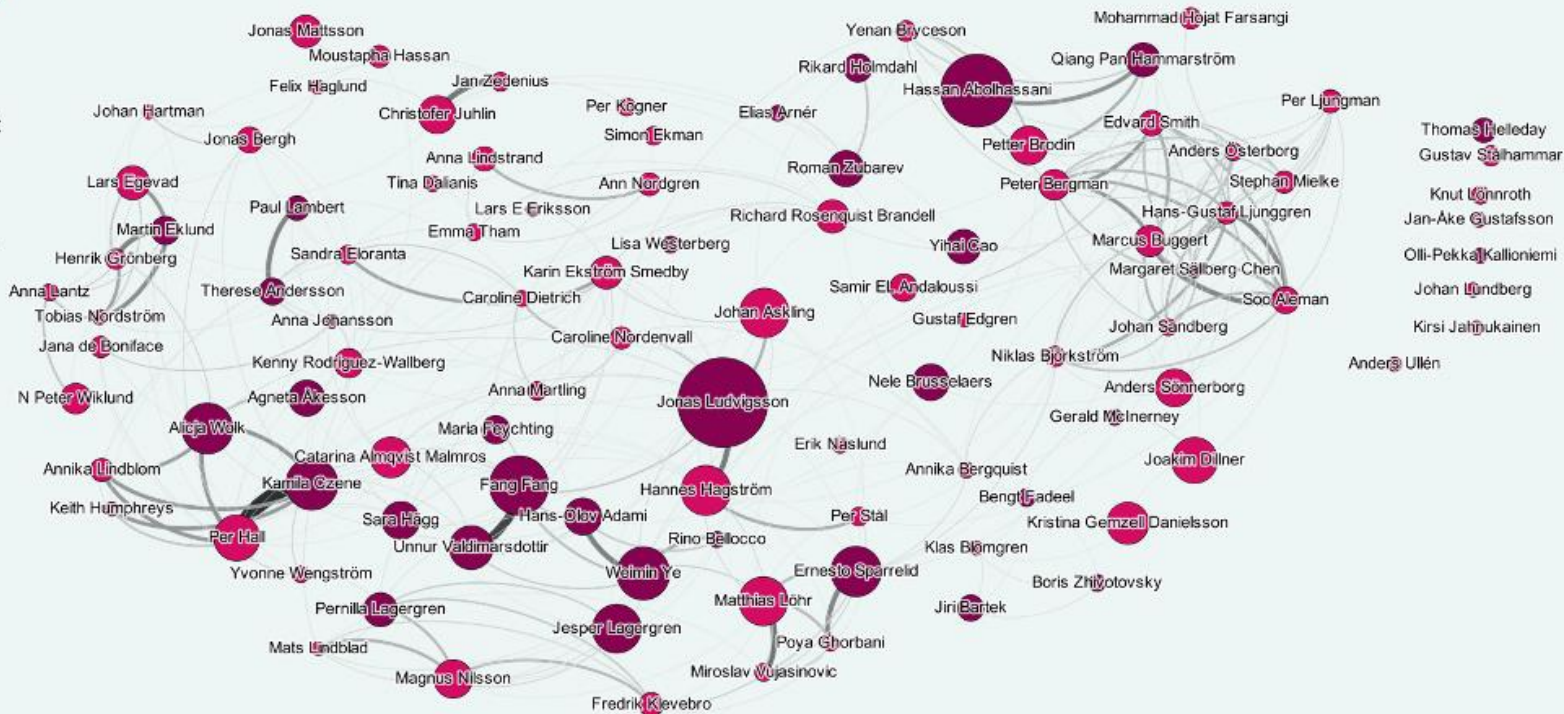


# Tema Cancer and Cancer Research KI

## Author network- at least 22 publications

### 2021-2023

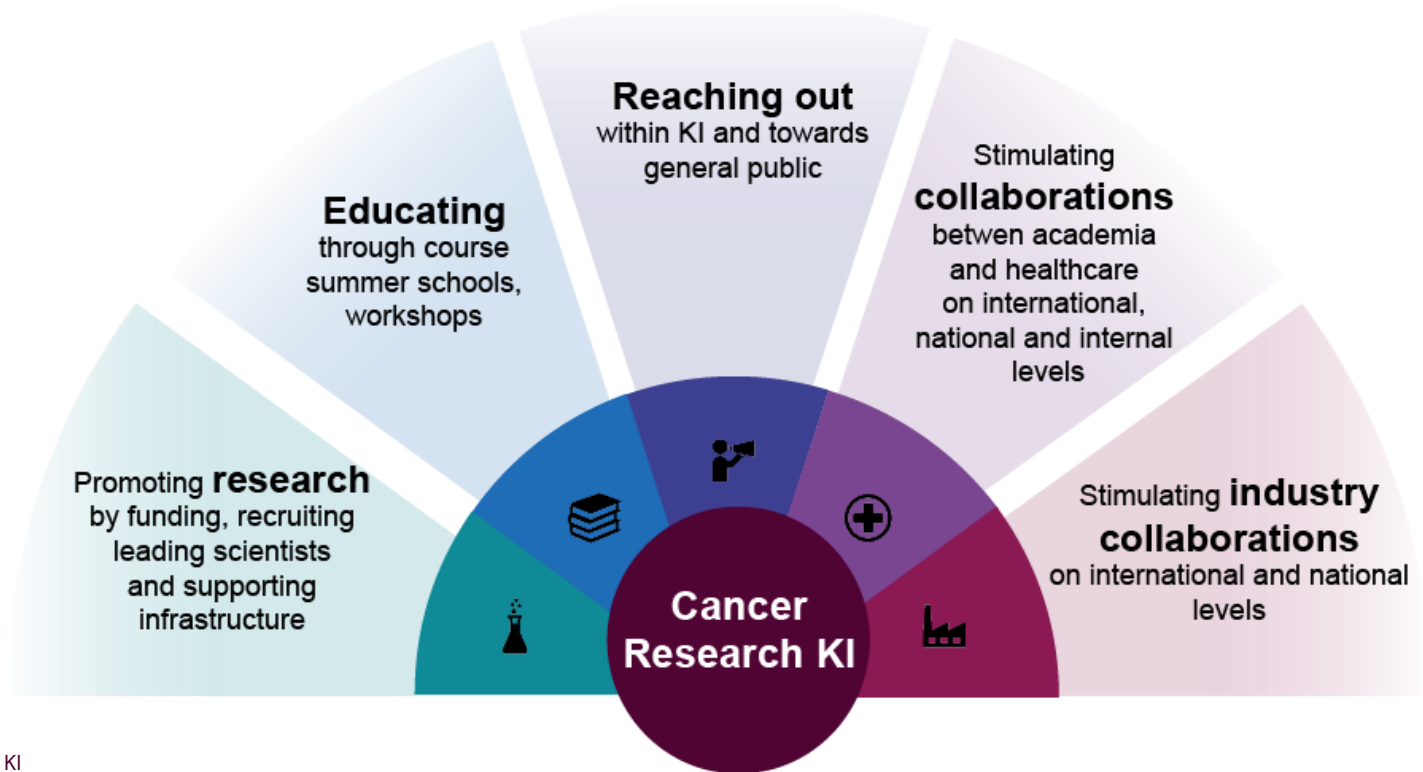
101 authors have been included (authors with at least 22 publications).  
Connections between authors need at least 1 publication to be shown.

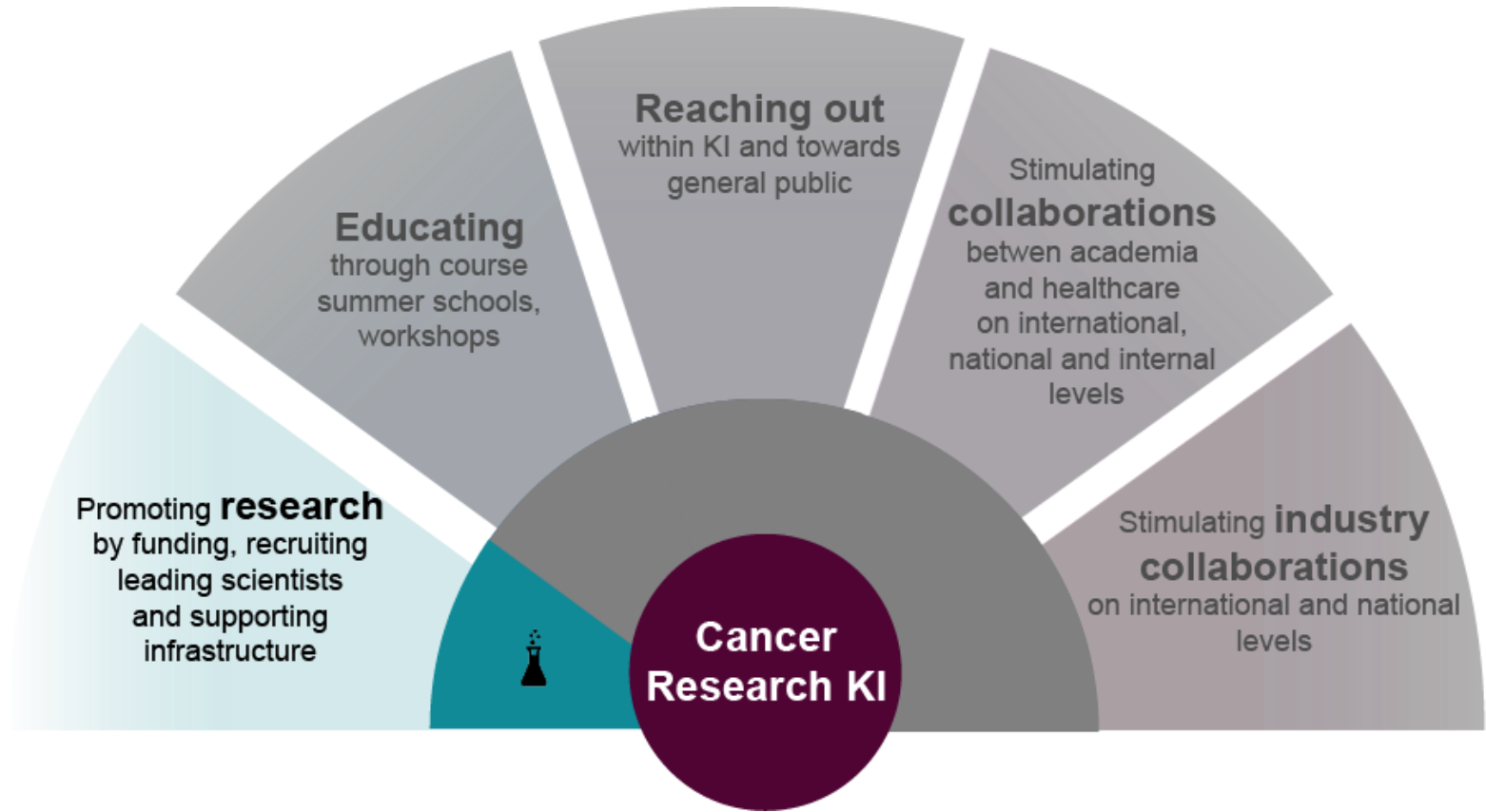




# The Cancer Research KI missions

*To stimulate, develop and build excellent cancer research environment by:*





# Examples of recent grants by CRKI



## Blue Sky Research Grants

one-year

innovative pilot project aiming at demonstrating proof of principle

## Translational Seed funding Grants

one/two-year

novel collaborations between basic and clinical scientists to address important problems in the area of translational cancer research

## CRKI Senior Research Fellow

a position

highly talented researchers in the process of consolidating their independent research program

## Bridging Grants

two years

prominent young researcher to consolidate their research and broaden their activities

# International collaborations grants



## KI-Mayo Clinic Cancer Center Collaborative Grant



support to initiate and enhance collaborations in breast cancer, other solid tumors, and hematologic malignancies

# Scientific meetings

## Swedish Cancer Research Meeting



The Strategic Research Programmes in Cancer: Cancer Research KI from Karolinska, Cancer: U-CAN from Uppsala/Umeå, BioCARE from Lund/Göteborg, meet biannually for a joint national meeting on cancer research.

## Annual Djurönäset retreat



**21** editions  
**260** participants  
**2** days  
**Junior, senior** researchers and **clinicians**

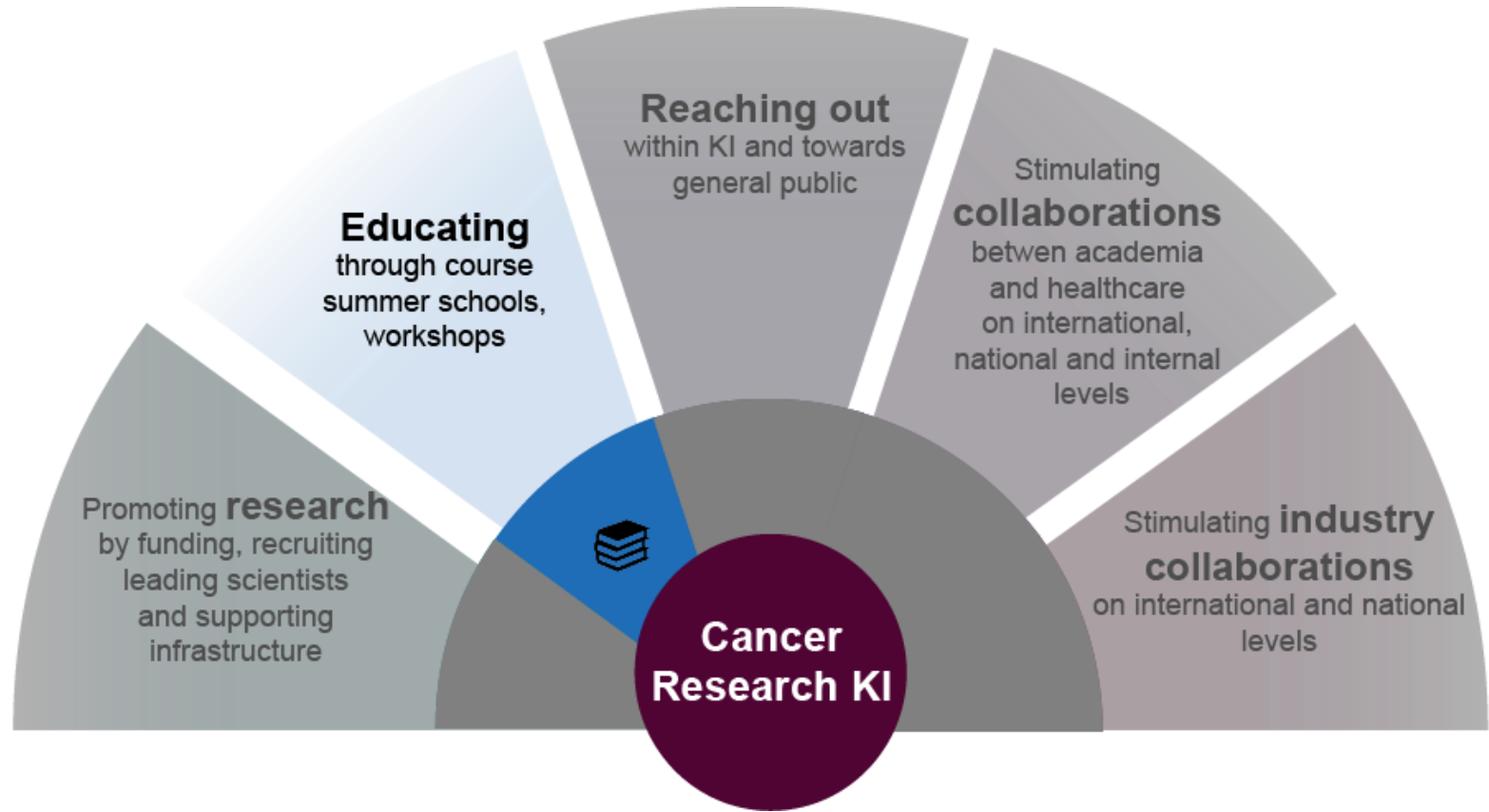
## Cancer Research KI PI Retreat

Annual retreat gathering PIs and group leaders in cancer research from Karolinska Institutet.

# Grant receivers and positions by CRKI



CRKI grant for translational research	Translational Seed Funding Grant 2020-2023																			
												CRKI innovative early-stage research grant	Blue Sky Research Grant 2012-2022							
		Positions and recruitments	Combined Research and Clinical Oncology/ Haematology Positions 2020			Senior Research Fellow 2014-2022					Research Associate/ young investigator 2011-2013				Strategical recruitments 2012-2019					
		Post-doc funding research groups 2011-2014										International collaborations	MD Andersson SINf grant 2013-2019							
						KI- Mayo Collaborative grant 2020-2024														



# Educating



## Research training



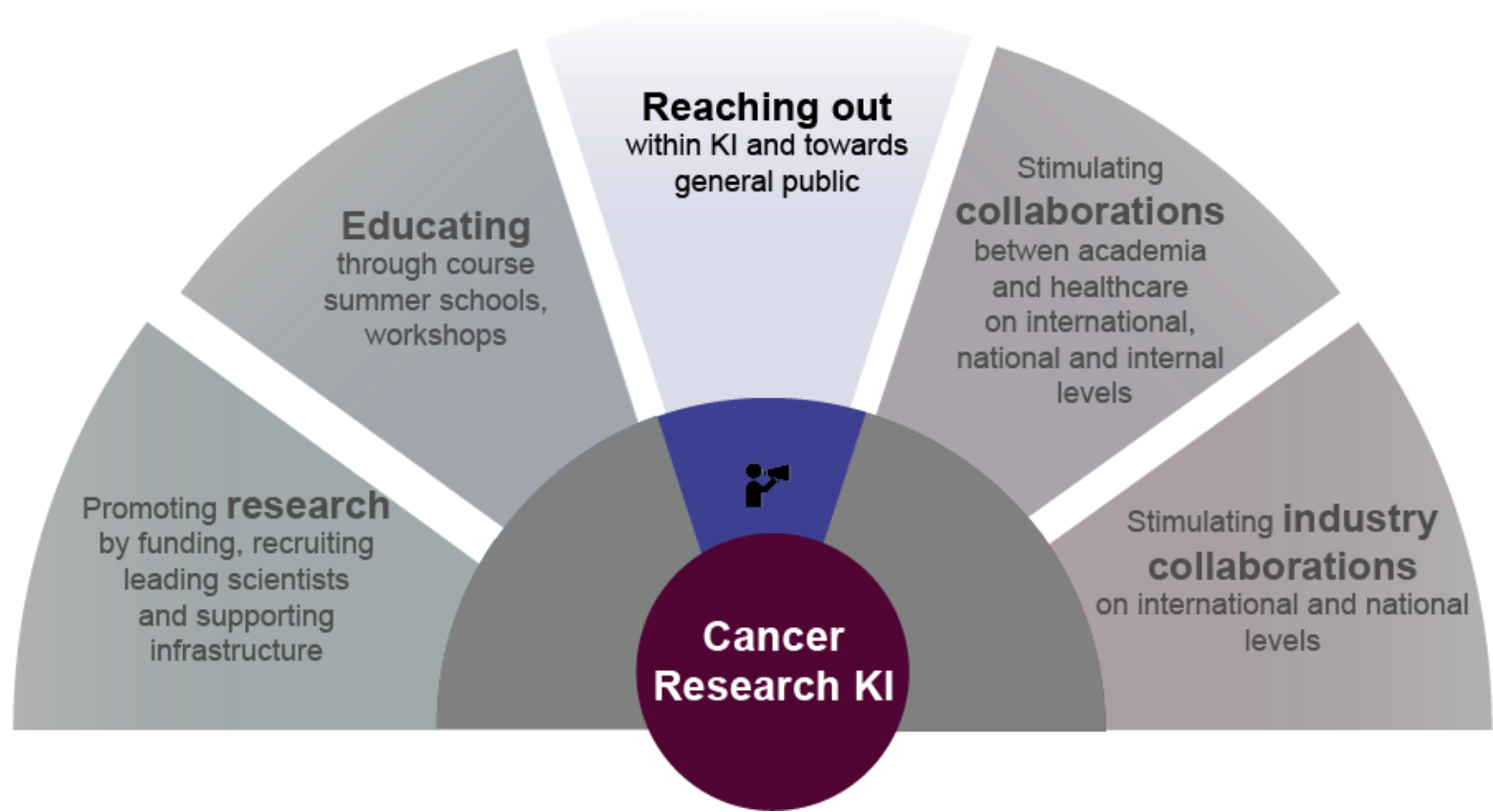
**FoTO:** The Doctoral Programme in Tumour Biology and Oncology  
**NatiON:** A National Clinical Oncology Research School

## Meetings



- CRKI Interactive summer school
- Joint Mayo-KI seminars
- CCE Summer School
- NIO Workshops

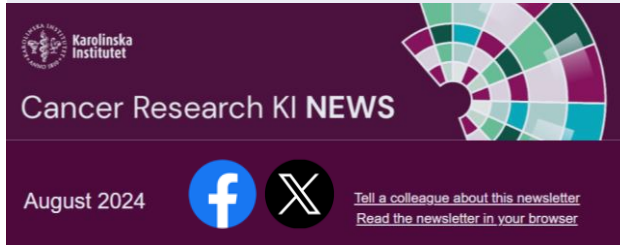




# Reaching out



## Communication for KI cancer researchers



- Newsletter
- Social Media
- Website
- Mailing list

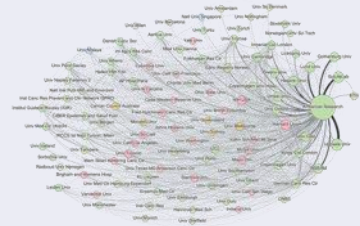
## Communication for general public



- En dag för cancerforskning
  - ›250 participants
  - ›2000 Youtube views
- Patient organisation-KI meetings (2-3 per year)

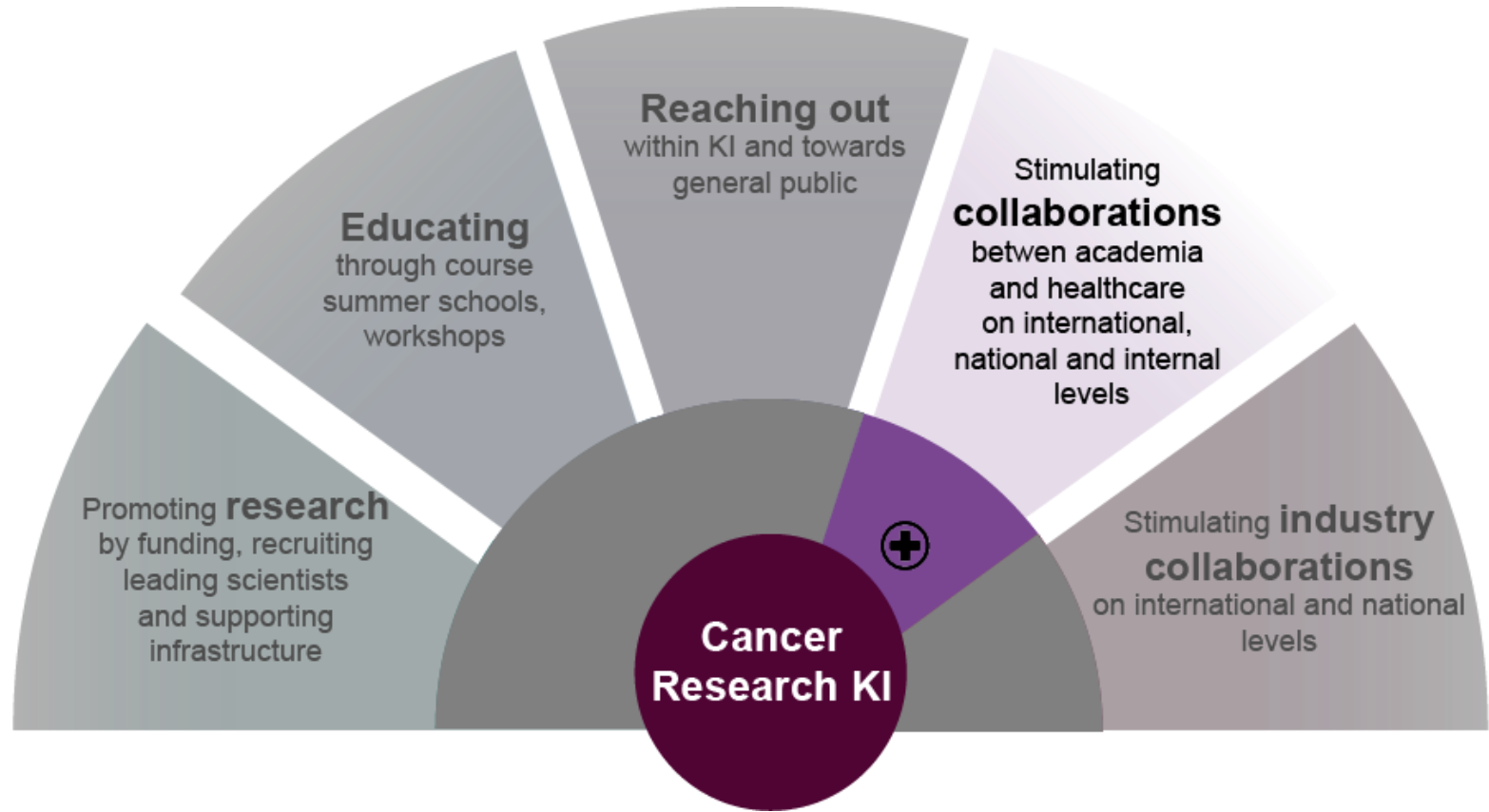
## Mapping all cancer researchers at KI

- Bibliometrics



- Database





# Cancer Research KI – international collaboration



# Cancer Research KI – member of European consortia



*Aims to more rapidly translate cancer discovery to the clinic for the benefit of patients*

*Aims to reduce morbidity and mortality from cancer in European populations through prevention and earlier diagnosis of the disease*

# Personalized Cancer Medicine Program



## Promote Personalized Cancer Medicine (PCM)



- Development of networks
- Cancer Core Europe
- Local Molecular Tumor Board meetings
- Lectures
- Workshops

## Accelerate implementation of PCM towards clinical routine



- Clinical trials (Basket-of-Basket, Liquid biopsy, FOCU.SE, DART, MCTM, ORRACLE)
- iPCM
- Molecular Tumor Board portal

## Strengthen infrastructure for near-patient PCM research



- Biopsy and intervention center (BIC)
- PM Sample Central
- PhenoPCM
- Cytology – single cells
- Virtual Data Center (VDC)
- Symptomics

# Participation in EU projects

## Comprehensive Cancer Infrastructure for EU (CCI4EU)



CCI4EU is aimed to improve/develop MSs/ACs existing or future CCIs, focusing on developing their research innovation and digital-related capacities and their integration with cancer care, through a tailored Capacity Building (CB) programme.

## Establishing of Cancer Mission Hubs: Networks and Synergies (ECHoS)



ECHoS aims to support the implementation of the Cancer Mission activities in all member states and associated countries through the establishment and development of National Cancer Mission Hubs operating at national, regional and local levels.

## Joint Action Networks of Expertise on Cancer (JANE 2)



JANE is a JA with the aim to shape 7 Networks of expertise on specific themes that will provide services and tools to European cancer institutions and networks. Five transversal task forces will focus on issues linked to cancer-related networking in the EU.

## European Network of Comprehensive Cancer Centres (EUNetCCC)

EUNetCCC is a JA aimed to prepare the necessary preconditions, administrative, professional and those related to high-quality performance towards Networks of Comprehensive Cancer Centres (CCCs), included an assessment of network sustainability.

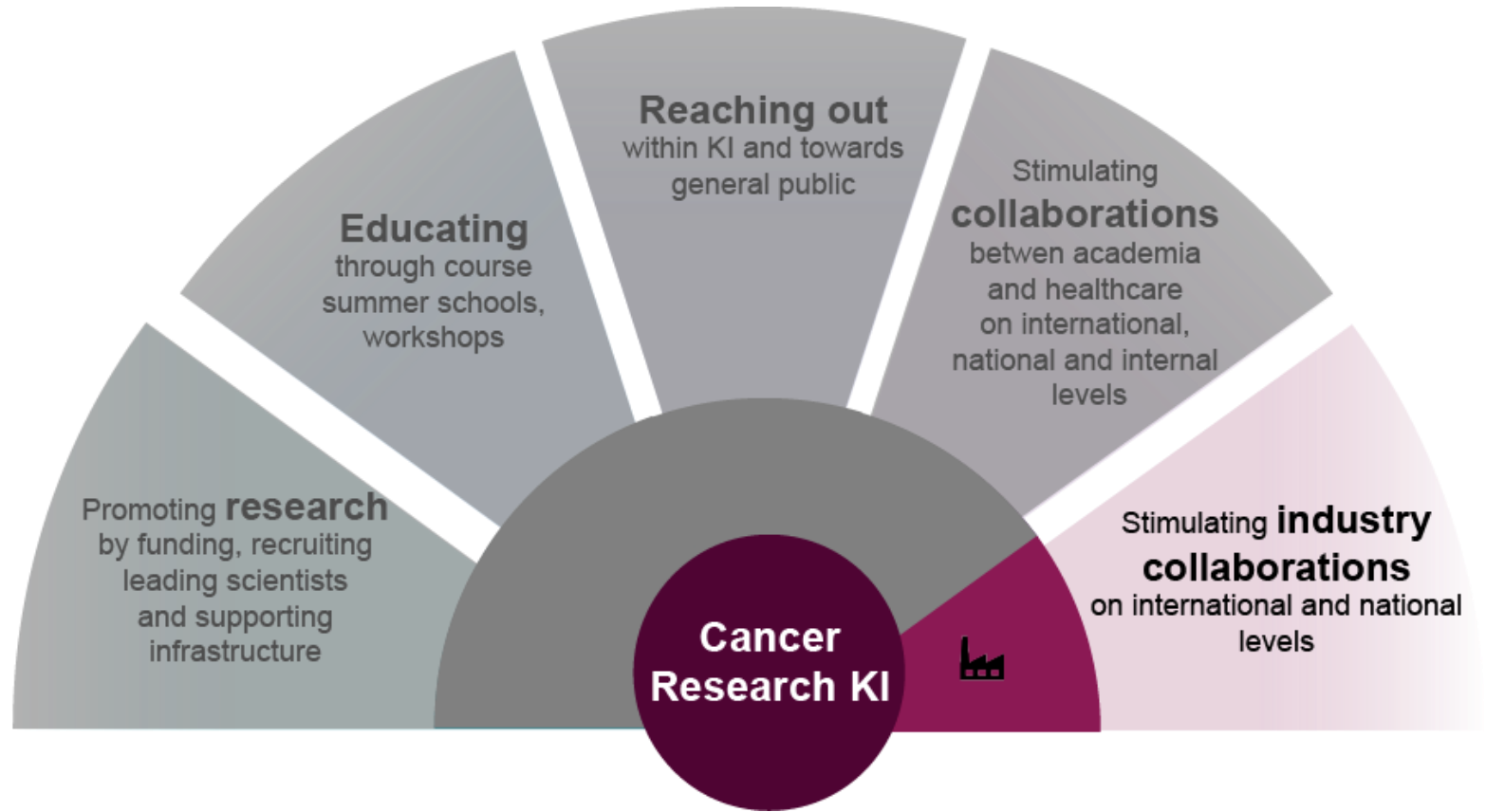
# Cancer Research KI – national collaboration



A map of Sweden with four location pins. The logos and names of the institutions are as follows:

- UMEÅ UNIVERSITY**: Umeå University logo and name.
- U-CAN**: U-CAN logo and name.
- UNIVERSITY OF GOTHENBURG**: University of Gothenburg logo and name.
- UPPSALA UNIVERSITET**: Uppsala University logo and name.
- Karolinska Institutet**: Karolinska Institutet logo and name.
- PCM**: PCM logo.
- SciLifeLab**: SciLifeLab logo.
- PMCK- Precision Medicine Centre Karolinska**: PMCK- logo and name.
- REGIONALT CANCERCENTRUM STOCKHOLM GOTLAND**: Regional Cancer Centre Stockholm Gotland logo and name.
- LUNDS UNIVERSITET**: Lunds Universitet logo and name.
- KAROLINSKA UNIVERSITY HOSPITAL**: Karolinska University Hospital logo and name.
- KTH VETENSKAP OCH KONST**: KTH logo and name.
- Stockholm University**: Stockholm University logo and name.






# Academia-industry collaboration



 Long-term **strategy** to promote and support industry collaborations

 Close collaboration with the **External Engagement office (EEO), PMCK, KI Science Park, LIF**

 **Bridge** cancer research between KI and industry

 **Workshops, meetings:**

- 4-5 industry-academia collaboration seminars/year

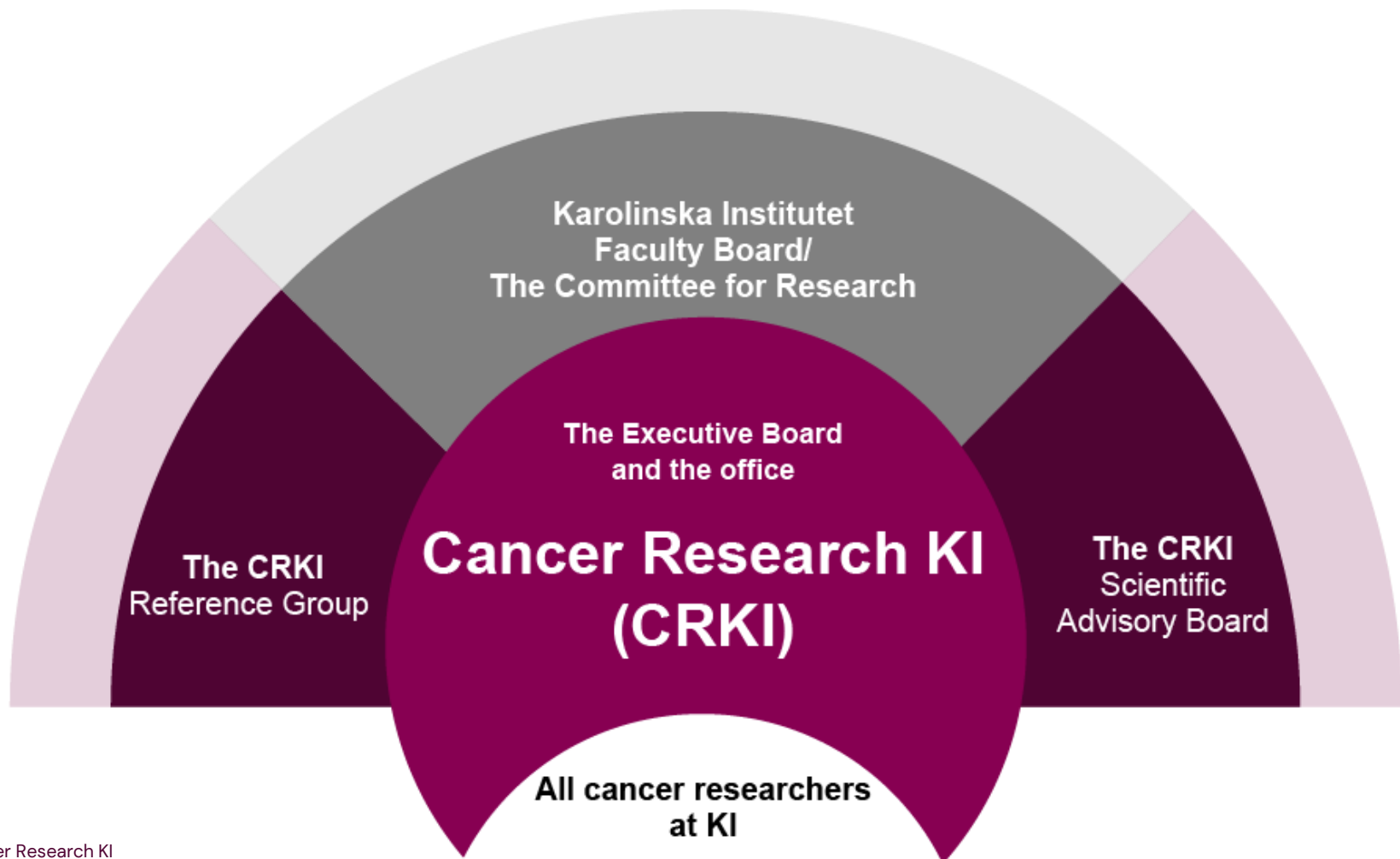
## Other activities

- Cancer Research Horizon
- Innovation Award (TBD)
- Collaboration with specific companies

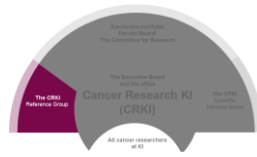
# Organisation

*The Cancer Research KI structure*

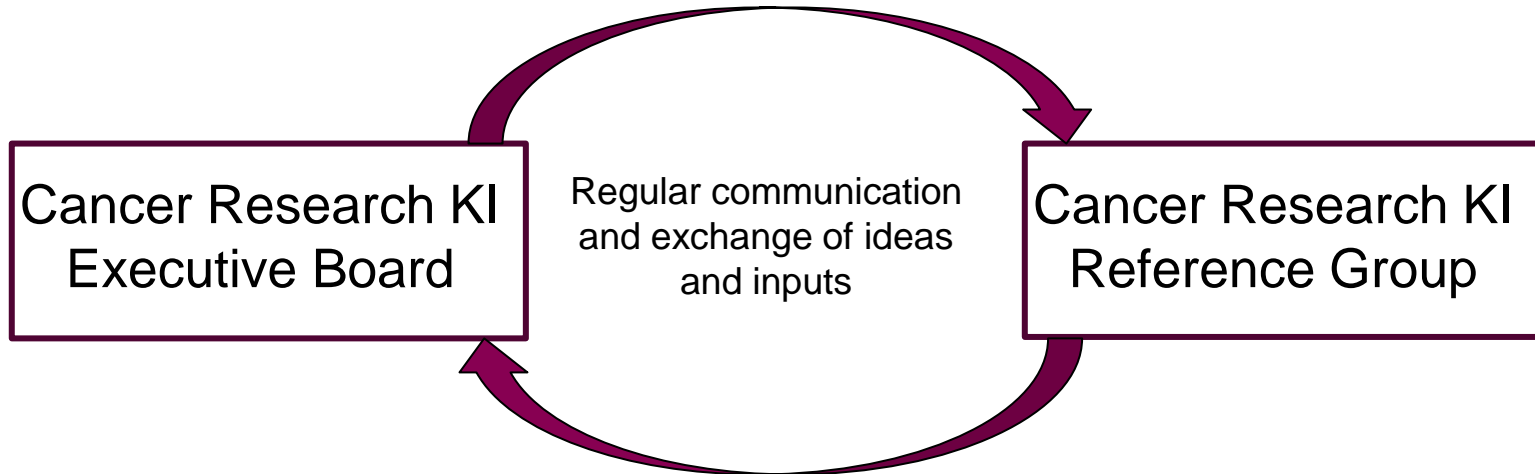




# Reference Group

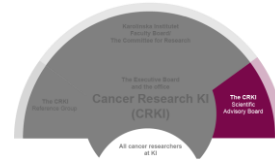


- One representative per KI department
- Nominates the candidates for the CRKI Executive Board



# Scientific Advisory Board

## Joint with Karolinska CCC



Prof. Erlend B. Smeland



Prof. Nancy Berliner



Prof. Laura Esserman



Prof. Julian Downward



Prof. Alison Richardson



Prof. Cornelis van de Veide



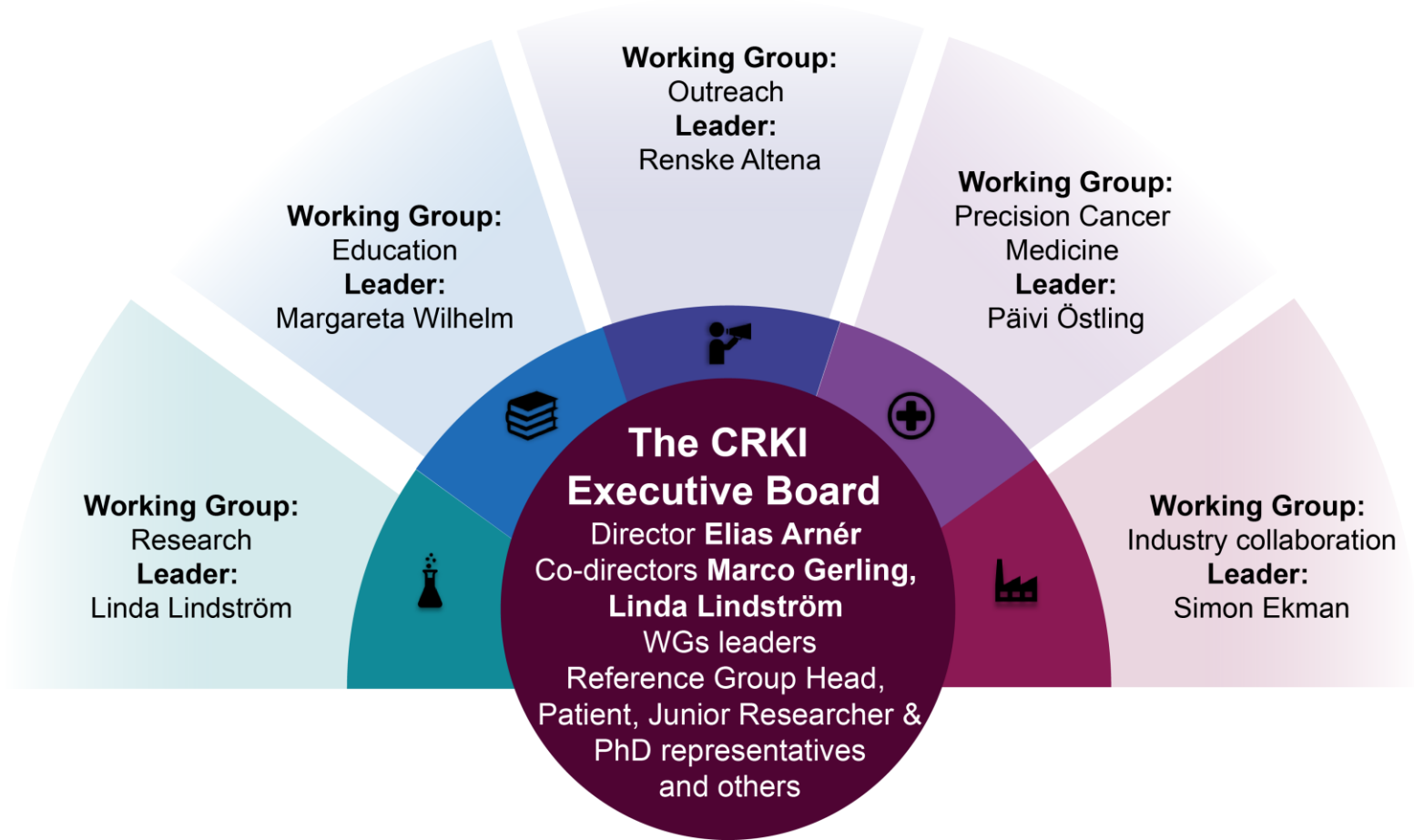
Prof. Josep Tabernero



Prof. Rupert Handgretinger



Prof. Eric Lartigau



# Cancer Research KI Executive Board



**Elias Arnér, Ph.D., Professor**  
*Director*  
Dept. of Medical Biochemistry  
and Biophysics



**Marco Gerling, Dr. med.,  
Ph.D**  
*Co-Director*  
Dept. of Clinical Science,  
Intervention and  
Technology



**Linda Lindström, Ph.D.,  
Associate Professor**  
*Co-Director*  
*Research WG Leader*  
Dept. of Oncology-Pathology



**Margareta Wilhelm, Ph.D.,  
Associate Professor**  
*Education WG Leader*  
Dept. of Microbiology,  
Tumor and Cell Biology



**Renske Altena, M.D., Ph.D.,  
Associate Professor**  
*Outreach WG Leader*  
Dept. of Oncology-  
Pathology



**Päivi Östling, Ph.D.,  
Associate Professor**  
*Precision Cancer  
Medicine WG Leader*  
Dept. of Oncology-  
Pathology



**Simon Ekman, M.D.,  
Ph.D., Professor**  
*Industry collaboration  
WG Leader*  
Dept. of Oncology-Pathology



**Jonas Fuxe, Ph.D.,  
Professor**  
*Reference Groups Chair*  
Dept. of Laboratory  
Medicine



**Carlos Rodrigues, Clinical  
Assistant**  
*Junior Faculty representative*  
Dept. of Women's and  
Children's Health



# Cancer Research KI Executive Board



**Joakim Dilner, M.D., Ph.D.,  
Professor**  
*Executive Board Member*  
Dept. of Clinical Science,  
Intervention and Technology



**Keith Humphreys, Ph.D.,  
Professor**  
*Executive Board Member*  
Department of Medical  
Epidemiology and Biostatistics



**Matthias Löhr, M.D., Ph.D.,  
Professor**  
*Executive Board Member*  
Dept. of Clinical Science,  
Intervention and Technology



**Eva Jolly RN, M.Sc.,  
Coordinating Officer**  
*Karolinska Comprehensive  
Cancer Center*



**Ninib Baryawno, Ph.D.,  
Associate Professor**  
*Executive Board Member*  
Dept. of Women's and  
Children's Health



**Sara Abu Ajamieh**  
*Ph.D. student representative*  
Dept. of Women's and  
Children's Health



**Lise-lott Eriksson**  
*Patient Group Representative*  
Chairperson of the Blood  
Cancer Association  
(Blodcancerförbundet)



**Lena Sharp R.N., Ph.D.**  
*Adjunct Ex Officio*  
Head of Regional Cancer  
Center Stockholm Gotland



**Patrik Rossi, M.D., Ph.D.**  
*Ex officio Board Member*  
Acting Managing  
Director, Cancer Theme  
Karolinska University Hospital

# Cancer Research KI Administration



**Liselotte Bäckdahl, Ph.D.**  
*Research Coordinator*  
*Cancer Research KI*  
Dept. of Medical Biochemistry  
and Biophysics



**Dina Dabaghie, Ph.D.**  
*Research Administrator*  
*Cancer Research KI*  
Dept. of Medical Biochemistry  
and Biophysics



**Stefina Milanova, Ph.D.**  
*Research Administrator*  
*Cancer Research KI*  
Dept. of Medical Biochemistry  
and Biophysics



**Pablo Martí Andrés, Ph.D.**  
*Research Administrator*  
*Cancer Research KI*  
Dept. of Medical Biochemistry  
and Biophysics



**THANK YOU!**



**Karolinska  
Institutet**