SciLifeLab

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SciLifeLab PULSE:
matchmaking portfolio

Application round 2 (Dec 2026-March 2026)

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Introduction

This portfolio has been compiled to assist candidates applying for the PULSE postdoc program in identifying a suitable SciLifeLab Group Leader/hosting Principal Investigator (PI) and lab for their proposed research project. All SciLifeLab Group Leader profiles can be browsed at https://www.scilifelab.se/contact/group-leaders/ .

Applicants are free to choose their hosting lab. Applicants should contact their prospective supervisor to discuss and secure support for their *individually-designed research proposal*, as well as obtain the PI's commitment to act as the main supervisor host. An applicant can submit one proposal, and a PULSE PI can support two proposals. The rationale for further communication during the application process should be clearly specified (e.g., seeking scientific advice, discussing the proposed research, visiting lab facilities, or meeting the research team). *Note that the PI is not allowed to be involved in writing the proposal.*

The PIs featured in this portfolio have submitted keywords summarizing their research areas. These keywords have been consolidated at the beginning of the portfolio to help candidates identify PIs in their field of interest. Candidates can easily locate relevant PIs by using the keywords and document's search function.

Keywords

3D cell cultures	bacteriophages
AAV	B-cells
Acoustofluidics	behavior
ADC	behavioral and neural modules
ADME	binding kinetics
aging	Biocatalysis
AI	Biochemical
AI agents	biodiversity
AI applications in Healthcare	Bio engineering
AI based medicinal chemistry	Bio-fluids
affinity proteomics	Bioimaging
antibody	bioinformatics
algorithms	Biologics
AlphaFold	biomarker
AlphaFold2	biomaterials
Alzheimer	Biomaterials Engineering
analysis pipeline development	Biopharmaceuticals
ancient RNA	biophysics
Antibiotic Susceptibility Testing (AST)	bioprinting
Antibodies	Bioremediation
antibody drug discovery	Biosensors
antibody technology	brain organoids
anticancer therapy	bispecific antibodies
Aptamers	body-fluids
Artificial-intelligence	Breast cancer
assay development	cancer
assays	Cancer Biophysics
autoimmunity	cancer phenotype switches
bacteria	Cancer relapse
Bacteria defense systems	Cancer research
bacterial diversity	Cancer Therapy
bacterial vectors	calcium imaging

calcium signalling	DNA metabolism
cardiac	DNA nanotechnology
cardiovascular disease mechanisms	dog
Catalytic Medicine	droplet microfluidics
Causal inference	drug conjugates
cell assays	drug delivery
cellular	drug discovery
cellular micro-environment	Drug resistance
cellular tomography	drug targeting
Chemical biology	early detection
circuits	ecology
climate change	ecosystem health
clinical proteomics	electron microscopy
clinical validation	endometrium
clonal evolution	endosome
colorectal cancer	environmental pollution
companion diagnostics	Epidemiology
comparative genomics	epigenetics
computational biology	epithelia
CRISPR-Cas13	evolution
CRISPR screen	Evolutionary genomics
CROPseq	exosomes
cryo-electron microscopy	exposome
Cryo-EM	extracellular vesicles/exosomes
cytoskeleton	fatty acid metabolism
Data science	feature inference
deep-learning	feedback-microscopy
degradation	fibroblasts
diabetes	FISH
diagnostics	flow cytometry
Digital pathology	fluorescence
distributed neural networks	functional screening
DNA damage response and repair	gene regulation
DNA encoded chemistry	gene therapies

generative AI
genetic adaptation
Genetic epidemiology
Genetic variation
genetics
Genomics
glioblastoma
GLP-1
glycobiology
Graph Machine Learning
Gut
gut infection
Gut microbiome
Gut microbial functional potential
health
hematology
Heparan sulfate
heparanase
high-resolution mass spectrometry
high through-put
High-throughput biophysics
High-Throughput-Screening
host-pathogen interactions
Human
human islets
image-analysis, image processing
immune checkpoints
Immune Responses
immunity
immunofluorescence
immuno-genetics
immunology
immuno-oncology
immunotherapy
influenza virus
in situ imaging
in situ sequencing
In situ structural biology
in vivo neural dynamics
induced pluripotent stem cells (iPSC)
infection
Infection Medicine
infectious diseases
inflammation
innate immunity
innovation
insects
In situ Cryo EM
instinctual behaviors
Insulin secretion
Insulin-dependent trafficking
Integrated/integrative structural biology
Lab on a chip
leukemia
lifespan
light activation
lineage tracing
lipid biology
lipidomics
liquid biopsy
live cell imaging
live tissue imaging
liver
LNP
local adaptation
lymphoma
lipid nanoparticle
liquid biopsy

long-read sequencing
LOY
lung
Lung development
Machine learning
Macrophages
Magnetic resonance imaging
Mass spectrometry
mast cells
medical imaging
medical microbiology
medicinal chemistry
meiosis
Microbial genes
Microbiology
Microphysiological Systems
microRNA
mucosal immunology
Molecular chaperones
Molecular dynamics simulations
Molecular detection
Molecular Psychiatry
Myeloid cells
machine learning
marine science
Mass spectrometry
Mechanism
medical chemistry
Medical Microbiology
medicine
medulloblastoma
membrane biology
membrane protein
membrane protein transport
membrane remodelling
membrane trafficking
metabolism
metabolome
metabolomics
Metagenomics
Metastasis
microbiology
microbiomes
microenvironment
microfabrication
microfluidics
microsampling
microscopy
mitochondria
modelling
molecular diagnostics
molecular docking
molecular dynamics simulations
molecular engineering
molecular glue degradation
molecular mechanisms
molecular modeling and simulation
molecular networks
molecular neuroscience
molecular radiotherapy
molecular recogntion
molecular tools
mRNA
multi-disease serology
Multimodal information fusion
Multi-modal based profiling
multi-omics
Multi-omics Data Integration

nanoparticles	polymer chemistry
neural encoding	population genetics
neural networks	Positron Emission Tomography
neurodegenerative disease	Precision health
neuroimaging	precision medicine
neuroinflammation	prevention
neuroproteomics	prion
Neuroscience	PROTACS
NMR	proteases
non-coding mutation	protein design
nuclear receptors	protein and antibody profiling
Nucleic acids therapeutics	protein assays
Nucleotide metabolism	protein degradation
oligonucleotides	Protein design
oncology	protein - DNA interactions
Oligonucleotide synthesis	protein interactions
oncology	Protein dynamics
Optical Pooled Screening (OPS)	protein evolution
oral microbiome	protein folding
Organoid modelling	protein-protein interactions
organoids	protein structure
organs-on-chip	protein structure predictions
pancreatic cancer	proteins
parasite	proteoforms
Parkinsons	proteogenomics
pediatric obesity	proteoglycans
peptide therapeutics	proteomics
Precision diagnostics	proximity inducing agents
Preclinical	proximity ligation
Personalized Medicine	Psychotropic Drugs
Phage Biology	radiation oncology
Phage display	radioimmunotherapy
pharmacokinetics	radiopharmaceuticals
plasticity	rare disease

rare event detection
RBP
reference genome assembly
regeneration
regenerative medicine
regulated proteolysis
respiratory pathogens
ribosome dynamics
risk prediction
RNA Biology
screening
scRNA-seq
selection
sequencing data
Sequencing
Sex Steroids
signal processing
Single-cell and spatial transcriptomics
single molecule
single-cell
Single-cell biology
Smart microscopy
Spatial
spatial biology
spatial omics
spatial proteomics
spatial transcriptomics
Statistics
stress adaptation
Structural Biology
structural proteomics
structural variation
Structure and function prediction
structure-based drug design
super resolution
Super resolution microscopy
synchrotrons
Synthetic biology
Systems Biology
Systems immunology
Systems medicine
targeted delivery
targeted radionuclide therapy
Taxonomy
Therapeutic oligonucleotides
therapy resistance
time-resolved cryo-EM
time-resolved X-ray scattering
Tissue engineering
toxicology
transcriptomics
transcriptomics-microbiomics
translational
Translational Research
Transporters
transposon
tumor biology
tumor lineages
tumor microenvironment
Vaccines
Vascular biology
virtual screening
Virus-host interaction
virus infection
whole cell modeling
zebrafish

Mikael Altun

University
Karolinska Institutet

Name of department
Department of Labratory medicine

Email address
mikael.altun@ki.se

Research keywords
Degradation, proximity ligation, molecular glue degradation, PROTACs

Research abstract
Focused on protein degradation and the ubiquitin-proteasome system, we develop cell-based assays for drug discovery, understanding degradation, and evaluating targeted molecules like PROTACs, molecular glues, and proximity-based modalities.

Interested to collaborate in
Drug development, assay development, AI-drug discovery, chemistry

Bio
Associate Professor at Karolinska Institutet, with expertise in protein degradation and the ubiquitin-proteasome system. Leads research on targeted cancer therapies, developing novel assays and molecules for drug discovery.

Olov Andersson

University
Uppsala University

Name of department
Department of Medical Cell Biology

Email address
olov.andersson@mcb.uu.se

Research keywords
Zebrafish, diabetes, beta-cell, regeneration, insulin

Research abstract
By bridging developmental biology, genetics and chemical biology we perform high-throughput in vivo drug discovery using the zebrafish model, to elucidate organogenesis and related mechanisms of disease, particularly for diabetes.

Interested to collaborate in
We strive to link basic and translational science and anticipate that our research ultimately will have a significant impact on understanding and developing new therapies for increasing the number of functional β-cell and thereby reverse diabetes. We will stick to our line of research but exchange methods and approaches in a synergistic fashion to explore beta-cell biology, thereby interact with drug-discovery, high-throughput transcriptomics and proteomics platforms.

Bio
Our laboratory currently has 9 people spanning 8 countries and a niche that is quite unique. We have about 500 aquaria with 150 mutant/transgenic zebrafish lines, now available for you.

Leif Andersson

University
Uppsala University

Name of department
Department of Medical
Biochemistry and Microbiology

Email address
leif.andersson@imbim.uu.se

Research keywords
Evolutionary genomics,
genetics, biodiversity, population genetics, genetic adaptation

Research abstract

The main research focus is evolutionary genomics and genetic adaptation in natural populations (Atlantic herring and other fish, Darwin's finches and ruff) using whole genome sequencing and functional genomics.

Interested to collaborate in
Evolutionary genomics, functional genomics, genotype-phenotype relationships

Bio
Leif Andersson is professor in Functional Genomics at Uppsala University. He is a specialist in genetics and genome biology. h-index (Google scholar): 112 (2024-09-24); 54,694 citations.

Anders Andersson

University
KTH

Name of department
Department of Gene Technology

Email address
anders.andersson@scilifelab.se

Research keywords
Metagenomics, microbiomes, evolution, ecology, marine science

Research abstract
Anders Andersson's group develops and applies molecular and bioinformatics methods for studying microbiomes. They use meta-omics to reconstruct genomes and study the ecology and evolution in ecosystems such as the Baltic Sea.

Interested to collaborate in
Microbial ecology, evolution, genomics, biogeochemistry, meta-omics, machine-learning, bioinformatics

Bio
Prof and PI of the Environmental Genomics group at SciLifeLab (https://envgen.github.io/). Coordinates genetic data within the Swedish Biodiversity Data Infrastructure (SBDI) and scientific co-lead of Planetary Biology Capability at SciLifeLab.

Niklas Arnberg

University
Umeå University

Name of department
Department of Clinical Microbiology

Email address
niklas.arnberg@umu.se

Research keywords
Virus, vaccin, vector, antiviral drugs, virus-host interactions

Research abstract
We study molecules and mechanisms engaged in virus-host interactions, with the aims to understand virus tropism, improve vector targeting, and develop new antiviral treatments.

Interested to collaborate in
Expertise in glycobiology, glycan arrays, antiviral treatment, respiratory virus, adeno-associated virus

Bio
Professor in virology. Senior Principal Investigator in EMBL-MIMS. Board member of Swedish Research Council. Secretary General for Virus- and pandemic foundation.

Per I Arvidsson

University
Karolinska Institutet

Name of department
Department of Medical Biochemistry and Biophysics

Email address
per.arvidsson@scilifelab.se

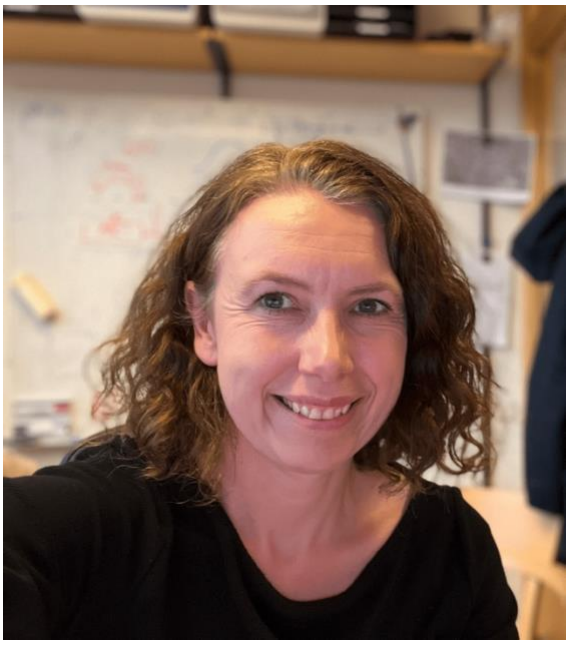
Research keywords
Drug discovery, medical chemistry, protein degradation, DNA encoded chemistry, targeted delivery

Research abstract
New methods and technologies for drug discovery, e.g. targeted protein degradation, covalent drug design, AI methods for drug design, display and selection technologies, targeted delivery, oligonucleotides, and proximity inducing agents.

Interested to collaborate in
Artifical intelligence for drug discovery - both small molecules and antibody therapeutics, assay development for target engagment and degradation, novel drug target discovery, proteomics

Bio
Founding Director of SciLifeLab DDD platform. Before being recruited by SciLifeLab & Karolinska Institutet in 2013, Prof. Arvidsson held various roles at AstraZeneca, Uppsala University, and University of KwaZulu Natal.

Gemma Atkinson



University
Lund University

Name of department
Department of EMV

Email address
gemma.atkinson@med.lu.se

Research keywords
Bioinformatics, microbiology, proteins, AlphaFold, bacteriophages

Research abstract
In my group we develop bioinformatics approaches to discover new biology, with a focus on proteins of bacterial immune systems. We use comparative genomics, remote homology detection, and AlphaFold predictions..

Bio
Established in 2015, the Atkinson lab works together with experimentalists to generate testable hypotheses about protein function. We recently launched LU-Fold, a national infrastructure for high-throughput protein complex prediction with AlphaFold.

Burcu Ayoglu

University
KTH

Name of department
Department of Protein Science

Email address
burcu.ayoglu@scilifelab.se

Research keywords
Spatial biology, Systems immunology, Proteomics, Bioimaging, Single-cell biology

Research abstract
Our research deciphers how single-cell phenotypes and tissue microenvironments drive immune functions in human development, health, and disease through advanced assays integrating omics and spatial biology.

Interested to collaborate in
Spatial omics, single-cell biology, systems immunology, human development, maternal-fetal immune interface, neuroimmunology, autoimmunity

Bio
Burcu Ayoglu, Docent in systems immunology, holds a PhD from KTH and was a KAW fellow at Stanford. Her research combines spatial biology, proteomics, and immunology to study immune function in tissues.

Hossein Azizpour

University
KTH

Name of department
Department of Division of Robotics, Perception, and Learning

Email address
azizpour@kth.se

Research keywords
Deep-Learning, Generative Models, Under-supervised Learning, Feature Selection, Inverse Problems

Research abstract
My group does research in machine learning, particularly deep-learning with applications to life science, particularly generative modeling of proteins with diffusion and flow matching models.

Interested to collaborate in
Life science research activities where either a generative model or feature selection is of importance. Particularly interested in modeling bio-molecules.

Bio
I am an associate professor at KTH and further affiliated with SciLifeLab, SeRC, WASP, Digital Futures and ELLIS. My main background is in deep-learning, so I am primarily a member of machine learning community. I am particularly interested in applications of ML in sciences, specifically life science.

Pawel Baranczewski

University
Uppsala University

Name of department
Department of Pharmacy

Email address
pawel.baranczewski@scilifelab.se

Research keywords
ADME, PHARMACOKINETICS, MACHINE LEARNING, OLIGONUCLEOTIDES, PROTACS

Research abstract

1) To integrate physiologically based pharmacokinetics (PBPK) modelling into SciLifeLab DDD and precision medicine capabilities. 2) Application of machine learning to development of bioanalysis and metabolite identification strategy for new modalities: oligonucleotides. protacs and peptides.

Interested to collaborate in
DRUG DISCOVERY, PRECISION MEDICINE, THERAPEUTIC OLIGONUCLEOTIDES, PROXIMITY INDUCING AGENTS

Bio
Associate Professor (Docent) in preclinical drug development. 14 years of industrial experience within the area of drug discovery and development. Expertise in ADME and pharmacokinetics (PK) of drugs.

Hanna Barriga

University
KTH

Name of department
Department of Protein Science

Email address
hanna.barriga@scilifelab.se

Research keywords
Lipid nanoparticle, endosome, mRNA, cardiac

Research abstract

We use multidisciplinary approaches to advance our understanding of nanoscale structure and dynamics in biological processes. Our long term goal is to understand drug delivery and engineer improved nanomedicines.

Interested to collaborate in
Cardiac models, super resolution microscopy

Bio
Hanna Barriga is an Associate Professor at KTH, SciLifeLab. Her research is focused on engineering and characterising lipid systems on the nanoscale.

Erik Benson

University
Karolinska Institutet

Name of department
Department of Microbiology, Tumor and Cell Biology

Email address
erik.benson@ki.se

Research keywords
DNA nanotechnology, Selection, Aptamers, Drug delivery, Sequencing.

Research abstract
We are developing a new type of DNA nanostructure compatible with selection experiments, and we combine these with sequencing and computational tools to develop strong binders and study the cell uptake of DNA.

Interested to collaborate in
Bioinformatics, Affinity profiling, Protein production.

Bio
I have an interest in combining physics and engineering with medicine to develop new tools. I run a research group at KI and SciLifeLab since 2024, and have previously worked in departments of medicine, physics and engineering.

Peter Bergsten

University
Uppsala University

Name of department
Department of Medical Cell Biology

Email address
peter.bergsten@uu.se

Research keywords
Translational, pediatric obesity, prevention, GLP-1, human islets

Research abstract
Insulin secretion in human islets (translational medicine); cardiometabolic health and pharmacological trials in pediatric obesity (precision medicine); tailored interventions to sustainably revert children at risk back to health (precision health)

Interested to collaborate in
Field: Metabolism, obesity, type 2 diabetes, pediatrics, prevention, bioinformatics, risk scoring, genomics, lipidomics, proteomics; Techniques at Cellular level: Islets of Langerhans, insulin and glucagon secretion, metabolism, differential expression of target genes, mitochondrial function; Techniqoes at Patient, individual level: Multinational childhood obesity patient cohort, clinical assessments and pharmacological trials; prospective municipality-based childhood cohort, health data including lifestyle data, anthropometry and blood samples; Techniques at Societal level: Co-creation, implementation, evaluation of interventions tailored to individuals, collecting, storing and analyzing biological (from children and their familiy members) and non-biological (different levels in society) data sets

Bio
Medical doctor, PhD (UU); postdoc at NIH (USA) and Cambridge (UK). Conducts translational research on childhood obesity prevention and treatment, integrating cellular, patient and societal levels for meaningful impact.

Daniel Bojar

University
University of Gothenburg

Name of department
Department of Chemistry and Molecular Biology

Email address
daniel.bojar@gu.se

Research keywords
AI; glycobiology;
bioinformatics; systems biology; data science

Research abstract
Pioneering the application of machine learning to glycobiology, studying roles of complex sugar molecules in biological systems, with applications in host-microbe interactions and immunology.

Interested to collaborate in
Computer science; chemical biology; protein engineering

Bio
Pioneered AI in glycobiology; Associate Professor in Bioinformatics; Leader in computational glycobiology and studying breast milk oligosaccharides.

Hjalmar Brismar

University
KTH

Name of department
Department of Applied Physics

Email address
hjalmar.brismar@scilifelab.se

Research keywords
Microscopy, super resolution, membrane protein, biophysics

Research abstract
Our lab studies the NA,K-ATPase, regulation and function in normal and disease states. We develop biophysical measurement technology based on advanced light microscopy.

Interested to collaborate in
Super resolution microscopy, light sheet microscopy, single molecule analysis.

Bio
Brismar’s group specializes in cellular biophysics, with a focus on advanced microscopy and membrane protein dynamics. They apply cutting-edge imaging and computational techniques to uncover detailed mechanisms of cellular processes.

Björn Burmann

University
University of Gothenburg

Name of department
Department of Chemistry and Molecular Biology

Email address
bjorn.marcus.burmann@gu.se

Research keywords
Advanced NMR spectroscopy/Integrated structural biology/In situ structural biology/molecular chaperones and proteases/bacterial and mitochondrial transcription regulation

Research abstract
Elucidation the function of protein complexes involved in a variety of aspects of cellular protein quality control, transcription regulation etc. at the atomic level using integrated structural biology approaches with a focus on NMR spectroscopy.

Interested to collaborate in
All the range of integrated structural biology approaches, with a focus on advanced high-resolution NMR spectroscopy, needed to answer fundamental biological questions.

Bio
More info can be found here: https://www.gu.se/en/research/bjorn-burmann

Joan Camunas Soler

University
University of Gothenburg

Name of department
Department of Medical Biochemistry and Cell Biology

Email address
joan.camunas@gu.se

Research keywords
Single-cell transcriptomics, spatial omics, live tissue imaging, calcium imaging, liquid biopsy

Research abstract
We combine single-cell and spatial transcriptomics with live tissue and calcium imaging to study tissue heterogeneity in diabetes. We also develop cfRNA-based liquid biopsy diagnostics for pregnancy complications and AI-driven analysis tools.

Interested to collaborate in
Single-cell and spatial data analysis, functional imaging of live tissues, pancreatic islet physiology, clinical biomarker discovery, RNA-based diagnostics, liquid biopsy, molecular biology for sequencing applications, translational medicine, AI-driven analysis pipelines, integration of omics and imaging data.

Bio
Joan Camunas-Soler has a background in physics and genomics, and his lab builds RNA and imaging tools to investigate tissue function and dysfunction in diabetes, autoimmunity, and pregnancy complications for precision medicine.

Jens Carlsson

University
Uppsala University

Name of department
Department of Cell and Molecular Biology

Email address
jens.carlsson.lab@gmail.com

Research keywords
Structure-based drug design, virtual screening, machine learning, molecular dynamics simulations, molecular docking

Research abstract
By integrating artificial intelligence, protein structure prediction, molecular dynamics simulations, and virtual screening, we identify ligands for protein drug targets to enable the development of small molecule therapeutics.

Interested to collaborate in
Computational chemistry, structural biology, pharmacology, chemical biology, medicinal chemistry

Bio
Jens Carlsson is a Professor of Computational Biochemistry at Uppsala University. More details about his diverse and international research team can be found on the group website: www.carlssonlab.org

Marta Carroni

University
Stockholm University

Name of department
Department of Biochemistry and Biophysics

Email address
marta.carroni@scilifelab.se

Research keywords
Time-resolved cryo-EM, light activation, microscopy

Research abstract

Build microscopy set ups to perform time-resolved cryo-EM experiments, using lasers to melt vitrified sample and induce light conformational changes. Set ups will be available to the whole Swedish community.

Interested to collaborate in
Correlative light and electron microscopy, Cell Biology, Optogenetics

Bio
Marta Carroni, Head of the Swedish National Cryo-EM Facility at SciLifeLab, is a pioneering structural biologist recognized for her expertise, innovation, and contributions to cryo-EM and imaging in Sweden.

Erika Comasco

University
Uppsala University

Name of department
Department of Women´s and Children´s Health

Email address
Erika.comasco@neuro.uu.se

Research keywords
Molecular Psychiatry; Positron Emission Tomography; Sex Steroids; Psychotropic Drugs; Personalized Medicine

Research abstract
Neural temporal dynamics at the intersection of personalized medicine and molecular psychiatry: person-centered research on the impact of sex steroids on response to psychotropic drugs by using positron emission tomography.

Interested to collaborate in
Neuroimaging; AI; Pharmacology; Endocrinology

Bio
SciLifeLab fellow neuroscientist passionate about neuropsychopharmacology. Leader of an international and multi-disciplinary research group dedicated to filling the knowledge gap surrounding sex and gender equity in mental health.

Helena Danielsson

University
Uppsala University

Name of department
Department of Chemistry - BMC

Email address
helena.danielson@kemi.uu.se

Research keywords
Biosensors, drug discovery, proximity inducing agents

Research abstract
Research using biosensors for drug discovery and life science. Expertise in fragment-based drug discovery, enzymology and molecular interactions. Analysis of conformational changes and ternary complexes.

Interested to collaborate in
Drug discovery, proximity inducing agents

Bio
Professor of Biochemistry at Uppsala University since 2002. Specialist in enzymology and biosensor-based drug discovery. New methods for analysis of recognition processes in life science area and drug discovery

David Drew

University
Stockholm University

Name of department
Department of Biochemistry and Biophysics

Email address
ddrew@dbb.su.se

Research keywords
In situ Cryo EM, Transporters, Mechanism, Insulin-dependent trafficking, Metabolism

Research abstract
We aim resolve native-like structures of glucose (GLUT) transporters directly from membranes using in situ cryo EM to build transport models beyond the individual proteins, e.g., from GLUT4 storage vesicles.

Interested to collaborate in
Cryo EM imaging platform

Bio
David Drew is a structural biologist and biochemist recognized for his mechanistic insights on SLC transporters and influential reviews on small molecule transport.

Jan Dumanski

University
Uppsala University

Name of department
Department of Immmunology, Genetics and Pathology

Email address
jan.dumanski@igp.uu.se

Research keywords
LOY, cancer, Alzheimer, immuno-genetics, aging

Research abstract

We study systemic immuno-genetic effects of loss of Y chromosome (LOY) on male health, using a longitudinal cohort of ageing males to follow up the LOY and its consequences on immunity.

Interested to collaborate in
The field of post-zygotic mutations in the normal breast tissue of breast cancer patients suggests that the therapeutic surgical treatment of patients (increasingly smaller resections of breast) is leaving behind oncogenic mutations causing recurrence, and this is associated with shorter survival. Results from the LOY-field suggest that males live shorter mainly because of this mutation and that it could be possible to overcome the negative LOY-effects on the function of the immune system. The field of LOY, including future perspectives and possibilities for collaboration is well described in very recent paper in press in Nature Reviews Genetics (Bruhn-Olszewska, et al. Dumanski: The effects of loss of Y chromosome on male health, Nature Reviews Genetics 2024, in press, available upon request).

Bio
Group leader and professor at Uppsala University (UU). Guest professor at Medical University of Gdansk (MUG). Since 2019, director of translational research centre at MUG (3P-Medicine Lab; https://ira3p.mug.edu.pl/71458.html).

Chinmay Dwibedi

University
Umeå University

Name of department
Department of Clinical Microbiology

Email address
chinmay.dwibedi@umu.se

Research keywords
Metagenomics, Human gut Microbiome, Microbial genes, Structure and function prediction, Gut microbial Functional potential

Research abstract
We are interested in exploring structure and functional differences in human gut microbes. We are especially interested in microbial genes associated with metabolic disease progression and those mediating drug response.

Interested to collaborate in
Shotgun metagenomics, microbial gene structure and function exploration.

Bio
Chinmay Dwibedi is a MIMS [Nordic EMBL node for molecular medicince, Sweden] group leader and DDLS Fellow in Biology of infection at Umea University. Interested in high resolution metagenomics.

Petter Dyverfeldt

University
Linköping University

Name of department
Department of Health, Medicine and Caring Sciences

Email address
petter.dyverfeldt@liu.se

Research keywords
Magnetic resonance imaging, image processing, artificial intelligence, precision diagnostics, cardiovascular disease mechanisms

Research abstract
Development and application of cardiovascular imaging, image processing and analysis to leverage improved understanding and precision diagnostics of cardiovascular disease.

Interested to collaborate in
Cardiovascular imaging, artificial intelligence, image processing, magnetic resonance imaging, cardiovascular physiology and pathophysiology.

Bio
Professor Petter Dyverfeldt conducts groundbreaking research on the development and application of cardiovascular imaging and image processing, using traditional methods and artificial intelligence at the intersection of medicine and technology.

Tino Ebbers

University
Linköping University

Name of department
Health, Medicine and Caring Sciences

Email address
tino.ebbers@liu.se

Research keywords
Medical Imaging, cardiovascular, blood flow, heart, stroke

Research abstract
Looking to collaborate in projects that combine advanced cardiac imaging, AI, computational modeling, and blood biomarkers to investigate how intracardiac flow disturbances and biological factors contribute to stroke risk, enabling improved prediction and personalized prevention strategies.

Interested to collaborate in
Medical imaging, hematology, modelling, AI

Bio
Tino Ebbers is a professor at Linköping University and CMIV, specializing in cardiovascular imaging, AI, flow MRI, and computational modeling to improve analysis and understanding of cardiac and vascular function.

Sara Ek

University
Lund University

Name of department
Department of Immunotechnology

Email address
sara.ek@immun.lth.se

Research keywords
Oncology, lymphoma, muli-omic, machine learning, translational

Research abstract
Plasma-based protein profiling to reveal immune-related factors governing response to treatment in clinical trial cohorts of mantle cell lymphoma patients

Interested to collaborate in
Spatial omics

Bio
I have a research group within translational lymphoma research. I have extensive experience in doctoral and postdoctoral supervision in the past 20 years.

Lena Eliasson

University
Lund University

Name of department
Department of Clinical Sciences Malmö

Email address
lena.eliasson@med.lu.se

Research keywords
microRNA, islet of Langerhans, insulin secretion, Type 2 diabetes, exosomes

Research abstract
Focus on development of dysfunctional insulin secretion in Type 2 diabetes, and the role of microRNAs in this process. The studies integrate electrophysiology, electron microscopy, and molecular biology.

Interested to collaborate in
non-coding RNA, iPS cells

Bio
LE is Professor at Lund University and deputy coordinator of Lund University Diabetes Centre (LUDC). Her research focuses on mechanisms underlying impaired islet hormone secretion contributing to diabetes development.

Johan Elf

University
Uppsala University

Name of department
Department of Cell and Molecular Biology

Email address
johan.elf@icm.uu.se

Research keywords
Optical Pooled Screening (OPS), Super Resolution Microscopy, Single-Cell Biology, Microfluidics, Antibiotic Susceptibility Testing (AST)

Research abstract

We bridge the gap between quantitative physical models and biological observations to identify and resolve inconsistencies in our understanding of life. We develop tools to fight the causes and consequences of antimicrobial resistance.

Interested to collaborate in
Optical pooled screening to solve fundamental biological riddles, super resolution microscopy, real-time image processing, microfluidics for single-cell biology, and AMR diagnostics.

Bio
Elf is a Professor of Physical Biology and a pioneer in live-cell optical pooled screening. Johan combines theory with experiments and methods development to tackle challenging problems related to biology’s central dogma.

Arne Elofsson

University
Stockholm University

Name of department
Department of Biochemistry and Biophysics

Email address
arne@bioinfo.se

Research keywords
Bioinformatics, machine learning, protein-protein interactions, protein evolution, AlphaFold2

Research abstract
We propose novel deep-learning methods to accurately map the human proteome, leveraging self-supervised learning on annotated and unannotated data to reveal proteoforms, interactions, and atomistic models.

Interested to collaborate in
Structural biology, machine learning, proteomics, imaging, Cryo-EM

Bio
Professor at SU/DBB. H-index 77, >22000 citations, supervised 25 PhD students. Honored for his many important contributions to the field of protein structure prediction. Among his many contributions are widely used prediction programs such as Pcons (automatic structure prediction), TOPCONS and OCTOPUS (membrane protein topology prediction), ProQ (assesses the quality of a protein structure), and studies of protein-protein interactions and evolution of protein structure. Nice and talented research group.

Julia Fernandez-Rodriguez

University
University of Gothenburg

Name of department
Centre for Cellular Imaging (Integrated Microscopy technologies, Gothenburg)

Email address
juliafer@cci.sahlgrenska.gu.se

Research keywords
Smart microscopy, image-analysis, feedback-microscopy, Artificial-intelligence, deep-learning

Research abstract
Smart microscopy integrates automated imaging, AI, and data management, enhancing productivity and reproducibility with scalable workflows, metadata management, and a robust framework for analysis and visualization in imaging research

Interested to collaborate in
Computer sciences, physicists, image analysts, microscopy. Our work aligns well with the entrepreneurial track, particularly in Machine Learning/AI, as we aim to use these technologies for Smart Microscopy

Bio
Head of the Centre for Cellular Imaging and Co-Director of Sweden's National Microscopy Infrastructure, I advance imaging research, lead training, and serve on international advisory boards with 22 years' experience in RI

Lars Feuk

University
Uppsala University

Name of department
Department of Immunology, Genetics and Pathology

Email address
lars.feuk@igp.uu.se

Research keywords
Long-read sequencing, structural variation, rare disease

Research abstract
Long-standing interest and experience in using cutting-edge genomics technologies to study neurodevelopmental disorders and rare disease. Specific interest in structural variation in population and patient genomes.

Interested to collaborate in
Cutting-edge sequencing technologies applied to patient samples. Will be a close collaboration with Uppsala Genome Center who will generate significant amounts of long-read sequencing data.

Bio
Professor of Molecular Medicine at Uppsala University, Co-Director of the National Genomics Infrastructure (NGI) and director of the long-read sequencing facility within NGI.

Karin Forsberg Nilsson

University
Uppsala University

Name of department
Department of Immunology, Genetics and Pathology

Email address
karin.nilsson@igp.uu.se

Research keywords
Glioblastoma, medulloblastoma, cancer, genomics, non-coding mutation

Research abstract

We identify and validate non-coding mutations with regulatory potential in Medulloblastoma and Glioblastoma, under the assumption that evolutionary constraint predicts function. Emerging results are also expected to suggest new targets.

Interested to collaborate in
Genomics, data-driven approaches, proteomics, functional validation, bioimaging, spatial methods

Bio
I'm a professor at Uppsala University, SciLifeLab Group Leader, and currently Dean of the Faculty of Medicine. My lab explores non-coding mutations in brain tumours to identify new driver mutations.

Mattias Forsell

University
Umeå University

Name of department
Department of Clinical Microbiology

Email address
mattias.forsell@umu.se

Research keywords
Respiratory pathogens, aging population, lifespan, proteomics, immune checkpoints

Research abstract
Aging increases susceptibility to infections and chronic diseases, straining public health. This project aims to identify factors influencing vulnerability and improve immunization strategies by integrating immunological data with population-based insights for healthier aging.

Interested to collaborate in
Multivariate analysis, AI, machine learning or similar field. Preferably with experience with large scale medical data

Bio
Our research group investigates molecular and cellular immune responses to infections and vaccination, translating these findings to population-level insights. This approach enhances understanding of immunological patterns and informs public health and clinical strategies.

Andrea Fossati

University
Karolinska Institutet

Name of department
Department of Microbiology, Tumor and Cell Biology

Email address
andrea.fossati@scilifelab.se

Research keywords
Microbiology, Phage Biology, Bacteria defense systems, Proteomics, Systems Biology

Research abstract
We aim to discover, characterize and catalogue the molecular function of toxin-antitoxin systems in various bacteria of clinical interest and how it relates to virulence and phage defense

Interested to collaborate in
Transcriptomics/ bioinformatics / structural biology / signaling pathways / kinases / protein complexes / microbiology / RNA biology

Bio
Our group aims to discover and characterize the molecular networks underlying infections in the context of bacteria and their viruses (bacteriophages)

Claudia Fredolini

University
KTH

Name of department
Department of Protein Science

Email address
claudia.fredolini@scilifelab.se

Research keywords
Biomarkers; body-fluids; microsampling; companion diagnostics

Research abstract

The affinity proteomics unit is equipped with high-throughput technologies applicable to the investigation of biomarkers in body fluids, but also for screening of protein-protein interaction (drug-protein interaction), and co-development of microsampling devices. I am available to host a postdoc interested in interdisciplinary projects.

Interested to collaborate in
Companion diagnostics, affinity proteomics, microsampling, new drug screening

Marc Friedländer

University
Stockholm University

Name of department
Department of Molecular Biosciences,
The Wenner-Gren Institute

Email address
marc.friedlander@scilifelab.se

Research keywords
RNA biology, ancient RNA, gene regulation, computational biology

Research abstract
Our group applies state-of-the-art wet-lab and dry-lab methods to study rare RNA molecules in the context of single cells, environmental samples, extinct animals and cancers.

Interested to collaborate in
Single-cell biology, planetary biology.

Bio
Dr. Marc Friedländer's team has recently developed the first method to experimentally map microRNA targets in single cells and has discovered RNAs in ancient samples, including the extinct Tasmanian tiger.

Stefania Giacomello

University
KTH

Name of department
Department of Gene Technology

Email address
stefania.giacomello@scilifelab.se

Research keywords
Spatial, Transcriptomics, Microbiome, Gut, Bioinformatics

Research abstract
My research group develops new approaches for spatially resolved modalities to study how cell localization influences biological processes across kingdoms with a particular focus on host-microbiome interactions. We also apply our technology to different biological questions.

Interested to collaborate in
Spatial Biology, Bioinformatics, Computational Biology, Machine Learning, AI, Spatial metaTranscriptomics, Spatial Transcriptomics

Bio
I am an Associate Professor in Spatial Genomics at KTH. I have a master in Biotechnology and a PhD in Genomics. I did my postdoc in Spatial Transcriptomics. Subsequently, I was a Senior Bioinformatician at the National Bioinformatics Infrastructure of Sweden (WABI) for 2.5 years and specialized in the analysis of single-cell and spatial transcriptomics data. Overall, I detain molecular and computational biology expertise, which I implement daily in my research.

Per Hammarström

University
Linköping University

Name of department
Department of Physics, Chemistry and Biology

Email address
per.hammarstrom@liu.se

Research keywords
Amyloid, prion, protein folding, molecular chaperones, fluorescence

Research abstract
Our objective is to track protein misfolding processes in various amyloid and prion diseases and to intervene in the formation of the toxic species utilizing small-molecules and molecular chaperones.

Interested to collaborate in
Amyloidosis, prion disease, fluorescence microscopy and spectroscopy

Bio
Prof. Protein Chemistry. Work in the field of protein folding, misfolding and disease on many different proteins. Loves wet-lab experiments

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Lotta Happonen

University
Lund University

Name of department
Department of Clinical Sciences Lund

Email address
lotta.happonen@med.lu.se

Research keywords
host-pathogen interactions, mass spectrometry, structural proteomics, cryoEM, medical microbiology

Research abstract
My research explores structural and molecular level mechanism of host-pathogen interactions, and determines how pathogens use defined virulence determinants to target central components of the hostâ€™s immune system

Interested to collaborate in
proteomics, structural biology, cryoEM, microbiology, infection medicine

Bio
SciLifeLab Group Leader and Associate Professor (Docent) at Lund University with expertise in quantitative and structural proteomics combined with cryoEM, and other methods in integrated structural biology.

Vasili Hauryliuk

University
Lund University

Name of department
Department of Experimental Medical Science,
Medical Faculty

Email address
vasili.hauryliuk@med.lu.se

Research keywords
Bacteriophages, immunity, infection

Research abstract
We are interested in mechanistically dissecting diverse novel antiviral defenses that protect bacteria against their viruses, bacteriophages.

Interested to collaborate in
Techniques: cryo-EM, proteomics, NGS, 5P-Seq, super resolution microscopy

Bio
Protein synthesis and phage biology. Göran Gustafssonpriset, molecular biology 2024, Svenska Fernströmpriset 2019, Ragnar Söderberg Fellow in Medicine 2014. MIMS group leader 2013-2021.

Thomas Helleday

University
Karolinska Institutet

Name of department
Department of Oncology and Pathology

Email address
thomas.helleday@scilifelab.se

Research keywords
Drug Discovery, Translational Research, Catalytic Medicine, DNA damage response and repair, AI based medicinal chemistry

Research abstract

We crystalize and target DNA damage response proteins with AI-developed, medicinal chemistry and pharmacology optimized small molecules, explored on novel biology and progressed in models and clinical trials in patients

Interested to collaborate in
Cell and Molecular Biology, Medicinal Chemistry, Drug Development, Structural Biology, Computational biology, Chemical Biology, In vivo disease models, Ageing, Cancer, Immunology

Bio
Our interdisciplinary lab has developed PARPi-BRCA treatment concept approved in cancer as first-line treatment, and pioneer DNA damage response, catalytic medicine, chemical biology, that are in various clinical trials.

Susanne Hellstedt Kerje

University
Uppsala University

Name of department
Uppsala Genome Center, National Genomics Infrastructure, Department of Immunology, Genetics and Pathology

Email address
susanne.kerje@igp.uu.se

Research keywords
Long-read sequencing, genomics, analysis pipeline development, reference genome assembly

Research abstract
At Uppsala Genome Center we are experts in long-read sequencing and at the absolute forefront regarding sample handling guidelines, DNA/RNA extraction methods, sequencing methods, genome assemblies

Interested to collaborate in
Long-read sequencing technology development for biodiversity and medical applications, exploration of methylation data generated from long-read technologies.

Bio
PhD in genetics, many years of experience of genomics and genetics research, head of Uppsala Genome Center

Johan Henriksson

University
Umeå University

Name of department
Department of Molecular Biology

Email address
johan.henriksson@umu.se

Research keywords
Single-cell, CRISPR, bioinformatics, screening, sequencing

Research abstract
Development of a novel single-cell perturbation method (“perturb-seq”) using a new microfluidic system, for e.g. in vivo analysis of human T cells. Both bioinformaticians and wetlab postdocs welcome.

Interested to collaborate
CRISPR, Tn5, single-cell, bioinformatics, sequencing, RNA-seq, microfluidics

Bio
Our group develops new methods for high-throughput genomic analysis, including single-cell, CRISPR, transposons, and new bioinformatic tools (Rust!). Working

Tuulia Hyötyläinen

University
Örebro University

Name of department
Department of Natural Sciences and Technology

Email address
tuulia.hyotylainen@oru.se

Research keywords
Exposome, metabolomics, health impacts of exposure, mass spectrometry

Research abstract

Our project develops high-throughput screening with direct MS analysis and phenotypic fingerprinting with high-resolution MS to identify sex-specific biomarkers and understand EDC-induced health effects, focusing on gut-liver and gut-brain axes.

Interested to collaborate
Within field of medicine and toxicology, MS imaging

Bio
I have focused on developing more robust methodologies to achieve comprehensive coverage of the metabolome, conducting detailed studies of each step in the workflow, and understanding the pathways and mechanisms of disease. My current research strongly focuses on the impact of the exposome on human health, using metabolomics and other omics as tools to characterize environmental exposures and the human biomolecular response to these exposures at the metabolic level.

Henrik Johansson

University
Karolinska Institutet

Name of department
Department of Oncology-Pathology

Email address
henrik.johansson@scilifelab.se

Research keywords
Breast cancer, clinical proteomics, proteogenomics, biomarker, precision medicine

Research abstract
Characterizing breast cancer proteome and proteogenome to enhance precision medicine, focusing on genome-phenotype impact, neoantigen discovery, immune composition, and therapy response biomarkers using mass spectrometry-based proteomics.

Interested to collaborate in
Cancer, breast cancer, proteomics, proteogenomics, multi-omics, clinical proteomics, therapy response biomarker discovery and validation, precision medicine, neoantigen discovery, immune composition, proteome cohort analysis.

Bio
Focused on breast cancer proteome and proteogenome to understand biology, identify drug targets, and develop biomarkers, emphasizing genome-phenotype impact, neoantigen discovery, and immune composition using mass spectrometry

Åsa Johansson

University
Uppsala University

Name of department
Department of Immunology, Genetics and Pathology

Email address
asa.johansson@igp.uu.se

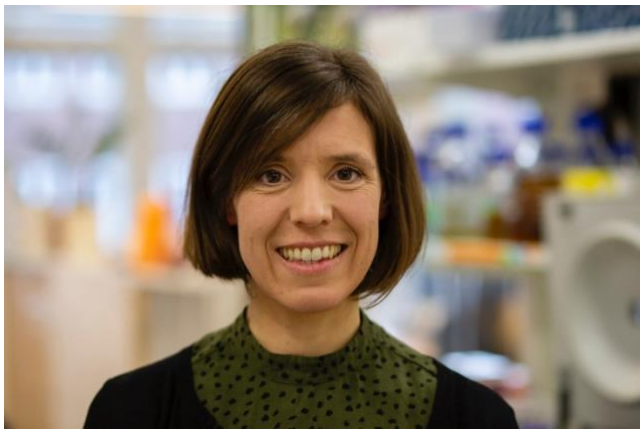
Research keywords
Genetic epidemiology, Precision health, Proteomics, Causal inference, Genomics

Research abstract
To uncover disease risk factors and the diverse pathways involved in disease development by leveraging national Swedish registers, as well as large-scale molecular data, including genomics, transcriptomics, and proteomics.

Interested to collaborate in
Genetic epidemiology, Precision health, Proteomics, Causal inference, Register-base research, multi-omics.

Bio
Associate professor at Uppsala University with a strong track record of high-impact publications like BMJ and Nature Medicine and plays a prominent role in local and national precision medicine initiatives.

Kristina Jonas



University
Stockholm University

Name of department
Department of Molecular Biosciences,
The Wenner-Gren Institute

Email address
kristina.jonas@scilifelab.se

Research keywords
Bacteria, stress adaptation, regulated proteolysis, molecular mechanisms, bacterial diversity

Research abstract
The Jonas lab studies how bacteria grow and reproduce in fluctuating environments. We dissect the molecular mechanisms governing stress adaptation. Additionally, we study the diversity of stress response pathways and their evolution.

Interested to collaborate in
Microbial genomics, structural biology, machine learning

Bio
2009 PhD at Karolinska Institute; 2009-2013 Postdoc at MIT / USA; 2013-2016 Independent group leader at University of Marburg / DE; 2016-2021 SciLifeLab Fellow & Assistant Professor at SU; 2021 promoted to Associate Professor

Rene Kaden

University
Uppsala University

Name of department
Department of Medical Sciences

Email address
rene.kaden@akademiska.se

Research keywords
Medical Microbiology; Metagenomics; AI applications in Healthcare; Epidemiology; Taxonomy

Research abstract
Our research group is based in the hospital, where we conduct research as for example on post-COVID conditions and the role of metagenomics in disease development. See also: https://www.scilifelab.se/researchers/rene-kaden/

Interested to collaborate in
AI for clinical use; molecular techniques development

Bio
Assoc. Prof. in Medical Microbiology, PhD in Biology, SciLife Groupleader "Epidemiology, Taxonomy and Evolution", Coordinator Genomic Medicine Sweden GMS Infectious diseases, Work package Leader “Microbiology” in Clinical Genomics Uppsala

Masood Kamali-Moghaddam

University
Uppsala University

Name of department
Department of Immunology, Genetics and Pathology

Email address
masood.kamali@igp.uu.se

Research keywords
Diagnostics, proteomics, molecular tools, extracellular vesicles/exosomes, cancer

Research abstract
Development of molecular tools for detection and characterization of proteins and extracellular vesicles, and clinical implementations of these technologies – with relevance to prostate- and pancreatic cancers, diabetes and lever disease.

Interested to collaborate in
Clinicians , biobanks, etc.

Bio
Professor of Molecular Diagnostics and the Director for SciLifeLab Proteomics platform, with experiences in developing large numbers of technologies resulted in commercial products or as services in SciLifeLab platforms

Kasper Karlsson

University
Karolinska Institutet

Name of department
Department of Oncology-Pathology

Email address
kasper.karlsson@scilifelab.se

Research keywords
Metastasis, lineage tracing, CROPseq, single-cell and spatial transcriptomics, bioprinting

Research abstract
We study metastatic spread and formation of tumor niches in animal models, trying to understand how niches forms, are sustained and can be disrupted.

Interested to collaborate in
Metastatic niches, cell barcoding, CRISPR screenings, spatial transcriptomics and proteomics.

Bio
I have a background developing molecular biology tools and studying tumor evolution. We are now focusing on translational research and tumor metastases.

Simon Koplev

University
KTH

Name of department
Department of Gene Technology

Email address
k simon.koplev@scilifelab.se

Research keywords
Single-cell and spatial transcriptomics, cancer, machine learning, fibroblasts

Research abstract
Inflammatory bowel diseases such as Crohn’s and ulcerative colitis carry a 20-fold increased risk for colorectal cancer, but for unknown reasons potentially involving alternative splicing of transcription factors.

Interested to collaborate in
Immunology, long-read sequencing, single-cell and spatial transcriptomics, human gut

Bio
Simon obtained his PhD in Medical Science from the University of Cambridge on multiplex imaging of pancreatic cancer. He was a postdoc in Sarah Teichmann’s lab at the Sanger Institute.

Claudia Kutter

University
Karolinska Institutet

Name of department
Department of Microbiology, Tumor and Cell Biology

Email address
claudia.kutter@scilifelab.se

Research keywords
RBP, transcriptomics, transposon, CRISPR-Cas13, liver

Research abstract

Uncovering the molecular underpinnings of complex diseases by studying non-canonical RNA-protein interactions at single-cell resolution through advanced molecular, microscopic and sequencing-based methods.

Interested to collaborate in
Genomics, transcriptomics, proteomics, spatial transcriptomics, network inference, AI, hepatology, cell profiling

Bio
My group at SciLifeLab specializes in functional genomics and regulatory transcriptomics, using multi-omics to identify disease mechanisms. We develop innovative methods in RNA biology facilitating collaborations.

Lukas Käll

University
KTH

Name of department
Department of Gene technology

Email address
lukas.kall@scilifelab.se

Research keywords
Machine Learning; Proteomics; Mass spectrometry; Statistics

Research abstract

Computational proteomics expert developing innovative tools for mass spectrometry-based proteomics, metaproteomics, and feature selection in biological data. Passionate about open science and advancing data-driven life science research.

Interested to collaborate in
Machine learning methods to interpret data, particularly within Proteomics and Metabolomics

Bio
Lukas Käll is a computational proteomics researcher specializing in mass spectrometry-based methods. He develops innovative machine learning-based tools for proteomics, metaproteomics, and feature selection, emphasizing open science and data-driven research

Nils Landegren

University
Uppsala University

Name of department
Department of Medical Biochemistry and Microbiology

Email address
nils.landegren@imbim.uu.se

Research keywords
Autoimmunity, medicine, immunology, diagnostics

Research abstract

Our group's research aims to improve understanding, diagnostics, and treatment of autoimmune diseases, focusing on 1) sex differences in autoimmunity, 2) cytokine autoantibodies linked to poor infectious disease outcomes, and 3) cancer-associated autoimmunity.

Interested to collaborate in
Most of our research projects are conducted in collaboration with clinicians and research groups who offer complementary expertise and technologies.

Bio
I have an MD background and am now full-time research active as a group leader at Uppsala University. Our research on autoimmunity is supported by the ERC, the Swedish Research Council, the Swedish Cancer Foundation, among others.

Ulf Landegren

University
Uppsala University

Name of department
Department of Immunology, Genetics and Pathology

Email address
ulf.landegren@igp.uu.se

Research keywords
Molecular detection, innovation, molecular diagnostics, protein assays, rare event detection

Research abstract

We establish and commercialize molecular assays, such as Olink's. We now pursue digital protein and DNA/RNA detection at extreme sensitivity and selectivity, even at the point of care.

Interested to collaborate in
We collaborate with both clinical and basic scientists to apply our several technologies

Bio
MD PhD, professor. Member of KVA and EMBO, inventor of padlock probes and proximity ligation assays, founder of ten companies including Olink, planning for more.

Janne Lehtiö

University
Karolinska Institutet

Name of department
Department of Oncology and Pathology

Email address
janne.lehtio@ki.se

Research keywords
Cancer research, proteomics, proteogenomics, precision medicine, computational biology

Research abstract
Our project harnesses advancements proteomics to create high-resolution landscapes of diverse tumor cohorts and clonal cell populations, driving innovations in cancer precision medicine.

Interested to collaborate in
Mass spectrometry, proteomics, computational biology, AI, imaging, genomics

Bio
Janne Lehtiö is a Professor in Medical Proteomics at Karolinska Institutet, pioneering proteogenomics and cancer precision medicine with translational research integrating genomics and proteomics for clinical impact.

Jin-ping Li

University
Uppsala University

Name of department
Department of Medical Biochemistry and Microbiology

Email address
jin-ping.li@imbim.uu.se

Research keywords
Heparan sulfate, heparanase, Alzheimer, inflammation, innate immunity

Research abstract

Heparan sulfate is a polysaccharide expressed in all cells, having essential functions in development and pathophysiology. The research is to elucidate the molecular mechanisms of heparan sulfate in the pathological process of Alzheimers disease, inflammatory diseases and innate immunity. The finding will provide information for development of new therapeutic strategies for the diseases.

Interested to collaborate in
Animal models, single-cell sequencing, FACS and advanced microscopes (including two-photon.

Bio
Basic education in Medicine, Master and PhD in biochemistry. Engaged in the research field since 1990. Established broad international collaboration within the field. Peer-reviewed original study : 140 and review 40. The research has been supported from VR (ongoing), Cancerfonden (ongoing) and Alzheimers foundation, Heart and Lung foundation

Kerstin Lindblad-Toh

University
Uppsala University

Name of department
Department of Medical Biochemistry and Microbiology

Email address
kersli@broadinstitute.org

Research keywords
Cancer, genomics, comparative genomics, dog, human

Research abstract

The non-coding genome is understudied in cancer. Using evolutionary constraint from Zoonomia (240 mammals) we identify genes enriched for non-coding constraint mutations in dogs and humans with osteosarcoma and DLBCL.

Interested to collaborate in
We perform both bioinformatic analysis, such as identification of non-coding constraint mutations, and experimental work including MPRA , CRISPR editing and drug response.

Bio
Professor in comparative genomics. I co-led the Zoonomia project published in 11 papers in Science in 2023. My work focuses on mammalian comparative genomics, dog and human genetics and cancer.

Bo Lundgren

University
Stockholm University

Name of department
Department of Biochemistry and Biophysics

Email address
bo.lundgren@scilifelab.se

Research keywords
Biochemical, cellular, assays, drug discovery, high through-put

Research abstract
Biochemical and cellular assays, used in our drug discovery projects. We use microplates and robotics to set-up new assay technologies for improved assay sensitivity, reliability and through-put.

Interested to collaborate in
Plate based, plate reader technologies, Imaging, High through-put, drug discovery, in vitro toxicology, Technology, novel therapeutic agents, target based

Bio
The BCA unite compass a broad expertise in biochemistry, in vitro toxicology, cell culture, 2D and 3D culture, HCS-imaging, molecular cloning, robotics, drug discovery, siRNA and small molecule screening.

Andreas Luttens

University
Karolinska Institutet

Name of department
Department of Medical Biochemistry and Biophysics

Email address
andreas.luttens@ki.se

Research keywords
Deep-learning, drug discovery, medicinal chemistry, infectious diseases

Research abstract
Development and application of new technologies for drug discovery, with a focus on high-throughput experimentation and deep learning to design urgently needed antivirals and antibiotics.

Interested to collaborate in
Molecular biology, medicinal chemistry, biochemistry, molecular modeling, deep learning

Bio
I joined KI as an Assistant Professor (DDLS Fellow) in 2025. My lab drives interdisciplinary drug discovery projects uniting deep learning, medicinal chemistry, structural biology. More info available at https://luttenslab.netlify.app.

Peetra Magnusson

University
Uppsala University

Name of department
Department of Immunology, Genetics and Pathology

Email address
peetra.magnusson@igp.uu.se

Research keywords
Preclinical, vascular biology, neuroinflammation, rare disese, induced pluripotent stem cells (iPSC)

Research abstract
We investigate brain vascular malformations, where blood-brain barrier disruption cause hemorrhage and neuroinflammation. Using human endothelial cells, iPSC, animal models, we explore molecular mechanisms driving immunothrombosis, vascular leakage, and disease.

Interested to collaborate in
Neuroinflammation, iPSC, omics, cell biology, inflammation, immunothrombosis

Bio
Associate Professor, DDLS RS Director, Rudbeck Laboratory Director, expertise in neuroinflammation, vascular biology, stem cell biology, advanced human preclinical models and patient material for novel treatment regimens. Since 2025 managing director of the SSF Center CNSx3.

Richard Lundmark

University
Umeå University

Name of department
Department of Medical and Translational Biology

Email address
richard.lundmark@umu.se

Research keywords
Membrane trafficking, membrane remodeling, protein structure, virus infection, metabolism

Research abstract
Our research is focused on how proteins and lipids interact to generate small membrane vesicles in cells. We aim to identify and structurally define mechanism that aid these processes.

Interested to collaborate in
Advanced light microscopy, cryo-electron microscopy, NMR, model membranes, mass spectrometry.

Bio
I am a northerner and professor in cell biology with a background in biochemistry and biophysics

Johan Malmström

University
Lund University

Name of department
Department of Clinical Sciences, Lund

Email address
johan.malmstrom@med.lu.se

Research keywords
Mass spectrometry, proteomics, Structural biology, Infection Medicine, Vaccines, Antibodies

Research abstract
We use advanced methods in quantitative and structural mass spectrometry to develop self-assembling nanoparticle vaccines against bacteria to combat the increasing threat of antibiotics resistant bacteria

Interested to collaborate in
Single-cell sequencing, structural biology (cryoEM, x-ray crystallographry), protein production and protein design

Bio
Professor since 2017, National director for the distributed infrastructure in biological mass spectrometry since 2024, platform scientific director for the integrated structural biology platform (ISB) at SciLifeLab

Sara Mangsbo

University
Uppsala University

Name of department
Department of Pharmacy

Email address
sara.mangsbo@farmaci.uu.se

Research keywords
Biologics, drug conjugates, targeted delivery, oncology, immunotherapy, ADC, peptide therapeutics, oligonucleotides, LNP, mRNA

Research abstract

My group work with research spanning the medicine and pharmaceutical field with a focus on both disease biomarker studies, model development and antibody and new modality drug development. A big focus at the moment is on targeted delivery of drugs such as peptides and oligonucleotides and LNPs using antibodies.

Interested to collaborate in
Targeted delivery, drug screening, in vitro and in vivo model,

Bio
Dr Mangsbo is a professor in antibody-based drugs at Uppsala University and have been active in research surrounding immunotherapy and cancer for about 20 years. She has been active in research that has moved drug candidates from discovery to phase I clinical testing and her expertise is within antibody and peptide-based drug development. She has also developed models for improved characterization of immune toxicity and bladder cancer progression. Apart from her active research contributions she is an inventor on multiple patent families and co-founder of Immuneed AB and Strike Pharma AB.

Yumeng Mao

University
Uppsala University

Name of department
Department of Immunology, Genetics and Pathology

Email address
yumeng.mao@igp.uu.se

Research keywords
Cancer, immune checkpoints, therapy resistance, CRISPR screen, drug discovery

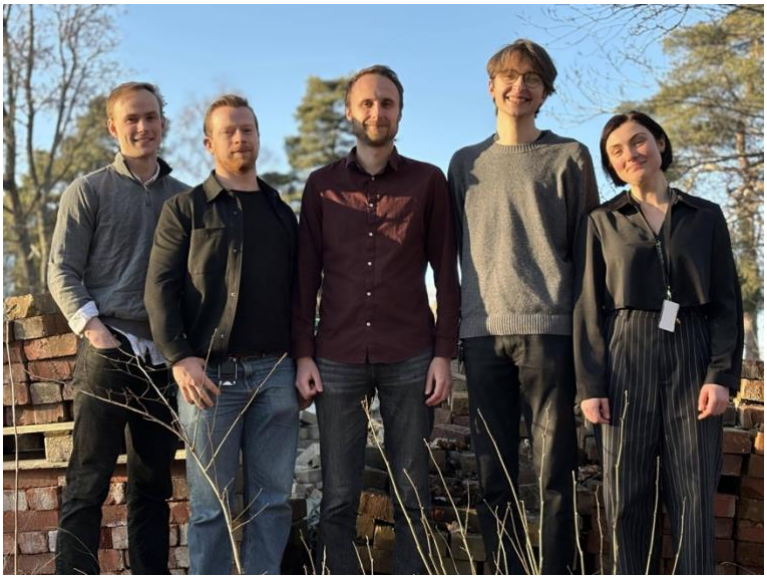
Research abstract

We focus on understanding how solid tumors resist to immunotherapy and discover ways to overcome it.

Interested to collaborate in
Spatial transcriptomics, transgenic mouse, clinical samples

Bio
I am a trained tumor immunologist with a few years' experience leading drug discovery projects in a pharma R&D environment. Our work combines genetic tools to validate new drug targets.

Emil Marklund



University
Stockholm University

Name of department
Department of Biochemistry and Biophysics

Email address
emil.marklund@scilifelab.se

Research keywords
High-throughput biophysics, molecular recogntion, binding kinetics, protein - DNA interactions, protein-protein interactions

Research abstract
We investigate how biological macromolecules can manage to interact with each other with high specificity, and how sequence information determines macromolecular structure and function.

Interested to collaborate in
Gene regulation, High-throughput in vivo screens

Bio
We combine high-throughput measurements of molecular binding with simulations and mathematical modeling. Our goal is to gain a deep and quantitative understanding of life at the molecular level.

Jonathan Martin

University
Stockholm University

Name of department
Department of Environmental Science

Email address
jon.martin@scilifelab.se

Research keywords
exposome, high-resolution mass spectrometry, metabolome, toxicology, health

Research abstract
Development and applications of chemical exposomics methods for human exposure monitoring

Interested to collaborate in
exposome, high-resolution mass spectrometry

Bio
I’m interested in the effects of complex environmental chemical exposures on health. My group develops sensitive analytical methods and runs national infrastructure for chemical exposomics using high-resolution mass spectrometry.

Pär Matsson

University
University of Gothenburg

Name of department
Department of Pharmacology,
Institute of Neuroscience and Physiology

Email address
par.matsson@gu.se

Research keywords
Therapeutic oligonucleotides, PROTACs, pharmacokinetics, biophysics, molecular modeling and simulation

Research abstract
We study the cellular and molecular mechanisms governing the delivery, exposure and cellular effects of new-modality drugs, specifically oligonucleotide therapeutics and PROTACs, combining cell-based and biophysical experiments with molecular simulation and AI.

Interested to collaborate in
Oligonucleotide and proximity-inducing agent drug discovery - measurements and predictions of activity, tissue distribution and cellular disposition using, for example, AI/ML and molecular simulation techniques, and biophysical experiments

Bio
I lead a group of 6 post docs, PhD and MSc students in Cellular and Molecular Pharmacokinetics, as well as the national infrastructure for oligonucleotide drug discovery, OligoNova (part of SciLifeLab-DDD) which support academic scientists with state-of-the-art oligonucleotide drug discovery capabilities.

Mikael Mattsson

PI name
Mikael Mattsson

University
Lund University

Name of department
Immunotechnology

Email address
mikael.mattsson@immun.lth.se

Research key words
Phage display, antibody drug discovery, bispecific antibodies

Research abstract
Currently head of SciLifeLab unit “Selection and Display technologies”. Previous research includes e g phenotypic antibody discovery, mining of complex antibody pools and bispecific antibodies.

Interested to collaborate in
Isolation, characterization and optimization of antibody drug candidates. Technologies for display of antibody libraries, affinity maturation and improved developability. Novel antibody formats, AI and NGS/long-read sequencing.

Bio
PhD in microbiology/biochemistry and MSc in molecular biology. Extensive experience of antibody drug discovery in the biotech industry and QC in the pharma industry in positions as line/project manager.

Wojciech Michno

University
Uppsala University

Name of department
Department of Public Health and Caring Sciences

Email address
wojciech.michno@scilifelab.uu.se

Research keywords
brain organoids, cancer, metabolism, microenvironment

Research abstract
We study cell-specific metabolic changes in tissue microenvironment, and how these influence inflammation in neurological diseases. We use brain organoids and spatial omics and work with both neurodegeneration and cancer.

Interested to collaborate in
Collaborators working on anti-inflammatory drugs, lipid-based formulation, and lipid metabolism altering compounds.

Bio
I did my PhD Sweden, and postdocs in UK and USA (including Stanford University). I have extensive interdisciplinary training in analytical/biochemistry chemistry and stem-cell biology (and so does my team).

Gisele Miranda

University
KTH

Name of department
Division of Computational Science and Technology

Email address
gisele.miranda@scilifelab.se

Research keywords
Deep-learning, Generative AI, Graph Machine Learning, Multi-modal based profiling

Research abstract
My group leverages cutting-edge machine learning techniques to advance our understanding of cellular behavior and interactions. We use generative AI to enhance our understanding of cellular networks and tissue architecture.

Interested to collaborate with
Imaging scientists, bioinformaticians, cellular biologists.

Bio
Gisele Miranda is a SciLifeLab fellow and an Imaging Scientist of the Chan-Zuckerberg Initiative. She has been working on multidisciplinary research projects in the intersection of computer science and biology.

Gabriela Montejo-Kovacevich

University
Uppsala University

Name of department
Department of Ecology and Genetics

Email address
gabriela.montejo-kovacevich@scilifelab.uu.se

Research keywords
Evolution, local adaptation, climate change, genomics, insects

Research abstract
We study the mechanisms driving local adaptation. Our research combines the power of genomics with ecology to gain insights into the mode and tempo of evolution in the wild.

Interested to collaborate with
I am interested to collaborate with researchers that would like to study rapid adaptation to climate change in wild populations of butterflies. This could be from a purely genomics perspective, or combining ecology, modelling, and fieldwork as well.

Bio
I am an evolutionary biologist specialising in genomics, focusing on adaptation to environmental change and developing innovative methods to study historical and contemporary evolutionary processes.

Marika Nestor

University
Uppsala University

Name of department
Department of Immunology, Genetics and Pathology

Email address
marika.nestor@igp.uu.se

Research keywords
radioimmunotherapy, targeted radionuclide therapy, molecular radiotherapy, radiopharmaceuticals, radiation oncology

Research abstract
Explore molecular radiotherapy innovations in cancer therapy through developing new radioconjugates, dosing strategies (such as fractionation or pretargeting) and combination strategies (e.g. with immune therapy) to improve efficacy and lower toxicity.

Interested to collaborate in
biomedical radiation sciences, radiochemistry, dosimetry, xenograft models, transgenic mice, organoids, nuclide techniques

Bio
Marika Nestor, professor at Uppsala University, develops cancer-targeted radiopharmaceuticals. She co-founded Akiram Therapeutics, advancing AKIR001 to clinical trials, and has received multiple prestigious research awards.

Avlant Nilsson

University
Karolinska Institutet

Name of department
Department of Cell and Molecular Biology

Email address
avlant.nilsson@ki.se

Research keywords
Cancer, modelling, deep-learning, multi-omics, molecular networks

Research abstract

We develop deep-learning models of cancer mechanisms. By integrating omics data and constraints from molecular networks, we aim to identify drug targets and predict resistance mechanisms for precision medicine.

Interested to collaborate in
Developing, expanding, applying, and/or validating computational models of cells. We are also interested in high throughput screening to generate training data for our models.

Bio
I am an Assistant Professor and DDLS Fellow in Precision Medicine, with a PhD in Systems biology from Chalmers and postdoc from MIT. I develop computer models of cells.

Peter Nilsson

University
KTH

Name of department
Department of Protein Science

Email address
peter.nilsson@scilifelab.se

Research keywords
affinity proteomics, protein and antibody profiling, multi-disease serology, infectious diseases, neuroproteomics

Research abstract

We do highly multiplex protein and antibody profiling in body fluids based on affinity proteomics and applied to neuroproteomics, psychiatric disorders, inflammatory autoimmune diseases, infectious diseases and multi-disease serology.

Interested to collaborate in
all fields

Bio
PhD 1999 in biotechnology, KTH and professor in proteomics 2011, KTH. Heading protein array technologies within Human Protein Atlas since 2003. Platform Scientific Director in the Proteomics platform at SciLifeLab.

Mats Nilsson

University
Stockholm University

Name of department
Department of Biochemistry and Biophysics

Email address
mats.nilsson@scilifelab.se

Research keywords
spatial biology, in situ sequencing, tumor biology, clonal evolution

Research abstract
Novel spatial biology tools will be developed evolving from the in situ sequencing method and they will be applied to studies of the molecular, genetic and cellular heterogeneity of tumors.

Interested to collaborate in
Spatial Biology, applying in situ sequencing

Bio
The group has pioneered the spatially resolved transcriptomic method in situ sequencing. We continue to develop this basic principle to address modes of analysis currently not available on commercial platforms.
.

Jessica Nordlund

University
Uppsala University

Name of department
Department of Medical Sciences

Email address
jessica.nordlund@medsci.uu.se

Research keywords
scRNA-seq, functional screening, leukemia, epigenetics

Research abstract

The Molecular Precision Medicine group works closely with clinical collaborators to integrate genomics, transcriptomics, epigenomics, and proteomics with machine learning to identify biomarkers, refine diagnostics, and explore new treatments.

Interested to collaborate in
We welcome postdoc candidates with expertise in computational fields, such as machine learning and single-cell analysis, as well as those with laboratory skills, including functional drug screening, CRISPR, flow cytometry, etc.

Bio
The Molecular Precision Medicine group develops molecular approaches to analyze patient samples, with the aim of advancing precision diagnosis and treatment discovery through multi-omics data integration.

Mats Ohlin

University
Lund University

Name of department
Department of Immunotechnology

Email address
mats.ohlin@immun.lth.se

Research keywords
antibody, antibody technology, molecular engineering, immuno-oncology, biomarker

Research abstract
Research focus on antibodies in health, disease and in technology. We exploit recombinant antibody technology, combinatorial antibody libraries, NGS, immunoinformatics, and a diversity of immunochemical techniques to study immune responses and antibodies
.

Interested to collaborate in
antibody development, therapeutic antibody, phage display, bacterial display, yeast display, mammalian display

Bio
Professor of Immunotechnology. Platform Scientific Director at SciLifeLab DDD. Expert in antibody technology and antibody development

Vladislav Orekhov

University
University of Gothenburg

Name of department
Department of Chemistry and
Molecular Biology

Email address
vladislav.orekhov@nmr.gu.se

Research keywords
Structural Biology, NMR, signal processing, AI, AlphaFold

Research abstract

We will develop a generative AI model to revolutionize biomolecular NMR in structural biology. The research leverages the group expertise in AI, NMR methodology, and advanced signal processing

.

Interested to collaborate in
AI methods, AlphaFold methodology, MD simulations of proteins

Bio
M.S. (1989) and Ph.D. (1993) degrees in biophysics from Moscow Institute of Physics and Technology, Moscow. 2007-2008, a visiting Associate Professor in the Dept Biol Chem & Mol Pharmacol, Harvard Medical School, Boston. Since 1998, a faculty member at the University of Gothenburg, where he is currently Professor in the Department of Chemistry and Molecular Biology.

Matej Oresic

University
Örebro University

Name of department
School of Medical Sciences

Email address
matej.oresic@oru.se

Research keywords
Metabolomics, lipidomics, systems medicine, exposome, biomarkers

Research abstract

The aim of the project is to identify early exposomic and multi-omics signatures associated with immune dysregulation and disease risk, with focus on neurocognitive and neurodegenerative diseases.

.

Interested to collaborate in
metabolomics and systems medicine

Bio
Matej Oresic is professor of medicine (systems medicine) at Örebro University and professor of biochemistry (metabolomics) at University of Turku. His research includes exposomics and metabolomics applications in biomedical research.

Dmitri Ossipov

University
University of Gothenburg

Name of department
Core Facilities, OligoNova Hub

Email address
dmitri.ossipov@gu.se

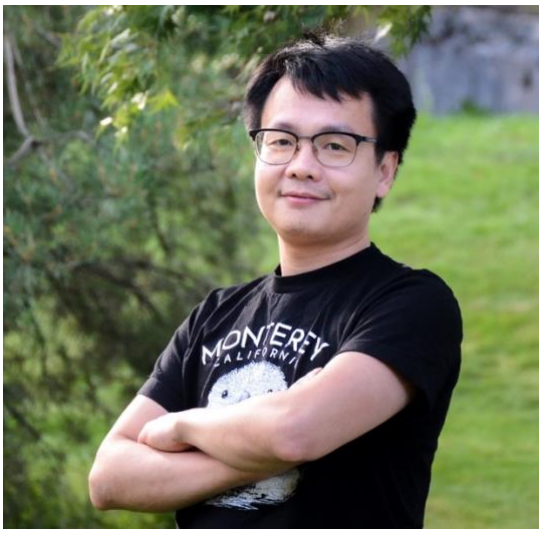
Research keywords
Oligonucleotide synthesis, drug delivery, drug targeting, polymer chemistry, biomaterials

Research abstract
Conjugation of synthetic oligonucleotides (ONs) to cell/tissue/organ specific ligands as well as chemical modification of ONs aiding in cellular uptake and intracellular trafficking to their mRNA targets
.

Interested to collaborate in
In vitro transcription, cell imaging, ADME

Bio
Dmitri Ossipov received his PhD degree from Uppsala University (2002), he has authored over 60 scientific papers and four patents. His expertise is chemical modifications of synthetic oligonucleotides, biomaterials, and drug delivery

Wei Ouyang



University
KTH

Name of department
Department of Applied Physics

Email address
wei.ouyang@scilifelab.se

Research keywords
Whole Cell Modeling, Smart Microscopy, AI Agents, Generative AI, Multi-omics Data Integration

Research abstract

The AICell Lab pioneers AI-driven human cell modeling by integrating real-time microscopy, automated data generation, and multi-omics data analysis to train AI models for in-silico experimentation, accelerating drug discovery, and advancing cellular-level understanding.

Interested to collaborate in
AI-driven bioimage analysis, multi-omics integration, cellular modeling, and automated microscopy systems. Expertise in deep-learning, computational biology, and smart microscopy are highly valued.

Bio
I lead the AICell Lab focused on AI-powered cell modeling, multi-omics integration, and generative AI for enabling automated scientific discovery in life sciences.

Stefano Papazian

University
Stockholm University

Name of department
Department of Environmental Science

Email address
stefano.papazian@scilifelab.se

Research keywords
Exposome, environmental pollution, high-resolution mass spectrometry, human and ecosystem health

Research abstract
Interested in collaborating with researchers to advance high-resolution chemical exposomics, developing workflows to investigate complex organic mixtures, environmental exposures, and their effects on human health and ecological systems.

Interested to collaborate in
Exposomics, metabolomics, environmental science, anthropogenic pollution, human health, biodiversity

Bio
Stefano Papazian is Head of the National Facility for Exposomics at SciLifeLab (Campus Solna) which specializes in high-resolution mass spectrometry exposomics with focus on environmental exposures, human health, and chemical ecology.

Gunnar Pejler

University
Uppsala University

Name of department
Department of Medical
Biochemistry and Microbiology (IMBIM)

Email address
gunnar.pejler@imbim.uu.se

Research keywords
mast cells, proteases, proteoglycans, inflammation, cancer

Research abstract
We are interested in the role of mast cells in health in disease. We are particularly interested in the biological function of mast cell granule compounds, such as tryptase, chymase and serglycin. We are are developing novel strategies to target mast cells in disease.

.

Interested to collaborate in
We are interested in collaborations with investigators within the fields of immunology, cancer immunology, asthma research and omics approaches.

Bio
I am professor of experimental immunology at Uppsala University. I have been working for more than 30 years within the fild of mast cell biology, and have published over 200 articles on this and related topics. The group presently consists of around 10 co-workers, including post docs, lab engineers, PhD students and master students.

Vicent Pelechano

University
Karolinska Institutet

Name of department
Department of Microbiology,
Tumor and Cell Biology (MTC)

Email address
vicent.pelechano@scilifelab.se

Research keywords
RNA Biology, Genomics, ribosome dynamics

Research abstract

We create genomic tools and diagnostic methods that focus on RNA biology in humans, yeast, and bacteria. Our studies include epigenetics, transcription, and posttranscriptional regulation.

.

Interested to collaborate in
Genomics, AI, synthetic biology, AMR, evolution.

Bio
I have a background in molecular biology and genomics, with experience in both experimental and computational biology. I hold a PhD from Spain and have completed postdoctoral training at EMBL.

Mia Phillipson

University
Uppsala University

Name of department
Department of Medical Cell Biology

Email address
mia.phillipson@mcb.uu.se

Research keywords
Macrophages, drug discovery, endometrium, bacterial vectors, regeneration

Research abstract

The outermost goal of my lab is to uncover immune cell contributions important in maintaining homeostasis, and to utilize these functions when developing the next-generation immunotherapies targeting cardiovascular disease, cancer and endometriosis
.

Interested to collaborate in
microbiology, cell biology, machine learning, single-cell sequencing, bioinformatics, intravital imaging

Bio
I head the immunophysiology laboratory of 14 members, am the co-director of SciLifeLab and co-founded Ilya Pharma which develops immunotherapies accelerating healing of wound in skin and mucosa currently in clinical phase 2.

Iskra Pollak Dorocic

University
Stockholm University

Name of department
Department of Biochemistry and Biophysics

Email address
iskra.pollak@scilifelab.se

Research keywords
Neuroscience, circuits, transcriptomics, in vivo neural dynamics, behavior

Research abstract

The project aims to bridge genetic and molecular brain modalities with functional and behavioral analysis to uncover how dysfunction of complex neural circuits plays a role in neuropsychiatric disorders.

Interested to collaborate in
transcriptomics, connectomics, whole-brain imaging, in vivo neural recordings and manipulations, behavioral assays.

Bio
The Pollak Dorocic lab studies the molecular diversity of neuromodulatory neurons and circuits with the aim to decipher their contribution to both healthy brain function and disease

Sean Rudd

University
Karolinska Institutet

Name of department
Department of Oncology-Pathology

Email address
sean.rudd@scilifelab.se

Research keywords
Cancer therapy; DNA metabolism; Nucleotide metabolism; Drug resistance; Chemical biology

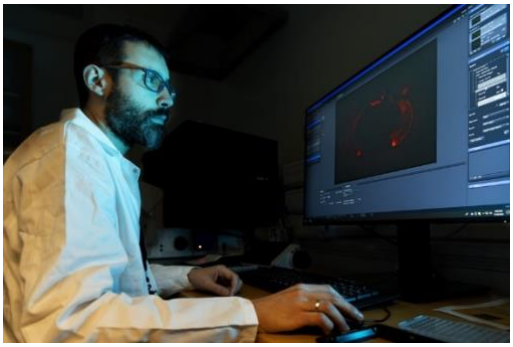
Research abstract

We are a curiosity-driven research group interested in nucleotide metabolism & molecular pharmacology and we apply our interests to better understand how current therapies work to inform optimal mechanism-based use

Interested to collaborate in
Cancer biology, Cancer therapy, Chemical biology

Bio
Sean trained in biochemistry and has spent his career investigating the molecular mechanisms of genome stability and nucleotide metabolism in cancer cells, and how this information can be exploited therapeutically.

Mario Ruiz



University
University of Gothenburg

Name of department
OligoNova Drug discovery and Development
Platform (DDD) - SciLifeLab / University of Gothenburg

Email address
mario.ruiz@gu.se

Research keywords
Therapeutic Oligonucleotides; cell assays, High-Throughput-Screening;

Research abstract
State-of-the-art research for oligonucleotide-based drug discovery: From bioinformatics to cell-based-assays and supporting in-vivo studies. From high-throughput screens and “omics” to deep phenotyping. Always open to innovations & new technologies.

Interested to collaborate in
Drug discovery/development, assay and technology development, cell biology, genomics, microscopy, oligonucleotides, lipids, metabolism, neuroscience.

Bio
+15 years of broad scientific experience. Since 2022, leading a fantastic interdisciplinary team at OligoNova Biology (SciLifeLab/University-of-Gothenburg) to deliver pharma quality standards in the academia.

Linda Sandblad

University
Umeå University

Name of department
Department of Chemistry

Email address
linda.sandblad@umu.se

Research keywords
Electron microscopy, bacteria, cell biology, Cryo-EM, cytoskeleton, cellular tomography, protein structure

Research abstract
Cryo electron microscopy and electron tomography provide possibilities to visualize the architecture and molecular machines driving bacterial growth and development. We study in vitro assembly of cytoskeleton proteins, cellular organisation and structure of the polarisome and divisome protein complexs.

Interested to collaborate in
Electron microscopy, bacteria, cell biology, cytoskeleton, protein structure

Bio
I work with cryo-EM and electron microscopy, started during my PhD on cytoskeleton protein complex assembly at EMBL Heidelberg, and is today director of Umeå Centre for Electron Microscopy.

Kristoffer Sahlin

University
Stockholm University

Name of department
Department of Mathematics

Email address
kristoffer.sahlin@scilifelab.se

Research keywords
Bioinformatics, Metagenomics, transcriptomics, sequencing data, algorithms

Research abstract
We develop algorithms and statistical models for analyzing large biological datasets, particularly, high-throughput genomic and transcriptomic long and short read sequencing data.

.

Interested to collaborate in
Bioinformatic researchers that work with data driven method development.

Bio
I am an Assistant Professor at Stockholm University (the Department of Mathematics) and SciLifeLab Fellow at the Science for Life Laboratory. I obtained my PhD in Computer science from KTH Royal institute of Technology in 2015.

Christos Samakovlis

University
Stockholm University

Name of department
Department of Molecular Biosciences,
The Wenner-Gren Institute

Email address
christos.samakovlis@scilifelab.se

Research keywords
Lung development and regeneration multi-omics

Research abstract
We develop and use high-resolution, single cell analysis technologies to understand the cellular and molecular programs of lung development and to discover how these programs become misdirected in disease.

Interested to collaborate in
Gene regulatory networks, multi-omics

Bio
Ph.D, 1991, Stockholm University, Postdoctoral researcher 1991-1994, Stanford University, Independent PI since 1995, SciLifeLab scientific director SU since 2021, Elected member KVA.

Patrick Sandoz

University
Uppsala University

Name of department
Department of Materials Science and Engineering

Email address
patrick.sandoz@scilifelab.se

Research keywords
Microphysiological Systems, Cancer Biophysics, Biomaterials Engineering, Immune Responses

Research abstract
My group will launch in January 2025, focusing on developing miniaturized in vivo-mimetic technology to study the spatial and temporal biophysical properties of the microtumor environment.
.

Interested to collaborate in
Spatial-omics, Artificial intelligence, Computational Modelling, Biomaterials, Microfabrication, Advanced Microscopy, Immuno-oncology

Bio
I am excited to be part of the SciLifeLab Fellows program. My previous background: MSc @UCLA (US) in microfluidics & lab-on-a-chip / PhD @EPFL (CH) in cellular biology / Postdoc @KTH (SE) developing microtumor models in immunology research.

Jochen Schwenk

University
KTH

Name of department
Department of Protein Science

Email address
jochen.schwenk@scilifelab.se

Research keywords
proteomics, liquid biopsy, assay development, multi-omics, precision medicine

Research abstract

My research aims to utilizes innovative proteomic approaches to understand the involvement of circulating biomarkers in human health and disease.
.

Interested to collaborate in
Protein interactions, autoimmunity, GPCRs, drug development, proteomics

Bio
Jochen, a KTH professor and biochemist, leads research in translational proteomics at SciLifeLab. He is part of the Human Protein Atlas (HPA), a Scientific Director of SciLifeLab's Proteomics Platform, and chair of HUPO's Plasma Proteome Project

Mikael Sellin

University
Uppsala University

Name of department
Department of Medical Biochemistry and Microbiology

Email address
mikael.sellin@imbim.uu.se

Research keywords
Organoid modelling, gut infection, inflammation, microbiology, epithelia.

Research abstract
Cell death in the gut epithelium is a fine-tuned process, subverted by invasive microbes and during tumorigenesis. We intend to resolve the mechanistic basis for such cell death subversion.

.

Interested to collaborate in
Genetic engineering of human cells, single-cell and bulk transcriptomics and proteomics, image analysis.

Bio
The Sellin laboratory combines human organoid modelling with microbial genetics and live-cell bioimaging to decipher microbe - host interactions in the gut and the implications for intestinal pathologies.

Erdinc Sezgin

University
Karolinska Institutet

Name of department
Department of Women's and Children's Health

Email address
erdinc.sezgin@ki.se

Research keywords
biophysics, immunology, membrane biology, lipid biology, synthetic biology

Research abstract
We develop and use advanced imaging and synthetic biology tools to reveal the molecular mechanisms governing the cellular physiology and disease processes.

Interested to collaborate in
drug screening, diseases

Bio
PhD, Dresden, Germany; EMBO, Marie Curie and Newton Postdoctoral Fellow, Oxford, UK; Group Leader, SciLifeLab, Karolinska Institutet, Stockholm

Tobias Sjöblom

University
Uppsala Universitet

Name of department
Department of Immunology, Genetics and Pathology

Email address
Tobias.sjoblom@igp.uu.se

Research keywords
Colorectal cancer, somatic mutation analysis, drug discovery

Research abstract

Our research departs from -omics analyses of large sets of samples from patients with colorectal cancers (CRCs) to identify targets for functional studies, diagnostic and prognostic biomarkers, and drug discovery.

Interested to collaborate in
Targeting LOH and alternatively spliced genes in CRCs (experimental). Functional studies of recently discovered CRC genes (computational and experimental). Spatial and single-cell analyses of a large CRC cohort, multi-omics data integration (computational).

Bio
Perfomed the first exome sequencing of any human disease (Science, 2006). Director for U-CAN (2013-). Professor in tumor genetics (2017-). Director for Biobank Sweden (2018-2023). Published currently largest WGS/TX multi-omics study of CRC (Nature, 2024). Co-founded two startups in the cancer precision medicine space.

Marie Skepö

University
Lund University

Name of department
Department of Chemistry,
Div. of Computational Chemistry

Email address
marie.skepo@compchem.lu.se

Research keywords
Intrinsically disordered and multi domain proteins, integrative structural biology, molecular dynamics simulations, BioSAXS, bimolecular interactions

Research abstract
Skepö's research combines computer simulations with experimental techniques like small-angle scattering to study intrinsically disordered regions and multi-domain proteins, focusing on their structure, interactions, and macroscopic properties.

Interested to collaborate in
Cryo-TEM/EM

Bio
Marie Skepö, Professor of Theoretical Chemistry at Lund University, researches biophysics and colloidal chemistry. She was LINXS vice director (2018–2023) and is the Chemistry Department's vice head.

Nataša Sladoje

University
Uppsala University

Name of department
Department of Information Technology

Email address
natasa.sladoje@it.uu.se

Research keywords
Image-analysis, Data-driven life science, Multimodal information fusion, Digital pathology, Spatial omics

Research abstract
We are developing innovative, powerful, yet interpretable data-driven methods for correlated structural and molecular tissue analysis in 3D, aiming to advance understanding of immune cell inter-relations within the cancer microenvironment.

Interested to collaborate in
Data-driven life science; Deep learning method development for understanding and improving immunotherapy against cancer; Precision medicine and diagnostics

Bio
Professor in Computerised Image Analysis, leading MIDA - Methods for image data analysis - research group at the Department of IT. Experience in development of data-driven methods for multimodal biomedical image analysis.

Charlotte Stadler

University
KTH

Name of department
Department of Protein Science

Email address
charlotte.stadler@scilifelab.se

Research keywords
Spatial omics, immunofluorescence, FISH, precision medicine, cancer

Research abstract
Technology development within image based spatial omics in cells and tissues including antibodies and probes, method integration with MALDI imaging, protein interactions. Applications within cancer to improve treatment selection for immunotherapy vs directed antibody therapies - focusing on solid tumours.

Interested to collaborate in
Spatial omics, bioinformatics for data integration, cancer, host-pathogen interactions, mass spectrometry, Olink or similar circulating protein

Bio
After doing my PhD within the Human protein Atlas Project I worked within research infrastructure to establish the Spatial Biology Platform at Scilifelab. Today I lead the Spatial Proteomics Team of 6 members, including 2 reserachers, 2 phD students and 2 reserach engineers.

Stefanos Stagkourakis

University
Karolinska Institutet

Name of department
Department of Neuroscience

Email address
stefanos.stagkourakis@scilifelab.se

Research keywords
distributed neural networks, neural encoding, instinctual behaviors, behavioral and neural modules, plasticity

Research abstract
Our lab focuses on understanding how biological neural networks drive behavior. We use cutting-edge technologies and systems-level approaches to connect traditionally isolated biological levels, ranging from ion channels to brainwide neuron population dynamics, and animal behavior.

Interested to collaborate in
The Stagkourakis lab has experimental and computational expertise, and we are now in wealth of "first of a kind" neural data sets aquired with custom neurotechnologies. We have the resources to pursue the analysis of these large data, but are interested in a possible collaboration with Jeanette Hellgren Kotaleski, an expert in modeling and simulations.

Bio
Dr. Stagkourakis completed his doctoral training on the neural basis of instincts at Karolinska Institute. During his postdoctoral tenure at Caltech, he developed advanced neurotechnologies and expertise in computational methods, which laid the foundation for the launch of his lab in the autumn of 2024.

Staffan Svärd

University
Uppsala University

Name of department
Department of Cell and Molecular Biology

Email address
staffan.svard@icm.uu.se

Research keywords
Parasite, diarrhea, genetic variation, meiosis

Research abstract

Giardia intestinalis is a significant cause of diarrheal disease worldwide in humans and other mammals. In this project we will study internal and external sexual processes that occur during Giardia encystation.

Interested to collaborate in
Infection biology, molecular parasitology

Bio
Dr. Staffan Svärd is the Deputy Vice-Rector of the Faculty of Natural Science and Technology, Uppsala University and Director of the Pandemic Preparedness program of SciLifeLab. His main research interest is the biology and pathogenesis of Giardia intestinalis, a major contributor to the enormous burden of diarrheal diseases with 200 million symptomatic human infections per year.

Fredrik Swartling

University
Uppsala University

Name of department
Department of Immunology, Genetics and Pathology

Email address
fredrik.swartling@igp.uu.se

Research keywords
Brain tumors, cancer relapse, gene therapies, in vivo models, organoids

Research abstract

We have collected paired samples (matched cells from primary operation and at relapse) from operated children affected by various malignant brain tumors. We aim to see if cells with particular expression of genes and distinct signalling pathways are enriched in recurrent tumor cells as compared to matched primary tumor cells. We will use advanced molecular analysis and single-cell sequencing to see if minor or major clones from the primary tumor are driving relapse and we finally hope to identify distinct molecular therapies that can specifically target relapsing cells.

Interested to collaborate in
Single-cell sequencing, iPS cell reprogramming, radiation treatment, blood-brain barrier, AAVs, anti-sense oligonucleotides

Bio
Dr. Staffan Svärd is the Deputy Vice-Rector of the Faculty of Natural Science and Technology, Uppsala University and Director of the Pandemic Preparedness program of SciLifeLab. His main research interest is the biology and pathogenesis of Giardia intestinalis, a major contributor to the enormous burden of diarrheal diseases with 200 million symptomatic human infections per year.

Per-Olof Syrén

University
KTH

Name of department
CBH, FPT

Email address
per-olof.syren@scilifelab.se

Research keywords
Protein design; Biocatalysis; Synthetic biology; Bioremediation

Research abstract
De novo protein design is used to develop designer enzymes with unprecedented structures harboring new-to-nature biochemistries to pave the way for biological breakdown plastics and man-made pollutants accumulating in nature.

Interested to collaborate in
Synthetic biology, protein design, biomolecular engineering

Bio
Following PhD at KTH and an Alexander von Humboldt postdoctoral fellowship in Germany, Dr. Syrén has built up an independent research program at KTH/SciLifeLab bridging biotechnology, protein engineering and chemistry.

Maria Tenje

University
Uppsala University

Name of department
Department of Materials Science and Engineering

Email address
maria.tenje@angstrom.uu.se

Research keywords
organs-on-chip, microfluidics, organoids, droplet microfluidics, microfabrication

Research abstract
We develop and apply innovative computational tools to infer and integrate complex cell features (e.g., cell lineage and micro-environment) to dissect intra-tumor cancer heterogeneity, especially phenotype switches.

Interested to collaborate in
droplet microfluidics, organs-in-chip, organoids, single-cell analysis

Bio
I hold expertise in microfabrication and microfluidics focused on life science and biomedical applications. I am Wallenberg Academy Fellow and I currently lead an ERC Consolidator grant focused on organoid-on-chip.

Ilaria Testa

University
KTH

Name of department
Department of Applied Physics

Email address
ilaria.testa@scilifelab.se

Research keywords
fluorescence, microscopy, in situ imaging, single molecule, molecular neuroscience

Research abstract

We are fascinated by the dynamic nature of protein interactions. Based on novel fluorescence probes, optics and images' computation we push forward the methodological toolbox to capture molecules in action.

Interested to collaborate in
cryo electron microscopy, labeling strategies, protein engineering

Bio
I started my lab 2015 at KTH-SciLifeLab after a top-notch training in super resolution microscopy, fluorescence microscopy and biophysics. Since then we developed new super resolution approaches compatible with live cell imaging across scales.

Qiaoli Wang

University
Lund University

Name of department
Department of Translational Medicine

Email address
qiaoli_wang@dfci.harvard.edu

Research keywords
early detection, pancreatic cancer, risk prediction, liquid biopsy, machine learning

Research abstract
Research focused on advancing early detection and personalized risk assessment in pancreatic cancer, integrating genetics, multi-omics, and imaging within large-scale population-based and clinical studies to transform diagnostic and preventive strategies.

Interested to collaborate in
bioinformatics, computation sciences, biostatistics

Bio
As a cancer epidemiologist and oncologist, Dr. Qiaoli Wang enhances precision prevention and diagnostic strategies by driving interdisciplinary innovation in pancreatic cancer research at Lund University.

Björn Wallner

University
Linköping University

Name of department
Bioinformatics Division, Department of Physics, Chemistry, and Biology

Email address
bjorn.wallner@liu.se

Research keywords
bioinformatics, machine learning, protein interactions, protein dynamics, AlphaFold

Research abstract
We propose an AI method to predict dynamic structural ensembles, improving macromolecule representation. Building on our AFsample model from CASP15, we optimize AlphaFold sampling, retrain networks for dynamic structures, and generate probability distributions from experimental data, enhancing structure prediction and applications.

Interested to collaborate in
Protein structure prediction and dynamics using AI

Bio
Professor at LiU with a track-record of developing top-ranked protein modeling methods, winning the CASP quality assessment category (CASP10-CASP13). He pioneered rawMSA, essential to AlphaFold, utilizing evolutionary data for deep learning and laying the groundwork for its success. In CASP15, he improved on AlphaFold's baseline and was ranked no 1, introducing the massive sampling technique. He has collaborated extensively on modeling protein systems using diverse experimental data and created DockQ, now a standard for assessing multimeric model quality.

Oommen Varghese

University
Uppsala University

Name of department
Department of Chemistry-Ångström Laboratory

Email address
oommen.varghese@kemi.uu.se

Research keywords
Nucleic acids therapeutics, nanoparticles, drug delivery, anticancer therapy, regenerative medicine,

Research abstract
My group is actively involved in designing next generation of nucleic acid drugs for gene silencing and developing bio-nanomaterials for delivering small-molecules, nucleic acid drugs and therapeutic proteins and 3D bioprinting. The group is focused on translational research for developing drugs for anticancer therapeutics and biomaterials for bone and cartilage regeneration.

Interested to collaborate in
Precision medicine & diagnostics; Therapeutic oligonucleotides; Nanomaterials; Drug design and delivery; AstraZeneca AB

Bio
Our group is one of the leading interdisciplinary research team within Uppsala University that aims to bring technologies from bench to bedside. Key interest is in developing technologies for treating brain cancer and for regenerating bone and cartilage tissues. We have the expertise and infraststructure for developing hydrogels, nanoparticles and therapeutics oligonucleotides. We also perform 3D bioprinting to develop in vitro models as well as develop 3D printed bone-like scaffolds that is implanted in bone defect models that showed promising results in preclinical rat models.

Gunilla Westergren Thorsson

University
Lund University

Name of department
Department of Experimental Medical Science

Email address
Gunilla.westergren-thorsson@med.lu.se

Research keywords
Regeneration, inflammation, clinical validation, bioengenering, lung

Research abstract
I investigate lung connective tissue remodeling in chronic lung diseases (COPD, fibrosis, asthma), focusing on ECM-cell interactions, inflammation, and diagnostic and therapeutic strategies using glycosaminoglycans, human 3D model systems, and bioengineering.

Interested to collaborate in
spatial omics, bioimaging, mass spectrometry, AI, machine learning

Bio
Director, Lund University Bioimaging Center

Martin Viklund

University
KTH

Name of department
Department of Applied Physics

Email address
martin.viklund@scilifelab.se

Research keywords
3D cell cultures; Tissue engineering; Lab on a chip; Acoustofluidics; Cancer Therapy

Research abstract

We use microscale acoustofluidics for 3D cell culture, micro-tumor modelling, and live cell microscopy in 3D, for research within anti-cancer drug screening and immunotherapy.

Interested to collaborate in
Researchers interested in using experimental facilities with advanced imaging/microscopy equipment combined with microscale acoustofluidic technology for cell, particle and fluid manipulation.

Bio
Martin Viklund is a Professor in Applied Physics with expertise within experimental acoustofluidics, acoustophoresis, ultrasound and microfluidics, with a research focus towards cancer therapy studies.

Cecilia Williams

University
KTH

Name of department
Department of Protein science

Email address
cecilia.williams@scilifelab.se

Research keywords
Colorectal cancer, nuclear receptors, transcriptomics-microbiomics, spatial proteomics, tumor microenvironment

Research abstract

Understanding the impact by sex and hormones on colorectal cancer development and treatment by connecting molecular sex differences and protective effects by estrogen via the ESR2 receptor.

Interested to collaborate in
Techniques: system biology, machine learning, bioinformatics, spatial omics. FIelds: immune signalling and immune checkpoint inhibitors

Bio
Cecilia Williams is a Professor and Head of Department at KTH, and Principal scientist at Karolinska Institutet, SciLifeLab Campus Solna. Scientific articles: 96, Graduate students main supervisor: 13, Postdocs: 6.

Jacob Vogel

University
Lund University

Name of department
Department of Clinical Science
Malmö

Email address
jacob.vogel@med.lu.se

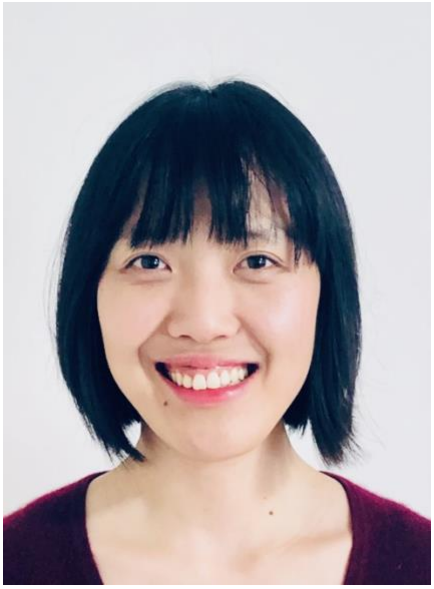
Research keywords
AI, neuroimaging, multi-omics, neurodegenerative disease, neuroscience

Research abstract
My lab applies AI and statistical learning approaches to diverse clinical imaging and biomarker data in order to model the onset and progression of neurodegenerative disease.

Interested to collaborate in
AI for medical images, proteomics, fMRI, disease progression modeling, subtyping

Bio
My expertise is at the interface of data science and clinical science. I use neurodegenerative disease as a model to better understand the brain function and disfunction.

Xiaonan Zhang



University
Uppsala University

Name of department
Department of Immunology, Genetics and Pathology

Email address
xiaonan.zhang@igp.uu.se

Research keywords
Mitochondria, dormant cancer cells, novel drug discovery, fatty acid metabolism and Epithelial–mesenchymal transition

Research abstract

Quiescent cancer cells drive relapse in solid tumors by resisting therapy. Using reporter models, we identified survival genes linked to metabolism and small-molecule targets, offering therapeutic strategies to overcome treatment resistance.

Interested to collaborate in
Drug discovery or bioinformatics

Bio
Xiaonan Zhang earned a Ph.D. at Karolinska Institutet, completed postdoctoral training there and at the University of Minnesota, and since 2020 has led independent research projects at Uppsala University.