SciLifeLab

The national board of Science for Life Laboratory

Minutes from board meeting no 70, March 21, 2024 (per capsulam)

Present members

Ylva Engström (SU)(chair), Martin Bergö (KI), Henrik Cederquist (SU), Mats Larhed (UU), Jonas Larsson (LU), Mikael Lindström (KTH), Carina Mallard (GU), Katrine Riklund (UmU), Christoph Varenhorst (AstraZeneca)

1.   DDLS industrial PhD project applications
VC-2023-0053

At its meeting on January 22, 2024, the SciLifeLab board decided to have a per capsulam decision on the allocation of funding for the DDLS PhD student projects.

The national DDLS Research School is scheduled to start in 2024. Over a 10-year period, more than 250 PhD students and 200 post-docs will be enrolled in the DDLS research school and its training activities. During 2024, 20 academic PhD students and 7 industrial PhD students will be admitted.

On November 8, 2023, the board decided to launch two calls for PIs to apply for PhD projects: one for academia and one for industry. The calls opened on November 24, 2023, and closed on January 10, 2024.

226 applications were received for academic PhD projects and 17 for the industrial ones. The applications have been reviewed by an international committee.

This final list of scored and ranked PhD projects from the international committee was then discussed and agreed upon at a meeting between Ylva Engström, chair of SciLifeLab board, Siv Andersson, Knut and Alice Wallenberg representative in the DDLS Steering Group, and Olli Kallioniemi, DDLS director. In addition, Peetra Magnusson and Olof Emanuelsson, the newly nominated DDLS Research School Directors were present. Throughout the process, possible conflicts regarding evaluators with either the main or co-supervisors were disclosed and appropriately considered.

Following the board approval of these projects, the supervisors will recruit a PhD student for these positions.

Documents and suggested decision have been sent out to and approved by the board members via e-mail.

Decision:
The SciLifeLab board approved the suggested PhD projects for funding according to Appendix 1.

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Anna Höglund Rehn, secretary

Minutes approved by:

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Ylva Engström

Call for Academic PhD Projects in Data-driven Life Science

No of projects 20

Cell and molecular biology

No of projects 6

Proposal title	Main PI	Affiliation	Co-PI(s)	Co-PI Affiliation
Multi-Modal Modeling of Spatial Biology Data	Joakim Lundeberg	KTH	Jens Lagergren	KTH
Integrating single cell clonal, spatial and dissociated cell transcriptomics data for 3D neurodevelopmental reconstruction: a machine learning approach	Igor Adameyko	KI	Sten Linnarsson and Carolina Wählby	KI and UU
Novel, integrative AI methods for single-particle analysis of cryo electron microscopy data.	Sebastian Westenhoff	UU	Fredrik Lindsten	LIU
SpliceCode: the regulatory grammar controlling cell-type specific alternative splicing	Rickard Sandberg	KI	Avlant Nilsson	KI
AfterFold: Conformational ensembles from experimental data using deep learning	Björn Wallner	LIU	Nicholas Pearce	LIU
AI-enhanced virtual screens of chemical libraries to accelerate drug discovery	Jens Carlsson	UU		

Evolution and biodiversity

No of projects 4

Proposal title	Main PI	PI Affiliation	Co-PI(s)	Co-PI Affiliation
Data driven analyses of the nitrogen cycling microbiome for predictions and novel insights on mechanisms of nitrous oxide emissions from terrestrial ecosystems (TerraData)	Sara Hallin	SLU	Christopher Jones	SLU
Can microbes distinguish friend from foe?	Eric Libby	UMU	Laura Carroll	UMU
New probabilistic and AI methods for inferring recent and ongoing plant extinctions	Aelys M. Humphreys	SU	Daniele Silvestro, Diana O. Fisher, Alexandre Antonelli, Jon Norberg	University of Fribourg; University of Queensland; Royal Botanic Gardens, Kew and Gothenburg University; Stockholm University
Developing biological weather forecasts for the digital twin of the ocean	Matthias Obst	GU	Tobias Andermann	UU

Epidemiology and Biology of infection
No of projects 3

Proposal title	Main PI	Affiliation	Co-PI(s)	Co-PI Affiliation
Finding the prophages of Escherichia coli genomes and annotating the function of their genes using high-throughput AlphaFold	Gemma Atkinson	LU	Andrea Fossati	KI
Predicting the future spread of antibiotic resistance genes	Erik Kristiansson	CTH	Joakim Larsson and Johan Bengtsson-Palme	GU and CTH
Developing methods for inferring transmission chains and disease outbreak surveillance in a hospital setting	Philip Gerlee	CTH	Jon Edman Wallér	GU

Precision Medicine and Diagnostics
No of projects 7

Proposal title	Main PI	Affiliation	Co-PI(s)	Co-PI Affiliation
Prediction of Single Cell Drug Response for Precision Cancer Medicine using Foundational Deep Learning Models	Kasper Karlsson	KI	Jens Lagergren and Avlant Nilsson	KTH and KI
From computational analyses of big epigenetics data to novel biomarkers for precision medicine in type 2 diabetes	Charlotte Ling	LU	Karin Engström	LU
Towards precision medicine for ischemic stroke: Integrating clinical, molecular omic, and neuroimaging data using deep and machine learning-based approaches	Christina Jern	GU	Tara Stanne, Björn Andersson, and Markus Schirmer	GU, GU, and USA (Harvard Medical School)
A precision study of molecular health and aging in Swedish population cohorts	Sara Hägg	KI	Jochen Schwenk and Patrik Magnusson	KTH and KI
Network-based cancer precision medicine using proteogenomics	Janne Lehtio	KI	Wojciech Chacholski, Avlant Nilsson, and Ioannis Siavelis	KTH, KI, and KI
Improving prostate cancer diagnostics and prognostication using artificial intelligence	Martin Eklund	KI	Kimmo Kartasalo and Lars Egevad	KI and KI
Deciphering Multiple Sclerosis: A Data-Intensive Approach to Unraveling Clinical and Molecular Complexities through Graph and Language Modeling	Ingrid Kockum	KI	Narsis Kiani and Ali Manouchehrinia	KI (and Cambridge Uni) and KI

Call for Industrial PhD Projects in Data-driven Life Science

No of projects 7

Proposal title	Main PI	Affiliation	Industry Co-PI	Company	Other Co-PI(s)	Other Co-PI(s) Affiliation
Tailored Protein Panel Composition in Biomarker Discovery Using Concrete Autoencoders	Lukas Käll	KTH	Lina Hultin-Rosenberg	Olink Proteomics AB	Fredrik Edfors, Hossein Azizpour, and Linn Fagerberg	KTH, KTH, and Olink Proteomics AB
Development and validation of AI-based histopathology phenotyping solutions to scale and accelerate breast cancer research	Mattias Rantalainen	KI	Stephanie Robertson and Philippe Weitz	Stratipath AB	Bojing Liu	KI
Automated generation of renal pathology endpoints and reports	Kevin Smith	KTH	Magnus Söderberg	AZ	Annika Östman Wernerson	KI
Scaling up single molecule variant-detection for aquatic pathogen surveillance	Stefan Bertilsson	SLU	Liza Löf	Readily Diagnostics		
Drugging the undruggable: bridging AI and MD to discover small molecule binders for difficult-to-drug targets	Erik Lindahl	SU	Ola Engkvist	AZ	Rocio Mercado and Werngard Czechtizky	CTH and AZ
Improving Treatment Response Evaluation in Whole-Body CT-Imaging by Automated Quantitative Assessment of Tumor Burden and Lesion-Wise Analysis in Metastatic Cancer	Joel Kullberg	UU	Simon Ekström	Antaros Medical AB	Håkan Ahlström, Johan Öfverstedt, and Elin Lundström	UU, UU, and UU
Towards precision medicine in obesity with high cardiometabolic risks	Rashmi Prasad	LU	Sara Hansson	AZ		

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