



The Novo Nordisk Postdoctoral Fellowship Programme at KI was initiated in 2015 and has completed six annual rounds of recruitments and we have to date appointed 24 postdoctoral fellows. The Fellowship Programme aims to support the development of a new generation of exceptional young diabetes and metabolism researchers, to become future leaders in the field, while further developing scientific excellence within these areas ultimately improving the lives of patients.

### We welcome the 2019 intake

**David Rizo Roca** completed his PhD at the University of Barcelona, Spain. David started his Novo Nordisk fellowship in October 2019 in a project led by Juleen Zierath and Anna Krook at the Department of Molecular Medicine and Surgery. The project will aim to unravel the complex regulation of the communication between liver, skeletal muscle and adipose tissue and to understand how these processes are perturbed in Type 2 diabetes. His project is entitled: “Metabolic crosstalk and the regulation of insulin sensitivity in Type 2 diabetes.”



**Katharina Herzog** completed her PhD at the University of Amsterdam, Netherlands. Katharina started her Novo Nordisk fellowship in October 2019 in a project led by Sofia Carlsson at the Institute of Environmental Medicine. The project will focus on a form of autoimmune diabetes called Latent Autoimmune Diabetes in Adults (LADA). By using data from large population-based studies Katharina will investigate factors associated with the risk of developing the disease. Her project is entitled: “LADA-latent autoimmune diabetes in adults, risk factors and prognosis.”



**Osman Ahmed** completed his PhD at the Karolinska Institutet. Osman started his Novo Nordisk fellowship in November 2019 in a project led by Peder Olofsson and Stephen Malin at the Department of Medicine, Solna. The project will focus on investigating the lipid-loading effects on individual cells, how this can lead to pro- and anti-inflammatory responses in the liver and how the cell types of the liver respond to the onset of NAFLD. His project is entitled: “Neural control of inflammation and metabolism in liver disease.”



**Alison Ludzki** completed her PhD at the University of Michigan, USA. Alison started her Novo Nordisk fellowship in January 2020 in a project led by Mikael Rydén and Peter Arner at the Department of Medicine, Huddinge. The project will explore the role of adipose tissue biology in the development of cardiovascular disease and investigate the molecular regulation of fat cell structure and function in the context of obesity and insulin resistance. Her project is entitled: “Identifying the role of human white adipose tissue for the development of cardiovascular complications in type 2 diabetes.”



## We also welcome the first fellow from the 2020 intake

**Ilke Sen** completed her PhD at the European Research Institute of the Biology of Ageing, University of Groningen, Netherlands. Ilke started her Novo Nordisk Fellowship in September 2020 in a project led by Anna Krook and Juleen Zierath at the Department of Physiology and Pharmacology. The project will aim to identify and validate key lncRNAs that may play a crucial role in controlling skeletal muscle insulin sensitivity and to understand their physiological role in Type 2 diabetes. Her project is entitled: “lncRNA regulating skeletal muscle metabolism.”



**We have recently completed the 2020 round of recruitment** and are delighted to have offered four positions for the following projects to start in Autumn 2020:

Project Title	Supervisors
lncRNAs regulating skeletal muscle metabolism.	Anna Krook and Juleen Zierath
The red blood cell as a novel mediator of vascular endothelial injury in type 2 diabetes.	John Pernow, Per Eriksson and Zhichao Zhou
Identifying mechanisms linking adipocyte-derived metabolites to inflammation and metabolic disorders.	Mikael Rydén and Niklas Mejhert
Effects of exercise on metabolism and healthy aging of adipose tissue in women.	Juleen Zierath

## Publications

Since the Fellowship Programme began, fellows have published 5 first-author research articles, 17 co-authored research articles and 3 reviews relating to their fellowship work.

### Recent selected publications:

- Chiara Moretti, ..., **Isabel Cordero-Herrera** et al (2019) [The obligatory role of host microbiota in bioactivation of dietary nitrate.](#) *Free Radic Biol Med*
- **Isabel Cordero-Herrera** et al (2020) [Head-to-head comparison of inorganic nitrate and metformin in a mouse model of cardiometabolic disease.](#) *Nitric Oxide*
- Ahmed M. Abdelmoez, ..., **Lucile Dollet** et al (2019) [Comparative profiling of skeletal muscle models reveals heterogeneity of transcriptome and metabolism.](#) *Am J Physiol Cell Physiol*
- Paul Petrus, Simon Lecoutre, **Lucile Dollet** et al (2020) [Glutamine links obesity to inflammation in human white adipose tissue.](#) *Cell Metab*
- Nicolas J. Pillon, Brendan M. Gabriel, **Lucile Dollet** et al (2020) [Transcriptomic profiling of skeletal muscle adaptations to exercise and inactivity.](#) *Nat Commun*
- **Thomas Ebert** et al (2020) [Inflammation and premature ageing in chronic kidney disease.](#) Review, *Toxins*
- Anke Tönjes, ..., **Thomas Ebert** (2020) [Pro-neurotensin depends on renal function and is related to all-cause mortality in chronic kidney disease.](#) *Eur J Endocrinol*
- **Alastair Kerr** et al (2020) [Long-term changes in adipose tissue gene expression following bariatric surgery.](#) *J Intern Med*
- Agné Kulyté, **Kelvin Kwok** et al (2019) [MicroRNA-27a/b-3p and PPARG regulate SCAMP3 through a feed-forward loop during adipogenesis.](#) *Sci Rep*
- Shuai Tan, ..., **Noah Moruzzi** et al (2020) [Platelet factor 4 enhances CD4<sup>+</sup> T effector memory cell responses via Akt-PGC1 \$\alpha\$ -TFAM signaling-mediated mitochondrial biogenesis.](#) *J Thromb Haemost*
- Stephen G. Malin, **Vladimir Shavva** et al (2020) [Functions of acetylcholine-producing lymphocytes in immunobiology.](#) *Curr Opin Neurobiol*

## Conferences and Workshops

### Recent oral presentations at national and international conferences include:

- **Sanna Hellberg** - *“The consequences of acute dyslipidemia”*, Atheroma Club, Ystad, Sweden (2019)
- **Noah Moruzzi** - *“Insulin receptor isoform expression is altered in mouse tissues of genetic and dietary models of obesity and type 2 diabetes mellitus”*, EASD, Barcelona, Spain (2019).

### Recent poster presentations at national and international conferences include:

- **Thomas Ebert** – *“High estimated phenotypic age associates with worse clinical outcome in chronic kidney disease patients.”*, 57<sup>th</sup> ERA-EDTA Congress (2020);
- **Sanna Hellberg** - *“The consequences of acute dyslipidemia”*, Karolinska CVP-CVR Retreat, Saltsjö-Boo, Sweden (2019)
- **David Rizo Roca** – *“Metabolic Crosstalk and the Regulation of Insulin Sensitivity in Type 2 Diabetes”*, Diabetes Day, Stockholm, Sweden (2019)
- **Lars Paeger** – *“Ageing promotes an excitatory switch in the response of AgRP neurons to leptin underlying age- related metabolic dysfunction”*, SRP Diabetes EndoMet-MetEndo Retreat, Saltsjöbaden, Sweden (2019)



Fellows attending the KI-Novo Nordisk Workshop November 2019. From left to right; Alastair Kerr, Vladimir Shavva, Noah Moruzzi, Sanna Hellberg, Thomas Ebert, Katharina Herzog, David Rizo Roca, Osman Ahmed and Daniel Svensson.

## Grants and Awards

**Sanna Hellberg** has received a 100 000 SEK research grant from Loo and Hans Osterman Foundation for Medical Research (2020)

**Thomas Ebert** has been selected for the EFSD Future Leaders Mentorship Programme for Clinical Diabetologists 2020 by the European Foundation for the Study of Diabetes.

## Collaborations and visits to Novo Nordisk

**Noah Moruzzi** visited Novo Nordisk in November 2019 where he was introduced to the structure and organization of the company. Noah also gave a presentation of his fellowship project to a group of scientists during his visit.

**Alastair Kerr** spent two weeks in January 2020 working in the Obesity Biology Department at Novo Nordisk in Måløv together with his mentor Johan Paulsson.

## Alumni Fellows and Next Steps

We have recently said farewell to the following fellows:

**Alastair Kerr** (2016 intake) ended his fellowship in November 2019. Alastair has recently submitted the manuscript of his main project conducted during his Novo Nordisk Postdoctoral Fellowship. Alastair will stay at Karolinska Institutet with the aim to become an independent researcher.

**Lars Paeger** (2018 intake) ended his fellowship in August 2020. Lars has been offered and accepted a position as leader of the in vivo electrophysiology section at the German Centre for Neurodegenerative Diseases, Ludwigs-Maximilian University in Munich.

## Upcoming conferences

**Thomas Ebert** – will be attending the *EASD virtual meeting*, September 21-25, 2020; *DGfN annual meeting* (German Nephrology Meeting) & *DDG annual meeting* (German Diabetes Association)

**Sanna Hellberg** – will be attending the *EAS virtual congress*, October 4-7, 2020

**Katharina Herzog** – will be attending the *EASD virtual meeting*, September 21-25, 2020

**David Rizo Roca** – will be attending the *SRP Diabetes-Endocrinology and Metabolism Network retreat*, April 15-16, 2021

**Vladimir Shavva** – will be attending the *Fourth Bioelectronic Medicine Summit*, virtual meeting, September 23-24, 2020

## Current Fellows

	Current Fellows	Supervisors	Mentor
2017 intake	<b>Sanna Hellberg</b> - The molecular and cellular consequences of acute hypercholesterolemia.	Stephen Malin, Göran K Hansson	Günaj Rakipovski
	<b>Kelvin Kwok</b> - Elucidating the molecular mechanisms behind impaired insulin-induced transcriptional regulation in human adipose tissue.	Carsten Daub, Mikael Rydén, Peter Arner	Sara Vienberg
	<b>Noah Moruzzi</b> - The role of insulin receptor isoforms in selective insulin signaling in pancreatic beta cell physiology/pathology.	Ingo Leibiger	Tine Glendorf
	<b>Daniel Svensson</b> - A novel concept for origin and treatment of diabetic nephropathy.	Hjalmar Brismar, Anita Aperia	Anil Karihaloo
2018 intake	<b>Vladimir Shavva</b> - Neural regulation of inflammation in atherosclerosis.	Peder Olofsson	Michael Nyberg
	<b>Thomas Ebert</b> - Chronic kidney disease – exploration of novel diagnostic, preventive and therapeutic targets for an emerging public health priority.	Peter Stenvinkel, Annika Wernerson	Thomas Idorn
2019 intake	<b>David Rizo Roca</b> - Metabolic crosstalk and the regulation of insulin sensitivity in Type 2 diabetes.	Juleen Zierath, Anna Krook	Damien Demozay
	<b>Katharina Herzog</b> - LADA-latent autoimmune diabetes in adults, risk factors and prognosis.	Sofia Carlsson	Louise Færch
	<b>Osman Ahmed</b> - Neural control of inflammation and metabolism in liver disease.	Peder Olofsson, Stephen Malin	Louise Zeuthen
	<b>Alison Ludzki</b> - Identifying the role of human white adipose tissue for the development of cardiovascular complications in type 2 diabetes.	Mikael Rydén, Peter Arner	Jakob Hansen
2020 intake	<b>Ilke Sen</b> - lncRNAs regulating skeletal muscle metabolism.	Anna Krook, Juleen Zierath	TBD

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Please visit our webpage for more information about the current fellows and the Fellowship Programme:

<http://ki.se/en/srp-diabetes/novo-nordisk-fellowships>