

Launch of the iCANDOC Personalized Cancer Medicine Flagship Program in Oulu

Five young doctoral researchers have started their work at the University of Oulu's three-year iCANDOC pilot. The kickoff meeting for the students and their supervisors took place at the end of February 2025.

The iCANDOC in Personalized Cancer Medicine is the largest pilot of the Ministry of Education and Culture's doctoral education pilots which aim to train 1000 PhDs in various fields of science within three years.

In the iCANDOC pilot, altogether 152 new PhDs will be trained in Finland to address the acutely growing need for expertise in the cancer field in both the public and private health care sector and pharma industry.

Five iCANDOC PhD positions were granted to the University of Oulu, three placed in the Faculty of Medicine and two in the Faculty Biochemistry and Molecular Medicine. The research topics of doctoral researchers and their supervisors are as follows.

- MSc **Elice Haataja** and Professor **Katri Pylkäs** - Deciphering genetic landscape of breast tumors through optical genome mapping and exome sequencing
- MSc **Laura Säynäjoki** and Professor **Jussi Koivunen** - Lung cancer predisposition
- MSc **Ida Köngäs** and Docent **Juha Väyrynen** - Neuroendocrine differentiation and Notch signaling in colon cancer
- Software engineer **Jiahui Wu** and Associate Professor **Valerio Izzi** & Docent **Ritva Heljasvaara** - Computational cancer biology: the role of extracellular matrix in cancer cell phenotypes and fates
- MSc **Anna Novokreshchenova** and Professor **Seppo Vainio** & Docent **Anatoliy Samoylenko** - Extracellular vesicles in kidney cancer diagnostics and targeted therapy.

In addition to completing a PhD in a record time, the selected PhD students expect to learn efficient ways to plan and implement experiments and to learn advanced subject knowledge and technical research skills that they can use in their future work.

– These skills are highly relevant in science and in everyday life and I look forward to perfecting them to promote effective research, says **Anna Novokreshchenova**, a cell biologist who already has expertise on extracellular vesicle and cancer research both in the academy and in US-based biotech company.

She is motivated to use her prior experience in cancer research and cell biology in the planned translational studies in Prof. **Seppo Vainio's** group. The goal is to advance the development of extracellular vesicle-based clinical applications in kidney cancer.

– I really appreciate how the iCANDOC program motivates young researchers to think about the utility of their findings, Anna continues.

Elice Haataja works in the breast cancer genetics group of Professor **Katri Pylkäs** and is motivated to finish the PhD in an efficient timeframe to advance her future career plans to train as a clinical laboratory geneticist.

– I also I hope that the iCANDOC program provides an inspiring community for mutual learning as well as learning from more experienced researchers.

Jiahu Wu is a software engineer from Beijing and thus has a slightly different background than the other recruited PhD students who have obtained their MSc degrees in biosciences. Jiahu is inspired by the international and multidisciplinary research community and the supportive atmosphere for international students at the University of Oulu and in the iCANDOC program.

– I expect to significantly improve my skills in bioinformatics through collaboration with leading researchers and build international research networks for my future scientific career.

An important aspect of iCANDOC program is to review and improve the practices of doctoral education in Finland and at the University of Oulu.

– In addition to training new PhDs and generating significant scientific results in the cancer field, we expect to learn new effective supervision methods for doctoral education, says Professor **Jussi Koivunen**, the coordinator of the iCANDOC pilot at University of Oulu.

iCANDOC-Oulu

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More about the iCANDOC program and PhD training at the University of Oulu.

- National Doctoral Education pilot in Precision Cancer Medicine iCANDOC <https://ican.fi/icandoc/>
- Doctoral educational pilot at the University of Oulu: <https://www.oulu.fi/en/research/graduate-school/doctoral-education-pilot>
- University of Oulu Graduate School UniOGS <https://www.oulu.fi/en/research/graduate-school>



A group photo of the iCANDOC-Oulu researchers in the kickoff meeting. From the left, front: Ritva Heljasvaara, Anna Novokreshchenova, Laura Säynäjoki, Ida Köngas, Elice Haataja and Jiahui Wu. Back: Anatoliy Samoylenko, Jussi Koivunen, Juha Väyrynen, Katri Pylkäs and Valerio Izzì.