TIINA SIKANEN
Academy Research Fellow

ACADEMY OF FINLAND

Scientific courage

Confidence and courage

Forward-looking teachers at Joroinen upper secondary school boosted my motivation and self-confidence. The basis of my self-belief was formed already back then.

"One of the main things that may have influenced my approach, to both science and life overall, is growing up in a small village in the municipality of Joroinen in the South Savo region of south-east Finland. Upper secondary school fostered a belief that if I always try to do my best, it will lead me in the right direction and, sooner or later, help me achieve results."

- Master's and doctoral degree in pharmacy, University of Helsinki
- Master's degree in chemical engineering, Aalto University
- Visiting researcher at Technical University of Denmark and University of Toronto
- Academy of Finland Postdoctoral Researcher 2011–2015
- Academy of Finland Key Project funding 2016–2018
- Academy of Finland Research Fellow 2017–2022
- ERC Starting Grant 2013–2019 and Proof of Concept Grant 2019

Diversity

Pharmacy is a diverse field that provides an opportunity to focus on a wide variety of disciplines.

My student organisation at the University of Helsinki supported my diversified approach to research.

"One of the best things about going to university was the variety it gave me. So much to see, so many opportunities to find your own thing and become independent. Going to university is for many about growing into independence, but for me it was also important to be actively involved in the University of Helsinki's student organisations through the Savo Student Nation."

Sikanen combines different scientific disciplines in a bold and creative way. She especially fuses pharmaceutical chemistry, microfluidics, bioanalysis, drug metabolism and nanotechnology.

From dreams to reality

As a kid, I wrote in a school essay that I wanted to be a scientist when I grow up.
"One of my dream jobs growing up was to be a scientist, although I didn't fully understand what it entailed. But for some reason, I was always fascinated with becoming a researcher."

I was asked if I wanted to do traditional research or embark on a completely new path and discover new solutions.

My answer to this question was that I'm more interested in carving out a completely new direction. It was a rather defining moment. I ended up doing a dissertation on microchip technology, and that's the path I'm on still today.

Sikanen's results in developing mass-spectrometry-based microchip technology have gained significant international attention.

Research work

The Chemical Microsystems Lab is a multidisciplinary team of researchers.
Setting up a team gave me freedom to pursue my dreams in research.

"Another major turning point in my career was when I set up my own research team. We currently have about a dozen team members. The team's official name is the Chemical Microsystems Lab, so yes, we still do microchip research."

Sikanen has built up a multidisciplinary research team and secured significant funding for it. She is currently supervising several doctoral candidates and postdoctoral researchers.

Bringing research closer to practical realities

The dialogue between human health and the environment provides an important framework for research.
Reducing the adverse environmental impacts of the pharmaceutical sector is a very concrete way of conducting research.

"Reducing environmental impacts creates a very important and concrete framework for our work. We get to see the social impact of what we do and how research helps change the world. In a way, we're bringing research closer to real life and concrete solutions."

Sikanen's innovative, fundamental research also shows a number of technological applications in bioanalysis and pharmaceutical analysis.