

Sjölabbet – Creating avenues for environmental monitoring

Speaker: Per Wilhelmsson, PKI Utveckling AB

Our ability to understand the environment depends on our capacity to collect and analyse data. Our capacity to collect and analyse data depends on the accessibility of instruments and knowledge as well as on the amount of people engaged in these activities. Recent years advances in open-source hardware (through 3D printer technology) and open-source software have enabled for a paradigm shift in manufacturing and implementation of cost-effective scientific equipment, such as for microscopes through the OpenFlexure project (openflexure.org). The concepts of open science and open hardware are still somewhat unfamiliar in education and academia. This highlights that spreading awareness of these contemporary concepts, striving towards democratisation of science, is of high priority.

Being able to collect more image data of microorganisms can contribute to a better understanding of their temporal and spatial distribution, at a time when a rapidly changing climate pose an increasingly significant stress factor on our ecosystems. Sjölabbet is a research-through-education initiative that promotes the use of the OpenFlexure microscope (OFM) in educational settings as a tool to contribute towards aquatic environmental monitoring. Sjölabbet emerged as a collaboration between Vattenhallen Science Center and a local company engaged in biological data collection (PKI Utveckling). Sjölabbet is currently helping teachers develop the skills to assemble their own OFMs as well as informing them on how to collect and share microorganisms image data to relevant national databases. The aim of Sjölabbet is to create avenues to contribute towards our understanding of the environment, bridging the gap between the environmentally interested and environmental research, by promoting the use of open science methodologies in education. This will raise more awareness of biodiversity research, open science and open hardware.