**Improving the quality of real-time interaction analysis**

Understanding molecular interactions in terms of binding strength, rates and mechanisms is a major focus of Ridgeview Instruments. Our device LigandTracer can monitor interactions in real-time on live cells and is used by research teams and pharma companies worldwide. Binding data can be evaluated with our analysis software TraceDrawer, which is not only connected to LigandTracer but also used by several other commercial instrument vendors that offer it as part of their own instrument packages.

We propose two master thesis projects with the aim of improving the quality of interaction analysis:

- **Apply Bayesian Inference for the development of new data quality control and analysis tools**
  Once binding data have been obtained, mathematical models are fitted to the measured curves to extract interaction constants. How well the extracted results can be trusted depends on both incoming data and how the models are applied. This exploratory project aims at improving data fitting by implementing Bayesian statistics for model selection and development of quality control rules.

- **Development of web/mobile app for virtual monitoring of interaction procession**
  During a LigandTracer measurement the interaction can be followed in real-time on the computer connected to the instrument. Since the instrument can run unattended for several hours it is likely that the user does not remain close to the instrument during measurement. This project aims at creating a desktop or mobile app for the user to monitor the progress remotely, not only facilitate for the user but to ensure that changes to the measurement are done at suitable times. This also includes investigating suitable strategies for data transfer that is adapted to different user needs, regulations and IT environments.

For more information, please contact Hanna Björkelund (hanna.bjorkelund@ridgeview.eu).

Ridgeview Instruments is part of a consortium of Uppsala based life science companies with overlapping ownerships. Besides Ridgeview, the consortium consists of the clinical diagnostic A23 lab that normally tests for prostate cancer but currently handles a large scale Covid-19 screening, and Cenvigo that develops and provides bed sensors. These are also looking for master students with programming experience. Please contact them for more information about thesis project proposals.