

## Cardiovascular and Metabolic Network

PROJECT PRESENTATION:

# Image Analysis Allowing More Time for Other Things

**BioPix offers an easy-to-use computer programme for image analysis for biomedical research teams and pharmaceutical companies. It makes it easy to automatically quantify large quantities of images and biological preparations at a quality suitable for both publication in scientific journals and effective studies in pharmaceutical companies, as well for use in pathology where large quantities of samples are analysed every day. BioPix makes everyday work easier for many different users.**

In the research world and the pharmaceutical industry there is a need for rapid, automatic methods of analysis so that measurements can be performed on large quantities of image data, for example from microscopied preparations, with reliable results. There is also interest in high-speed image management of the large quantity of information in pathological diagnostics. In addition, computer-assisted image analysis increases the evidential value of the material, which is of interest when research results are to be included in scientific publications.

Pontus Boström, a research scientist at the Wallenberg Laboratory of Göteborg University, and Peter Holmdahl, a systems developer with special expertise in image analysis and user-oriented design, decided to solve these real problems. The result is BioPix.

Along with BioPix software there are other programmes for image analysis on the market. What distinguishes BioPix is its unique function of being able to automatically analyse very large image material without demanding any programming skills on the part of the user. This user-friendliness means that the whole research team can use it. Nor is the program linked to a specific workstation, and it therefore quickly becomes a natural tool in the user's work flow.

### Three-dimensional Models at Cell Level

As well as the rapid quantification of large amounts of information, it is possible to build detailed three-dimensional models of the appearance and movement of individual cells or other objects using image material in the computer. Image material from fluorescence and confocal microscopes, for example, can easily be assembled into a model in which the user can study courses of events and look at locality and relationships between objects with unlimited magnification capability.

BioPix has ongoing cooperation with Euromed Networks, a Stockholm-based software company which, among other things, is developing an image management system, Picsara, that sorts and stores large quantities of images. The functionality in this software supplements BioPix's systems, and together they create an easy-to-manage way of working that is highly appreciated by the joint customers.



## Preliminary Results

In 2005 the development project came into contact with the Cardiovascular and Metabolic Network. Financial and strategic support provided what was necessary to focus development and marketing efforts on specific interest groups. Along the way companies were formed together with GU Holding, and today the company is in a more stable situation with a growing set of customers.

Needs for specific screening systems have been expressed in contacts between BioPix, Sven-Olof Olofsson's research team at the Wallenberg Laboratory of Göteborg University and the pharmaceutical industry. When using a system of this kind it is possible to sift out irrelevant material early on and instead concentrate on more promising areas. And the earlier a candidate drug can be verified, the more interesting it is to the pharmaceutical industries. This system is under development, but even before it has been completed, BioPix has received its first order.

## Next Stage

The company is committed to growth and over the coming two-year period it intends to increase its number of customers many times over, both inside and outside Sweden. This will be achieved by adding another ten persons onto the staff, having direct licence sales, through cooperation with partners, and by completion of the screening system. BioPix aims at supplying the standard method for quantification of histological analysis.

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## PROJECT PARTICIPANTS:

- **BioPix** – Software company focused on image analysis of histological data.
- **Euromed Networks AB** – A company focused on the development and sale of professional digital image, video and dictation systems with customers in industry and health-care.
- **GU Holding** – Wholly owned holding company of Göteborg University. The company finances and develops new companies based on research results and other academic top-level expertise from Göteborg University.
- **The Wallenberg Laboratory, Göteborg University** – Centre for research into cardiovascular diseases ranging from clinical physiology to cell biology.

Would you like to know more about this project? Please contact:

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**Henrik Svensson**  
Managing Director  
BioPix AB

*It feels great to see how BioPix has developed in just a few years from a small promising project consisting of two enthusiasts to a software supplier to be reckoned with.*

**William E. Ackerman IV,**  
Assistant Professor, Co-Director, Laboratory of Perinatal Research, Department of Obstetrics and Gynecology, Ohio State University College of Medicine

*BioPix software is an inexpensive and easy-to-use alternative to more expensive software packages, and makes it possible for researchers to carry out morphometric analyses, which is crucial for cell biologists. Confidence in this software has risen massively since its successful use in several publications in the recent past.*



**Anna Ljungberg**  
PhD  
AstraZeneca R&D, Mölndal

*The user-friendliness of BioPix and its capability for automated image analysis eases and speeds up our work on analysing large study material. The speed and professionalism of BioPix support team is extremely valuable to us, and we have become used to it being first-class and working painlessly.*

**The Cardiovascular and Metabolic Network, CVM,** is a competence network and co-operation project between health care, academia and industry. Its task is to increase the number of commercialisations in the cardiovascular and metabolic area, which in the long term will lead to better applications in health and medical care and more employment opportunities. The CVM Network validates suitable development projects and provides cutting-edge competence and capital. CVM is part of GöteborgBIO.