

»Perfusion production, data mining, and cell-based therapies are important challenges.«



User at a Glance

Eppendorf knows the users of its products and their specific requirements for various applications very well. Here, we would like to introduce some of our valued customers - or rather: let them introduce themselves by answering five questions - about themselves, their employer and current challenges they face in their market.

For this issue we have interviewed Vania Bertrand about her work and private life. Vania is a PhD candidate at the ETH Zurich, Switzerland in the group of Prof. Morbidelli.

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What three words would your colleagues use to describe you?

A brief survey among my charming colleagues resulted in: Organized, proactive, communicative.

Where and how did you spend your last vacation?

My most recent trip led me to Greece, where a former colleague got married on an island near Mykonos called Syros. It was a fantastic Greek-German wedding at an amazing location by the sea with good food, perfect weather and pleasant company. The rest of the time we spent on Mykonos and immersed in the hospitality and happiness of the Greek people, as well as the seemingly endless and wonderful seaside and landscapes of the island.

What do you especially like about your job?

I enjoy the opportunity to explore a wide range of different topics related to the biopharmaceutical industry, while developing deeper expertise on selected projects. Our group focuses on applied research, which means that our projects mostly target an industrial feasibility with a clear set of goals, often leading to very exciting and insightful collaborations with different companies. Furthermore, I do appreciate the modern infrastructure and excellent conditions to achieve high quality scientific work here at ETH.



the smallest and most versatile system on the market at that time. Since then we use these bioreactor systems continuously for multiple projects, ranging from scale-up studies and the development of a perfusion process to the cultivation of stem cells.

In your opinion, what is the most exciting challenge in your area of science at the moment?

In my opinion, there are quite a few interesting challenges but three of the most important ones, I feel, are related to perfusion production, data mining and cell-based therapies. Firstly, perfusion cannot only be used for the continuous production of proteins with a constant quality profile, but in the time of biosimilars and biobetters, its application to target specific quality patterns is very valuable. Secondly, it can be applied for intensified fed-batch processes or for capacity reduction by using it for seeding bioreactors. Then the vast supply of process data from increasingly sophisticated analytics, online monitoring, and high-throughput devices makes comprehensive analysis a complex task. The use of statistical models and their hybridization with physical models could lead to new directions in process development combining knowledge- and data-driven approaches. Finally, we are moving towards new cell-based therapies and personalized drugs. Developing appropriate and flexible bioprocesses on smaller scales, maybe even in pocket size that allow for high quality at affordable cost will be a challenge.



Vania Bertrand, PhD candidate at the ETH Zurich, Switzerland.

How did you get in touch with Eppendorf bioprocess equipment?

We required a bench-size bioreactor system for small-scale experiments related to the production of recombinant proteins and the DASGIP® system was