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# Newsletter BioBusiness

WHEN BIOLOGY MEETS TECHNOLOGY

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## ROLE OF FELLOWS IN EACH PRODUCT GROUP

### Tom Van Hertem

Image pre-processing & modelling behaviour for lameness detection



### Gunel Ismayilova

Labelling



### Qin Tong

Improvement of incubation conditions & monitoring embryonic development



### Nancy Roulston

Chick welfare, project management & product development



**Daniel Rozen**  
Project management & product development



**Andrés Schlageter Tello**  
Selection of golden standard, scoring and labelling



**Lilia Sonoda**  
Field experiments & on-farm observations



**Maciej Oczak**  
Product development



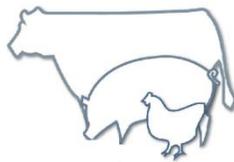
**Hakim Bergoug**  
Assessing the effect of incubation profiles on rearing



**Anna Johansson**  
Automation of welfare indicators at early post-hatch age (Collaboration with SLU)

### Model and control development

Stefano Viazzi



Carlos Eduardo Bites Romanini



CONSORTIUM



KU LEUVEN



DeLaval



# Joint European Conference on Precision Livestock Farming



**6<sup>th</sup> EC-PLF September 10-12<sup>th</sup>, 2013**

The PLF community continues to grow globally and extend beyond engineering into various sectors. The 6th European Conference on Precision Livestock Farming hosted in Leuven, Belgium drew a record number of international PLF scientists and industry specialists to network and learn about the latest PLF research. This year, participation tripled and the number of papers doubled since the last conference in 2011. From 31 different countries, a total of 110 scientific papers (79 orally presented and 31 posters) spanned sessions in swine, cattle, poultry, equines, aquaculture, sheep, incubation technology, environment, animals and climate, business development, and society-economics-ethics. The EC-PLF conference also incorporated the final conference of EU BioBusiness Project (2009-2013) and the first workshop of the EU-PLF Project (2012-2016).

The EC-PLF conference highlighted new researchers by providing PhD students the opportunity to chair or co-chair 50% of the sessions. Recognition for Best Oral Presentation, Best Poster and Best Young Researcher were awarded to Engel Hessel (Georg-August-University of Goettingen), Mona Giersberg (University of Veterinary Medicine Hannover, Foundation) and Stefano Viazzi (KU Leuven, Belgium), respectively.

The overall conference outcome was one of success. The enthusiastic participation, the expansion of the field, and the excellent cultural activities and gastronomy of Leuven all contributed to an enlightening and memorable event. The next EC-PLF Conference will be hosted in Milan, Italy on September 22-25<sup>th</sup>, 2015. Hope to see you there!

Winning presentations and poster and BioBusiness material can be accessed through the link: <https://www.dropbox.com/sh/xwb42eu9ftpoz5m/pz5u7t847U>.

For photographs from the 6<sup>th</sup> EC-PLF please visit: <http://www.ecplf2013-leuven.eu/public/photogallery.aspx>.



## BIOBUSINESS YEARBOOK – “COW GROUP”

Tom is the junior of our project. He was born in 1986 in Neerpelt, Belgium, situated in the northeast of Belgium close to the Dutch border. He spent his childhood playing football with his friends and helping out on the dairy farm of his parents. He was always intrigued by the cows and their behaviour. Tom holds a Bachelor degree (2008) and a Master degree (2010) in Bio-Science Engineering from KU Leuven. In 2010, Tom moved to Israel to begin the BioBusiness project at the Agricultural Research Organization (ARO) – the Volcani Center. Tom set up the field experiments in the dairy farms, gathered live labeled data and analysed sensor data in relation to lameness. In September 2013, Tom returned to KU Leuven to finish his Ph.D. research. “Within the BioBusiness-project, I not only learned more about the dairy industry and product development, but more importantly, I lived for three years in a different culture. I believe that this experience has broadened my perspective”.



Daniel was born in Bogotá, Colombia in 1983 but moved to Costa Rica at the age of 15. He has been interested in mechanical and electrical engineering since he was a young boy, so it was an easy decision to study electromechanical engineering in college. After working in several engineering projects in Costa Rica, Daniel became fascinated with turning ideas into products and services. For that reason, Daniel moved to Sweden pursued a Master degree in Innovations Management. Upon graduating, Daniel put his knowledge to practice in the BioBusiness Project. Since October 2011, Daniel has worked in DeLaval, Sweden managing the product development of the cow group. “It has been a great challenge, not only because I basically did not know anything about cows before the project, but also because I was able to lead an interdisciplinary group composed by excellent professionals”.

Stefano Viazzi joined the BioBusiness team in 2011, moving from Italy to Belgium to pursue his Ph.D. in BioScience Engineering. Even though Stefano had never been in a farm or handled animals prior to the project, his playful enthusiasm and strong passion for computer vision and modelling, proved him an invaluable team member for both the cow and pig BioBusiness groups. His major task in the cow group was to develop an algorithm that measured the back posture of cows by using computer vision techniques and that assessed individual lameness in dairy cows. After his first Master studies in Computer Engineering in Italy, he obtained a double degree in Intelligence Systems at the University NTNU in Trondheim, Norway spending more than two years in the cold but beautiful Scandinavian landscape. With an incredible cultural adaptability, Stefano comments on his life and career in Belgium: “My work in the BioBusiness team was the Ph.D. opportunity that I have been long looking for. Living in Belgium is just yet another life experience for me that has a great impact on how I can evolve as a person as well.”



Andrés was born in Osorno in the cold and rainy south of Chile in 1980. Since Osorno is the main dairy area in Chile and his father was a proud dairy farmer, Andrés was highly influenced by the “milk world”. In 2003 Andrés earned the title of doctor in veterinary medicine in the Universidad de Chile. After working for a few years in Chilean dairy area, he realized that science would be his future. The first step in becoming a researcher was to obtain a Master of Science in Animal Nutrition at the Mediterranean Agronomic Institute of Zaragoza (Spain) in 2009. In 2010 Andrés joined to BioBusiness team in Wageningen University (Netherlands) to pursue a Ph.D. “BioBusiness has been a great experience. I came here to become a researcher, but I’ve learned a lot more. I’ve learned to work in a team composed by people with different backgrounds and different cultures. I’ve learned to work in cooperation with others and, maybe the most important, I’ve made really good friends.”