MERIT Newsletter

01 - 2014

Content

Suggestions for the next issue are highly welcome!

Dear all,

This is the first newsletter of the new year, and I would like to take the chance to wish you all the best for 2014.

Besides this, 2014 is also the last year of our project, and lots of things need to be finalized within the next months, administrative tasks and also scientific ones. The most challenging this year are probably the submission and defense of the first theses, and also the publication of all the results, which came up the last years.

Finding a new position will probably also an upcoming issue, and therefore we focus our training activities on career skills, in and outside academia. Two workshops are in preparation, one organized by Matthew Hannah (Bayer) and the last one associated with our final meeting, organized by Ulrike Zentgraf.

As mentioned in a previous email, looking for jobs can be quite time consuming, especially if you are looking for jobs in foreign countries.

In our network we originate from more than 10 countries, which gives quite some expertise and it might be very helpful to share those knowledge. So, if you know some websites with information, vacancies, or anything helpful for searching jobs please let me know and we can upload it on our website.

Good luck with all these challenges!
Sylvia

PS As usual: for more information please visit our website

http://theory.bio.uu.nl/MERIT/html/index.html

Project timeline

01/11 start of the project

03/11 kick off meeting in Utrecht

09/11 website online

10/11 almost all fellows selected

11/11 1.annual meeting in Madrid

01/12 1.Annual Report submitted

02/12 ST1 successfully finished

03/12 Umeå new MERIT partner

05/12 1.Annual Report accepted

06/12 MERIT team complete

07/12 ST2 successfully finished

08/12 Midterm Report submitted

10/12 CST 2 and M^3 – MERIT Mid-term Meeting in Lisbon

02/13 1.Periodic Report submitted

03/13 ST3 successfully finished

09/13 MERIT 3.Annual Meeting in Würzburg

01/14 2.Progress Report submitted

03/14 Industry skills workshop

09/14 Final meeting in Tübingen

12/14 Official end of MERIT

3. Annual Meeting

In September 2013 we had our 3. Annual Meeting in Würzburg, Germany. It was a dense and intense program, well organized by Wolfgang Dröge–Laser and his team. Thanks for this!

The first day of the meeting was reserved for the fellow presentations to give an update to the consortium of the progress over the last months. During the second day the PI´s gave a short overview about their groups activities, and the scientific aspects of the projects were discussed. Besides this, the fellows updated the Career Development Plans together with their supervisors and co-supervisors. This is a quiet important issue to check if the progress is according to what has been promised and keep the direction of the project. The last day of the meeting was blocked for administrative issues, e.g. the next report, the organization of the final meeting and upcoming network events in the next and last year of the project.

Despite the labor–intensive days everybody joined and enjoyed the social network events in the evenings. Especially the guided tour through the impressive, former royal wine cellar gave a first glance on the importance and history of this interesting city.

CST ¾ –

Associated to the meeting a combined network course CST3/4 about "Optimizing writing strategies for publishing in English" (12. - 13.09.2013) was organized. Britta Mägde and Marcy Scholz, both highly experienced experts in this field, gave the lectures. All MERIT fellows attended the course, and additionally two external researchers. The goal was to get an idea about writing strategies and how to systematically and efficiently start the writing process. The fellows learned how to achieve precise research questions and how to formulate them. This was also practically exercised, and the participants got individual feedback. The course was evaluated by the students afterwards and got highest rates. Students experienced it much better than expected, and would have appreciated it to be three days instead of only two days. Especially the exercises and the very interactive parts of the lectures with individual feedback meet their approval. In combination with the good background material was this course a useful time investment in the future.

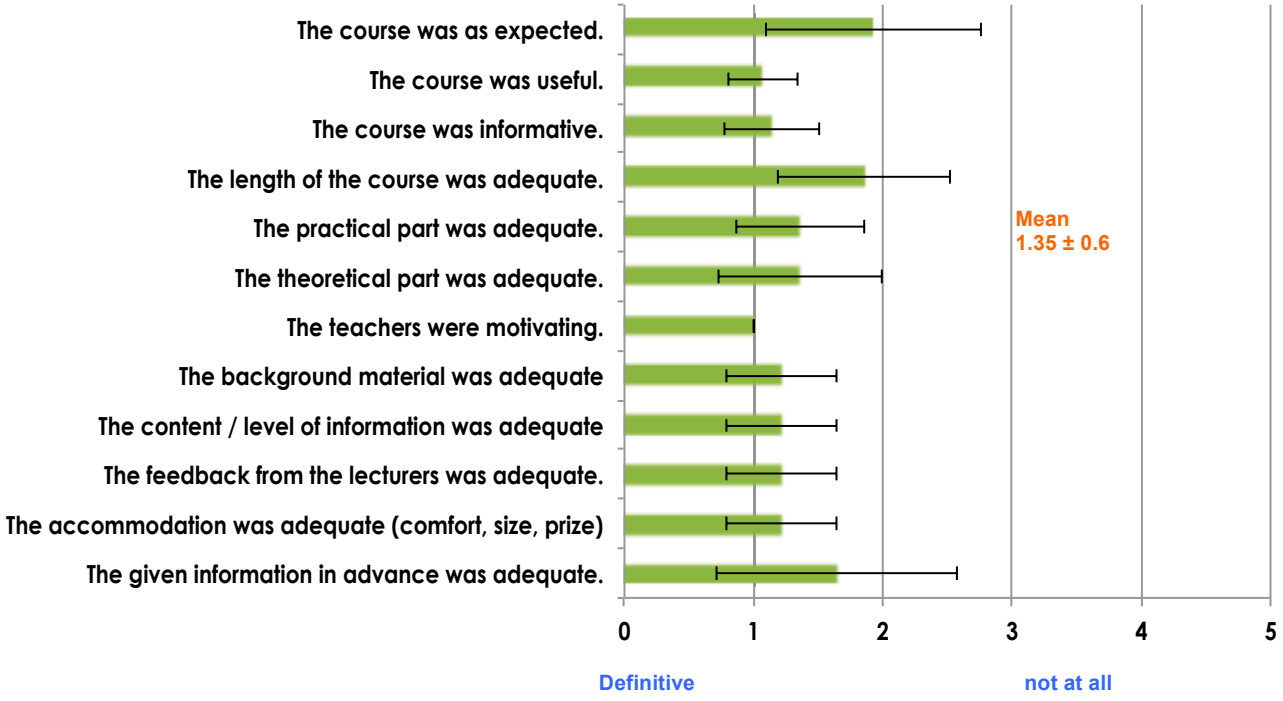
Calendar 2014

ST4 – Industrial relevant skills
24 – 28 March 2014, Gent, Belgium

ASPB Plant Biology
12 – 16 July 2014
Portland, OR, USA

25th ICAR - International Conference on Arabidopsis Research
28 July – 1 August 2014
Vancouver, Canada

MERIT Final Meeting
29 September – 1 October 2014
Tübingen, Germany



The mass western: go North

Figure 1: Ella, Magda and the big machine in the noisy lab.

Ella and I have been working together on this quantitative proteomics approach for some time and I have already spent several extremely interesting (and nice) visits to the lab in Vienna. The project is to quantify the changes in ribosomal proteins upon sucrose treatment and to determine whether they play any role in the translational activity of the ribosome. We bought 21 labeled peptides to be spiked in the samples and be used as standards for quantification of the native one. To start with we used samples containing calibration curves of the peptides to determine sensitivity and the optimal concentrations to be used. After the first promising results in Vienna, we went to Umeå in search for higher sensitivity. We had obtained linear calibration curves for some of peptides, but not detected all of them in the Orbitrap. The TripleQuad, I thought, would solve all our problems. We had 2 full weeks in October with the machine all for ourselves and were determined to figure it out.

First thing we found was the enormous number of parameters that had to be adapted peptides because they are different for the metabolites and hormones mainly they usually quantify over there. So we played around with gas flow, nebulizer settings, sheath gas temperature and flow, capillary voltage, nozzle voltage, cell accelerator voltage, … until something worked for our peptides. With these new settings we went on to identify the parent masses and transitions for our standard peptides one by one, optimized collision energies. And so passed the first week (and the weekend). After this first, rough approach, we had to switch to nanoflow LC, so 'the chipcube' (to be pronounced with awe) was installed (that's the nanoflow system of Agilent). And this brought a whole new set of problems to be solved. Capillaries to be changed, pump pressure to be corrected, leakages to be fixed, the chip to be checked for damage,

Helpful links for finding jobs:

http://ec.europa.eu/euraxess/index.cfm/jobs/index

http://flandersbio.be/jobs/

www.career.bayer.com/

http://www.epsoweb.org/careers/jobs

http://www.arbeitsagentur.de/nn_27908/Navigation/Startseite/Startseite.html

http://jobboerse.arbeitsagentur.de/vamJB/startseite.html?kgr=as&aa=1&m=1&vorschlagsfunktionaktiv=true

chip needle position to be adjusted and adjusted again. And finally: the spray! It was stable! That was 2 days later (felt like 2 weeks). Now we could test and adjust gradients and start to measure the first samples of the calibration curves. It started to look really good by the end of the second week, we could see most of the peptides using the calibration samples with high concentrations of the spiked peptides, and now we decided to start running all the other samples. Time was running out, too, so we decided on the protocol and measured the 15 calibration samples and a set of test samples to check the quantification.

Figure 2: We got a spray!

To our great disappointment, when we went to lower concentrations, we stopped to have nice peaks and the signal was barely (or not at all) visible over the background. So what happened to that famous sensitivity that is advertised for the TripleQuad? The best guess we have is that it is an issue of chromatography, which can only be fixed by changing columns and adapting the gradient. We did not have the time to do that and it is questionable whether the chipcube system with its prepacked on-chip columns allows enough flexibility. Gladly, the TSQ in Vienna is repaired and will allow using the nanoflow system that works so well on the Orbitrap. So the story does not end here and we hopefully can apply all that we learned in Umeå.

In summary, these two weeks were an amazing opportunity for me to learn a lot and to get some real, hands-on experience with the big machine. I learned a lot about proteomics and mass spectrometry and the big span between the immense frustration facing all these parameters and the great ecstasy when finally a problem is solved and the spray is there!

I have to thank Ella for the loads of work we did, the late hours, all the coffees, and the let's-try-agains, not forgetting the great time we had, as well as Annika, Jonas, Jocke, Gunnar, and Johannes to welcome us in Umeå and help us as much as they could!

Figure 3: Barbecue at minus degrees in the forest: typical Swedish?

In dus tryr elevant ski llsf romt hela bora torytoth efield ????????? Skills? Relevant? More?

What skills are needed for a career? And are there differences inside and outside science? Not for all students is staying in science a possibility or an option.

This workshop is scheduled for one week, 24th to 28th march 2014, organized by Matthew Hannah (Bayer, Belgium) and Wim Vriezen (Nunhems, The Netherlands). The fellows will be introduced to the complexity of the R&D process within a modern agro-biotech company, including IP and legal protection, licensing and stewardship, to allow successful product commercialization. This exposure to industry-relevant research and to the various departments and functions will also provide insights into the diverse career opportunities in non-laboratory functions. One day is reserved to visit the Bayer subsidiary company Nunhems. The schedule of this workshop is outlined below:

Time	**Monday 24th**	**Tuesday 25th**	**Wednesday 26th**	**Thursday 27th**	**Friday28th**
09:00	Bayer CropScience	Trait Research	Regulatory Affairs	Travel by coach to Nunhems	Public acceptance of academic GMO research
	John O'Brien	*Matt Hannah*		(leave 08:00)	
10:00	*Cornelia Kuse*	*Alex Galle*	*Taha Hosni*		*Marc Van Montagu*
	Coffee	Coffee	Coffee	Arrival Nunhems	
11:00	Ag-Biotech Industry	Alliance Management	Tour of BCS NV, Gent	Company Intro	
	John O'Brien	+Activity			
12:00	*Cornelia Kuse*	*Stefan Schwarz*		Lunch	Lunch
	Lunch	Lunch	Lunch		
13:00				Tour	Market acceptance I
	Seed & Trait Safety	Intellectual Property I	R&D Pipeline Game		
14:00			*Matt Hannah*	Coffee	*Mathias Mondy*
	Liz Bates	*Rolf Deblaere*	*Alex Galle*	Tomato breeding	
15:00	Coffee	Coffee	Coffee		Coffee
	Innovation Relations at	Intellectual Property II	R&D Pipeline Game	Molecular tools	Market Acceptance II
16:00	Bayer	+Activity	*Matt Hannah*		+Activity
	Michael Metzlaff	*Rolf Deblaere*	*Alex Galle*		*Mathias Mondy*
17:00	Freetime	Freetime	Freetime	Discussion	Freetime
				Depart Nunhems	
18:00				Dinner in Roermond	
19:00	Dinner	Walking tour of Gent	Dinner		Dinner
end				Return to Gent	