CALANDAR PICKS


2. March 10-14th, NMT Days Christer Nilsson speaks at youth outreach days for science in March

3. April 24th - BILS Lecture On April 24th professor Anthony Grace will talk about the role of the dopamine system in schizophrenia and depression.

4. May 8th - Neuroscience Day Registration is free of charge - shall be no later than April 25th. More information - CLICK HERE

BAG NEWS PICKS

1. Oskar on the Radio - On Jan 21st Oskar Hansson was interviewed on revelations presented in a new study on dementia. CLIP HERE

2. SRC Reviewers Visit BAG On Jan 27th BAG scientists presented results and visions within the different work packages.

3. International PostDoc Positions Are you a fresh PhD and wish to do research at a foreign university? Apply for International Postdoc no later than 25th February 2014

4. SRC Grants for 2014 Announced CLICK HERE to see a list of the SRC grants announced this year.

CALENDAR PICKS

IN FOCUS

BAGADILICO TAKES THE LEAD WITH PATIENT PARTICIPATION EVENT

On February 4th, BAGADILICO invites you to an event on Patient Participation in Parkinson's. We hope to deliver exciting talks on the opportunities and challenges of patient participation as part of the scientific process. The live webcast event will conclude with a discussion session where the audience, in the room as well as in front of computers the world over, is encouraged to take an active part.

The session is moderated by Cristin Lind, a prominent figure in the U.S. discussion on the relationship between patients and health care professionals.

The first talks are held by Sara Riggare and Jon Stamford, both patient advocates in the global Parkinson's community.

The concluding talks are presented by two researchers, Marjan Faber and Peter Hagell, whose bodies of work reveal a long-lasting relationship with the idea of patient participation as key for the advancement of therapies in Parkinson's disease.

The PPP Event is part of a concerted effort by BAGADILICO to forge closer ties with patients and patient organizations. Through a collaboration with the WPC the live webcast is expected to have a wide viewership across the globe.

The event will take place February 4th, 17:00-20:00 in Belfragesalen, BMC, D15, Lund University.

For registration and further information, please e-mail Jens Persson@med.lu.se
THE LIFE OF A DOPAMINERGIC NEURON:
MAKING A CASE FOR CELL THERAPY

TEXT: JENS PERSSON

From the native region of famed children’s book author Astrid Lindgren comes Jenny Nelander Wahlestedt. Growing up in a household where the natural sciences were rarely discussed her interest in medicine at a young age was never a given. In her lab today, far removed from the adventures of Pippi Longstockings, fact always trumps fiction. On December 12th she successfully defended her thesis on the development of dopaminergic neurons. With her help, Parkinson’s research is now a step closer to bringing cell therapy to the clinic.

As with many practitioners within the field of medicine it was not just curiosity that brought Jenny to pursue a career in neuroscience. For all its cliché value - clichés are clichés because they are more than often true - a basic feeling of wanting to do good and contribute to society has been an important driver in Jenny’s everyday work. Having been able to work hands on within TRANSEURO – the pan European study on cell therapy for PD that is getting close to clinical implementation – gives her a sense of being closer to the patient and that fuels her motivation going forward, trying to develop new therapies.
The dopaminergic cells being transplanted in the first clinical trials of TRANSEURO will come from aborted fetuses, as they did in the world-renowned transplantations in Lund in the late 1980’s. However, this is not an expandable therapy in the longer term, because collecting the cells needed carries with it both logistical an ethical challenges. Transplantation with these cells will never reach a majority of patients. They are simply too hard to get a hold of.

In her thesis Jenny lays out the foundation for taking human embryonic stem cells and turning them into functioning dopaminergic neurons, the very brain cells that wither away in PD. By creating a refined protocol for identifying the key factors in this developmental process she and her colleagues have been able to differentiate the stem cells into mesencephalic dopaminergic cells that mirror the function of the already developed cells taken from aborted fetuses. As scientific progress goes, there are still a few kinks to be ironed out. Further tests for efficiency and safety are needed but if successful these cells could very well lead to cell therapy becoming a routine treatment for PD in the future. When starting out with stem cells one could, in theory, produce a never-ending supply of the dopaminergic cells needed.

- Of course, we have a ways to go. But in this study we have really made our homework and made sure that the dopaminergic cells that we have developed behave like authentic mesencephalic dopaminergic neurons. When we transplanted them to rats we could also see that they were relieved of symptoms and that these cells were releasing dopamine.

Other findings, later on in the research process, have opened up exciting new avenues for understanding the basic course of development of different brain cells, in different parts of the brain. Micro-RNAs are fast becoming a blossoming field within neuroscience as they have been discovered to play an important role in regulating transcription within cells. Jenny and her colleagues were able to reveal how they were expressed in different regional specific populations of early neural progenitor cells. The work will now continue to try to reveal the function that they have in early human brain development.

- We were surprised that they were so region specific in their expression. For example, one micro-RNA was very prevalent in a certain area of the brain, while others were more clearly expressed in other areas. This data opens up for a broad spectrum of research lines, not only confined to PD. If we can better understand the role that micro-RNA play in cell development in the brain it may help us reveal disease processes that are today still shrouded in mystery.

As is the case for many young scientists, Jenny’s future is something of an open book. The coming year will be dedicated to work within the TRANSEURO study but come next year she and her husband, also a stem cell biologist at BMC, have not decided upon a specific plan for the future. Her resolve and genuine excitement for her work suggests however that she will, as Pippi Longstockings always do, land on her feet. Certainly, they share the same level of determination, whether it’s finding a treasure of gold coins or the cure for Parkinson’s disease.

Jenny Nelander Wahlestedt will now continue to work on the TRANSEURO study in the coming year.

“If we can better understand the role that micro-RNA play in cell development in the brain it may help us reveal disease processes that are today still shrouded in mystery”
AWARD GIVES GESINE PAUL THE STRENGTH TO PUSH TRANSLATION FORWARD

An unexpected donation a couple of years ago became the starting point for the Bengt Falck Prize, named after the renowned Lund University professor of histology, today 87 years old. The prize recognizes significant contributions to neuroscience at Lund University. On January 9th it was awarded to BAGADILICO's Gesine Paul.

With one foot in the clinic and the other in the lab Gesine Paul embodies translational science, a concept that is becoming more and more relevant to the field of medical science. Bringing experimental findings all the way to the patient is a long and difficult journey. In these processes people like Gesine are key figures in bridging experimental research and clinical application. With a broad knowledge of daily patient life as well as the inner workings of cells, she is able to point out the risks going forward and also the genuine concerns held by patients.

As the resources for clinical research continue to shrink the prize is a welcome boost in confidence, motivating her to keep pushing forward. She believes that her translational ambitions and achievements are what led to her receiving the prize.

- This prize is an acknowledgement and encouragement for doctors that combine clinical work and basic science. I have always been motivated by helping patients directly while at the same time being able to pursue advanced neurorestorative treatments through experimental research.

As her science goes, she is now focused along two main research lines. Both aimed at restoring or reversing the disease progression in Parkinson's disease. First off, she is part of a study that just passed the phase one stage for clinical trials. Using a growth factor, the research is geared towards restoring motor function and improving neurochemical deficits. Should the treatment turn out to be effective it may have the potential to halt and even reverse disease progression in Parkinson's disease (PD).

- The therapies we have available today in the clinic only address the symptoms of Parkinson's disease. Therefore it's extremely exciting to be involved in a clinical study testing a new disease-modifying treatment for the first time in humans. We can already see that there is an upregulation of dopamine transporter binding in the patients included in the high dose group. My hope is that this could be the first neuroprotective therapy available. That would be fantastic.
This research also leads back to the lab bench where Gesine’s team, the Translational Neurology Group, further evaluates the underlying mechanisms of the growth factor, which are yet to be fully understood. The knowledge gained here will be important for patient selection and risk- and effectiveness assessment in going forward with the next phase of clinical trials.

Stimulation of endogenous brain repair mechanisms is one of the main aims of Gesine’s team. One particular focus is on examining the role of a perivascular stem cell that the group discovered under pathological conditions.

She is also active in developing new methods for cell therapy in PD, bringing it closer to clinical application. Gesine has recently become a coordinator for a “Cell Therapy for PD”, a Creative Environment at Lund University where a team of scientists, doctors, ethicist and health scientists work together to bring stem cells towards a treatment for PD to the clinic.

One cell therapy study already ongoing is TRANSEURO, where the first transplantations using fetal tissue are expected to take place in the coming year, in Lund among other places.

Under the leadership of Professor of Neurology Olle Lindvall, brain researchers in Lund had already developed a method of transplanting immature nerve cells in the 1980s. In 1987, brain surgeon Stig Rehncrona operated on the very first patient. That study was historic and marked the first repair of the human nervous system.

The TRANSEURO study will play an important role in carrying on this legacy. Most likely it will decide the immediate future of cell therapy as a viable treatment. Collaborating scientists all over Europe have scrutinized previously failed studies in an attempt to optimize the techniques, improve patient selection and conduct more relevant follow-ups of patients.

Gesine’s role within TRANSEURO, as with many of her research endeavors, is one of multiple responsibilities. Because of her broad palette, tying together basic- and clinical science, she often finds herself as a link in the translational chain. Having knowledge from both camps allows her to see the bigger picture, helping her to better judge risk assessment in planning future clinical trials and to design relevant outcome measures. It also puts her in a position to screen for the type of patients best suited for a particular trial.

- I definitely believe there is a shortage of clinical researchers who combine clinical and experimental work. It is not easy being in the clinic receiving patients, running an experimental research group, conducting clinical studies while teaching at the same time.

Although the prize is a welcome boost in energy the truth of the matter is that the situations for clinicians with research ambitions are often very tough.

- In the larger scheme of things, getting clinicians to work with translational research requires more resources, new positions quite simply.

When asked what has stopped her from jumping ship and switch to a job in the industry Gesine offers a laughter of surprise. As if the thought had never really crossed her mind.

- Well, I think that perhaps I’m one of the last idealists. I really want to work with patients and I also want to have the creative freedom that academic research offers. But my research is not driven by curiosity in the first place, I think maybe we as a society do not have the money for exploring just curiosity anymore. I want to do something that can be used relatively soon for patients. That’s what drives me.