# Euroclast Newsletter October 2014

Here is a Euroclast newsletter to inform you about the latest developments within the consortium.

**All ESRs in post**

We are happy to tell you that all Early Stage Researchers have started their projects. After Anh Tran from Perth, Australia, joined us in Aberdeen, Viktė Lionikaitė from Kaunas, Lithuania, has started her research project in Gothenburg, Sweden. A warm welcome to both ESRs and the best of luck on your projects!

**Next progress meeting in Kiel**

Our next Euroclast progress meeting is scheduled from December 7 until December 10 2014. The Christian-Albrechts-Universität (CAU) in Kiel, Germany, will be the venue for this meeting.

Prior to the meeting, students are expected to send their personal development plans and what they have achieved so far using a template that Bas will distribute. In addition to this, some teaching materials will be distributed in relation to the generation of transgenic animals and research governance in preparation for the discussion session. Students are expected to read these materials as the lecturer will assume they have this knowledge.

In this meeting we will discuss the progress of the individual research projects and explore where further collaborative efforts between partners may be beneficial. All ESRs will meet with their mentors and will receive personal feedback on their submitted progress reports and their presentations.

During the meeting some time will need to be created to allow students to ask general questions that should be addressed. These can be related to gaps in knowledge or to issues specific to Euroclast. We can hold ad hoc “catch-up” sessions around specific topics early in the morning, before the start of the official programme, or during dinner or after dinner.

**Communication**

There are more ways than ever to be in touch with your colleagues in the Euroclast consortium.

- Join the Euroclast LinkedIn group following this link.
- The ESRs have their own Facebook page to discuss all kinds of social activities and of course a bit of science as well.
- Files will be shared with Euroclast partners in the cloud. More information will follow during the progress meeting in Kiel.

**Outreach**


The Euroclast team at the University of Aberdeen - Emma, Anh, Fraser and Miep - took part in Explorathon on September 26th 2014. This event highlighted a wide range of EU-funded research to the general public.

It was held in four major universities in Scotland simultaneously and was itself funded as part of the EU Marie Curie actions. We were "science busking" in Union Square, a large shopping mall in the city centre of Aberdeen.


We were using a variety of materials, including images and X-rays, bones, teeth, artificial joints, bone chalk, shammies, skulls and antlers, to explain the properties of bone as a tissue and the role osteoclasts play in maintaining this in good health. More than 200 people visited the Euroclast stand.

An edition of the Aberdeen University Magazine accompanied the Explorathon event. This magazine is written and edited entirely by students. Emma contributed a piece about the Euroclast project which you can find on page 14:

http://issuu.com/ausciencemag/docs/issue11


**Website**

The website committee is working on improving our consortium's website. You can find a movie about on our first meeting in Zandvoort on the website. We are also asking for your input. All partners are expected to write a short biography and a description of the project together with a picture of the team. We are looking forward to your creative contribution. Please find two examples at the end of this newsletter for inspiration. You can also find these on the website.

**In the next issue…**
In our next newsletter we would like to include some hot-off-the-press results or methodology developments. Please let us know what is going well in your project and we will spread the word!

**Euroclast Newsletter Editorial board**
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David Massa: dmassa@biochem.uni-kiel.deArjen Gebraad: awhgeb@utu.fi

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Here are two examples for your own team's introductory webpage:

**David Massa Lopez**
My name is David Massa Lopez and I am from Spain, from the city of Barcelona. I did my Biology degree at the University of Barcelona and I did the Master of Molecular Biotechnology at the same University. I performed the master practices in the Cancer Epigenetics Biology Program (PEBC) in Bellvitge, and my studies were focused on the characterization of RANK receptor in PC-3/Mc and PC-3/S cell lines. Since May 2014 I am the Early Stage Researcher located in Kiel (Germany), at the Biochemistry department of Christian Albrechts Universität. When I am not in the lab I like to spend time with my friends and family, play tennis and travel always that I have the opportunity to do it.

E: dmassa[at]biochem.uni-kiel.de

**Paul Saftig**
I am Paul Saftig, the PI and supervisor and have been involved in research on lysosomes for 20 years. The overall research areas in my laboratory include proteolytic events at the cell surface, lysosome biology, lysosomal storage disorders and Alzheimer 's disease. When I am not in the lablab I enjoy playing and following Holstein soccer matches and enjoying time with friends and family. I can be reached via email.

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**Markus Damme**
I am Markus Damme, the co-supervisor and I have experience in research on lysosomes, lysosomal proteins and lysosome-related diseases. I moved to Kiel in May 2013 and before that I worked in Göttingen and Bielefeld (Germany). My current research focuses on the characterization of new lysosomal membrane proteins of unknown function. I can be contacted by email. I enjoy nature and when I am not in the lab I love to spend time outside.

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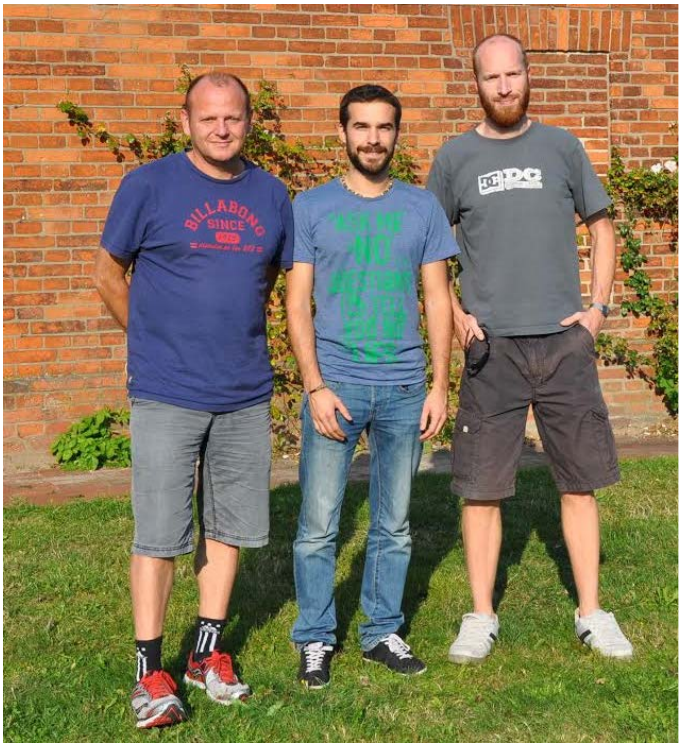
The general aim **in the Euroclast consortium** is to get a deeper insight into the function of lysosomal membrane proteins in the biology of osteoclasts. The specific focus of the project is the newly identified lysosomal membrane protein *Major facilitator superfamily domain-containing protein 1* (Mfsd1). This protein shows highest expression in osteoclasts compared to other bone cells as osteoblasts and compared to other tissue cells according to high-throughput gene expression profiling analysis and is hypothesized to be acting as an exporter for metabolites from lysosomes, the supposed "waste bag" of the cell. I will study the localization of

the protein in osteoclasts ex vivo (using microscopical methods) and examine the function of Mfsd1 *in vivo* using a conditional Mfsd1 knock-out mouse specific of osteoclast. This will be achieved breeding the conditional KO mouse with a strain that expresses Cre recombinase under the control of the CathepsinK promoter, whose expression is dramatically increased in osteoclasts. Because of the similarities between the limiting membrane of the lysosome and the ruffled border of the osteoclast, we hypothesize that Mfsd1 may be localized at the ruffled border where it may play a role in uptake of bone resorption products.

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**Arjen Gebraad**

I am Arjen and I am from Capelle aan den IJssel in the Netherlands. I did my bachelor and master in Biomedical Engineering at the University of Twente, Enschede, the Netherlands. In 2013, I graduated at the Department of Biomaterials Science and Technology at the University of Twente on polymer 3D scaffolds seeded with mesenchymal stem cells for the repair of intervertebral disc lesions.

Since August 2014, I am working as an Early Stage Researcher at the Department of Cell Biology and Anatomy at the University of Turku, Finland.

E: awhgeb[at]utu.fi

**Tiina Laitala-Leinonen**

I am Tiina and I did my PhD-work 1996 on the pH regulation in bone-resorbing osteoclasts, using e.g. antisense molecules to alter resorption activity. Since then, I have worked on short inhibitory and regulatory RNA molecules (siRNAs, miRNAs) in rat, mouse and human hematopoietic and mesenchymal stem cells and primary bone and cartilage cells. In addition to skeletal tissues, I am also interested in tissue regeneration after sport-induced trauma. We collaborate with scientists, athletes, coaches and clinicians to understand how differentiation of individual cell types could experimentally be regulated. These experiments are undertaken in order to produce specific cell types for use in *e.g.* regenerative medicine.

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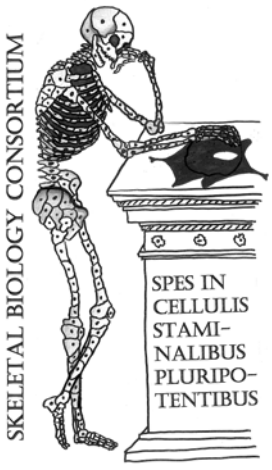


**In the EUROCLAST project** we study the extensive vesicular trafficking in bone-resorbing osteoclasts. We want to understand how the production of enzymes and acids used by osteoclasts to resorb bone are produced and transported. We also study how osteoclasts transcytose bone degradation products from the resorption site to be secreted into the blood stream. For these purposes, the genetics behind setting up and maintaining the osteoclast resorption machinery is investigated in detail. *In silico* -derived data on the proteins involved in vesicular trafficking is verified *in vitro* by using state-of-the-art microscopy techniques.