Manchester Regenerative Medicine Network (MaRMN) Newsletter

Issue 1: Autumn 2019

1. MaRMN Announcements

Dear Readers,
Welcome to the first issue of the Manchester Regenerative Medicine Network (MaRMN) Newsletter. It has been a busy summer across the network and there are a number of important upcoming events. Please read on to find out more. We hope you find the newsletter interesting and informative.

Announcements:

- **New website**: We are pleased to announce that we will soon be launching the new MaRMN website with up-to-date information about research successes, ongoing work and researcher profiles. Please look out for a future announcement regarding its launch.
- **Seminar series**: There are some really interesting talks from field-leading researchers scheduled in the next few months. On 15th November, Dr Claire Higgins (Dept. Bioengineering, Imperial College London) will give a seminar titled *'Hacking the skins ability to bear load'.* The MaRMN internal seminar will be given by Professor Enrique Amaya on the 6th December discussing *'A conserved role for reactive oxygen species during appendage regeneration and early embryonic development'*. In the build-up to Christmas, on 13th December, Dr Raphael Levy (University of Liverpool) will talk about *'Imaging the fate of stem cells in organoids and in vivo'.* All seminars will take place in the Michael Smith lecture theatre, at 1pm.
- **4th MaRMN Annual Symposium 2020**: The MaRMN Board invite you to save the date for the 4th MaRMN Annual Symposium which will take place on the afternoon of Thursday 6th February. More details to be announced soon.

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2. Recent events from the network

a. Manchester Biomaterials Network (ManBioMat) Workshop

In the summer, Professor Alberto Saiani, Xiaoxia Huang and colleagues from the School of Materials and Manchester Institute of Biotechnology, successfully hosted a free workshop for PDRAs and PhD researchers in the field of biomaterials and related disciplines. The day featured a great line-up of talks from leading UK academics on a fascinating spectrum of topics from 3D Bioprinting (Prof Paulo Bartolo, University of Manchester; Mr Alvaro Sanchez-Rubio, Glasgow University) and biomaterials translation (Prof Liam Grover, University of Birmingham) and commercialisation (Prof A.F. Miller, University of Manchester), to intervertebral disc repair (Prof Christine Le Maitre, Sheffield Hallam University) and nerve repair (Dr Adam Reid, University of Manchester). There were also some excellent short talks and poster presentations with three of four awards going to University of Manchester staff/students. The event was sponsored by RSC Biomaterials Chemistry Group, Manchester BIOGEL and AMM@M. The School hopes to run the event again next year.

Photograph of the organising committee for the ManBioMat Workshop 2019

b. Advanced Materials in Medicine @ Manchester (AMM@M) International Collaboration Workshop 2019



Advanced Materials in Medicine Network serves to unite researchers at the frontiers of materials science and healthcare, with the common goal to discover and develop disruptive technologies and transformative solutions for patients in areas of unmet clinical need. Dr Stephen Richardson (SBS), Dr Jason Wong (SBS) and Dr Cyrill Bussy (SHS), along with colleagues from the Faculty of Science and Engineering, participated in a two-day 'AMM@M International Collaboration Workshop' at the Camp Hill Estate in Yorkshire on the 3rd and 4th July. The meeting welcomed academics from the Universities of Toronto and Melbourne to discuss strategic alliances and define collaborative projects in the area of materials in medicine.

3. Upcoming network events

a. Tissue Engineering and Regenerative Medicine International Society (TERMIS) EU Meeting 2020.

The **TERMIS EU Chapter Meeting 2020** will be held in Manchester **on 26th-29th May 2020** at Manchester Central Conference Centre. The TERMIS EU conference is a leading event in the tissue engineering and regenerative medicine calendar, featuring cutting-edge, field leading research. The theme of this year's meeting will be 'Broadening the Targets and Approaches for Regenerative Medicine', and will reflect state-of-the-art international science including the latest breakthroughs. The conference will feature world-renowned speakers, scientific sessions, poster presentations, pre-conference workshops and networking events. There will also be dedicated sessions for TERMIS Student and Young Investigator Section (SYIS), allowing delegates the opportunity to engage with future leaders in this inter-disciplinary field. The local organising committee includes Dr Stephen Richardson (Programme Chair), Professor Sarah Cartmell (Conference co-chair) and Professor Sue Kimber (Conference co-chair). TERMIS EU Chapter 2020 offers researchers, clinicians and industry an ideal opportunity to present their most recent findings, developments and dilemmas. For more information and to submit your **abstract (deadline 20th Dec 2019)**, please visit: www.termis.org/eu2020.

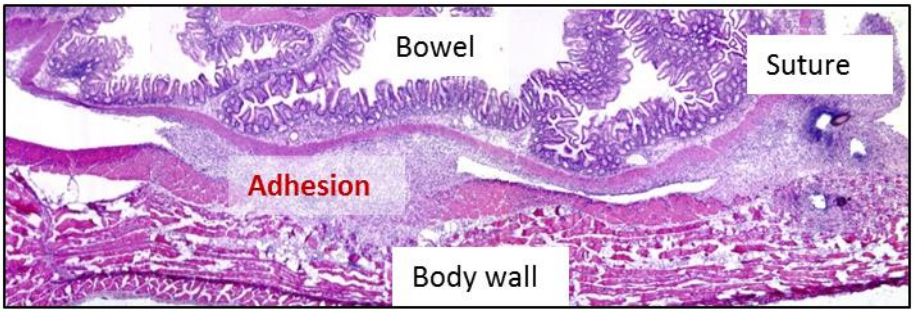
b. Mercia Stem Cell Alliance 2019: Young Investigator Workshop and Conference

The Mercia Stem Cell Alliance 2019 conference will take place on 16th-17th December 2019 at Parkgate Road Campus, The University of Chester. This two day meeting highlights the most exciting developments in basic science and translational aspects of stem cell research across the Mercia region and beyond. There will be plenary talks from internationally renowned speakers, as well as oral papers from young investigators at each of the academic institutes involved in the Alliance, and poster presentations from selected submitted abstracts. Keynote speakers are Professor Matt Dalby, Chair of Cell Engineering in the Institute of Molecular, Cell and Systems Biology at the University of Glasgow, and Professor Uri Frank, Professor of Developmental Biology and Wellcome Trust Investigator at the National University of Ireland. It is anticipated that the meeting will provide a lively forum for networking, discussion and debate.

The Young Investigator Workshop will take place on 16th December and is themed 'The Cell Secretome'. This day will include expert presentations on secretome biology, analysis and delivery, in addition to

demonstrations and input from industrial partners. The MSCA meeting will take place on 17th December. Abstract submission deadline is 11th November 2019. For more information about the meeting and abstract submission guidelines, please visit: https://storefront.chester.ac.uk/index.php?main_page=product_info&products_id=701.

4. Grant successes



Histological H&E section of an adhesion formed between bowel and abdominal wall in a mouse surgery model. (Gorvy et al. 2005 Am J Pathol 167:1005)

Sarah Herrick (with Adrian S. Woolf, Judith E Allen and Dominik Ruckerl), Medical Research Council (2019), '*Defining functional impacts of macrophages in the formation of surgical adhesions*'.

Synopsis: We will discover new medical treatments to prevent the formation of internal scars, or 'surgical adhesions'. Such adhesions cause pain, bowel obstruction and infertility in women and require further surgery resulting in huge health costs. Current treatments are limited and a better understanding of their formation is required. Macrophages are known to be involved in the development of organ fibrosis but have not been carefully investigated in surgical adhesions formation. In this project, we will employ a 3D co-culture system and mouse surgical model to investigate the involvement of specific macrophage subpopulations and receptor signalling in the modulation of adhesion formation. Our experimental strategy will not only illuminate the pathobiology of adhesion formation, but also identify novel biological therapies to prevent adhesions forming post-surgery.

Valerie Kouskoff, Medical Research Council (2019) '*Control of blood cell emergence by YAP and environmental cues.'*

Tony Day (with Caroline Milner, Leela Biant, Susan Kimber and Richard Unwin), Versus Arthritis Programme Grant, January 2020 to December 2023, '*Understanding an endogenous mechanism that protects against osteoarthritis; towards a new paradigm for disease management*'.

Doug Dyer, Royal Society Research Grant, November 2019 — November 2020, '*Specificity of chemokine production and glycosaminoglycan sulphation during inflammatory disease'.*

Karl Kadler with Qing-Jun Meng and Joe Swift (and Oliver Jensen, Martin Lowe in collaboration with the University of Bristol), BBSRC sLoLa, January 2020 - January 2025, '*Opportunities to modulate extracellular matrix secretion and assembly for long term health'*

5. Featured researcher: Dr Svitlana Kurinna

Research Overview: : Dr Svitlana Kurinna is an MRC Independent Research Fellow in the Division of Cell Matrix Biology and Regenerative Medicine. She has a long-standing interest in regenerative medicine which commenced with her highly successful PhD research titled 'p53 and p73 regulate transcription of Foxo3 during liver regeneration', at the University of Texas MD Anderson Cancer Centre. Since then, Svitlana's work has focussed on the role of transcriptional regulators in wound repair. In 2017, Svitlana was awarded a £1.2million grant from the MRC to investigate the function of small ribonucleic acids (RNA) molecules, miR-29s, which she identified as regulators of the epidermis, in order to better understand the mechanisms underpinning normal and impaired cutaneous healing. Via this work she hopes to use the miR crosslinking and immunoprecipitation (miR-CLIP) approach to identify new miR-29 targets regulating growth and differentiation of human keratinocytes with the long-term goal of utilizing miR-29 to improve skin repair.

Hello Svitlana ☺ Please tell us a little bit about your research career to date… Hello ☺ I am originally from Kyiv, did my PhD in Houston, Texas, and moved here from ETH Zurich, where I did my postdoctoral research in the group of Sabine Werner.

What is your favourite thing/what excites you about working in science/academia? Experiments – designing them, doing them, teaching them, thinking about them…

What has driven your interest for the area of research that you currently work on? It's a good opportunity (and a challenge!) to apply the results of my 'basic' research to the clinics.

What kind of impact(s) do you hope your work will have? My hopes are very low at the moment... But I know that the impact will be a good one!

What is your proudest moment/biggest achievement in science? The fact that I am still doing it.

What is the biggest challenged you have faced in your career and how did you overcome it? It was the realization that I cannot do research I want where I want. I have to move countries to follow my research interests and opportunities.

What advice would you give to early career researchers (PhDs/post-docs) trying to get a fellowship? Read good papers and come up with ideas. Position yourself well to get a good chunk of preliminary data.

What was the best piece of advice you were given earlier in your career? Go to a place with an excellent research environment.

How do you maintain a healthy work-life balance and your drive for your research when under pressure? Oh, I am quite bad at this. Struggling nearly all the time! My PhD supervisor emailed me not long ago andsaid to lower my expectations ☺

Outside of your research area, what other topics in science fascinate you? Astronomy and particle physics (I can hardly follow the latter though but it makes one think!).

Outside of work, what do you do to unwind/what are your favourite things to do outside of work? Hiking, hanging out with friends.

Where is your favourite type of food? Tex-Mex in San-Antonio, and Swiss Röschti after snowboarding ☺

Do you have any pets? I have a very hungry venus fly trap sitting on my bench. If you know how to feed it, call me (I am serious!).

If you could visit anywhere in the world, where would it be and why? Spitsbergen. It probably feels like the end of the world.

What is the best book you have ever read? Oh, I cannot choose! Love to read!

Do you have a favourite philosophical quote and why? Contra spem spero. It's the baseline of life.