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Volume XI, Issue II

LINKING THE INTERNATIONAL COMMUNITY OF TERMIS

IN THIS ISSUE

Letter from the President

by Rui L. Reis

The organization of the Chapter and World meetings is one of the main activities of TERMIS. The society has been trying, during the last few years, to provide its members, and the relevant scientific community, the best possible meetings. The different chapters have different ways of dealing with their own meetings, which respond to the different geographical areas particularities, and of course to the leadership of the distinct conference organizers. But TERMIS has now reached a state where meetings in the 3 different chapters can typically expect something between 700 and a 1000 participants.

Attendees of meetings can always expect good science, with top plenary and keynote speakers, general parallel sessions and symposia proposed and organized by members of the society, student activities, business plan competitions, industrial sessions, women luncheons, sessions organized with other societies, panel discussions, etc. But of course there is always space and time for scientific and social/cultural interactions. TERMIS meetings are always a place to meet old friends of a truly global society with members from almost 90 countries, but are also of course an opportunity to make new ones and to start brand new collaborations.

This is year the "meeting season" started very well with the TERMIS-EU meeting in Uppsala (Sweden). But we are looking forward for the other TERMIS Chapter meetings of 2016 that will be held respectively in, Tamsui (Taiwan) – TERMIS-AP, and San Diego (USA) – TERMIS-AM. I would like to invite members that can make it to try to attend not only their own Chapter meeting but whenever possible to attend a TERMIS meeting in another region. I have attended almost all the meetings of the different Chapters of TERMIS and I can only advise you to expand your horizons!

Within TERMIS Global we have now also created the possibility for interested members to organize smaller workshops. Specific rules were approved for this. If you are interested in possibly organizing a workshop, please ask for the guidelines from our wonderful TERMIS Executive Administrator, Sarah Wilburn.

Also, feel free to contact TERMIS officers to discuss your ideas. TERMIS is all about making happening what the membership

feels is useful! Any other ideas or suggestions are also of course more than welcomed.

See you at the next TERMIS meeting!

Yours Sincerely,

Rui L. Reis
TERMIS President

Stay Connected to *Tissue Engineering, Parts A, B and C*!

As a member of TERMIS you have FREE online access to, *Tissue Engineering, Parts A, B and C* (http://www.liebertpub.com/ten) the leading biomedical journal on all aspects of tissue growth and regeneration. Multidisciplinary in scope, the Journal provides a variety of original articles, reviews, and methods papers that can be delivered right to your inbox!

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NEW Special Collection: Harnessing Topographical Cues for Tissue Engineering
Guest Editor: Aurélie Carlier, PhD
http://www.liebertpub.com/lpages/ten-topographical-cues-2016/158/

Tissue Engineering and Regenerative Medicine in Asia-Pacific, The Same But Different
Review from Dr. David Williams

Student & Young Investigator Activities

Message from TERMIS-AM SYIS

Welcome to the Student and Young Investigator Section (SYIS) event page for TERMIS AM 2016 Meeting. Based on student feedback from previous conferences as well as discussions within SYIS, we have designed programming to make this year's conference another success! Below, please find a description of our events. The sign-up form will be available soon online via the conference website. Please note that several of these events have limited seating and priority will be given in a first-come, first-served basis. Closer to the conference, you will receive an e-mail confirming your registered events. We hope you enjoy these SYIS events!

**Times and locations of the event will be determined soon. The*

Information Booth (Saturday evening)

Date: Sunday, December 11th
Time: TBD
Location: TBD
Availability: No restrictions

TERMIS-AM SYIS is pleased to host an information booth during the ***TERMIS AM 2016 Welcome Reception*** on the evening of Sunday, December 11th to celebrate the opening of the 2016 TERMIS AM Meeting in San Diego. This information booth will serve as a hub to share details about the SYIS events going on throughout the conference as well as make SYIS volunteers available to answer any questions. In addition, this is an occasion for students who wish to become involved in TERMIS SYIS to discuss opportunities with current members in SYIS leadership positions.

Career Opportunities Discussion Panel

Date: Monday, December 12th
Time: 11:45P am - 1:00 pm
Location: TBD
Availability: 100 members

TERMIS-AM SYIS is pleased to host the ***Career Opportunities Discussion Panel*** on Monday, December 12th during the TERMIS-AM Meeting (light snacks will be provided). This discussion panel will consist of young professionals representing careers in academia, industry, government agencies and institutes, and entrepreneurial activities. This is a great opportunity for students and young investigators to hear the recent experiences of these scientists in choosing their career paths, the opportunities and challenges of their chosen career, and providing advice on how you can achieve your career goals. This interactive panel is designed to facilitate open discussion, and to allow students and young investigators to have their questions answered by the panel and other attendees. At previous meetings, this event has been very beneficial for students and young investigators thinking about pursuing a career in any of these fields. Please use the sign-up sheet below to register for this event.

Student-Meet-Mentor Lunch

Date: Tuesday, December 13th
Time: 11:30 am - 1:00 pm
Location: TBD
Availability: 80 members
Ticketed Event

TERMIS-AM SYIS is pleased to hot the Student-Meet-Mentor Lunch on Tuesday, December 13th at 11:30 AM – 1:00 PM during the TERMIS-AM Annual Meeting. The Student-Meet-Mentor Lunch gives students and young investigators the opportunity to enjoy an invigorating plated lunch with faculty mentors and leaders of the TERM fields. Mentors include session chairs, members of the Scientific Advisory Committee, and local industry leaders. Please use the sign-up sheet to register for this event.

Peer Mentor Breakfast

Date: Monday, December 12th
Time: 7A (1 hr in duration, 1 hr before sessions begin)
Location: TBD
Availability: 30 members
Ticketed Event

TERMIS-AM SYIS is pleased to host the ***Peer Mentor Breakfast*** on Monday, December 12th from 7 am-8A am during the TERMIS-AM Meeting. This event is for undergraduates or first year graduate students to pair up with older graduate students in an informal setting over a light breakfast. Students are encouraged to discuss matters such as the application process for graduate school, selecting an adviser, selecting a program, "day in the life," etc. Please use the sign-up sheet below to register for this event (priority given to undergraduate students).

5k Fun Run

Date: Tuesday, December 13th
Time: 6:15A-7:30A
Location: Meet outside of Sally's Restaurant, at the back of the conference hotel
Availability: No restrictions

TERMIS AM SYIS is pleased to host the ***5k Fun Run*** on the morning of Tuesday, December 13th from 6:15 am – 7:30 am during the TERMIS AM Meeting. This event is for anyone (students, young investigators, faculty) who wants to wake up and exercise in beautiful San Diego! Runners will be

provided with a map and directions for a scenic 5k along the San Diego bay, followed by a light breakfast at the finish line. Runners will start at Embarcadero Marina Park North (south of the Manchester Grand Hyatt San Diego) and loop back at the end of Waterfront Park. Please use the sign-up sheet below to register for this event so we may gauge interest.

Student Co-Chairing (throughout the conference)

TERMIS AM SYIS is pleased to announce the opportunity for students and young investigators to serve as co-chairs for scientific sessions at the TERMIS AM 2016 Meeting in San Diego. This one-of-a-kind event provides a unique platform for students and young investigators to co-chair sessions with leading scientists and get first-hand experience moderating scientific discussions. At previous meetings, this event has been hugely popular, and we hope to see several of you co-chairing sessions at this year's meeting. Please use the sign-up sheet below to indicate interest- a follow-up survey will be sent to those interested with available sessions.

Tours of the San Diego Biomedical Laboratories

Date: December 14th
Time: 2:15P- ~5P
Location: Hotel Lobby (to an off campus site)
Availability: 30 Members
Ticketed Event

TERMIS-AM SYIS is pleased to help coordinate a tour of one of the prestigious biomedical institutions in the San Diego area. To minimize overlap with other conference sessions, this tour will be offered immediately following the conference closing ceremony. Interested persons will meet in the lobby to take Uber cars off site (these costs will have to be paid by those that sign up and are estimated to be ~$40 per car in total). We are working hard to coordinate with local institutes to determine which laboratories will be best suited for this tour. If interested in more information and potentially signing up, please use the sign-up sheet below to enter your e-mail.

Late Breaking Poster Abstracts Are Being Accepted!

Deadline: August 31, 2016

termis.org/am2016/late_abstracts.php

Undergraduate Poster Abstracts Are Being Accepted!

Deadline: September 2, 2016

termis.org/am2016/syis.php

Register for the 2016 TERMIS-AP Conference! Online registration is available unil August 15, 2016.

Program-at-a-Glance is available here.

The list of notable speakers that will be presenting during the conference is available here.

The list of student and young investigator (SYIS) activities (all students and young investigators are encouraged to participate) is available here.

The conference venue is the Fullon Hotel Tamsui Fishermen's Wharf. http://fishermen-wharf.fullon-hotels.com

Book your accommodations

Student & Young Investigator Activities

During the recent 2016 TERMIS-EU conference in Uppsala, the Student and Young Investigator Section of the European Chapter (SYIS-EU) held several activities that were very well attended. The activities and participants of those activities are provided below.

These activities (or similar ones) will be organized during the 2017 EU conference that will be held in Davos, Switzerland. Check the conference website for more information on those activities and all events for the program as we draw closer to 2017.

TERMIS SYIS EU Council:
Chair: Michael Monaghan
Chair Elect: Dilip Thomas
Treasurer: Alan Ryan
Secretary: Claudia Loebel

Local SYIS Representatives: Daniel Bermejo, Liyang Shi, Nick Walters

TERMIS-EU SYIS activities Uppsala 28th June- 1st July 2016

Student Co-Chairing

The TERMIS-EU SYIS chapter is pleased to announce the opportunity for students and young investigators to serve as co-chairs for scientific sessions at the 2016 TERMIS EU Chapter Meeting in Uppsala. This provides a unique platform for students and young investigators to co-chair sessions with leading scientists and engage in scientific discussions. The provisional list of co-chairs for this year's meeting is:

Yanny Marliana	Roberta Fraioli	Ceren Ozel
Richard Balint	Deana Haralampieva	Thomas Paterson
Richard Bartlett	Hadi Hezaveh	Barbulescu Remus
Silvia Budelli	Outi Huttala	Diana Ribeiro
Silvia Caddeo	Jeonghyeong Im	Alan Ryan
Sandra Camarero-Espinosa	Zohreh Izadifar	Angela Rynne Vidal
Nehar Celikkin	Weronika Jakubowska	Paolo Sanchez
Vera Chernonosova	Heinz Peter Janke	Reza Shahbazi
Natalia Vladimirovna Chevtchik	Kyoung-Tak Kang	Jakub Smolar
Dimple Chouhan	Reza Khorramirouz	Richard Tan
Pritam Das	Caoimhe Kiernan	Dilip Thomas
Pedro Díaz-Payno	WonJin Kim	Kaisa Vuornos

Anna Diez-Escudero	Callie Knuth	Ganesh Vythilingam
Shorouk Fahmy Garcia	Fabian König	Annika Weigand
Michele Fedecostante	Youngwon Koo	Miguel Xavier
Marc Antoni Fernandez-Yague	Che-Ying (Vincent) Kuo	Kai-Chiang Yang
Jonathan Field	Claudia Loebel	Nadia Zakaria
Sonia Font Tellado	Jekaterina Maksimcuka	Jakub Zimoch
Nicola Foster	Estrela Neto	

Student Presentation Awards

SYIS commits to recognise excellence in research by giving awards to participating researchers who demonstrate research excellence through their talent, knowledge and expertise in the field of tissue engineering and regenerative medicine. The section covers several awards under the following categories:

- Oral Presentation Awards: Three awards will be given for presentations given by SYIS eligible members (Students and Young Investigators within three years of PhD awarded) based on their rankings by the judging committee. Recipients will receive a certificate for their award and a cash prize of €500 (first prize), €400 (second prize) and €300 (third prize).

- Rapid Fire Presentation Awards: Three awards will be given for presentations given by SYIS eligible members (Students and Young Investigators within three years of PhD awarded) based on their rankings by the judging committee. Recipients will receive a certificate of their award and a cash prize of €450 (first prize), €350 (second prize) and €250 (third prize).

- Poster Presentation Awards: Three awards will be given for presentations given by SYIS eligible members (Students and Young Investigators within three years of PhD awarded) based on their rankings by the judging committee. Recipients will receive a certificate of their award and a cash prize of €400(first prize), €300 (second prize) and €200 (third prize).

Podium Presentation Awardees
1st Place €500
Lizette Utomo

2nd Place €400
Riccardo Levato

3rd Place €300
Mireia Hoyos Nogues

Rapid Fire Poster Presentation Awardees
1st Place €350
Michel Haagdorens

2nd Place €250
Rachael Harrison

3rd Place €150
Arianna Mauretti

Poster Presentation Awardees
1st Place €400
Shorouk Fahmy Garcia

2nd Place €300
Angela Rynne Vidal

3rd Place €200
Jonathan Field

SYIS Social Night
Tuesday, 28th June from 21:00 till late
Terrassen Kök & Bar, Drottninggatan 1, 753 10 Uppsala, Sweden

The TERMIS-EU SYIS chapter is organizing a Social Night open for students and young investigators. This event is an opportunity to meet friends and other young scientists while enjoying snacks and beverages. We also welcome your ideas for future plans of SYIS and how to get more involved in the section. Please collect your tickets from the SYIS information desk at the congress hall.

Grant Writing Workshop
Tuesday 28th June, 17:00 to 18:30
Location: Hall B

The TERMIS-EU SYIS is hosting a Grant writing workshop designed for young scientists at the 2016 TERMIS-EU Chapter Meeting in Uppsala. Gwendolyn Schaeken from the Swedish **Marie Curie National Contact Point** joins us to discuss grant opportunities and evaluation procedures. In addition, previous European grant holders will present their experiences and tips for successful proposal submission. The last part of this workshop is designed to facilitate open discussion and allow young investigators to get answers from the experts. This is a great opportunity for students and young investigators to gain insight into European funding procedures. Topics covered will be grant preparation, identifying grants available at a certain career stage, dealing with rejected grants and how to successfully prepare applications. Our current confirmed speakers are:

Professor Liesbet Geris

Liesbet Geris is professor in Biomechanics and Computational Tissue Engineering at the Department of Aerospace and Mechanical Engineering at the university of Liège and part-time associate professor at the Department of Mechanical Engineering of the KU Leuven, Belgium.

Her research interests encompass the mathematical modeling of bone regeneration during fracture healing, implant osseointegration and tissue engineering applications. The phenomena described in these mathematical models reach from the tissue level, over the cell level, down to the molecular level impaired healing situations and the *in silico* design of novel treatment strategies. She is scientific coordinator of Prometheus, the skeletal tissue engineering division of the KU Leuven. Her research is financed by European, regional and university funding (up to date 4.5 M€ as PI and co-PI). In 2011 she was awarded **an ERC starting grant** to pursue her research. Liesbet Geris is the author of 57 ISI indexed journal papers (h-index 21), 8 book chapters and over 80 full conference proceedings and abstracts. She is the editor of 2 Springer-Verlag books on computational modeling in tissue engineering and the modeling of biological processes and she is member of the Editorial Board of the NPG journal Scientific Reports. She has received a number of awards, the Young Investigator Award of the International Federation for Medical and Biological Engineering (IFMBE, 2008), the Taylor & Francis award for outstanding innovation in computational methods in biomechanics and biomedical engineering (2010) and the IAMBE-IFMBE early career award (2015). She is chair of the policy affairs work group of the Virtual Physiological Human Institute, member of the Young Academy of Europe and co-chair of the Young Academy of Belgium (Flanders).

Professor Eric Farrell

Since October 2012 Eric Farrell is an assistant professor in the Department of Oral and Maxillofacial Surgery, Erasmus Medical Centre in Rotterdam. There he has established a research group focused on the treatment of large bone defects by tissue engineering and regenerative medicine approaches. Eric's research interests are in mimicking the biological process of endochondral ossification to tissue engineer new bone for the treatment of bone defects and in understanding the mechanisms of action of this process by studying the donor/host interactions (immunologically) and the role of specific factors in the process (via lentiviral knockdown). By understanding how implanted stem cells interact with host systems Eric hopes to improve tissue engineering based strategies for tissue repair.

Eric Farrell graduated second in his class with a degree in Physiology from Trinity College Dublin, Ireland, in 2002. He subsequently carried out his PhD in tissue engineering between the departments of Physiology and the Trinity Centre for Bioengineering focusing on the generation of bone and cartilage constructs from adult mesenchymal stem cells and the signalling mechanisms involved, graduating in 2006. He then completed a 2 year postdoctoral fellowship in the Trinity Centre for Bioengineering and Anatomy Department of the Royal College of Surgeons in Ireland. This period also included a 6 month period in the Orthopaedics Department of Erasmus Medical Centre in Rotterdam. Research areas included focusing on in vivo repair of critical sized skeletal defects, in vitro angiogenesis and cell tracking using magnetic resonance imaging (MRI).

In 2007 Eric returned to Erasmus where he successfully applied for a **Marie Curie fellowship**, working in the Departments of Orthopaedics and Otorhinolaryngology. This personally awarded fellowship for career advancement involved the development of an in vitro model of endochondral ossification and neovascularisation. Other ongoing work focused on in vivo stem cell tracking with MRI and the induction of angiogenesis from mesenchymal stem cells to improve the viability of tissue engineered constructs in vivo.

In 2009 Eric returned to Ireland to work in the Regenerative Medicine Institute working on an EU funded project entitled "Gene Activated Matrices for Bone and Cartilage Repair in Osteoarthritis". There he examined the role of inflammation modulation in prevention of osteoarthritis and also endochondral ossification as a means to effect osteochondral repair in joint defects. Eric has been the recipient of **two AO starter grants** and has recently coordinated the acquisition of a **Marie Curie ITN**.

Robert Brown Student Mentor Meet

Thursday, 30th June at 12:45-14:00

Location: Rooms K1 and K2

This year the Student Mentor Meet is named in the memory of late Professor Robert Brown (University College London, UK). Prof. Brown was a significant figure in the field of tissue engineering. In 2002, he was appointed as UCL's first Professor of Tissue Engineering. His pioneering works on 3D tissue models and elucidating the effect of mechanics has had a tremendous impact in the basic understanding for developing biomimetic scaffolds. In addition to being a highly regarded scientist, Prof. Brown was an extraordinary individual, popular teacher and a sought after research supervisor. Also most notably, he was an active participant and advocate of student mentoring activities within the tissue engineering community nationally and internationally. Sharing his enthusiasm and vision for inspiring young minds, we present to you Robert Brown Student Mentor Meet. This event will give students and young investigators the opportunity to meet scientific leaders in the field to ask the most burning questions; from the state of current academic research environment to useful advice for a successful career. The format of this session is informal in a more relaxed atmosphere, where students can engage in fruitful discussions with their peers and mentors, about their research interests and aspirations. The list of mentors will be made available soon.

TERMIS-EU 2017 is now accepting Symposium Proposals for the Annual TERMIS-EU meeting in Davos. Proposals may be for standard symposia or newly initiated Society symposia. The Symposia application forms are attached for you to review and complete.

Completed forms should be submitted by 31st August to the Conference Secretariat termis@aofoundation.org.

Both forms can be found on the conference website.

If you are interested in sponsoring TERMIS-EU 2017 please visit our sponsor's page
http://www.termis.org/eu2017/sponsor_opps.php.

If you are interested in sponsoring a symposium at TERMIS-EU 2017, please contact us and let us know, so that when the symposia are accepted we can contact you for possible sponsorship of keynote speakers. Sponsors of symposia will be able to promote their company by way of advertising material as part of the symposium. (This form of sponsorship has been added after the creation of the sponsorship opportunities leaflet.)

We look forward to seeing you in Davos!

The local Organizing committee for the TERMIS-EU 2017 Conference,

Chair: R. Goff Richards, PhD Program Chair: Mauro Alini, PhD

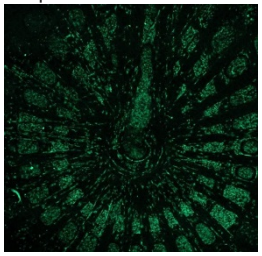
Laboratory Feature: The Moroni Lab

The Moroni Lab (www.moronilab.org) is part of the MERLN institute for Technology-Inspired Regenerative Medicine (http://merln.maastrichtuniversity.nl) at Maastricht University, the Netherlands. The research group was founded in 2009 at University of Twente, the Netherlands, laying down its roots on biofabrication technologies to control cell fate. Today, the Moroni Lab has several local and international collaborations. Locally, we contribute to the Brightlands ecosystem, with which a new program on 3D printing for biomedical applications is being established. The vicinity of the Maastricht University academic hospital further facilitates strong collaborations with clinical departments. Internationally, we are active within the International Society for Biofabrication, the Tissue Engineering and Regenerative Medicine International Society, and the European Society for Biomaterials. Thanks to these communities, several collaborations are in place around the world. Current research projects are running thanks to National and European grants, among which an ERC starting grant to Professor Moroni, European consortia (H2020-FAST, and FP7-STELLAR), and regional funding investing in knowledge and innovation.

Mission.

The Moroni lab develops new biofabrication technologies to generate libraries of 3D scaffolds able to control cell fate. This passes through the design of biomaterials, 3D scaffolds, and surface properties to better understand cell-material interactions.

Current tissue engineering and regenerative medicine products suffer from high costs and laborious techniques that complicate scaling-up production. First generation products consisted of cells in suspension, encapsulated in hydrogels, or seeded into 3D porous matrices. These products demonstrated the potential of regenerative medicine therapies by reducing pain and restoring tissue continuity. Yet, the regenerated tissue is not always as functional as the original one. This leads to degeneration few years after surgery and consequently to the need of another surgery. Causes are different. Cells need to be expanded before achieving a sufficient number for implantation. Cell expansion is typically performed on 2D surfaces, while in the body cell proliferation and homeostasis happens in a 3D environment. This is associated with a loss of the original cell phenotype. Consequently, the expanded cells produce a different extracellular matrix (ECM), ultimately resulting in a tissue formation that is different than the targeted tissue to regenerate. Furthermore, surgical procedures with these products typically consist of two steps, namely isolation and expansion of cells from a tissue biopsy and cell seeding on scaffolds prior to implantation. This is associated with long hospital stay and rehabilitation time, increasing healthcare costs as well.



Our overarching goal is to create new solutions for regenerative medicine and understand the fundamental phenomena at the base of the observed regenerative processes.

Challenges.

Biofabrication strategies able to create smart constructs to direct cell fate hold the potential to be applied in several regenerative medicine applications to face the above mentioned challenges. The core activities of the group evolve around acquiring and implementing knowledge for biofabrication technologies based on the following research objectives:

Design of scaffolds able to control and steer (stem) cell activity. Stem cells are a fascinating and promising source to regenerate tissues and organs due to their potential to differentiated into multiple specialized cells. Yet, better control over cell-material interactions is necessary to maintain tissue engineered constructs in time. It is crucial to control stem cell quiescence, proliferation and differentiation in three-dimensional scaffolds while maintaining cells viable *in situ*.

Develop current and new biofabrication technologies based on additive manufacturing, bioprinting, bio-assembly, and electrospinning. Among biofabrication technologies, bioprinting, additive manufacturing, bio-assembly, and spinning technologies form crucial clusters that shall be used for this purpose. These technologies will be further advanced in the future to include surface engineering methods during fabrication.

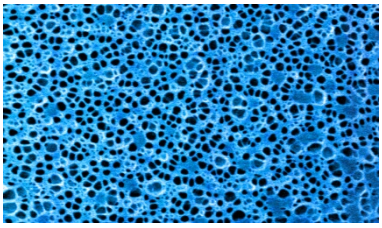
Integrate neural and vascular cues in tissue and organ regeneration strategies. Initial investigations on how different biofabrication platforms could be combined to recreate a synthetic mimicry of the ECM of the peripheral nervous system have been started. The goal in the coming years is to complement this know-how with vascularization and understand how neurovascular stimuli can modulate tissue regeneration.

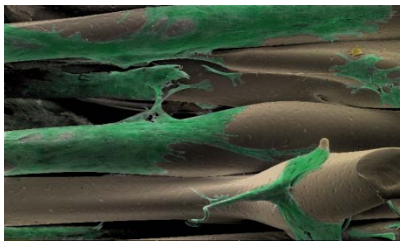
Engineer the immune response of biomaterials, scaffolds, and biomedical devices. Engineered devices with surface properties able to steer the foreign body response to synthesize a vascular graft for dialytic patients have already been successfully created. Further deepening our understanding of how biomedical implants can be engineered to steer the foreign body response is an exciting field in regenerative medicine as it will allow improving the integration of biofabricated substitutes with surrounding tissues.

Apply biofabrication technologies to study regenerative and degenerative phenomena. 3D constructs could be used as 3D *in vitro* models to understand biological mechanism behind tissue regeneration, homeostasis, and eventual degeneration. This will be fed back into the design of biofabricated constructs to achieve on one side a better 3D construct, on the other side possible new therapies for targeted diseases.

Most Recent Achievements of the Lab.

In a series of recent papers, we demonstrated how additive manufacturing can be used to design and fabricate scaffolds displaying a number of structural and physico-chemical gradients able to influence the differentiation of adult stem cells towards skeletal cells.





Structural as well as physico-chemical gradients can be considered as an additional element in designing scaffolds for stem cell-based regenerative medicine applications. In a few recently published papers, we have shown how gradients in pore size and shape could aid in the differentiation of bone marrow derived adult mesenchymal stem (or stromal) cells towards skeletal lineages. When MSCs are cultured in scaffolds with pores varying in size, they can be better differentiated towards osteoblasts or chondrocytes in presence of either chondrogenic or osteogenic media (Di Luca A., et al. Scientific Reports 2016; Di Luca A., et al. Acta Biomaterialia 2016). Specifically with increasing pore size, better osteogenic differentiation occurs. Vice versa, with decreasing pore size, better chondrogeneiss is observed. Similarly, when pore shape is varied from squared to increasingly rhomboidal shapes, MSCs shift their differentiation preferece from the chondrogenic to the osteogenic lineage, respectively (Di Luca A., et al. Advanced Healthcare Materials 2016). Such influence on stem cell differentiation seems to be connected to different local nutrient availability, as shown by a differential expression of hypoxic inducible factors.

These studies show new avenues in the ever growing biofabrication field, where additive manufacturing of hierarchical scaffolds promises to be a new exciting bioprinting strategy.

University of Pittsburgh

EMORY UNIVERSITY SCHOOL OF MEDICINE | Department of Rehabilitation Medicine
Division of Physical Therapy

Palo Alto VA Rehabilitation R&D REAP Center

CONGREGATE
EDUCATE
REGENERATE

October 14-16, 2016

Emory University | Atlanta, GA

FIFTH ANNUAL

SYMPOSIUM ON REGENERATIVE REHABILITATION

Endorsed by termis

This activity has been approved for AMA PRA Category 1 Credit(s)™.

KEYNOTE & PLENARY SPEAKERS

Mark H. Tuszynski, MD, PhD (UC San Diego)

Ravi Bellamkonda, PhD (Georgia Tech)

Robert E. Guldberg, PhD (Georgia Tech)

Christine Mummery, PhD (Leiden University Medical Center)

Network with scientists and clinicians from across the fields of rehabilitation & regenerative medicine.

NEW THIS YEAR!
Poster Competition with Prizes

- *First place:* $300 + free registration to 2017 Symposium
- *Second place:* $200
- *Third place:* $100

Sponsored by Georgia Tech Neural Engineering

Travel Awards are available!

Discover integrated methods to enhance tissue healing and regeneration!

To register, contact Katy Wharton at rehabmtg@pitt.edu or (412) 624-5293.

Symposium Program Chairs
Randy Trumbower, PT, PhD
Fabrisia Ambrosio, PhD, MPT

Symposium Series Course Directors
Fabrisia Ambrosio, PhD, MPT
Michael Boninger, MD
Thomas Rando, MD, PhD
William Wagner, PhD
Anthony Delitto, PT, PhD, FAPTA

Symposium Sponsors & Partners

Symposium Organizers
The McGowan Institute for Regenerative Medicine
Pitt School of Health and Rehabilitation Science
Palo Alto VA Rehabilitation R&D REAP Center
Pitt Physical Medicine & Rehabilitation
UPMC Rehabilitation Institute
Emory University School of Medicine, Dept. of Rehabilitation Medicine

Symposium Sponsors
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National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)

International Consortium for Regenerative Rehabilitation

http://www.ar3t.pitt.edu/Symposium

Upcoming Conferences

All conferences listed have been reviewed and approved for endorsement by the TERMIS Endorsement Committee.

August 2016

- Advances in Tissue Engineering Short Course
  Short Course Dates: August 10-13, 2016
  Location: Rice University, Houston, TX

September 2016

- 2016 TERMIS-AP Conference
  Conference Dates: September 3-6, 2016
  Conference Location: Tamsui Town of New Taipei City
  Conference Chairs: Shih-Chieh Hung and Ming-Thau Sheu

- Future Investigators of Regenerative Medicine 2016 (FIRM 2016)
  Symposium Dates: 26-29 September 2016
  Symposium Location: Hotel Cap Roig, Spain
  Abstract Submissions now being accepted

October 2016

- CELLS | Musculoskeletal 2016
  Conference Dates: October 7-9, 2016
  Conference Location: Amsterdam, The Netherlands
  TERMIS members receive a 15% discount on registration. Inquire for the code.

- 5th Annual Symposium on Regenerative Rehabilitation
  Symposium Dates: October 14-16, 2016
  Symposium Location: Atlanta, GA
  Hosted by: Emory University

- Symposium on Biomaterial Science
  Symposium Dates: October 24-25, 2016
  Symposium Location: Renaissance Woodbridge Hotel in Iselin, NJ
  Hosted by: NJ Center for Biomaterials
  TERMIS members receive a 10% discount on registration.

- Biofabrication 2016: Past, Present and Future Biofabrication and Translation
  Meeting Dates: October 29-31, 2016
  Meeting Location: Embassy Suites Winston-Salem/Winston-Salem Marriott, Winston-Salem, NC
  TERMIS members receive a discount of $50 off of their registration.

December 2016

- 2016 TERMIS-AM Conference
  Conference Dates: December 11-16, 2016
  Conference Location: San Diego, CA
  Conference Chairs: Anthony Ratcliffe, PhD; Robert Sah, MD, ScD; and Bill Tawil, PhD

June 2017

- 2017 TERMIS-EU Conference
  Conference Dates: 26-30 June 2017
  Conference Location: Davos Conference Center, Davos, Switzerland
  Conference Chair: R. Geoff Richards, PhD
  Conference Program Chair: Mauro Alini, PhD

September 2017

- 2017 TERMIS-AP Conference
  Conference Dates: September 21-24, 2017
  Conference Location: Nantong, China
  Conference Chairs: Prof. Dr. Xiaosong Gu, Dr. Xiaobin Fu, and Dr. Yilin Cao
  Program Chairs: Dr. Fei Ding and Dr. Wei Liu

December 2017

- 2017 TERMIS-AM Conference
  Conference Dates: December 3-6, 2017
  Conference Location: Charlotte Convention Center
  Conference Chair: Anthony Atala, MD
  Conference Program Chair: Shay Soker, PhD

September 2018

- 2018 TERMIS World Congress - Kyoto, Japan
  World Congress Dates: September 4-7, 2018
  Location: Kyoto International Conference Center
  Co-Chairs: Yasuhiko Tabata, PhD and Yoshiki Sawa, MD, PhD

interLink

To accomplish its mission, TERMIS brings together the international community of persons engaged or interested in the field of tissue engineering and regenerative medicine and promotes education and research within the field of tissue engineering and regenerative medicine through regular meetings, publications and other forms of communication. The Society also serves as an international forum to promote the informed discussion of challenges and therapeutic benefits of the application of tissue engineering and regenerative medicine technologies.

Most importantly, the Society is committed to bringing you closer to key professionals to support your mutual understanding of the field, accelerate your research in the field and to enable you to contribute to the ultimate care of patients in this very important way.

TERMIS

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