

Newsletter, *interLink*

Tissue Engineering and Regenerative Medicine International Society, Inc.

Linking the International Community of  **termis**

Letter from the Editor

Dear Colleagues,

The tail end of an economic downturn might seem like an odd time to be taking an imaginative look forward at the prospect of the future of tissue engineering & regenerative medicine, which will result from advances in science and technology over the next two decades. However, now is in fact the perfect time to focus on the positive opportunities and developments that could lead us into recovery through investment in science and technology excellence in TE & RM in the coming decades. As nations across the globe emerge from the economic crises, there is a growing focus on choosing the right levers to pull in order to restore confidence and restart economic growth. As a result, there has been a new emphasis on tissue engineering and regenerative medicine. Governments, corporations and investors alike are recognizing that innovation in the fields of TE & RM can drive growth, create new jobs and facilitate improvements in life expectancy and health. Grant funding Agencies have approved investments, which have been made over the last 5 years are creating well funded facilities in research centres and laboratories around the world. Furthermore, technology itself is facilitating collaboration between scientists across the globe on an unprecedented scale. We are also entering an era where medical technology will assume even greater prominence in our lives and will play a more central role in everything we do. Society's expectations will subsequently be raised as to how effectively science and technologies (such as TE & RM) can meet our ever expanding needs and desires and tackle persistent problems relating to health and life expectancy. The combination of global need, funding and societal expectation makes this a tremendous time to be part of the TERMIS family.

From the TERMIS AP meeting in Sydney.

Yours sincerely,

Professor Dietmar W. Hutmacher PhD (NUS), MBA (Henley)

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July - September 2010

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2011 Print Subscription Rates Coming Soon!

Librarian Recommendation Form

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Queensland University of Technology

Sarah Wilburn

TERMIS Administrator

2010 TERMIS Election

The process for the 2010 election has begun. Thank you to those members, who submitted their suggestions of nominees for the various open positions within the three TERMIS chapters. Over the next couple of months, the regional Nominating Committees will be reviewing the list of nominations submitted by the membership. Once the slate of nominees is completed, the Nominating Committee will be present the slate to the TERMIS Governing Board for final approval.

The final election date is set for Thursday, December 16, 2010.

Notification of the start of the election will be distributed to all members qualified to vote thirty (30) days prior to the final election date, Tuesday, November 16, 2010. At this time, members will be provided with the information necessary for the election (i.e. election direction letter, final slate of nominees, and the candidate's biographical information.)

Please note: Once the final slate of nominees is submitted to the membership, TERMIS members are provided with an opportunity to submit additional nominations by petition to the President. The call for additional nominations process is outlined in the TERMIS by-laws and will be explained in the announcement to the membership at the start of the election process.

If you have any questions about the election process, please do not hesitate to contact Sarah Wilburn, swilburn@termis.org.

Online voting will begin on Wednesday, December 1, 2010, fifteen (15) days prior to the final election date. All voting will be conducted online. We ask that you please take a moment of your time to cast your votes.



December 5-8, 2010, Hilton in the WALT
DISNEY WORLD® Resort - Orlando, Florida
www.termis.org/na2010

REGISTER TODAY!

To take advantage of the early registration deadline, you must register *on or before September 30, 2010!*



Overview of TERMIS-EU 2010

'At the Crossroads: Development and Translation'

The Tissue Engineering Regenerative Medicine International Society (TERMIS) EU meeting, which was held in Galway last June, was a tremendous success. Attendees, numbering around 750, were inspired by the innovative scientific programme and the calibre of science presented. Plenary speakers included Professor Randall Moon, Director of the Institute for Stem Cell and Regenerative Medicine at the University of Washington; Professor Helen Blau, Professor and Director of the Baxter Laboratory for Stem Cell Biology at Stanford University School of Medicine; Professor James Fawcett, Chair of the Cambridge Centre for Brain Repair; and Professor Mark Ferguson, co-founder and Chief Executive Officer of Renovo. The record number of attendees at TERMIS-EU 2010 highlighted the growing interest in tissue engineering and regenerative medicine in Europe and around the world.

Galway is located on the western fringes of Europe on the Atlantic coast of West Ireland. The weather is typically unpredictable; however, during the conference this year delegates enjoyed a week of glorious sunshine. The city is synonymous with the medical device industry as many of the leading multinational companies are based here including Boston Scientific, Medtronic and Creganna-Tactx. In fact, almost 20% of the working population are employed in industries related to this sector. In addition the National University of Ireland adds a young flavour to the city life. It is also a city renowned for arts and culture. During the conference, a vibrant social programme was organised that provided the delegates with a flavour of what Galway has to offer.

The theme of the meeting, *At the Crossroads: Development and Translation*, covered a range of topics and was attended by academics, clinicians and industry representatives alike. For the first time, the TERMIS-EU conference hosted an 'Industry Day' which attracted significant interest and addressed issues associated with translation, regulation and commercialisation of research in tissue engineering and regenerative medicine.

The conference, held for the first time in Ireland, was hosted by the Network of Excellence for Functional Biomaterials (NFB) and chaired by Professor Abhay Pandit who is director of the NFB based at the National University of Ireland, Galway. The NFB was established with funding from Science Foundation

Ireland (SFI), the principal funding body for basic research in Ireland, under the Strategic Research Cluster (SRC) Programme. Since its establishment, the NFB has engaged with leading academic institutions, research laboratories, hospitals and companies both in Ireland and around the world to support the translation of biomaterials from the laboratory bench to the patient's bedside. Currently, there are over 50 research staff members at NFB making it the largest biomaterials group in Ireland.

The conference embraced a broad range of scientific topics throughout the four days. The opening plenary speaker, Professor Randall Moon, spoke about WNT signalling, regeneration and regenerative medicine. Professor Helen Blau delivered a stimulating presentation entitled '*Designing Biomaterials to Direct Stem Cell Fate*', and Professor James Fawcett gave an interesting clinical insight into the stimulation of axon regeneration. Professor Mark Ferguson, the final plenary speaker, spoke about how to progress a scientific idea in tissue regeneration towards commercialisation.

In total, there were over 300 podium presentations and almost 350 poster presentations from leading international research laboratories, industry and clinical institutes. Almost 60% of the abstracts submitted were from senior researchers. In addition, there were 39 keynote lectures given in symposia by key researchers from across the globe. These lectures provided an opportunity for delegates to hear about recent developments in a broad range of areas from Advanced Manufacturing Systems for Clinical Grade Stem Cells to Tissue Engineering Strategies for Rebuilding the Nervous System.

The conference debate attracted a capacity audience to listen to the contentious motion that *Active biomolecules are more important than scaffold materials in tissue engineering products*. The debate was chaired and organised by Professor David Williams. This debate was truly one of the highlights and delegates will remember this lively debate for a long time.

The introduction of an 'Industry Day' at TERMIS-EU 2010 attracted many delegates from leading and emerging medical device companies, venture capitalists and governmental support agencies. During the special event, two thematic sessions pertinent to the tissue engineering and regenerative medicine sectors were held: *Surveying the landscape of Tissue Engineering Commercialisation and Lessons Learned from Start-Ups/SMEs in Regenerative Medicine*. Discussions were extensive, providing an excellent overview of the translation of regenerative medicine to the clinic as well as of the barriers associated with these efforts.

As Galway is known as a centre of Irish arts and culture, the conference introduced attendees to artists from the local community including a specially commissioned virtual art exhibition entitled *37 Degrees*. The *37 Degrees* art exhibition which was commissioned for the TERMIS-EU event is a brainchild of Professor Abhay Pandit and two local artists Paula Walsh and Paul Fullard. The two artists who had no scientific background worked closely with the NFB Research Group for over eight months to develop interpretative concepts derived from their understanding of Tissue Engineering. The artists took alternative approaches to one another in representing these themes and subsequently abstracted these ideas to arrive at very different conclusions. The resulting artwork was displayed in several areas throughout the Radisson Blu Hotel for the duration of the TERMIS-EU meeting and during intervals at the conference sessions.

In addition, *Arcana*, a community performance art troupe welcomed the delegates from across the world to Galway during the opening ceremony with celtic drummers, live traditional music and more than life size stags on stilts while *Cois Cladaigh*, a local Galway choir, and *Trad on the Prom* provided music and dance during the conference gala dinner.

Recognising the importance of hosting the TERMIS-EU conference in Ireland, Science Foundation Ireland (SFI), the leading funding agency in Ireland, sponsored several awards at the event including the SFI Award in Regenerative Medicine, the SFI Award for Exemplary Podium Presentations, the SFI Award for Exemplary Poster Presentations and the SFI Award for Exemplary Rapid Fire Delivery.

The SFI Award in Regenerative Medicine for an early stage researcher was presented to Dr. Wenxin Wang (National University of Ireland, Galway) for his contribution within the tissue engineering and regenerative medicine field. The winners of the SFI Awards for Exemplary Podium Presentations were Hannah Levis, University College London; Anna Marsano, University Hospital Basel; and Estelle Collin, National University of Ireland, Galway. The SFI Awards for Exemplary Poster Presentations were awarded to Anna Blocki, National University of Singapore; Inga Bernemann, Leibniz University; and Stephen Thorpe, Centre for Bioengineering, Trinity College Dublin.

Finally, the SFI Awards for Exemplary Rapid Fire Delivery were won by Umber Cheema, University College London; Ana Barradas, MRA Institute for Biomedical Technology and Technical Medicine, Enschede; and Adam Stops, Biomechanics Cluster, National University of Ireland, Galway.

In addition to the SFI awards, Dr. Christian Pellevoisin, from the Research and Innovation Division of L'Oréal, the international cosmetics company, attended the TERMIS-EU 2010 conference in Galway to award the 'L'Oréal Recherché & Innovation' Awards. The winner of the TERMIS-EU L'Oréal Recherché Innovation Best Poster Award 2010 went to Rossukon Kaewkhaw, Sheffield University for his poster entitled *Adipose-Derived Stem Cells (ASCs) for Peripheral Nerve Repair*. The TERMIS-EU L'Oréal Recherché Innovation Best Podium Communication Award 2010 was awarded to Nynke Hosper, University Medical Center Groningen for a presentation entitled *Wound Healing Effect of Amniocytes derived from a Fetus with a Neural Tube Defect*. The awards were open to all young researchers and included an inscribed cut glass trophy and a cash prize.

The organising committee were delighted to take the opportunity to introduce the delegates to the west of Ireland and what Galway has to offer. On behalf of the Local Organising Committee of the Tissue Engineering and Regenerative Medicine International Society-EU Chapter Meeting the organising committee thanks all the conference delegates, speakers and volunteers who helped to organise a wide-ranging and exciting meeting. We hope to see you in Galway again and look forward to seeing you all in Granada!

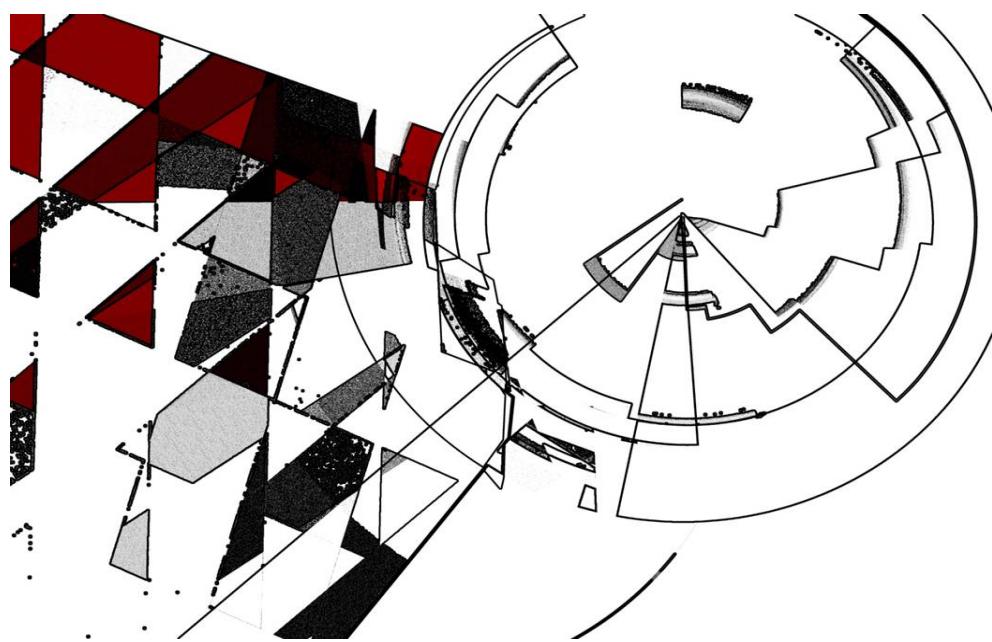


Recipients of the Best Abstract Awards



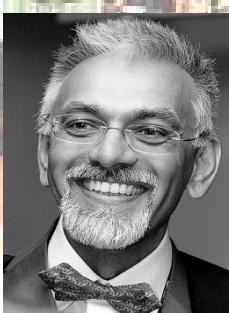
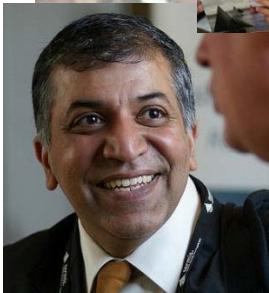
37 Degrees Artwork
by Paul Fullard
commissioned for
TERMIS-EU 2010
Conference in Galway

37 Degrees
Artwork by
Paula
Walsh
commission
ed for
TERMIS-EU
2010
Conference
in Galway



Arcana Stags visit the
TERMIS-EU 2010
conference

- Ends





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GALWAY, IRELAND, 13TH -17TH JUNE 2010



Debate Session
"This House Believes that Active Biomolecules are more Important than Scaffold Materials in Tissue Engineering Products"

A major event during the TERMIS-EU conference in Galway was the Debate. This was organized and chaired by Professor David Williams, President-elect of TERMIS. Professor Williams organized his first Debate during the World Biomaterials Congress in Amsterdam 2008 as part of the College of Fellows session. Professor Pandit invited Professor Williams to present his second debate in Galway.

The motion of the debate, held as a plenary session in the conference, was 'This House Believes that Active Biomolecules are more Important than Scaffold Materials in Tissue Engineering Products'. Speaking for the motion were Mark Ferguson, CEO of Renovo UK and Peter Johnson, CEO of Scintellix, USA and founder of the Pittsburg Tissue Engineering Initiative. Speaking against the motion were James Kirkpatrick of the University of Mainz in Germany and Alan Russell of the McGowan Institute of Regenerative Medicine in Pittsburgh and one of the founders of TERMIS.

The debate was acknowledged to be highly entertaining and informative. Each speaker had ten minutes, without slides, to present their argument, which they did with a combination of prepared speeches and impromptu remarks. Members of the audience were able to vote and by a show of hands, David Williams was able to declare that the motion was lost. It is difficult to highlight any one point which swayed the audience the most, but James Kirkpatrick comment, in support of physical delivery systems, that if a delegate at the conference wished to go home and give his wife a present, he might choose some perfume, which contains some interesting functional molecules, but he would not put the perfume in a bucket and throw it over her, was highly persuasive – you need far greater control over the dose, and we are far from achieving that with most active biomolecules in tissue engineering products.

Further debates may be presented by Professor Williams in future TERMIS meetings.



TERMIS-EU 2010 Crossword

As part of the TERMIS-EU Conference held in Galway, Professor David Williams, President-Elect of TERMIS arranged and compiled a crossword competition. This crossword was featured on the TERMIS website and included in the conference program. Entries had to be submitted to the conference desk on the penultimate day of the conference.

The crossword with clues and solution may still be found on the [TERMIS website](http://www.termis.org/chapters_eu.php) (http://www.termis.org/chapters_eu.php).

The first prize in the competition was an FIFA art poster. The Galway conference took place during the early stages of the 2010 Soccer World Cup in South Africa. FIFA had commissioned a series of 17 art posters for this event and made these posters available as a Limited Edition of 2010 complete portfolios. Professor Williams and his wife Peggy spend three months each year in Cape Town and, as collectors of African art, acquired one of these portfolios. This first prize was one of the posters from their collection. The award was sponsored by the South African company Southern Access Technologies (www.southernaccesstechnolgies.com). This company has been established by Professor Williams in conjunction with Professor Peter Zilla and Dr Deon Bezuidenhout of the University of Cape Town and is aimed at developing medical technologies for sub-Saharan Africa, such as rheumatic heart disease.



There were two joint winners of the competition. Professor James Kirkpatrick of the University of Mainz, Germany, received the poster shown below. Since a poster could not be shared, a further, but different, poster, was provided for the second joint winner, Professor John Hunt, of the University of Liverpool, UK. Two runners-up prizes were limited edition prints of art from two Irish artists who had been commissioned to produce work especially for the conference. These runners-up were Ryan Hoshi, Northwestern University, USA and Michael Raghunath of National University of Singapore. In fifth place was Amulya Saxena of Graz, Austria.

This was the second crossword compiled by Professor Williams, the first being at the World Biomaterials Congress in Amsterdam 2008. He is willing to discuss with any organizer of future TERMIS conferences the compilation of crosswords for their meetings. These are aimed at scientific terms related to the theme of the conference, coupled with words of a topical or local interest. In addition, if any member of TERMIS is interested in receiving, free of charge, a copy of the Williams Dictionary of Biomaterials, a small number is available, first come first served, from Peggy, at odonnellpeggy@gmail.com.

INTRODUCTION

Tissue engineering and regenerative medicine (TE/RM) is an emerging multidisciplinary field involving biology, medicine, and engineering that is likely to reform the ways of improve the health and the quality of life by restoring, maintaining, or enhancing tissue and organ function. TE/RM requires complex approaches to design and engineer tissues that combine living cells, scaffold materials, and biomolecules. Some of the challenges in TE/RM include understanding and controlling cellular responses, developing scaffold materials with key characteristics to function in their physiological environments, while maintaining relevant temporal/spatial signaling gradients, developing tools that advance the research and the translation of tissue engineered constructs to products, and establishing standard production/manufacturing protocols and preservation technologies. Our main goal is to craft products that improve tissue function or heal tissue effects.

RESEARCH HIGHLIGHTS

Tissue engineering

In the cartilage tissue engineering lab, we study the biological processes of cartilage such as (i) development and growth (ii) aging (iii) degeneration (iv) repair, regeneration and replacement (v) designing optimal biopolymer scaffolds, (vi) investigating cell delivery systems and (vii) constructing advanced bioreactors for mechanical stimulation of the growing tissues.

Scaffolds

Three-dimensional biodegradable porous scaffolds play an important role in tissue engineering. Tissue engineering and regenerative medicine are two rapidly advancing fields of research offering potential for effective treatment of cartilage lesions. Fibrous scaffolds are needed to engineer dense fibrous tissues like tendons and ligaments. Today, chondrocytes are the cell type of choice

for use in cartilage repair approaches such as autologous chondrocyte implantation. In this regard, we have developed different scaffolds such as bi-layer gelatin–chondroitin-6-sulfate–hyaluronic acid (gelatin–C6S–HA), gelatin/C6S/C4S/HA modified tricopolymer and biodegradable collagen scaffold for cell adhesion and cell proliferation. We also included several antioxidant supplements to investigate the reinforcement of the cellular antioxidant status inside the scaffold.

Injectable hydrogel allows irregular surgical defects to be completely filled, lessens the risk of implant migration, and minimizes surgical defects due to the solution–gel state transformation. We have also formulated an injectable hydrogel composed of oxidized hyaluronic acid (oxi-HA) and adipic acid dihydrazide (ADH) which is incorporated with nucleus pulposus cells to reverse nucleus pulposus degeneration.

Biomaterials for cancer therapy and diagnosis

The incidence of colorectal cancer is increasing in the world and the prognosis remains poor. Photo-diagnosis is one of the most promising and non-invasive methods used nowadays to detect malignant or premalignant tissue. We designed an oral form nanoparticle to encapsulate 5-aminolaevulinic acid (5-ALA) to improve the detection of colorectal cancer cells *in vivo*.

We developed a gelatin nanoparticle (GP) complex with CDDP (GP–Pt) surface-modified with NeutrAvidin^{FITC}-biotinylated epidermal growth factor (bEGF), abbreviated as GP–Pt–bEGF, to target the tumor site and be taken up by EGFR-mediated endocytosis in tumor cells over expressing EGFR.

Immunosensors

We investigated the utilization of highly sensitive immuno-PCR (IPCR) method as a powerful tool to detect NPC in early disease stage. This should facilitate the specific detection of rare antigens, such as EBNA1, which are present only in very small numbers, and thus could expand the application of this technique in early detection of nasopharyngeal carcinoma.

Currently, more attention has been paid to QCM as a sensor due to its rapid analysis speed, satisfactory sensitivity, simple instrumentation, and low cost. Thus, we employed QCM as a screening tool for the sensitive detection of variety of antigen-antibody complexes.

Biomaterials for orthopedics

Calcium phosphate cement (CPC) is a considerable candidate as a filling material in orthopaedic applications because of its non-cytotoxic and osteoconductivity. To offer appropriate mechanical strength and accomplish the properties of osteoconductivity, we combined poly(propylene fumarate) (PPF) and calcium phosphate cement (CPC) for the development of new angiogenic bone cement composite. We anticipate this bone cement composite can offer mechanical strength immediately after injection followed by releasing angiogenic agent.

Biomagnetic nanoparticles

Magnetic nanoparticles have been used commonly for various biomedical circumstances. The functionally modified magnetic nanoparticles could be exploited for various biological applications, such as cell label and separation, immunoassay, drug delivery, MRI contrast agents, and hyperthermia. Recently, we have made some developments in synthesis and surface engineering of hydroxyapatite nanoparticles. We also applied the magnetic biomaterial for hyperthermia therapy using balb/c mice. Magnetic hydroxyapatite nanoparticles were fabricated by the co-precipitation process with different concentrations of Fe^{2+} . We also developed a magnetic nanoparticle based on dicalcium phosphate dihydrate (DCPD) by co-precipitation method showed relative cancer-killing ability without damaging normal cells in vitro.

Multi-functional Nanocomposites for immuno labeling and diagnostics

Nanocomposites materials could fetch new and distinctive capabilities for a variety of biomedical applications which includes

diagnosis of diseases, in-situ labeling like fluorescence imaging, ultrasound, isotope labels, and magnetic resonance imaging (MRI) etc...A new magnetic resonance imaging (MRI) contrast agent made of gadolinium hexanedione nanoparticles (GdH-NPs) was developed as a cell tracking agent.

Design and development of Bioartificial Pancreas

Bone marrow with a widely distributed and well-vascularized microenvironment is capable of sustaining grafts and used as a potential site for islet transplantation. The femur bone marrow cavity offers sufficient space to receive the implantation of bioartificial pancreas (BAP). Our preliminary study indicates that the effectiveness of BAPs transplanted into the femur bone marrow cavity is superior than the intramuscular space, which reveals the bone marrow may be a potential receptor site for the BAP transplantation.

Advanced Bioreactors

We developed a simplified procedure for efficient generation and selection of antibody-producing hybridoma cells in a novel design of bioreactor, cytoflow reactor, at a very short span of time. The cytoflowreactor with several modifications have been developed for various tissue engineering applications.

Facilities

Our laboratory is equipped with the state-of-the-art facilities for fabricating polymer scaffolds, clean room facility for tissue culture, image analysis, immuno-histochemistry and molecular biology techniques.

- 3D fabrication technologies for tissue engineering
- Cell culture facility and Bioreactors
- Facilities for Immunohistochemistry & cell and molecular biology
- Fourier Transform Infrared Spectrophotometers
- Confocal Microscopy
- Real Time RT-PCR
- Differential Scanning Calorimetry
- Atomic Force Microscopy
- Quartz Crystal Microbalance
- Rheometric Analysis
- Fiber Formation (Electrospinning)



**TERMIS-NA Awards Program
2010 Awardees**

The TERMIS-NA Awards Committee would like to announce the awardees of the 2010 awards program. Each of the awardees will be acknowledged during the upcoming TERMIS-NA conference in Orlando, Florida.

Congratulations to each of the awardees!



Lifetime Achievement Award: Arnold I. Caplan



Young Investigator Award: Ali Khademhosseini



Mary Ann Liebert, Inc. Outstanding Student Award: James Kretlow

The Awards Committee would also like to thank all of the individuals, who submitted a nomination package for consideration.

A complete list of awards established by the TERMIS-NA Awards Committee is posted [online for viewing](#). We look forward to receiving nomination packages in 2011!



Tissue Engineering, Parts, A, B & C

Tissue Engineering, Parts A, B, & C - The Official Journal of TERMIS 2011 Subscription Rates Coming Soon!

Members of TERMIS may purchase a print subscription to the journal, *Tissue Engineering, Parts A, B, & C*, at a discounted membership rate. The Journal is published by Mary Ann Liebert, Inc., publishers, and is the Official Journal of TERMIS (Tissue Engineering and Regenerative Medicine International Society). TERMIS has no affiliation with the journal entitled *Tissue Engineering and Regenerative Medicine* published by John Wiley & Sons.

For further information on the journal, *Tissue Engineering, Parts A, B, & C*, and to view information on other journals published by Mary Ann Liebert, Inc. please visit the [Tissue Engineering](#) website.

Tissue Engineering, Part A

Co-Editors: Antonios G. Mikos and Peter C. Johnson

The flagship journal provides a fundamental understanding of structure-function relationships in normal and pathologic tissues with the ultimate goal of developing biological substitutes. The Journal brings together scientific and medical experts in the fields of biomedical engineering, biomaterials science, molecular and cell biology, genetic engineering, and surgery to present and discuss advances in this emerging field.

Tissue Engineering, Part B, Reviews

Co-Editors: John P. Fisher, Antonios G. Mikos, and Peter C. Johnson

This journal meets the urgent need for high-quality review papers due to the rapid expansion of the field. The Journal presents critical discussions, analyses, and concise summaries of research in different aspects of the field to assess where we are now and future directions.

Tissue Engineering, Part C, Methods

Co-Editors: John A. Jansen, Antonios G. Mikos, and Peter C. Johnson

This journal presents procedures and protocols that will be adopted by the tissue engineering community as the research is translated into clinical applications. Authoritative papers will bring consistency to the research methods employed and help the field grow and mature.

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If your institution does not currently subscribe to the journal, *Tissue Engineering, Parts A, B, & C*, we ask that you please complete the library recommendation form and fax to your institution's librarian encouraging them to subscribe to the journal today.

Upcoming Conferences Endorsed by TERMIS

October 2010

- [4th International Conference on Biofabrication](#)
Conference Dates: October 4-6, 2010
Conference Location: Drexel University
Co-organizers: Prof. Wei Sun and Prof. Gabor Forgacs
- [2010 World Stem Cell Summit](#)
Summit Dates: October 4-6, 2010
Summit Location: Detroit Marriott Renaissance Center, Detroit, MI, USA
- [bone-tec 2010 - International Bone-Tissue-Engineering Congress](#)
Congress Dates: 7 – 10 October, 2010
Congress Location: Hannover, Germany
The deadline for abstract submission has been extended: 15 May 2010
- [BioStar 2010](#)
4th Congress on Regenerative Biology and Medicine
Congress Dates: October 13-15, 2010
Congress Location: Stuttgart, Germany
Congress Organizer: Prof. Dr. Claus D. Claussen
- [ASMB 2010 Biennial Meeting](#)
Conference Dates: October 24-27, 2010
Conference Location: Marion Hotel, Charleston, SC
Organizer: Jean Schwarzbauer, Princeton University
Keynote: Elaine Fuchs, Rockefeller University
- [Fraunhofer Life Science Symposium Leipzig 2010](#)
Symposium Dates: October 29-30, 2010
Symposium Location: Leipzig, Germany
President: Professor Frank Emmrich
Themes: „Stem Cells for Immunotherapy, Immune Disease and Disorders“

November 2010

- [2010 International Symposium of Materials on Regenerative Medicine](#)
Conference Dates: November 3-5, 2010
Conference Location: Zhunan, Taiwan, ROC
Conference Theme: The Prospects of Materials on Health Care Technology
- [Biophysical stimuli and mass transport for tissue development](#)
"Biophysical stimuli and mass transport for tissue development; implications for in vitro model systems"
Symposium Dates: 18 and 19 November 2010
Conference Location: the Netherlands
This symposium is organized by the Dutch "Translational excellence in Regenerative Medicine" (TeRM Smart Mix) consortium (see www.TeRM.nu).
- [8th Annual Commercial Translation for Regenerative Medicine](#)
Conference Dates: 18-19 November 2010
Conference Location: London, UK
Theme: Optimise cell product quality and overcome regulatory, reimbursement and

funding challenges within successful clinical trials
[10% Discount for TERMIS Members](#)

December 2010

- [TERMIS-NA 2010: Orlando, Florida](#)
Conference Dates: December 5-8, 2010
Conference Location: the Hilton in the Walt Disney World Resort
Conference Chair: Anthony Atala, MD
Scientific Chair: James Yoo, MD, PhD
Hosted by: Wake Forest Institute for Regenerative Medicine

June 2011

- [TERMIS-EU 2011: Granada, Spain](#)
Conference Dates: 7-10 June 2011
Conference Location: Granada Exhibition and Conference Centre
Conference Chair: Antonio Campos Muñoz, MD, PhD
To request further information, please send an email to acampos@ugr.es.

August 2011

- [TERMIS-AP 2011: Singapore](#)
Conference Dates: 3 - 5 August 2011
Meeting Chair: Prof. James Goh

December 2011

- [TERMIS-NA 2011: Houston, Texas](#)
Meeting Chairs: Antonios Mikos, PhD and Jennifer West, PhD
More information to follow.

September 2012

- [2012 TERMIS World Congress - Vienna, Austria](#)
Conference Dates: September 5-8, 2012
Conference Location: Hofburg Congress Center in Vienna, Austria
Conference Chair: Heinz Redl, PhD
To request further information, please send an email to Office@lbitrauma.org.