In This Issue of *inter*Link

Edited and Compiled by:

Dietmar W. Hutmacher, PhD, MBA
Queensland University of Technology

Sarah Wilburn
TERMIS Administrator

Letter from the Editor

In the December Issue of our Societies Journal (Tissue Eng. 2007 Dec;13(12):2827-37.), the Co-editors under the leadership of Dr. Peter C. Johnson published a report titled "Strategic directions in tissue engineering". To characterize strategic directions in tissue engineering, a distant but reachable clinical goal was proposed and a worldwide body of 24 leaders in tissue engineering was asked to fill out a questionnaire to determine the best paths toward that goal. Our future research should focus on a better understanding of angiogenesis, stem cells, and the utilization of molecular biology and systems biology tools to enable a deeper comprehension of tissue development and control. I had the privilege to attend a lecture by Dr. Johnson at a conference in Singapore and I learned a great deal by getting a deeper insight on how the study was designed and performed. I would like to encourage all members to read this article as it will help us to make the next steps in moving tissue engineering research into clinical applications.

I would like to thank on this occasion our outgoing President Dr. Allan Russell for his service over the last three years and to welcome Dr. Jöns Hillborn as our new President. It is beyond the scope of my editorial to describe the importance of Dr. Russell's leadership and vision that has formed the now truly global "Tissue Engineering & Regenerative Medicine International Society". Hence, I would like to end with a statement of Dr. Russell's which should be of great encouragement for all TERMIS members over the years to come. "Our goal is to take these great ideas, these remarkable scientific discoveries, and make them applicable. It's hard to know which breakthrough will come next, and I don't want to speculate. But applications of cell-based therapies are expanding all the time, and it remains an exciting time." (Pittsburgh Business Times Dec. 2007)

Sincerely,
Dietmar W. Hutmahcer, PhD, MBA
*inter*Link Editor

TERMIS-EU News
Robert Brown – TERMIS-EU London Meeting Chair

TERMIS-EU 2007 London Conference Overview

The second TERMIS-EU conference, 2007, (the first fully organised under the TERMIS banner) was held in Regents Park in the centre of London from 4th to 7th of September. This was the sunniest spell for months in London's wettest summer in years so any photo-philic euphoria worked alongside the coincidental tube strike to get delegates walking. The location, in a small private college in the largest of the Royal Parks, meant that all the catering, posters, commercial exhibitors were located in a vast marquee (20 by 60 meters) in the grounds. Given the climate, this is traditional British risk-taking and this time, it worked.

TERMIS-007 was a conference designed to challenge and stimulate even the most hide-bound and conventional participant. The organisation was structured to promote 4 aims: networking, discipline-integration, Young investigator-experience and 'stem cells in UK & Europe'. The opening evening session examined the *Drivers and Inhibitors of Stem Cell research in the UK*, and this was led by Baroness Warnock with a tour-de-force explanation of the ethical logic behind British law in this area (she is the political academic who established the regulatory concepts and ground rules which have allowed UK stem cell scientists to flourish!!). This was complemented by the closing session, 3 days later, spot-lighting examples of leading stem cell research across Europe (from Haifa, Prague & London).

This was a conference for 'extreme networkers'. It opened with a free satellite workshop focused on work from major Chinese Centres of Excellence, including Shanghai, Beijing, Chengdu and Dalian. The theme was developed by later sessions; one investigating successful commercial research in China involving Dutch & UK groups and a second providing detailed analysis of 3 European Union research programmes (in biomaterials, bioreactor scaffolds and ocular engineering). Meanwhile, Turkish Tissue Engineering and Industrial exploitation were adopted as further networking opportunities.

The work of Young Researchers was brought to the fore in a special afternoon, organised by the UK Tissue and Cell Engineering Society. 8 complementary sessions, covering areas from angiogenesis and bioreactors to musculo-skeletal tissues and nano-fabrication were presented and chaired by the best of TERMIS early stage researchers. Social meetings around this were sponsored by TCES and the Dutch Embassy. As part of the continuing growth of the SYIS group activities, members initiated a new scheme – the '*master-class pub crawl*' where they became acquainted (sometimes closely) with senior society members and invited speakers by escorting them on walking tours around local pubs and eating places. In addition SYIS members again were selected to co-chair most of the sessions, working alongside the most senior and experienced scientists TERMIS.

This was a conference for serious integration of the conventional component disciplines of TERM. Organising and advisory committees for this TERMIS-007 were inclusive - being drawn from all the major TERM-active UK institutions and across Europe. Their advice and active support was invaluable, pointing out that TERMIS cannot afford to be conventional or a clone of one of its component discipline societies (biomaterials, bioeng. or cell biology). We used this logic to develop an organisation where session topics cut across traditional subjects and divisions, wherever possible, to draw speakers into process-linked groups (avoiding session sequences like 'tissue engineering I to V or scaffold materials A, B & C).

This also meant 'inclusivity and involvement' so that 80% of delegates who wishes to present orally were accommodated, generating an unusual level of choice from around 60 sessions in 6 parallels and over 300 talks in total.

This was a conference designed to stimulate ideas, to find collaborators and new concepts to go with them, to find how to get European and industrial funding. It was experimental and challenging, though this also meant it needed work and decision. Its location was designed to foster excitement and to appeal to the distinctive nature of our members. Who of the delegates is likely to forget the experience of a full diner for 500 - BUT under canvas, accompanied by live jazz and within sight of swans, herons and the largest city in the Union. After all, this was the **template conference.** Its success makes it more likely that TERMIS will carve out its own distinctive, surprising niche, leaving its membership informed, beguiled, excited -even inspired. Without this it is likely to blend and gently disappear against the rich background of regional and specialist competition across the Continent.

Submit your abstracts for TERMIS-EU 2008 Porto Meeting!

June 22 to 26, 2008
Porto, Portugal
Conference Chair: Rui L. Reis

For abstract submission and information please go to http://www.termis.org/eu2008

- Abstracts accepted will be published in the journal, *Tissue Engineering* (Special Issue).
- As courtesy of TERMIS-EU, the 50 highly ranked abstracts submitted by students and young investigators will be awarded 50% discount on their early registration.

List of Plenary Speakers
C. James Kirkpatrick
Clemens Van Blitterswijk
David Kaplan
David Mooney
Evan Snyder
Samuel I. Stupp
Teruo Okano
Yasuhiko Tabata

Message from TERMIS SYIS-Asia Pacific
Sambit Sahoo – SYIS-AP Chair

On behalf of TERMIS-SYIS Asia Pacific, I am pleased to announce that several events were organized to motivate young researchers, to present their research work as well as to network with other students and experts in the field, at the recently concluded 1st TERMIS-AP Chapter meeting in Tokyo. With the active involvement of SYIS volunteers from Tokyo, led by Dr. Yukiko Tsuda, we were able to successfully arrange these events.

The "Meet the Expert" event saw more than 40 students and young investigators interacting, in an informal atmosphere, with 8 leaders in the field. The participants were then guided along the "Tokyo ARTelligent Night Walk" to show them a breathtaking night view of Tokyo. A "Career Centre" was also operated and 3 "Outstanding Student and Young Investigator Awards" were presented. I thank all the participants for their support and we look forward to your continued and active participation in the future activities of TERMIS-SYIS.

We are presently seeking motivated SYIS members from the Asia Pacific region to join our **"Scientific and Professional Development Committee"**. This committee is responsible for planning and organization of events and programs at the TERMIS meetings, the biannual TERMIS-SYIS e-newsletter and the Online Discussion

Forum. If you are interested in being a part of the TERMIS-SYIS community, please contact me at sambit@nus.edu.sg

Wishing you Happy Holidays and a very Happy and Prosperous New Year!

Sambit Sahoo
Chair, TERMIS-SYIS (Asia Pacific)

TERMIS-NA 2008 San Diego Conference

Abstract submission OPENS January 2008
www.regenerate-online.com

The Tissue Engineering & Regenerative Medicine International Society announces their 2008 North America Chapter meeting:

TERMIS-North America 2008 Conference and Exposition
December 6 - 10, 2008, Hyatt Regency La Jolla, San Diego, California

Abstracts invited! Abstract system opens January 2008.

Major Themes:
Organ Tissue Engineering
Stem Cells
Immunology

Specific Topics for Abstracts:

Synthetic and Biologic Scaffolds
Printing and Stereolithography for 3D Scaffolds
Hydrogels
Smart Biomaterials
Stem Cells (MSCs, adult stem cells, embryonic stem cells)
Cell Tracking and Imaging
Cell Regulation and Microenvironment
Bioreactors and Mechanical Training of Tissue Constructs
Microvascularization and Angiogenesis
Skin and Wound Healing
Soft Tissue Repair
Craniofacial and Dental Tissue Engineering
Musculoskeletal Tissue Engineering
Cardiovascular and Vascular Tissue Engineering
Neural Tissue Engineering
Organ Tissue Engineering
Cancer: In Vitro Models, Stem Cells
Endocrine and Metabolic Tissue Engineering
Immunology of Allografts and Xenografts
Nanotechnology for Tissue Engineering
Product Development, Scale-Up, Preservation and Shelf-life
TE and RM in the Clinic

Abstract submission deadline is June 2008.

More details regarding abstract content, format and submission procedure coming in early January. Please contact Andrea Lubienski, Forecast Technology Group, Inc., alubienski@conferencestrategists.com with any questions.

In conjunction with the California Tissue Engineering Meeting

Laboratory Feature

Biomaterials and Tissue Engineering,
Dr Julie Gough,
Materials Science Centre, School of Materials, Grosvenor St,
University of Manchester, Manchester M1 7HS, UK.
j.gough@manchester.ac.uk

The Biomaterials and Tissue Engineering group led by Julie Gough began in 2002 aimed at novel tissue engineering approaches to a variety of tissues. Currently there are 5 main themes to the research focusing on interverterbral disc, fabrication of 3D scaffolds, self-assembled peptide scaffolds, fibrous scaffolds for craniofacial bone repair and control of cell responses via amino acid functionalisation.

The group consists of 2 PDRAs (Wilda Helen and Richard Knight) and 8 PhD/EngD students (Anita Bassi, Kapil Chopra, George Ponirakis, Rumana Rashid, Robert Thornton, Simon Todd, Kirsten Whitehead, Mi Zhou). Funding is from the EPSRC, DTI, Leverhulme Trust, Royal Society, Smith and Nephew, Johnson and Johnson, Magnesium Elektron.

1. Intervertebral disc tissue engineering

Researchers: Wilda Helen.
Collaborators: Jonny Blaker, Imperial College London, Judith Hoyland, University of Manchester.
Funding: BackCare.
Publications:

Helen W, Gough JE. Cell viability, proliferation and extracellular matrix production of human annulus fibrosus cells cultured within PDLLA/Bioglass® composite foam scaffolds in vitro. In Press: *Acta Biomaterialia*.
Helen W, Merry CLR, Blaker JJ, Gough JE. Three-dimensional culture of annulus fibrosus cells within PDLLA/Bioglass® composite foam scaffolds: Assessment of cell attachment, proliferation and extracellular matrix production. *Biomaterials* 2007;28(11):2010-2020.
Wilda H, Gough JE. In vitro studies of annulus fibrosus disc cell attachment, differentiation and matrix production on PDLLA/45S5 Bioglass® composite films. *Biomaterials* 2006;27(30):5220-5229.

Composite films of PDLLA and Bioglass® were initially investigated for their potential to support annulus fibrosus cell growth and matrix production. Addition of Bioglass® to the films resulted in a change in physical properties (roughness and increase in hydrophilicity) (Wilda and Gough, 2006). Bioglass® also resulted in higher levels of glycosaminoglycan and collagen production by the cells. We then went on to producing 3D foamed scaffolds using the TIPS process. Both human (Helen and Gough, In Press) and bovine (Helen et al, 2007) annulus fibrosus cells were cultured within the porous network of these scaffolds and again the addition of Bioglass® resulted in an increase in levels of glycosaminoglycan and collagen production (Figure 1). Western blotting revealed presence of both collagen I and II in the extracellular matrix. Real time gene expression analyses have also shown active expression of collagen, aggrecan and Sox-9.

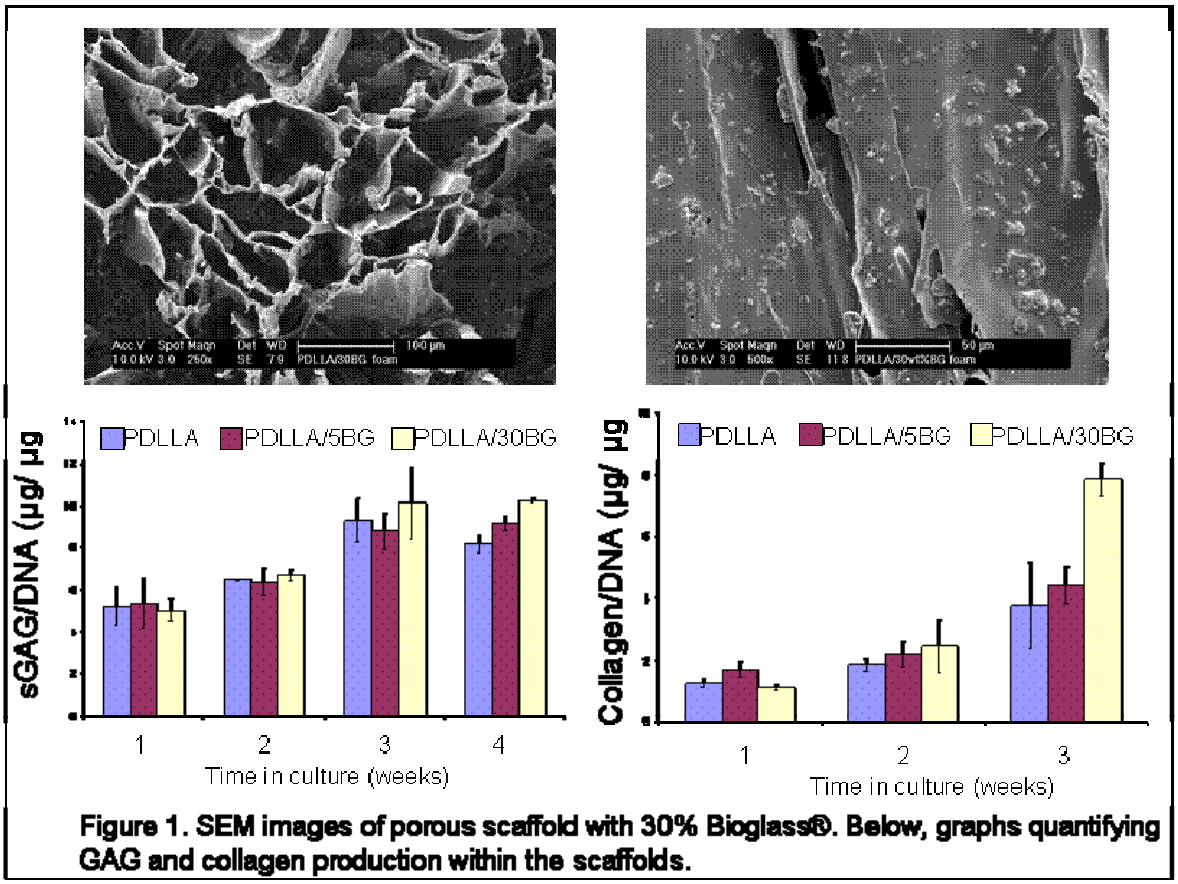

Figure 1. SEM images of porous scaffold with 30% Bioglass®. Below, graphs quantifying GAG and collagen production within the scaffolds.

2. 3D scaffolds for bone: Stereolithography

Researchers: Kapil Chopra.
Collaborators: Paul Mummery, Brian Derby, University of Manchester.
Funding: EPSRC.

Stereolithography has been used to produce highly porous 3D ceramic and composite scaffolds for bone tissue engineering (Figure 2). Human osteoblast proliferation and collagen production have been demonstrated on scaffolds composed of LG112 glass-ceramics.

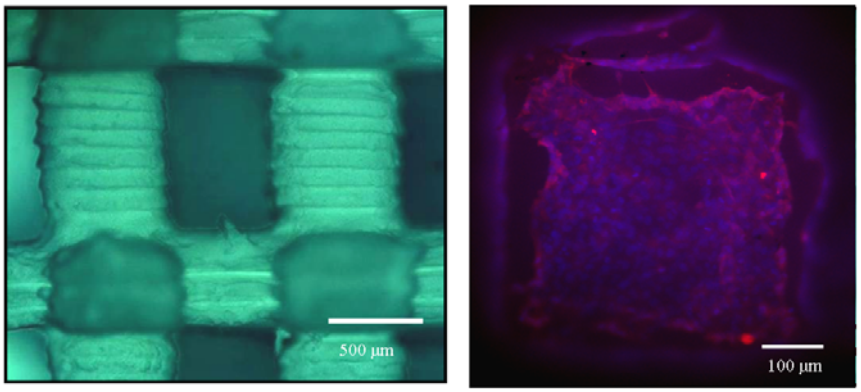

Figure 2. LG112 scaffold (left) and collagen production by human osteoblasts (right).

3. Self-assembled peptide scaffolds: Skin, cartilage and intervertebral disc.

Researchers: Mi Zhou, Vineetha Jayawarna, Wilda Helen.
Collaborators: Rein Ulijn, University of Manchester.
Funding: EPSRC, Johnson and Johnson.
Publications:

Jayawarna V, Smith A, Gough JE and Ulijn RV. Three-dimensional cell culture of chondrocytes on modified di-phenylalanine scaffolds. *Biochemical Society Transactions* 2007;35 (3): 535–537.
Jayawarna V, Ali M, Jowitt TA, Miller AF, Saiani A, Gough JE, Ulijn RV. Nano-structured Hydrogels for 3D Cell Culture through Self-assembly of Fmoc-dipeptides. *Advanced Materials* 2006;18(5):611-614.

Self-assembled peptide scaffolds with a nanofibrous structure similar to the extracellular matrix have been produced from Fmoc-amino acids for cell encapsulation. Remarkable differences have been demonstrated between different cell types and cell responses change with variations in amino acid composition.
Human dermal fibroblasts have been cultured in peptide gels with additional RGD (cell-adhesive ligand) or RGE (non-adhesive ligand). RGD gels showed increased proliferation and spread fibroblastic morphology (Figure 3). When chondrocytes were cultured in peptide gels, their morphology (spread or round) was dependent on amino acid composition. Gels based on diphenylalanine resulted in chondrocytes retaining their normal rounded morphology (Figure 4, Jayawarna et al, 2006). Gene expression analyses have shown active expression of cartilage extracellular matrix components. Nucleus pulposus cells have also been cultured on a range of peptide gels with varying elastic modulus. Cell responses (morphology, glycosaminoglycan and collagen production) vary with varying mechanical properties. These peptide gels therefore have huge potential for the 3D culture of cells and also for a variety of tissue engineering applications.

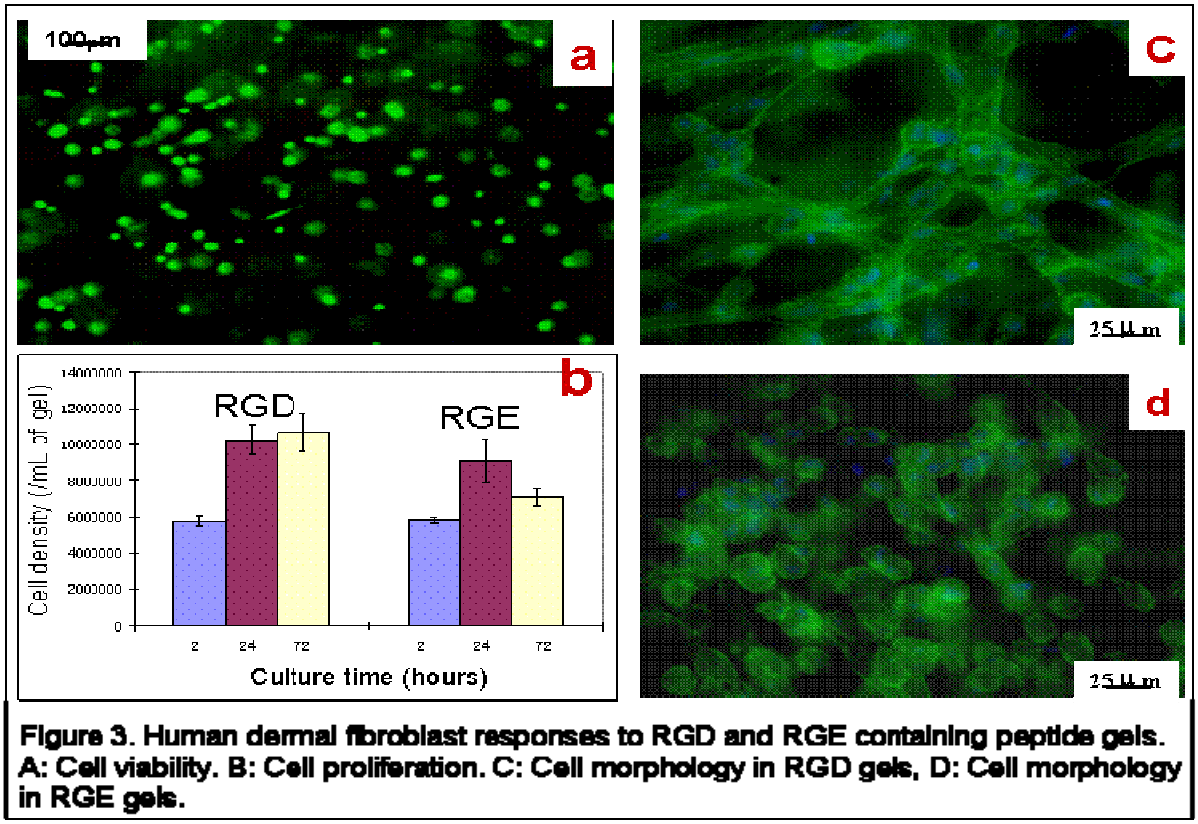

Figure 3. Human dermal fibroblast responses to RGD and RGE containing peptide gels. A: Cell viability. B: Cell proliferation. C: Cell morphology in RGD gels, D: Cell morphology in RGE gels.

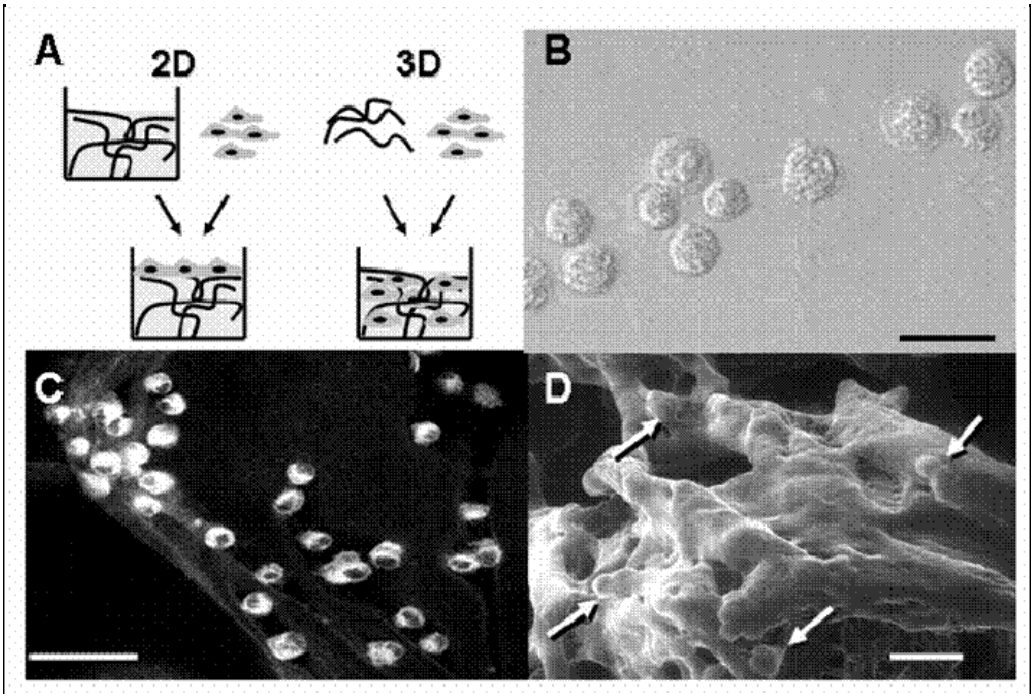

Figure 4. Bovine chondrocyte responses to diphenylalanine containing peptide gels. A: Cell encapsulation. B: Light micrograph of rounded morphology. C: Fluorescence micrograph of cell viability. D: ESEM image of rounded morphology.

4. Fibrous scaffolds for craniofacial bone repair

Researchers: Richard Knight.

Collaborators: Pera, DePuy, Corinthian Surgical, Lombard Medical Technologies, NovaThera, Hunt Developments.

Funding: DTI

Composite fibrous scaffolds of Theraglass® and biodegradable polymers have been produced via a novel textile fabrication method (Figure 5). These scaffolds are being engineered for use in craniofacial bone repair (and potentially other applications). The exact compositions of the scaffolds are being optimised for human craniofacial cell growth and matrix production.

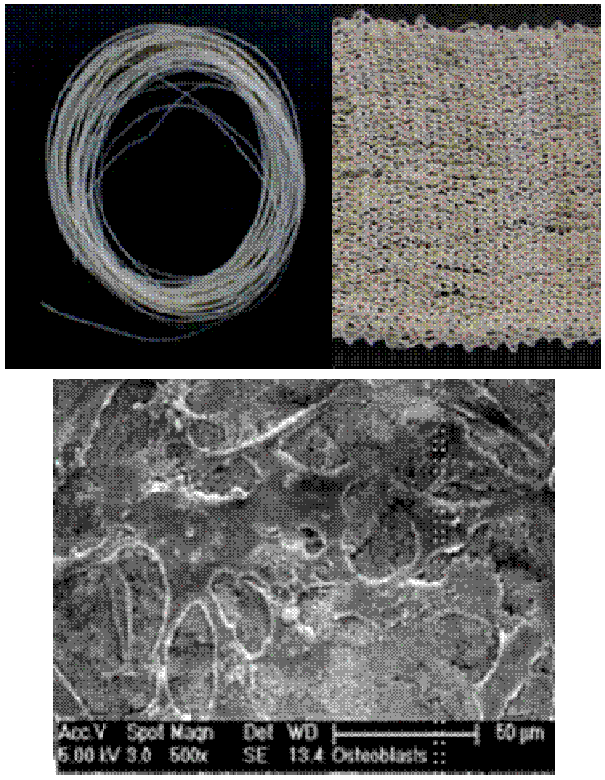

Figure 6. Theraglass®/polymer fibre (top left), 3D textile scaffold (top right), craniofacial osteoblast morphology after 24 hours culture.

5. Control of cell responses via amino acid functionalisation

Researchers: Simon Todd, Deepak Kalaskar.

Collaborators: Rein Ulijn, Steve Eichhorn, University of Manchester, Morgan Alexander, University of Nottingham.

Funding: EPSRC, Smith and Nephew.

Publications:

Todd SJ, Farrar D, Gough JE, Ulijn RV. Enzyme-triggered cell attachment to hydrogel surfaces. *Soft Matter* 2007;3(5):547-550.

Rawsterne RE, Todd SJ, Gough JE, Farrar D, Rutten FJM, Alexander MR, Ulijn RV. Cell Spreading Correlates with LogP on Amino Acid Surfaces. *Acta Biomaterialia* 2007;3(5):715-721.

Rawsterne RE, Gough JE, Rutten FJM, Pham NT, Poon WCK, Flitsch SL, Maltman B, Alexander MR, Ulijn RV. Controlling protein retention on enzyme-responsive surfaces. *Surface and Interfacial Analysis* 2006;38(11): 1505-1511.

Functionalisation of glass and hydrogel surfaces with amino acids has been explored to control cell responses. Binding single amino acids to glass surfaces leads to distinct changes in osteoblast and fibroblast morphology and actin organisation which also appear to be controlled by fibronectin adsorption. By introducing enzyme cleavable capping groups to the functionalised surfaces, cell adhesion could be switched on, on demand resulting in enzyme responsive surfaces which can direct cell behaviour (Figure 6, Todd et al, 2007). Changing

the amino acids present on the surface, and the enzyme cleavable capping groups results in the possibility of controlling a wide range of cell responses.

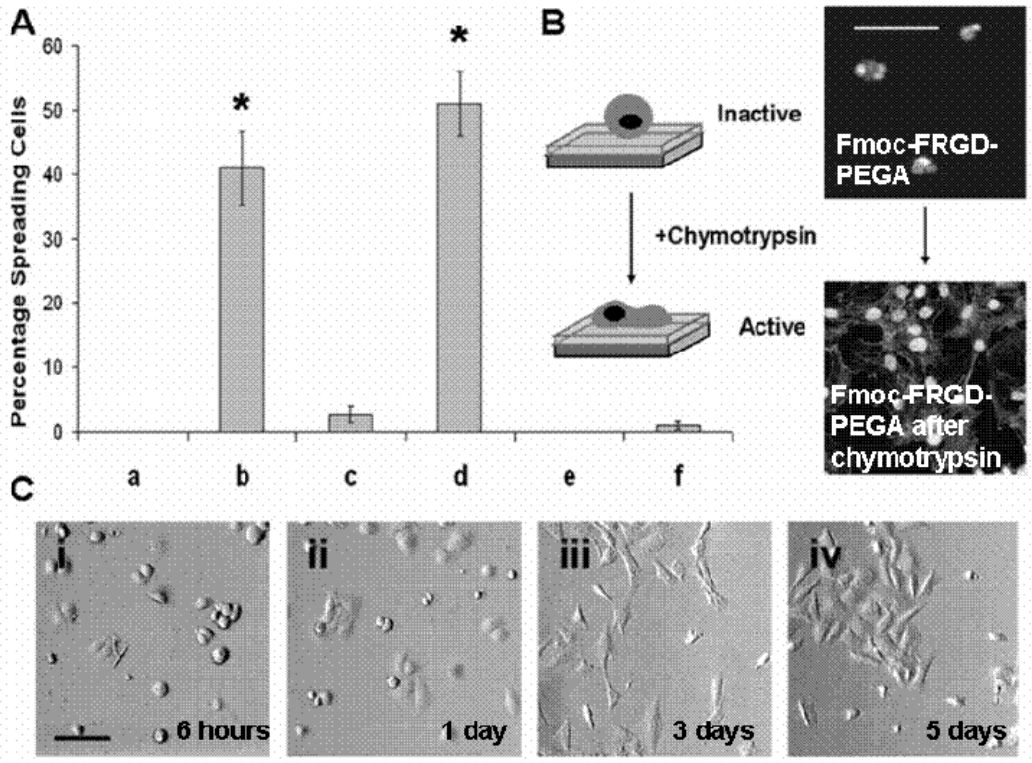

Figure 6. A: Cell spreading on a: PEGA, b: RGD-PEGA, c: Fmoc-FRGD-PEGA, d: Fmoc-RGD-PEGA+trypsin free chymotrypsin, e: Fmoc-^{D}FRGD + trypsin free chymotrypsin; (f) Fmoc-FRGE + trypsin free chymotrypsin. B: shows activation of surfaces and cell spreading. C: Cell spreading Fmoc-FRGD-PEGA surfaces switched in situ by trypsin-free chymotrypsin. * denotes not significant.

Upcoming TERMIS Conferences

Visit www.termis.org for further information.

MARK YOUR CALENDERS!

2008

June 2008
TERMIS-Europe: Porto, Portugal
Porto Congress Center – Alfândega
Meeting Chair: Rui Reis
23-26 June 2008
Deadline for the submission of abstracts: January 18, 2008
www.termis.org/eu2008

November 2008
TERMIS-Asia-Pacific: Chinese, Taipei
Taipei International Convention Center
Meeting Chair: Prof. Ging-Ho Hsiue
November 7-8, 2008

December 2008
TERMIS-North America: San Diego, California
Hyatt Regency La Jolla
Meeting Chairs:
Bill Tawil, Bob Sah and Anthony Ratcliffe
December 6-10, 2008
Abstract submission open: January 14, 2008

2009

World Congress 2009
Daejeon, South Korea
Meeting Chair: Shin Yong Moon
August 31 – September 3, 2009

Organizing and Registration Office for 2nd TERMIS WC DAEJEON:

The Institute of Reproductive Medicine and Population,
Medical Research Center, Seoul National University
199-1 Dongsoong-Dong, Chongno-Gu, College of Medicine, Annex Building,
Seoul 110-510, Korea
gskhang@chonbuk.ac.kr

Mary Ann Liebert, Inc. publishers is pleased to announce the launch of

Tissue Engineering, Part B, Reviews
and
Tissue Engineering, Part C, Methods

Tissue Engineering, Official Journal of the Tissue Engineering and Regenerative Medicine International Society, has been receiving increasing numbers of excellent reviews and methods papers. ***Tissue Engineering*** (Part A) has traditionally focused on hypothesis-driven scientific reports. The ***Reviews*** and ***Methods*** journals will enable the flagship ***Tissue Engineering*** to bring these valuable papers to the readership on a much larger scale.

Tissue Engineering, Part A
Co-editors: Antonios G. Mikos, and Peter C. Johnson
Published: Monthly ISSN: 1937-3341
TERMIS Member Prices: **Print:** $93.00 US; $140.00 outside US **Online:** FREE to members

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
Published: Quarterly ISSN: 1937-3368
TERMIS Member Prices: **Print:** $50.00 **Online:** FREE to members

This new 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
Published: Quarterly ISSN: 1937-3384
TERMIS Member Prices: **Print:** $50.00 **Online:** FREE to members

This new 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.

BEST OFFER: Combined Subscription to ***Tissue Engineering, Parts A, B, & C***
Print: $113.00 US; $160.00 outside US **Online:** FREE to members

The publisher also offers a special package that includes *Tissue Engineering, Parts A, B, C,* as well as *Cloning and Stem Cells, Stem Cells and Development* and *Rejuvenation Research* **Online Only** for $350.00. If you are interested, please check the corresponding box that is included within the TERMIS online membership form.

Please encourage your institution to subscribe (click here for library recommendation form) We look forward to your active participation and welcome your manuscript submissions.

For more information and instructions to authors, please visit www.liebertpub.com/ten

Free Online Access to *Tissue Engineering*

The online version of the journal, *Tissue Engineering*, the official journal of TERMIS, is now available for free to members only. The online journal can be accessed 24 hours a day, 7 days a week by logging on to the online journal website, http://www.termis.org/journal.php.

All members of TERMIS have been issued a username and password to access the online version of the journal. If you are experiencing problems logging on to view the online journal or have any questions, please contact Sarah Wilburn either by email at swilburn@termis.org or by phone at +1 (410) 931-7838.

Encourage Your Institution to Subscribe to the journal, *Tissue Engineering*

If your institution does not currently subscribe to the journal, *Tissue Engineering*, 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. (A copy of the librarian recommendation form can be found at http://www.termis.org/docs/libraryRecommendForm.doc) Your institution's library can benefit in subscribing to *Tissue Engineering* by providing a publications outlet for yourself and other colleagues within the field of tissue engineering keeping you up-to-date with the latest papers and research. The journal now offers an online version, which offers convenience and ease of accessibility.

Please take a moment to complete the form and fax to your librarian today!

Meetings Endorsed by TERMIS

February 2008

- Biologic Scaffolds for Regenerative Medicine: Fifth Symposium
  Conference Dates: February 15th and 16th, 2008
  Conference Location: Pointe Hilton Tapatio Cliffs Resort, Phoenix, AZ
  Deadline for Abstracts: October 15, 2007
  For additional information or questions, please email: biologics_symposium@upmc.edu
  Call for Abstracts

March 2008

- Hilton Head Workshop
  Conference Dates: March 12-16, 2008
  Conference Location: Hilton Head Island, South Carolina

- PharmaMedDevice 2008
  Conference Dates: March 26-28, 2008
  Conference Venue: Pennsylvania Convention Center
  Conference Location: Philadelphia, PA

May 2008

- 8th World Biomaterials Congress
  Meeting Dates: May 28 through June 1
  Conference Location: RAI Conference Centre in Amsterdam, The Netherlands.
  Please contact info.wbc2008@ics-online.nl for further details.

- 3rd Biennial Heart Valve Biology and Tissue Engineering
  Conference Dates: 4th-7th May 2008
  Conference Location: The Royal Society, London
  Abstract Deadline: 15th January 2008

July 2008

- European Society of Biomechanics
  Conference Dates: July 6-9, 2008
  Conference Location: Lucerne, Switzerland

- XX International Fibrinogen Workshop
  Conference Dates: 10-13 July 2008
  Conference Location: Venice, Italy

The International Fibrinogen Research Society (IFRS - http://www.fibrinogen.org) is sponsoring the **XXth International Fibrinogen Workshop**, to be held in the San Servolo campus of the Venice International University (http://www.univiu.org), Venice, Italy, July 10-13, 2008.

The workshop, organized by Mattia Rocco and Ranieri Cancedda of the Istituto Nazionale per la Ricerca sul Cancro (IST, http://www.istge.it), Genova, Italy, has been endorsed by TERMIS and is open to all investigators and scientists with a basic, clinical or biotechnological research interest in fibrinogen. The XXth IFW, following a long-standing tradition set up by its predecessors, will provide a forum for collegial presentations and discussions of new findings and perspectives in most if not all the fibrinogen and fibrin research and application fields. As fibrin-based products are widely used in the tissue engineering and regenerative medicine fields, TERMIS members should find plenty of interesting topics in the XXth IFW program. The IFRS welcomes participation of TERMIS members, including contributions of abstracts for presentation. Please note that the XXth IFW closely follows the 16th Congress of the European Society of Biomechanics, Lucerne, Switzerland, July 6-9, 2008.

Please note that the dealine for abstract submission is February 2, 2008.

For more information, visit the XXth IFW website (http://alisf1.univpm.it/XXifw/).
Contact: Dr. Mattia Rocco, mattia.rocco@istge.it

August 2008

- Advances in Tissue Engineering Short Course
  Conference Dates: August 13-16, 2008
  Location: Rice University Campus, Houston, Texas

November 2008

- TERMIS-AP: Chinese Taipei
  Conference Dates: November 6-8, 2008
  Meeting Chair: Prof. Ging-Ho Hsiue (ghhsiue@che.nthu.edu.tw)
  Program Chair (Contact): Hsing-Wen Sung (hwsung@che.nthu.edu.tw)
  Venue: Chien Tan Overseas Youth Activity Center, Taipei, Taiwan, ROC

- bone-tec 2008 - International Bone Tissue Congress
  Conference Dates: 7 - 9 November 2008
  Conference Location: Hanover, Germany

bone-tec 2008
Int. Bone-Tissue-Engineering Congress
Nov. 7-9, 2008
Hanover, Germany

CALL FOR ABSTRACTS - Online submission only – bone-tec 2008

Scientific topics

- scaffolds, matrices
- drug release systems
- cells and growth factors
- animal models
- bone regeneration
- cartilage engineering
- clinical applications

The **deadline** for abstract submission is **May 31, 2008**. Thereafter, abstracts will be reviewed by the advisory board. Authors will be notified of their acceptance/rejection by late August. Together with the confirmation of abstract acceptance, authors will be requested to register for the congress.
Deadline for author registration is September 15, 2008.

POSTER OR ORAL PRESENTATION

Participants are invited to submit electronic abstracts for either poster or oral presentation on one of the main topics of the conference.

STUDENT POSTER PRESENTATION - for students only

Students are invited to submit electronic abstracts for poster presentation on "Modern Bone Regeneration" (includes all scientific topics of the congress). Postgraduated students have to participate in regular abstract submission (see above). We are pleased to inform that prizes will be given out to the 3 best student posters presented.

REGISTRATION – Online registration only

REGISTRATION FEES (all fees are quoted in Euros)	**Early rate** before 16 September 2008	**on / after** 16 September 2008
non member	€ 320	€ 350
member of scientific partner organisation *	€ 290	€ 320
student **	€ 70	€ 85

* member should indicate membership society
** a copy of your student card or a letter signed by the head of department is required and must be submitted with the registration

Member registration only applies to those who are members of the following societies: (to be completed)
- European Association for Cranio-Maxillo-Facial Surgery (EACMFS)
- European Society of Biomaterials (ESB)
- International Cartilage Repair Society (ICRS)
- International Union of Societies for Biomaterials Science and Engineering (IUS-BSE)
- Orthopaedic Research Society (ORS)
- Tissue Engineering & Regenerative Medicine International Society (TERMIS)

TERMIS Governing Board

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