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Upcoming Events

June Meeting: **Speaker Series**

Date: Tuesday, June 18, 2013
 Time: 6:00 PM—8:00 PM
 Location: Barley's Brewhaus \ 16649 Midland Drive \ Shawnee, KS 66217
 Dues: \$8.50 for Members, \$12.50 for Non-Members, **PayPal** in advance
 \$10 for Members, \$15 for Non-Members, paid at the door

**Add an Appointment to
Your Outlook Calendar!**

Dr. Michael Detamore, University of Kansas

Gradients and 'Raw Materials' in Tissue Engineering

Our group is interested in new technologies and strategies for osteochondral tissue regeneration. Some of the core tenets of our philosophy for tissue regeneration include the use of "raw materials" as building blocks, the engineering of continuous phase gradients, and leveraging osteochondral tissue engineering to enhance cartilage regeneration. The use of scaffolds built exclusively from microspheres provides a means for both raw materials and gradients to be employed in osteochondral tissue engineering. With the use of microspheres, we have shown that a single osteochondral biomaterial implant can be created with a continuous gradient in both material composition and growth factor release, with a seamless transition from one side to the other. We have further demonstrated the ability to create shape-specific scaffolds, and even fabricate the scaffolds in the presence of cells in a single step, by using dense phase CO₂ to sinter the microspheres. A series of *in vivo* tests in both the knee and in the temporomandibular joint (TMJ, or jaw joint) have yielded promising results for the use of microsphere-based scaffolds. As an alternate strategy, we are pioneering the use of interpenetrating network (IPN) hydrogels to encapsulate cells for cartilage tissue engineering. We have shown that two different hydrogel networks can be combined in such a way to create an IPN hydrogel with mechanical integrity far superior to either of the original gels, with viable cells encapsulated. This IPN approach has been further enhanced with the incorporation of "raw materials" for cartilage. In addition, we have developed a gradient-based design for a biomaterial to treat tracheal stenosis (narrowed airway). Finally, we have introduced human umbilical cord Wharton's jelly cells (WJC) to musculoskeletal tissue engineering, which has permeated a number of different applications in our group.

RSVP by Wednesday, June 12th! Email kansascity@aiiche.org.

Thanks to our Sponsors of this Event!



The Kansas City Section Newsletter is published monthly for AIChE-KC members.

Questions/comments?
Email kansascity@aiiche.org

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Upcoming Event

July Meeting: **Kansas City T-Bones Baseball Game**

Date: Tuesday, July 16, 2013
Time: 7:05 PM
Location: Community America Ballpark
1800 Village W Pkwy, Kansas City, KS 66111
Cost: \$20 includes ticket, 2 drink tickets, and food!

The Kansas City Section
SPOTLIGHT...

Coming soon to a section near you...

1. Technical Meeting (August)
2. Plant Tour (September)
3. AIChE Trivia Night (October)

Spotlight on the May Meeting

Dr. H. Scott Fogler of the University of Michigan attracted over 40 members to Barley's Brewhaus for our 2nd Speaker Series Event! Thanks to everyone who attended! We hope you will join us again for our final Speaker Series Event!



Look for more pictures on our website!

UPCOMING CONFERENCES

2013 Process Development Symposium

June 11-13, 2013,
Oak Brook, IL

2013 AIChE Annual Meeting

November 3-8, 2013,
San Francisco, CA

<http://www.aiche.org/conferences/>

UPCOMING WEBINAR

The Chemistry of Chocolate

Wednesday, June 12, 2013
2:00—3:00pm

<http://www.aiche.org/resources/webinars>