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Pittsburgh Region Middle School Students Participate in Hands-on Tissue Engineering Summer Camp

Pittsburgh (July 7, 2008) - Have you ever wondered why a starfish can completely grow a new arm, but humans cannot? Or, how about the fact that a salamander can regenerate a severed leg, but human beings have to rely on man-made, prosthetic limbs? Many of us have asked the same questions for a long time and, in fact, many cutting-edge, "tissue engineering" researchers are beginning to find the answers. What's even more exciting is that much of this ground-breaking work is being done in our own backyard, with the Pittsburgh region recognized as a world-class leader in tissue engineering and regenerative medicine.

Tissue Engineering (TE) and Regenerative Medicine are revolutionary technologies that offer incredible hope to people with compromised tissue function. The challenge for us is to help humans tap into their innate ability to regenerate damaged, diseased or compromised body parts -- Much like the Starfish and salamander! This requires a team approach and the coordinated efforts of biologists, chemists, physicists, engineers, computer specialists and physicians. For one week this summer, 48 middle school students across the Pittsburgh region will become a member of a tissue engineering team as they seek answers to the mystery of regeneration in the starfish and salamander and learn how tissue engineering might help humans be able to more easily accomplish what the starfish and salamander readily can.

The Pittsburgh Tissue Engineering Initiative (PTEI) has been long viewed as a leader in creating awareness and facilitating educational enrichment activities for professionals, educators, elementary and secondary students, college students, and post doctoral candidates. This summer, PTEI is providing two separate, one-week, hands-on tissue engineering summer camps during the weeks of July 7th to July 11th and again on July 14th to July 18th with camp headquarters at the University of Pittsburgh Center for Biotechnology and Bioengineering, located off Second Avenue at 300 Technology Drive, Pittsburgh. Middle school campers will experience becoming members of a medical team dedicated to a difficult task and challenge related to sports injury. A local star athlete has a seriously damaged knee joint and traditional medical attempts at repair have been unable to restore him to peak performance. The challenge for the tissue engineering camper teams will be to, "boldly go where no surgeon has gone before as they seek to develop strategies and utilize technologies that will enable them to fabricate **NEW** tissue to replace the athlete's damaged knee joint. What technologies might be used? What experimental strategies can you imagine? What ethical considerations are raised by this scientific breakthrough? Through work with team members at camp headquarters and also at local tissue engineering laboratories and facilities, middle school campers will explore these questions and more.

Joan Schanck, Director of Education for the Pittsburgh Tissue Engineering Initiative describes, “Through participation in the tissue engineering summer camp, we are helping students learn that science is so much more than just lists of factoids and formulas. By taking an inter-disciplinary approach, students are able to gain abilities to build scientific understanding and enhance communication skills. Students who are actively engaged in a hands-on, application-based approach to learning will be most likely to remember material. As well, the camp encourages students to think by requiring interpretation of observed events, rather than memorization. Overall Tissue Engineering Summer Camp promotes fun in the classroom for students who typically do not get one-on-one interaction in science for an entire week.”

Components of the summer camp receive partial supported by Grant Number 1 R25 RR023286 from the National Center for Research Resources (NCRR), a component of the National Institutes of Health (NIH) and by a Pennsylvania Department of Community and Economic Development Workforce Leadership Grant.

The Pittsburgh Tissue Engineering Initiative

The Pittsburgh Tissue Engineering Initiative (PTEI) incorporated in January 1996 as a free-standing, novel initiative designed to encourage development of tissue engineering (TE) by uniting the scientific, engineering, and commercial talent of Pittsburgh and southwestern Pennsylvania. At the nexus of TE for a decade, PTEI serves stakeholders’ interests by joining academic researchers with government and industry to promote development of advanced TE therapies and technologies and deliver them more rapidly to patients and the marketplace. Central to PTEI’s mission to advance the field of regenerative medicine by cultivating research and commercial development is an educational mandate to develop models and programs to grow the intellectual capacity required to support this promising field.

The [Allegheny-Singer Research Institute](#), [Carnegie Mellon University](#), [Duquesne University](#), the [University of Pittsburgh](#) and the [University of Pittsburgh Medical Center](#) share a vision of the region as an international center of excellence in the field of regenerative medicine and have pooled their expertise in basic biomedical research, applied clinical investigations, organ transplantation, biomaterials research, computer and supercomputer science, advanced imaging techniques, and advanced bioengineering to make this vision a reality.

For additional information you are invited to visit our Web site at www.PTEI.org and/or contact LaShon Jackson, Educational Program Manager, at 412/235-5230, or email at ljackson@ptei.org

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