

Cellular Niches Workshop Agenda

May 16-17, 2005

Monday, May 16

7:30 a.m. – 8:15 a.m. **Registration and Light Refreshments**

8:15 a.m. **Welcome**

8:30 a.m. – 9:30 a.m. **Keynote Address: Allan Spradling**

The germline stem cell niche in the *Drosophila* ovary is one of the few niches that have been well described with reference to factors that maintain viability and stem cell potential. How cells exit the niche to begin their differentiation path has also been characterized, and the somatic follicle stem cells and their niche are being actively investigated. Dr. Spradling's lab has led this field. His address will describe the types of factors and processes that establish and maintain niches, and will provide an example of the types of things we'd like to know about niches generally.

9:50 a.m. – 12:30 p.m. **Session I: Definition of Cellular Niches**

The purpose of this session is to describe current knowledge of stem cell or other cellular niches in tissues of interest: Where are stem cells within a tissue? What cells surround them? What extracellular cues are produced by the surrounding cells to maintain viability and pluripotency of stem/progenitor cells? How do niches regulate cell function and behavior?

Speakers:

- 1) Linheng Li – Stem Cell Regulation: Niche and Signaling
- 2) Kateri Moore – Molecular Mechanisms in the Hematopoietic Stem Cell Niche
- 3) Harvey Lodish – Purification and Expansion of Hematopoietic Stem Cells Based on Proteins Expressed by a Novel Stromal Cell Population
- 4) Jeff Gordon – Title TBD

Hot Topic

2:00 p.m. – 4:30 p.m. **Session II: Disease Pathogenesis and Changes in the Niche**

This session will describe how niches change following disease, injury, or aging: How do otherwise quiescent stem/progenitor cells become “activated” to repair tissue? How does inappropriate regulation of stem cells result in disease or degeneration?

Speakers:

- 1) Christopher Chen – Title TBD
- 2) Qais Al-Awqati – Stem Cells in the Adult Kidney
- 3) Lynette Wilson – The Properties and Regulation of Prostatic Stem Cells and Their Relevance to Prostatic Diseases
- 4) Ormond MacDougald – Role of Wnt Signaling in Development of Adipose Tissues and Bone

Hot Topic

4:30 p.m. – 6:30 p.m. **Poster Session**

Tuesday, May 17

7:00 a.m. – 8:00 a.m. **Registration and Light Refreshments**

8:00 a.m. – 10:30 a.m. **Session III: Development of Cellular Niches During Organogenesis**

Speakers in this session will describe factors that define particular niches during embryonic development. What factors define the site at which organogenesis will occur and what maintains the viability and continued development of the organ?

Speakers:

- 1) Ken Zaret – Influence of the Vasculature on Pancreas and Liver Development
- 2) Tom Schultheiss – Specification of Nephric Tissue from the Intermediate Mesoderm
- 3) Maureen Gannon – Signals that Foster Pancreatic Development
- 4) Jordon Kreidberg – VEGF Mediates a Mesenchyme: Angioblast Interaction During Early Kidney Development That Induces a State of Competence in the Nephrogenic Mesenchyme

Hot Topic

11:00 a.m. – 1:30 p.m. **Session IV: Developing a Therapeutic Niche**

This session will focus on studies of manipulations that facilitate viability and function of transplanted stem cells or other cells. What extracellular matrices are required to maintain function? Growth factors? Do therapeutic niches recapitulate developmental niches?

Speakers:

- 1) Linda Griffith – title TBD
- 2) Markus Grompe – Host Factors Permissive to Therapeutic Liver Repopulation
- 3) Peter Quesenberry – Tissue Niches for Stem Cell Differentiation: A Functional Concept

Hot Topic