ATA 2009 Research Summit: Thyroid Hormone in Pregnancy and Development

(Held in conjunction with the one-day American Thyroid Association Spring Symposium)

(Draft agenda as of 3/5/2009)

Steering Committee:
Gregory Brent (UCLA)
Douglas Forrest (NIH-NIDDK)
Yun-Bo Shi (NIH-NICHD)

Date:
Thursday, April 16, 2009, 9:30 am – 5:00 pm

Location:
The Madison Hotel, 1177 15th Street, NW, Washington, DC

Overview
Thyroid hormone is essential for normal development. Both excess and deficient maternal thyroid hormone levels can alter normal developmental pathways resulting in permanent defects in brain, sensory development, growth, and bone development. There are many potential sites of regulation of thyroid hormone action including: ligand activation and inactivation by thyroid hormone metabolizing enzymes in tissues, selective thyroid hormone transport into different cell types, thyroid hormone receptor isoform-selectivity, thyroid hormone receptor interaction with co-factors, regulation of iodine transport, and placental transport of iodine and thyroid hormone. Environmental toxicant exposure during pregnancy have been recognized that can interfere with thyroid hormone regulation at many of these sites. Key and emerging research focused on the mechanisms of thyroid hormone action in development and maternal-fetal interactions will be discussed. Special emphasis will be given to the role of thyroid hormone and maternal thyroid status on brain and sensory development. Rodent models of development will be emphasized, although discussion of amphibian models and application to human studies will be included.

Audience
Scientists and trainees in the fields of endocrinology, developmental biology, cell biology, toxicology, environmental health, neuroscience, and physiology. Correlations to human physiology and disease will be of interest to clinicians in endocrinology, obstetrics and gynecology, pediatrics, and occupational health.

Agenda
9:30 am – 10:00 am  Keynote: Basic Mechanisms of Thyroid Hormone Production, Action, and Regulation in Development: Interaction Between Mother and Fetus
Donald St Germain

10:00 am – 12:00 pm  Thyroid Hormone Action in Development
Pharmacological and Transgenic Analysis of Thyroid Hormone Control of Development in a Vertebrate Model System
J. David Furlow

Embryonic Stem Cell Differentiation as a Model of Thyroid Hormone Action in Early Development
Gregory Brent

Regulation of Developmental Rate and Timing by Thyroid Hormone Receptor Cofactors
Yun-Bo Shi

Thyroid Hormone and Bone Development
Graham Williams

12:00 pm – 1:00 pm  Lunch: Trainee Poster Session
1:00 pm – 2:15 pm  
**Thyroid Hormone Effects on Brain and Sensory Development**  
Role of Thyroid Hormone Transporters in Neural Development  
*Samuel Refetoff*

Thyroid Hormone Actions in Early Brain Development  
*Juan Bernal*

Thyroid Hormone Regulation of Sensory Development  
*Douglas Forrest*

2:15 pm – 3:30 pm  
**Clinical Correlates to Basic Research: Human Studies of Maternal-Fetal Interactions**  
Maintaining Thyroid Hormone Sufficiency in Pregnancy: Thyroid Supply to Mother and Fetus  
*Erik Alexander*

Increasing Precision of Thyroid Function Testing in Pregnancy  
*Offie P. Soldin*

Designing Studies to Assess the Impact of Thyroid Status on Pregnancy  
*John Lazarus*

3:30 pm – 3:40 pm  
**Break**

3:40 pm – 5:00 pm  
**Environmental Toxicants in Pregnancy and Fetal Development**  
Influence of Thyroid Hormone Action Disrupters on Brain Development  
*J. Thomas Zoeller*

Models of Thyroid Toxicants and Brain Development  
*Kevin Crofton*

Impact of Iodine Transport Inhibitors on Development  
*Nancy Carrasco*

5:00 pm – 6:00 pm  
**CLOSED Roundtable Discussion: Priorities in Research on Thyroid Hormone in Pregnancy and Development**  
*(Speakers, ATA Officers and Staff, NIH Program Staff)*

**Faculty**  
*Erik Alexander*, Brigham and Women’s Hospital, Harvard Medical School  
*Juan Bernal*, Universidad Autonoma de Madrid  
*Gregory Brent*, David Geffen School of Medicine at UCLA  
*Nancy Carrasco*, Albert Einstein College of Medicine of Yeshiva University  
*Kevin Crofton*, Environmental Protection Agency  
*Douglas Forrest*, National Institutes of Health, NIDDK  
*J. David Furlow*, University of California, Davis  
*John Lazarus*, University Hospital of Wales, Cardiff University  
*Samuel Refetoff*, University of Chicago  
*Yun-Bo Shi*, National Institutes of Health, NICHD  
*Offie P. Soldin*, Department of Medicine, Georgetown University  
*Donald St Germain*, Dartmouth University School of Medicine  
*Graham Williams*, Hammersmith Hospital  
*J. Thomas Zoeller*, University of Massachusetts, Amherst