

Trainees' research recognized at SSR annual meeting

By Eddy Ball

Work by three trainees in the NIEHS [Reproductive Developmental Biology Group \(RDB\)](#) won top honors at the Society for the Study of Reproduction (SSR) [meeting](http://www.ssr.org/13Meeting.shtml) (http://www.ssr.org/13Meeting.shtml) July 19-23 in Montreal.

Visiting predoctoral fellow Chang Liu, a graduate student at the University of Illinois at Urbana-Champaign, and Intramural Research Training Award fellows Erica Ungewitter, Ph.D., and Heather Franco, Ph.D., were among the 16 winners of the Lalor Foundation Merit Award, which includes a prize of \$500.

Along with their Lalor awards, Liu and Ungewitter also won SSR Trainee Research Awards. Liu placed first in the oral category, winning an additional \$500 prize, and Ungewitter took second place in the poster category, receiving an extra \$300.

"These trainees really made me and NIEHS look great at the meeting," said Humphrey Yao, Ph.D., head of the RDB and mentor of the winners. "I appreciate the support of the intramural program that allowed us to attend the meeting."

According to Yao, the selection process for the Trainee Research Award is very stringent, involving the selection of six finalists for each category - best platform (oral) presentation and best poster presentation - from around 900 abstracts submitted by predoctoral and postdoctoral fellows. External reviewers cull for the top 200, and the award committee then chooses the final six oral and six poster finalists. Judging criteria include merit of the study, presentation format, delivery, visual aids, and response to questions during discussion.

Quality mentoring translates into award-winning research presentations

While the award winners are exceptionally talented young scientists, Liu, Ungewitter, and Franco also credit Yao's mentoring and their career development experiences in the NIEHS Laboratory of Reproductive and Developmental Toxicology (LRDT) with helping to make the awards a reality.

Liu, who has worked in the group for the past four years pursuing a Ph.D. in reproductive biology, said he appreciated the support and direction Yao has provided. "Humphrey is always available and always encouraging. He is good at building up your confidence, cheering you up when you're low, and motivating you to move on with your research projects," Liu said.

The winners also benefited from structured training experiences provided by LRDT, which is headed by Kenneth Korach, Ph.D. "LRDT has a summer fellows' seminar series, where all the trainees present research and are rated by the other scientists in LRDT," Korach explained.

The ratings cover subject matter and organization, as well as presentation skills, and colleagues offer specific recommendations about how to improve. "This kind of practice helps in many ways when the fellows go to national meetings," Korach said.

For Yao, the awards were also a symbolic passing of the torch. In 1999, as a graduate student at one of his first SSR meetings, Yao won a first place Trainee Research Award for his oral presentation, setting the tone for a career that took him to the University of Illinois at Urbana-Champaign, where he was an associate professor, and then on to NIEHS. According to Yao, SSR is especially nurturing for students and fellows, with approximately 70 percent of the presentations at each year's annual meeting being given by trainees.



"All of Humphrey's projects are the type answering important questions that not many people have tried to answer, but are needed in order to move the field forward," Korach said of the group's work. "Humphrey has recruited very, very well." Shown above, from left, are the award winners and their mentor - Ungewitter, Yao, Liu, and Franco. (Photo courtesy of Steve McCaw)

Award-winning research from RDB

Working with mouse models, members of the Yao group investigated the developmental differentiation of stem and progenitor cells in the reproductive system of mammals, for insight into the mechanism of the process and the ways early-life events could result in abnormalities that develop later in life.

- **Liu C**, Yao HH-C. 2013. Unveil the Origins of Theca Cells: Divergent Sources to a Convergent End. Meeting abstract 1.

Theca cells play essential roles in normal ovarian function yet their origin remains unclear. These lineage-tracing studies investigated whether somatic progenitor cells in the gonad (*Wt1*-positive) and/or mesonephros (*Gli1*-positive) contribute to the theca cell lineage. The studies uncovered multiple origins for the progenitors of the theca cell lineage - the gonadal *Wt1*-positive cells and the extragonadal *Gli1*-positive cells. The experiments also demonstrated that these two sources of theca progenitor cells are indispensable for normal ovarian function.

- **Ungewitter EK**, Lichti-Kaiser K, Jetten AM, Yao HH-C. 2013. *GLI*-similar 3 is a Sexually Dimorphic Regulator of Fetal Germ Cell Development in the Mouse. Meeting abstract 453.

This study traced genes involved in embryonic sex determination, focusing on the first stage of meiosis, a special type of cell division necessary for sexual reproduction. The findings suggest that *Glis3* is critical for germ cell development and maintenance in the testis and that it does so by preventing male germ cells from entering meiosis prematurely through a novel pathway independent of retinoic acid, which is able to induce meiosis in female germ cells.

- **Franco HL**, Tsai M-J, Tsai SY, Yao HH-C. 2013. The Novel Regulation of Both Male and Female Murine Reproductive Tract Regression by COUP-TFII. Meeting abstract 28.

This investigation of the factors that govern embryonic reproductive tract development tested the hypothesis that the orphan nuclear receptor COUP-TFII plays a critical role in the process. Surprisingly, ablation of COUP-TFII resulted in the presence of two reproductive tracts in both males and females, making this the first model whereby a genetic alteration causes a failure of ductal regression in both sexes, and opening avenues for future research into the mechanisms of reproductive tract development.

The Environmental Factor is produced monthly by the [National Institute of Environmental Health Sciences \(NIEHS\)](http://www.niehs.nih.gov/)
(<http://www.niehs.nih.gov/>)

, Office of Communications and Public Liaison. The content is not copyrighted, and it can be reprinted without permission. If you use parts of Environmental Factor in your publication, we ask that you provide us with a copy for our records. We welcome your [comments and suggestions](#).
(bruskec@niehs.nih.gov)

This page URL: NIEHS website: <http://www.niehs.nih.gov/>
Email the Web Manager at webmanager@niehs.nih.gov