

Work Experience

Research Services Senior Professional in Pulmonary Sciences

School of Medicine, University of Colorado Anschutz Campus, Aurora, CO

Research Scientist

Eleven P15 Inc.

Nov, 2021 – current

- Developing cell based phenotypic assays to recapitulate disease biology, and suitable for therapeutic drug screening of IPF.
- Primary cell culture, ALI culture, qPCR, Western Blot, ELISA, and cell-based assays.
- Plasmid library construction.
- Mice injection and organ harvest, Tracheotomy.

Staff Scientist II

Eurofins BioPharma Product Testing, Columbia, MO

Feb – Nov, 2021

- Worked under GMP/GLP environment in accordance with regulations including DEA, EPA, FDA, FIFRA, OECD, etc.
- Bioassay for drug of abuse and pharmaceutical testing, preparation of release report.
- qPCR, ELISA, mammalian cell culture, viral infection, cell-based assays, enzyme activity assay.
- Data analysis, data review and report preparation.
- Method verification and validation.

Research Specialist in Immunology

School of Medicine, University of Missouri, Columbia, MO

Jul, 2018 – Feb, 2021

- Studied the mechanism of enhancing T Cell responses to weak antigens by mono-Fabs, the truncated monovalent antibody fractions; and investigated potential immunotherapy design.
- Monoclonal antibody hybridoma culture, size-exclusion and affinity chromatography, Fab fragment preparation.
- Biomarker analysis by Flow cytometry, Western blot, cell division and survival assays.
- *in vivo* tumor experiment in mice to study the therapeutic potential of mono-Fabs against cancer.
- Mice colony management; genotyping by PCR or biomarker staining; ImmunoPrecipitation, tail-vein injection, retro-orbital injection.

Postdoctoral Research Associate in Developmental Biology

Department of Biology, University of Maryland, College Park, MD

2015 – 2017

- Investigated the molecular mechanism of GLD-1, a highly conserved mRNA-binding protein and its species-specific cofactor FOG-2 on the sex determination, in particular how FOG-2 modifies the activity of GLD-1 and its target mRNAs.
- Nematode mutagenesis and genetic crossing; developed transgenic worms using CRISPR/Cas9 system or plasmid DNA.

- PCR, RT-PCR, Big Dye sequencing.
- *in vitro* and *in vivo* protein analysis to examine expression level and localization by using Western blots, immunohistochemistry, and confocal microscopy.
- Co-IP and polysome profiling for future RNA-seq and Mass-spec based shotgun proteomic analysis to identify mRNAs and proteins associated to FOG-2/GLD-1 complex.
- Mentored undergraduate students; led summer projects for undergraduates and visiting high school science teachers.

Graduate Assistant in Developmental Biology

Department of Biology, University of Toledo, Toledo, OH, USA

2007 - 2013

- Investigated the role of UNC-73/Trio RhoGEF, which activates the small Rho GTPases, in mature nervous system, where UNC-73 modulates dense core vesicles release and interacts with heterotrimeric G proteins pathways to alter animal motility.
- DNA engineering and construction for reporter and expression constructs, cloning, plasmid digestion and ligation, Gateway system, tissue specific RNAi.
- Worked extensively on fluorescent and confocal microscopes; fluorescent signal quantification from live animals.
- Live worm assays, microinjection, COPAS Biosort.

Education

- **Ph.D.** in Biology (2013), University of Toledo, Toledo, OH, USA
- **B.S.** in Biology (2000), Peking University, Beijing, China

Publications

Shuang Hu, Lauren Skelly, Ebru Kaymak, Lindsay Freeberg, Te-Wen Lo, Scott Kuersten, Sean P. Ryder, Eric S. Haag, Multi-modal regulation of *C. elegans* hermaphrodite spermatogenesis by the GLD-1-FOG-2 complex, *Developmental Biology*, 2019 Feb 15;446(2):193-205

Eric S. Haag, Johannes Helder, Paul J.W. Mooijman, Da Yin, and **Shuang Hu**, The Evolution of Uniparental Reproduction in Rhabditina Nematodes: Phylogenetic Patterns, Developmental Causes, and Surprising Consequences, *Transitions between Sexual Systems: Understanding the Evolution of Hermaphroditism and Dieocy*, 1st edition, 2018

Li Lin, Thuy Tran, **Shuang Hu**, Todd Cramer, Richard Komuniecki, and Robert M. Steven, RHGF-2 is an Essential RHO-1 Specific RhoGEF That Binds to the Multi-PDZ Domain Scaffold Protein MPZ-1 in *Caenorhabditis elegans*, *PLoS One* 2012; 7(2): e31499

Shuang Hu, Tony Pawson, and Robert M. Steven, UNC-73/Trio RhoGEF-2 Activity Modulates *Caenorhabditis elegans* Motility Through Changes in Neurotransmitter Signaling Upstream of the GSA-1/Ga_s Pathway, *Genetics*, 2011 vol. 189 no. 1 137-151

WANG Dayong, **HU Shuang**, LI Qing, CUI Keming, ZHU Yuxian, Photoperiod Control of Apical Bud and Leaf Senescence in Pumpkin (*Cucurbita pepo*) Strain 185, *Acta Botanica Sinica* 2002 44 (1): 55-62