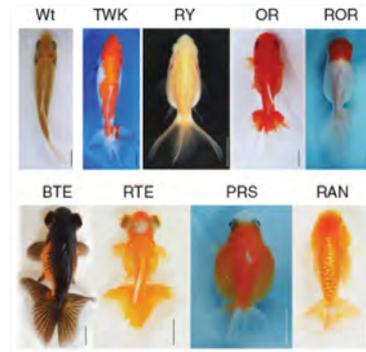
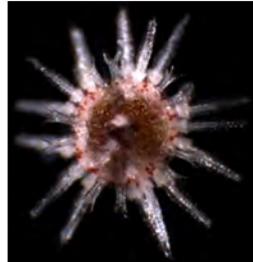


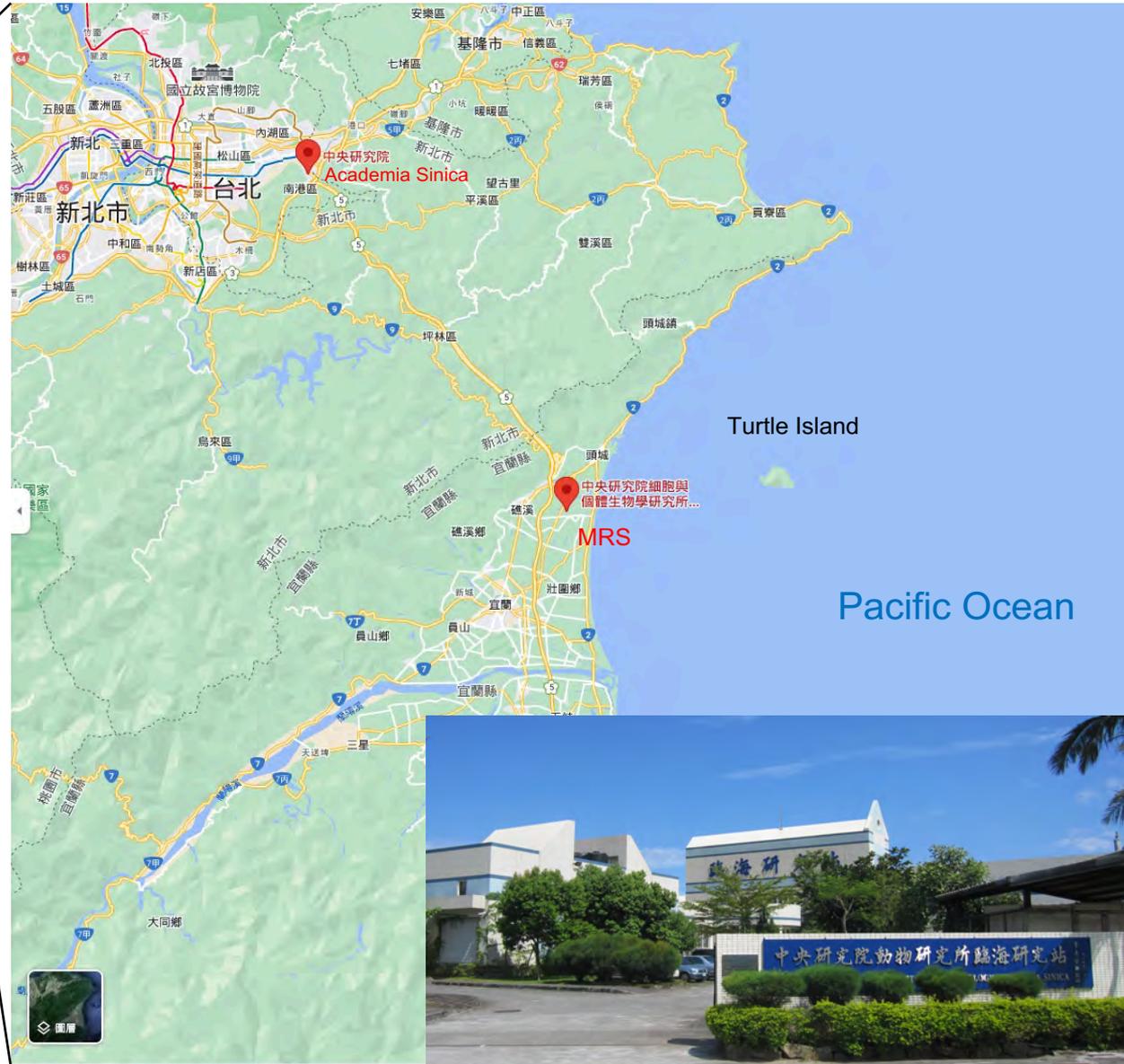


Yi-lan Marine Research Station (MRS)  
Institute of Cellular and Organismic Biology (ICOB), Academia Sinica

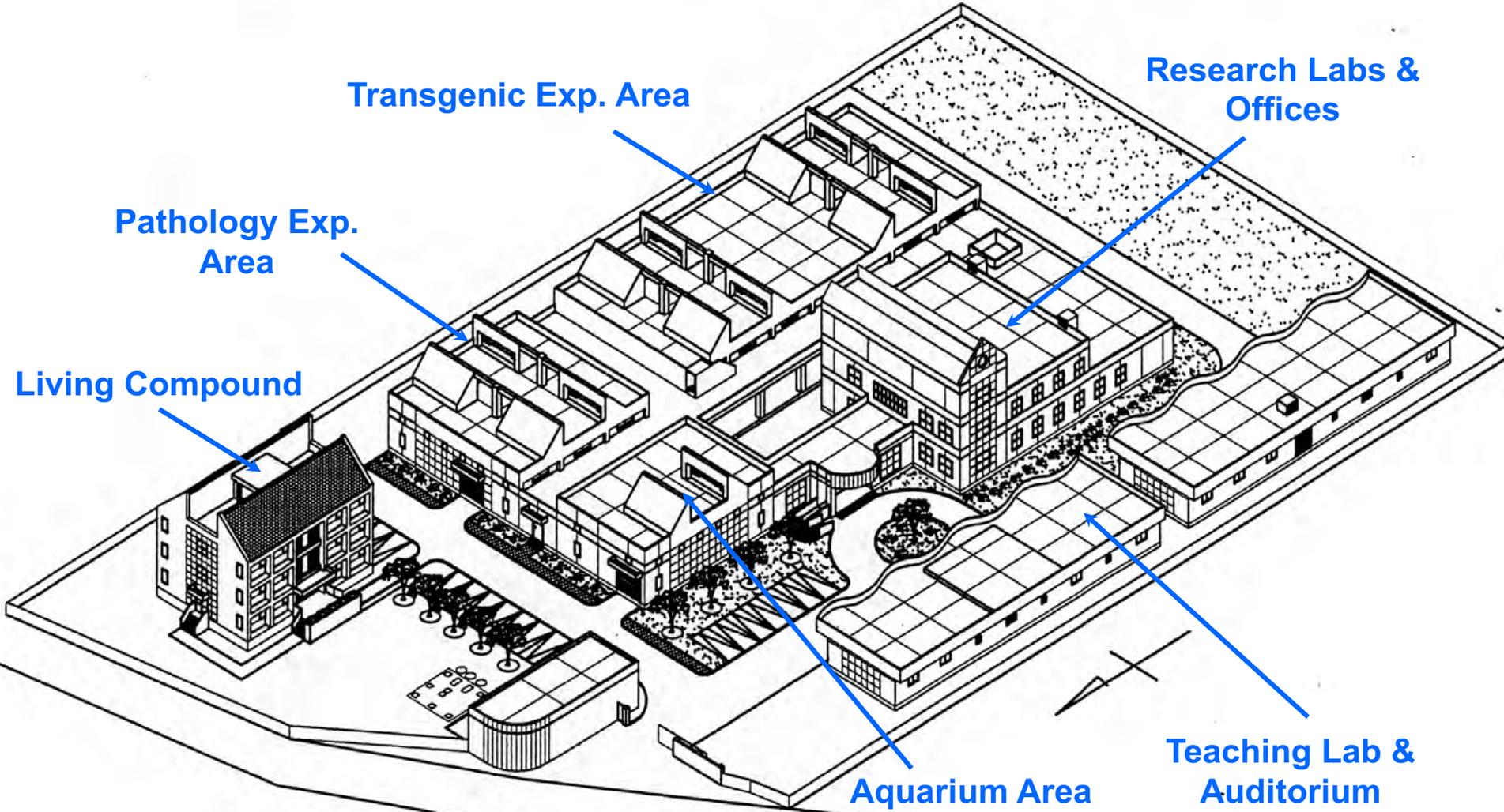
Jr-Kai Sky Yu, Chief of MRS



# MRS is located near the northeast coast of Taiwan



# Research facilities in ICOB-MRS



~ 30 employees, graduate students, and researchers  
5 research laboratories and shared facilities

# Principle investigators in ICOB-MRS:

Research Theme: Understanding the interplay between form and function, and its adaptation to an ever changing environment

## Primary members

**Jyh-Yih Chen:** Antimicrobial peptides, Marine biotechnology

**Kinya Ota:** Evolution by domestication

**Yung-Che Tseng:** Physiological adaptation

**Jr-Kai Yu:** Evolution of developmental mechanisms

**Vincent Laudet (Joint appointment with OIST):**

Metamorphosis and color variation of clownfish



Chen JY



Ota K



Laudet V

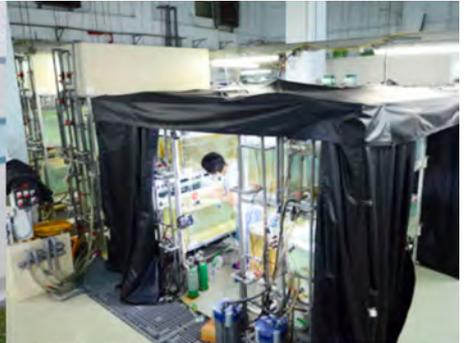


Tseng YC



Yu JK

# Research facilities in ICOB-MRS



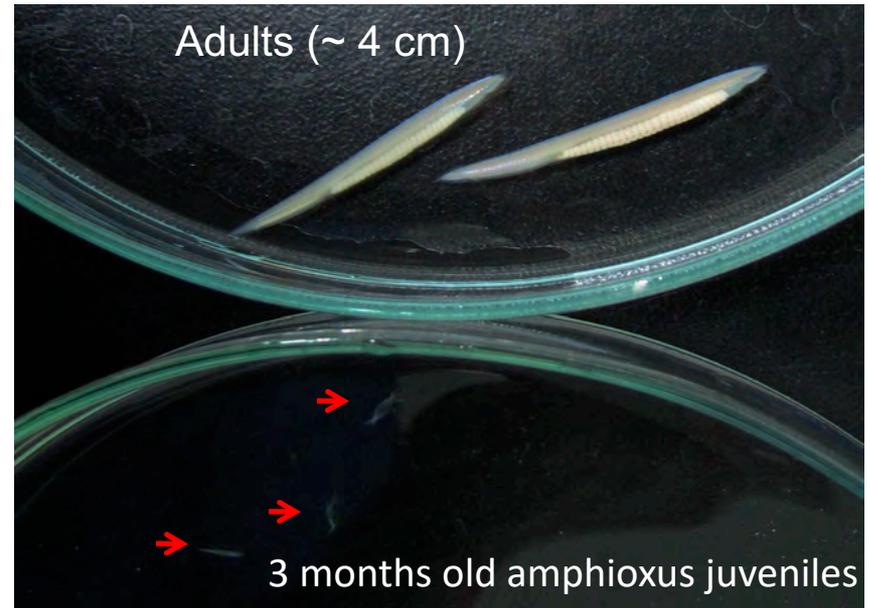
# The amphioxus facility and algae culturing system in ICOB-MRS



# Amphioxus facility in MRS – inverted day-night light regime for obtaining gametes at noon



Gravid amphioxus adults



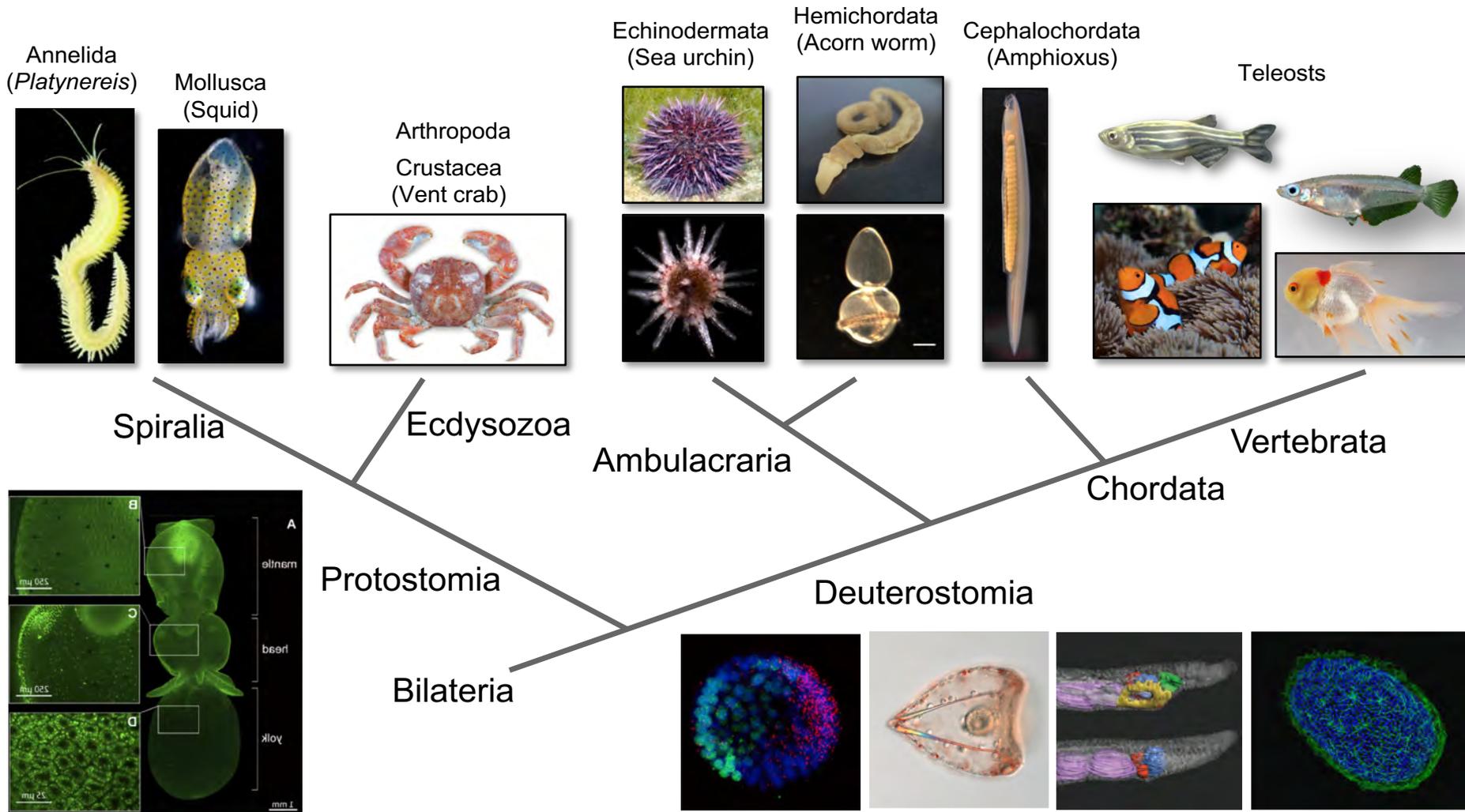
Adults (~ 4 cm)

3 months old amphioxus juveniles

# Clownfish facility in MRS



# Our research topics cover a wide variety of organisms, enabling comparative approaches for cross-species studies



Experimental approaches in cell biology, developmental biology, and physiology

# Northeast coast of Taiwan- rocky shore and coral reef



## Turtle Island



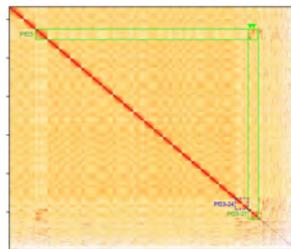
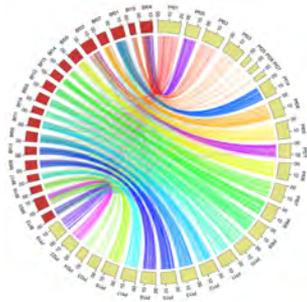
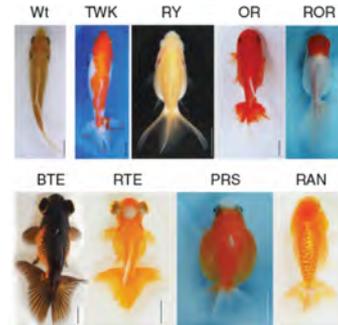
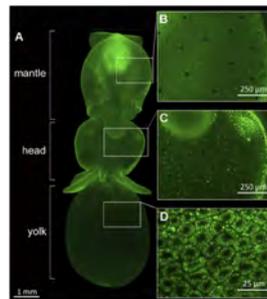
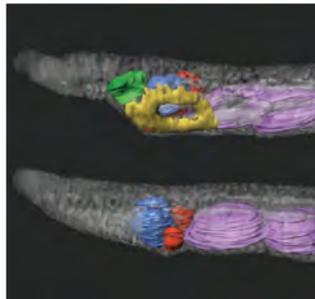
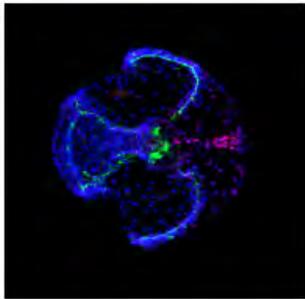
## Nearby fishing port - Dashi



# ICOB Marine Research Station

## Our Aims:

1. Serving as a biological resource center - tropical/subtropical region
2. Developing strategically selected marine model organisms
3. Employing multi-omics and advanced imaging technologies
4. Promoting collaborations



**BMP controls dorsoventral and neural patterning in indirect-developing hemichordates providing insight into a possible origin of chordates**

Yi-Hsien Su<sup>1,2</sup>, Yi-Chih Chen<sup>1</sup>, Hsiu-Chi Ting<sup>1</sup>, Tzu-Pei Fan<sup>1</sup>, Ching-Yi Lin<sup>1</sup>, Kuang-Tse Wang<sup>1</sup>, and Ji-Kai Yu<sup>1,2,3,4</sup>

<sup>1</sup>Institute of Cellular and Organismic Biology, Academia Sinica, 11529 Taipei, Taiwan, and <sup>2</sup>Marine Research Station, Institute of Cellular and Organismic Biology, Academia Sinica, 26242 Yilan, Taiwan

**Genetic Reprogramming of Positional Memory in a Regenerating Appendage**

Sing Sing Wang<sup>1</sup>, Tzu-Lun Tseng<sup>1</sup>, Yu-Chia Kuo<sup>1</sup>, Jen-Kai Yu<sup>1</sup>, Yi-Hsien Su<sup>1</sup>, Kenneth D. Patel<sup>2</sup>, and Chen-Hsi Chen<sup>1,3,4</sup>

<sup>1</sup>Institute of Cellular and Organismic Biology, Academia Sinica, Taipei 11529, Taiwan  
<sup>2</sup>Department of Cell Biology, Program in Stem Cell Biology, University Medical Center, Dartmouth, NH 03755, USA  
<sup>3</sup>Current address: <sup>3</sup>Department of Cell Biology, Academia Sinica, Taipei 11529, Taiwan  
<sup>4</sup>Correspondence: chenhsien@as.sinica.edu.tw

**PROCEEDINGS B**

**Variability in larval gut pH regulation defines sensitivity to ocean acidification in six species of the Ambulacraria superphylum**

Marian Hu<sup>1</sup>, Yang-Cher Tseng<sup>1</sup>, Yi-Hsien Su<sup>1</sup>, Estelle Loeff<sup>1</sup>, Han-Gyung Lee<sup>1</sup>, Jae-Ron Lee<sup>1</sup>, Sam Dupont<sup>1</sup> and Muel Stamps<sup>1</sup>

<sup>1</sup>Institute of Cellular and Organismic Biology, Academia Sinica, Taipei 11529, Taiwan, and <sup>2</sup>Department of Cell Biology, Academia Sinica, Taipei 11529, Taiwan

**PLOS GENETICS**

**Molecular asymmetry in the cephalochordate embryo revealed by single-blastomere transcriptome profiling**

Chia-Lin Lin<sup>1</sup>, Han-Gyung Lee<sup>1</sup>, Yang-Cher Tseng<sup>1</sup>, Kuan-Hsiung Lin<sup>1</sup>, Hsiu-Chi Ting<sup>1</sup>, Chen-Hsi Chen<sup>1,2,3,4</sup>, and Ji-Kai Yu<sup>1,2,3,4</sup>

<sup>1</sup>Institute of Cellular and Organismic Biology, Academia Sinica, Taipei 11529, Taiwan, and <sup>2</sup>Department of Cell Biology, Academia Sinica, Taipei 11529, Taiwan, <sup>3</sup>Department of Cell Biology, Academia Sinica, Taipei 11529, Taiwan, and <sup>4</sup>Marine Research Station, Institute of Cellular and Organismic Biology, Academia Sinica, Yilan 26242, Taiwan

**Journal of Endocrinology**

**Insulin-like growth factor 1 triggers salt secretion machinery in fish under acute salinity stress**

Jia-Qin Yan, Yi-Chieh Lee, Yi-Ling Tsai, Yang-Cher Tseng and Pung-Pung Hwang

<sup>1</sup>Institute of Cellular and Organismic Biology, Academia Sinica, Taipei 11529, Taiwan, and <sup>2</sup>Department of Cell Biology, Academia Sinica, Taipei 11529, Taiwan

Thank you!