

Yuanning Li

Position: Postdoc

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Research Interests

Animal comparative genomics, systematics, and life history evolution; Genome evolution of marine invertebrates; Genomic and symbioses adaptation to deep-sea chemosynthetic (hydrothermal vents, cold seeps or whale bones) habitats, especially in tubeworms; Mitogenomics.; Root of the animal tree of life.

Education

2018-present PostDoc, Yale University Advisor: Casey Dunn

2017-2018 PostDoc Auburn University Advisor: Ken Halanych

2012-2017 Ph.D **Auburn University** (Molecular Systematics)
Committee: Drs. Kenneth Halanych (advisor), Scott Santos, Jason Bond, Eric Peatman
Courses: Advanced Biological Computing, Invertebrate Biodiversity, Molecular Ecology, Molecular Genetics And Biotech, Biogeography, Evolutionary Biology, Invertebrate Zoology.

2011-2012 M.S. **Ocean University of China** (Aquatic biology)

2007-2011 B.S. **Shanghai Ocean University** (Biological Science)

Research Projects

- Population genetics of wood-eating bivalves *Xylophaga* and bone-eating worms *Osedax*
- Whole genome sequencing and annotation of deep-sea tubeworm *Lamellibrachia*
- Comparative genomics of siboglinid endosymbionts.
- Mitogenomics of wood-eating bivalves *Xylophaga*

Research Cruises

2013 **BoWLs** - Two weeks long NSF funded deployment of bone/wood landers for capture of *Osedax* and *Xylophaga* in the Pacific Northwest.

Workshop

May 2014 **AU Bioinformatic Bootcamp.**

October 2014 **FAB Fall Taxonomy Workshop Polychaetes part III: the Spionida**

Publication

13. Li, Y., A.F. Bernardino, K.M. Halanych. (*In prep*). **Whole genome sequencing of tubeworm *Lamlibrachia* reveals adaptation to deep-sea chemosynthetic environments.** *PNAS*
12. Li, Y., P.G. Galaska, A.F. Bernardino, K.M. Halanych. (*In prep*). **Recruitment patterns of deep-sea wood-boring bivalves (Xylophagidae, Mollusca) inferred from SNP data.**
11. L. Kong, Li, Y., K.M. Kocot, K.M. Halanych. (*In prep*) (2018) **Mitogenomics reveals phylogenetic relationships of Arcoida molluscs and multiple independent expansions in mitogenome size.** *Molecular Phylogenetics and Evolution*. (Co-first Author).
10. P.G. Galaska, Li, Y., K.M. Kocot, A.R. Mahon, K.M. Halanych. (*In press*) (2018) **Conservation of brittle stars (Ophiuroidea, Echinodermata) mitochondrial genome arrangements.** *Molecular Phylogenetics and Evolution*
9. Li, Y., A.F. Bernardino, K.M. Halanych. (*Submitted*). **Mitogenomics reveal evolutionary relationships and dynamic genomic architecture of deep-sea wood-boring bivalves (Molluscs: Xylophagidae).** *Molecular Phylogenetics and Evolution*.
8. Li, Y., K.M. Kocot, M.G. Tassia, J.T. Cannon, M. Bernt, K.M. Halanych. (*In press*). **The case of the codon reassignment: A novel hemichordate mitochondrial genetic code provides insights on deuterostome evolution.** *Genome Biology and evolution*. IF=3.940
7. Li, Y., M.R. Liles, K.M. Halanych. (*In press*). (2018) **Endosymbiont genomes yield clues of tubeworm success.** *ISME journal*. IF=9.520
6. A.F. Bernardino, Li, Y., C.R. Smith, K.M. Halanych. (2017) **Multiple introns in a deep-sea Annelid mitochondrial genome.** *Scientific Report* 7:4295.
5. D.S. Waits, S.R. Santos, D.J. Thornhill, Li, Y., K.M. Halanych. (2016) **Evolution of Sulfur Binding in Hemoglobin in Siboglinidae (Annelida) with Special Reference to Bone Eating Worms, *Osedax*.** *Journal of Molecular Evolution*. 82: 219-229.
4. Li, Y., K.M. Kocot, N.V. Whelan, S.R. Santos, D.S. Waits, K.M. Halanych. (2016) **Phylogenomics of tubeworms (Siboglinidae, Annelida) and comparative performance of different reconstruction methods.** *Zoologica Scripta*. 46: 200-213. IF=3.057
3. Li, Y., K.M. Kocot, S.R. Santos, D.J. Thornhill, K.M. Halanych. (2015) **Mitogenomics reveals phylogeny and dramatic size variations of control regions in the deep-sea family Siboglinidae (Annelida).** *Molecular Phylogenetics and Evolution*. doi:10.1016/j.ympev.2015.02.008. IF=4.412
2. Li, Y., P. Ma, P. Liu, Q. Li. **The genetic diversity and phylogenetic analysis of ITS1 in mitochondrial DNA of four populations of *Portunus Trituberculatus*.** (2012) *Oceanologia Et Limnologia Sinica*. 2012,43(4).

1. X. Su, G. Wang, J. Feng, J. Li, **Li, Y.** **Genetic diversity of 15 *Macrobrachium nipponense* populations in Poyang Lake based on microsatellite analysis.** (2011) *Chinese Journal of Ecology*. 2011,30(9):2007-2013.

Oral Presentations

8. **Li, Y.** (speaker), K.M. Halanych. **Comparative genomics of seep-dwelling tubeworm (Siboglinidae: Annelida) endosymbionts.** *The Society for Integrative & Comparative Biology (SICB)*. San Francisco, CA, USA. January 2018
7. **Li, Y.** (speaker), K.M. Halanych. **Comparative genomics reveal symbiont-host evolution of deep-sea tubeworms.** *6th International Symposium on Chemosynthesis-Based Ecosystems*. Woods Hole, Mass. USA. August 2017
6. **Li, Y.** (speaker), A.F. Bernardino, K.M. Halanych. **Recruitment patterns of deep-sea wood-boring bivalves (Xylophagidae, Mollusca) inferred from SNP data.** *The Society for Integrative & Comparative Biology (SICB)*. New Orleans, LA, USA. January 2017
5. **Li, Y.** (speaker), K.M. Halanych. **Using genomic tools to understand symbiont-host evolution of deep-sea tubeworms.** *12th International Polychaete Conference (IPC12)*. Cardiff, UK. August 2016
4. **Li, Y.** (speaker), K.M. Halanych. **Recruitment of deep-sea wood-boring (Xylophagidae, Mollusca) inferred from RAD sequence Data.** *Evolution 2016*. Austin, TX, USA. May 2016
3. **Li, Y.** (speaker), N.V. Whelan, K.M. Kocot, S.R. Santos, K.M. Halanych. **Phylogenomics of tubeworms (Annelida: Siboglinidae) facilitates comparative performance of supermatrix versus species tree phylogenetic approaches.** *The Society for Integrative & Comparative Biology (SICB)*. Portland, OR, USA. January 2016
2. **Li, Y.** (speaker), K.M. Kocot, S.R. Santos, K.M. Halanych. **Phylogenomics and species-tree analyses reveal deep-sea family Siboglinidae (Annelida) relationships.** *The Society for Integrative & Comparative Biology (SICB)*. West Palm Beach, FL, USA. January 2015
1. **Li, Y.** (speaker), K.M. Kocot, S.R. Santos, K.M. Halanych. **Mitogenomics and Phylogenomics of the family Siboglinidae (Annelida).** *Southeastern Ecology and Evolution Conference (SEEC)*. March 2014

Outreach/Service

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| 2016-present | Manager of the Auburn University Next-generation Sequencing Center. |
| 2013-2017 | AU Explore. (outreach event to interest area grade-school students in higher education) 7 |
| 2016 | Outreach in Drake Middle School 7th grade. (2 classes, 40 students) |

Grants and Fellowships

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| 2017 | Ocean University of China-Auburn University (OUC-AU) Grant. Genetic resources for Ark Shell bivalves: An evolutionary perspective on aquaculture resources. (Listed as CO-I) \$78,000 |
| 2012-2016 | Chinese Government Scholarship. (1600\$/month, 4 years) |

- 2016** **COSAM Travel Award.** (\$250)
- 2016** **CMB Summer GRA.** (\$1683/Mo, \$5049 Total)
- 2015** **Auburn University Graduate School Travel Award.** (\$400)
- 2014** **Biological Sciences Department Travel Award.** (\$250)
- 2014** **COSAM Travel Award.** (\$350)

Awards

- 2017** **Kenneth Ottis Distinguished Graduate Fellowship (For outstanding achievement in physiology/Molecular Biosciences).**
- 2017** **COSAM Outstanding International Graduate Student.**

Teaching Experience

- 2016** **Graduate Teaching Assistant.** Introductory Biology. Auburn University
- 2017** **Graduate Teaching Assistant.** Introductory Biology. Auburn University

References

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