

## Yuanning Li, Ph.D. – Curriculum Vitae

Institute of Marine Science and Technology  
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### CURRENT POSITIONS

2022-now Professor of Institute of Marine Science and Technology

### PAST POSITIONS

2019-2021 Postdoc scholar, **Vanderbilt University**. Advisor: Dr. Antonis Rokas  
2018-2019 Postdoc scholar, **Yale University**. Advisor: Dr. Casey Dunn  
2017-2018 Postdoc scholar, **Auburn University**. Advisor: Dr. Ken Halanych

### EDUCATION

2012-2017 Ph.D. **Auburn University** (Molecular Systematics). Advisor: Dr. Ken Halanych  
2011-2012 M.S. **Ocean University of China** (Aquatic biology). Advisor: Dr. Qi Li  
2007-2011 B.S. **Shanghai Ocean University** (Biological Science)

### RESEARCH INTERESTS

- Animal comparative genomics, systematics, and life history evolution
- Inferring large-scale species phylogeny with genome-scale data
- Genomic and symbioses adaptation to deep-sea chemosynthetic (hydrothermal vents, cold seeps or whale bones) habitats, especially in tubeworms
- Genome evolution in yeast subphylum

### RESEARCH CRUISE

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

### WORKSHOP

2014 **AU Bioinformatic Bootcamp.**  
2014 **FAB Fall Taxonomy Workshop Polychaetes.**

### PROFESSIONAL AFFILIATIONS

Society for Molecular Biology and Evolution, Society of Systematic Biologists, Deep-sea Biology Society, The Society for Integrative and Comparative Biology.

## **PUBLICATIONS**

### **First-Author**

1. **Yuanning Li**, Liu H, Steenwyk JL, LaBella AL, Harrison MC, Groenewald M, Zhou X, Shen XX, Zhao T, Hittinger CT, Rokas A. (In Press) **Contrasting modes of macro and microsynteny evolution in a eukaryotic subphylum**. *Current Biology*. 2022 Nov 4.
2. **Yuanning Li**, Altamia MA, Shipway JR, Brugler MR, Bernardino AF, de Brito TL, Lin Z, da Silva Oliveira FA, Sumida P, Smith CR, Trindade-Silva A. (2022) **Contrasting Modes of Mitochondrial Genome Evolution in Sister Taxa of Wood-Eating Marine Bivalves (Teredinidae and Xylophagaidae)**. *Genome biology and evolution*. Jun;14(6):evac089.
3. **Yuanning Li**, X. Shen, B. Evans, A. Rokas, C.W. Dunn. (2021). **Rooting the animal tree of life**. *Molecular Biology and Evolution*. Msab170. (Impact Factor: 16.4).
4. **Yuanning Li** J. L. Steenwyk, Y. Chang, Y. Wang, T. Y. James, J. E. Stajich, J. W. Spatafora, M. Groenewald, C. W. Dunn, C. T. Hittinger, X.-X. Shen, & A Rokas (2021). **A genome-scale phylogeny of the kingdom Fungi**. *Current Biology*. 31, 1653-1665. (Impact Factor: 9.6).
5. **Yuanning Li**, K.T. David, X. Shen, J.L. Steenwyk, K.M. Halanych, A. Rokas. (2020). **Feature Frequency Profile-based phylogenies are inaccurate**. *Proc. Natl. Acad. Sci. USA* 117: 31580-31581. (Impact Factor: 9.4).
6. L. Kong\*, **Yuanning Li\***, K.M. Kocot, Y. Yang, Q. Li, K.M. Halanych. (2020) **Mitogenomics reveals phylogenetic relationships of Arcoida molluscs and multiple independent expansions in mitogenome size**. *Molecular Phylogenetics and Evolution*. 150, 106857 (\* Co-first Author). (Impact Factor: 3.7).
7. **Yuanning Li**, M.G. Tassia, D.S. Waits, V.E. Bogantes, K.T. David, K.M. Halanych. (2019) **Genomic adaptations to chemosymbiosis in the deep-sea seep-dwelling tubeworm *Lamellibrachia luymesii***. *BMC Biology*. 17(1):19. (Impact Factor: 6.8).
8. **Yuanning Li**, K.M. Kocot, M.G. Tassia, J.T. Cannon, M. Bernt, K.M. Halanych. (2019) **Mitogenomics reveals a novel genetic code in Hemichordata**. *Genome Biology and evolution*. 11(1), 29-40. (Impact Factor: 3.5).
9. **Yuanning Li**, M.R. Liles, K.M. Halanch. (2018) **Endosymbiont genomes yield clues of tubeworm success**. *The ISME journal*. 12(11), p.2785. (Impact Factor: 9.5) .

10. **Yuanning Li**, K.M. Kocot, N.V. Whelan, S.R. Santos, D.S. Waits, K.M. Halanych. (2017) **Phylogenomics of tubeworms (Siboglinidae, Annelida) and comparative performance of different reconstruction methods.** *Zoologica Scripta*. 46: 200-213. (Impact Factor: 3.2).
11. **Yuanning Li**, 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*. 85, 221-229. (Impact Factor: 3.7).
12. **Yuanning Li**, 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).

### **Contributing-Author**

13. Novitsky V, J. Steingrimsson, M. Howison, C. Dunn, F.S. Gillani, A. Manne, Li Y, M. Spence, Z. Parillo, J. Fulton, T. Marak. (*In press*). **Longitudinal typing of molecular HIV clusters in a statewide epidemic.** *AIDS* (London, England).
14. Steenwyk, J. L., M. E. Mead, P. A. Castro, C. Valero, A. Damasio, R. A. C. Santos, A. L. LaBella, **Yuanning Li**, S. L. Knowles, H. A. Raja, N. H. Oberlies, X. Zhou, O. A. Cornely, F. Fuchs, P. Koehler, G. H. Goldman, & A. Rokas (*In press*). **Genomic and phenotypic analysis of COVID-19-associated pulmonary aspergillosis isolates of *Aspergillus fumigatus*.** *Microbiol. Spectr.*
15. Steenwyk, J. L., T. J. Buida III, A. L. LaBella, **Yuanning Li**, X.-X. Shen, & A. Rokas (2021). **PhyKIT: a broadly applicable UNIX shell toolkit for processing and analyzing phylogenomic data.** *Bioinformatics*: in press.
16. X. Shen, J.L. Steenwyk, A.L. LaBella, D.A. Opulente, X. Zhou, J. Kominek, **Yuanning Li**, M. Groenewald, C.T. Hittinger, A. Antonis. (2020) **Genome-scale phylogeny and contrasting modes of genome evolution in the fungal phylum Ascomycota.** *Science Advances*. 6(45), eabd0079.
17. J.L. Steenwyk, T.J. Buida, **Yuanning Li**, X. Shen, A. Antonis. (2020) **ClipKIT: a multiple sequence alignment-trimming algorithm for accurate phylogenomic inference.** *Plos Biology*. 18(12), e3001007.
18. Novitsky, V., Steingrimsson, J.A., Howison, M., Gillani, F.S., **Yuanning Li**, Manne, A., Fulton, J., Spence, M., Parillo, Z., Marak, T. and Chan, P.A. (2020) **Empirical comparison of analytical approaches for identifying molecular HIV-1 clusters.** *Scientific reports*. 10(1), pp.1-11.
19. Kantor, R., Fulton, J.P., Steingrimsson, J., Novitsky, V., Howison, M., Gillani, F., **Yuanning Li**, Manne, A., Parillo, Z., Spence, M. and Marak, T. (2020) **Challenges in evaluating the use of viral sequence data to identify HIV**

**transmission networks for public health.** *Statistical Communications in Infectious Diseases*, 12(s1).

20. X. Shen, **Yuanning Li**, C. Hittinger., X. Chen, A. Antonis. (2020). **An investigation of irreproducibility in maximum likelihood phylogenetic inference.** *Nature Communication*.11(1), 1-14.
21. Y. Zhou, **Yuanning Li**, C. Shen, K.M. Halanych C. Wang. (2020) **The mitochondrial genome of the bone-eating worm *Osedax rubiplumus* (Annelida, Siboglinidae).** *Mitochondrial DNA*. 50(1), 1-9.
22. V. Novitsky, J. Steingrimsson, Ma. Howison, F. Gillani, **Yuanning Li**, A. Manne, J. Fulton, M. Spence, Z. Parillo, T. Marak, P. A. Chan, T. Bertrand, U. Bandy, N. Alexander-Scott, C. W. Dunn, J. Hogan, R. Kantor (*Accepted: In press*). **Empirical Comparison of Analytical Approaches for Identifying Molecular HIV-1 Clusters.** *Scientific Reports*. 10(1), 1-11.
23. Y. Zhou, Y. Wang, **Yuanning Li**, C. Shen, Z. Liu, C. Wang. (2020) **First report of *Osedax* in the Indian Ocean indicative of trans-oceanic dispersal through the Southern Ocean.** *Marine Biodiversity*. 50(1), 1-9.
24. N. Li, L. Bao, T. Zhou, Z. Yuan, S. Liu, R. Dunham, **Yuanning Li**, Wang K, Xu X, et al. (2018) **Genome sequence of walking catfish (*Clarias batrachus*) provides insights into terrestrial adaptation.** *BMC genomics*.19(1):952.
25. J.R. Voight., B.A. Marshall, J. Judge, K.M. Halanych, **Yuanning Li**, A.F. Bernardino, F. Grewe and J. Maddox. (2019). **Life in wood: preliminary phylogeny of deep-sea wood-boring bivalves (Xylophagaidae), with descriptions of three new genera and one new species.** *Journal of Molluscan Studies*, 85(2), pp.232-243.
26. P.G. Galaska, **Yuanning Li**, K.M. Kocot, A.R. Mahon, K.M. Halanych. (2018) **Conservation of brittle stars (Ophiuroidea, Echinodermata) mitochondrial genome arrangements.** *Molecular Phylogenetics and Evolution*. 130, pp. 115-120.
27. A.F. Bernardino, **Yuanning Li**, C.R. Smith, K.M. Halanych. (2017) **Multiple introns in a deep-sea Annelid mitochondrial genome.** *Scientific Reports* 7:4295.
28. D.S. Waits, S.R. Santos, D.J. Thornhill, **Yuanning Li**, 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.
29. X. Su, G. Wang, J. Feng, J. **Yuanning Li**. **Genetic diversity of 15 *Macrobrachium nipponense* populations in Poyang Lake based on microsatellite analysis.** (2011) *Chinese Journal of Ecology*. 2011,30(9):2007-2013.

## **INVITED TALKS**

10. **Yuanning Li.** (speaker), C.W. Dunn, A. Rokas. **Rooting the animal tree of life.** The biology of genomes. The 2nd AsiaEvo Conference (virtual). August 2021.
9. **Yuanning Li.** (speaker), C.W. Dunn, A. Rokas. **Rooting the animal tree of life.** The biology of genomes. Cold Spring Harbor Laboratory (virtual). May 2021.
8. **Yuanning Li.** (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. **Yuanning Li.** (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. Augustus 2017.
6. **Yuanning Li.** (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. **Yuanning Li.** (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. **Yuanning Li.** (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. **Yuanning Li.** (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. **Yuanning Li.** (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. **Yuanning Li.** (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.

## **NATIONAL AND INTERNATIONAL ACADEMIC ACTIVITIES**

### ***Editorial Board Member***

Review Editor in *Frontiers in Genetics*.

### ***Manuscript Reviewer***

I review many manuscripts and has served as a reviewer for many top-flight journals, including: *Systematic Biology*, *BMC Evolutionary Biology*, *Deep-sea Research Part I*, *Frontiers in Genetics*, *Molecular Biology and Evolution*, *Molecular Ecology Resources*, *MicrobiologyOpen*, *Molecular Phylogenetics and Evolution*, *PLOS One*, *Zoologica Scripta*.

### **OUTREACH/SERVICES**

- 2016-2018**     **Manager of the Auburn University Next-generation Sequencing Center.**
- 2013-2017**     **AU Explore.** (outreach event to interest area grade-school students in higher education)
- 2016**           **Outreach in Drake Middle School 7th grade.** (2 classes, 40 students)

### **GRANTS AND FELLOWSHIPS**

- 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**

**Dr. Ken Halanych**  
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**Dr. Antonis Rokas**  
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