Yuanning Li, Ph.D. – Curriculum Vitae

Department of Biological Sciences
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CURRENT POSITIONS

2019-now Posdoc scholar, **Vanderbilt University**. Advisor: Dr. Antonis Rokas

PAST POSITIONS

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 Biolgoy Society, The Society for Integrative and Comparative Biology.

PUBLICATIONS

First-Author

1. **Yuanning Li**, X. Shen, B. Evans, A. Rokas, C.W. Dunn. (*In press*). **Rooting the animal tree of life**. *Molecular Biology and Evolution*. Msab170.

2. **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.

3. **Yuanning Li**, KT. David, X. Shen, JL. Seenwyk, KM. Halanych, A. Rokas. (2020). **Feature Frequency Profile-based phylogenies are inaccurate**. Proc. Natl. Acad. Sci. USA 117: 31580-31581.

4. 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).*

5. **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 luymesi*.** *BMC Biology*. 17(1):19.

6. **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.

7. **Yuanning Li**, M.R. Liles, K.M.Halanch. (2018) **Endosymbiont genomes yield clues of tubeworm success.** *The ISME journal*. 12(11), p.2785.

8. **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.

9. **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.

10. **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

11. 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).

12. 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.*

13. 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.

14. X. Shen, JL. Seenwyk, AL. LaBella, DA. Opulente, X. Zhou, J. Kominek, **Yuanning Li**, M. Groenewald, CT. Hittinger, A. Antonis. (2020) **Genome-scale phylogeny and contrasting modes of genome evolution in the fungal phylum Ascomycota**. *Science Advances*. 6(45), eabd0079.

15. JL. Steenwyk, TJ. Buida, **Yuanning Li**, X. Shen, A. Antonis. (2020) **ClipKIT: a multiple sequence alignment-trimming algorithm for accurate phylogenomic inference**. *Plos Biology*. 18(12), e3001007.

16. 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.

17. 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).

18. 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.

19. 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.

20. 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.

21. 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.

22. 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.

23. 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.

24. 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.

25. 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.

26. 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.

27. 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

9. **Yuanning Li.** (speaker), C.W. Dunn, A. Rokas. **The biology of genomes**. Cold Spring Harbor Laboratory (virtual). May 2021.

8. Yuanning Li. (speaker), K.M. Halanych. **Comparative genomics of seep-dwelling tubeworm (Siboglnidae: 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

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