Jonathan Chang

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Research interests

Comparative phylogenetics, computational methods, geometric morphometrics, ecomorphology

Education

2017 *expected* Ph.D Biology, University of California, Los Angeles
"Diversity, disparity, and exploitation in the ray-finned fishes"
Advisor: Michael E Alfaro

2011 B.S., University of California, Los Angeles.
Major: Biology Minor: Conservation Biology

Grants, Awards, and Fellowships

Grants

2016 NSF Doctoral Dissertation Improvement Grant (Co-PI with PI Michael Alfaro) $20,020. Testing macroevolutionary predictions of diversity and disparity in the ray-finned fishes. ⇒

2013 Encyclopedia of Life Rubenstein Fellowship (PI) $52,280. Using massively crowdsourced data to examine morphological impacts of extinction risk in ray-finned fishes. ⇒

Awards

2016 Best Student Presentation (Wake Award), Society for Integrative and Comparative Biology. ⇒

2013 Honorable Mention, Best Student Presentation (Wake Award), Society for Integrative and Comparative Biology. ⇒

Other grants

2016 UCLA George A. Bartholomew Fellowship and Research Award. $9,000.

2015 UCLA Research and Travel Grant. $1,991

2014 NESCent Travel Award. $600.

2014 UCLA Conference and Research Grant. $1,500.

2014 Stephen and Ruth Wainwright Fellowship. $1,200.

2013 Society for the Study of Evolution Travel Stipend. $500

2010 UCLA Whitcome Summer Undergraduate Research Fellowship, $3,000. Phylogenomic approaches to resolving evolutionary relationships among ray-finned fishes. ⇒

Publications

2017 DL Rabosky, JS Mitchell, **J Chang**. Is BAMM flawed? Theoretical and practical concerns in the analysis of multi-rate diversification models. Systematic Biology doi:10.1093/sysbio/syx037

2016 E Gjesfjeld, **J Chang**, D Silvestro, C Kelty, ME Alfaro. Competition and extinction explain the evolution of diversity in American automobiles. Palgrave Communications. 2:16019 doi:10.1057/palcomms.2016.19

2015 **J Chang**, ME Alfaro. Crowdsourced geometric morphometrics enable rapid large-scale collection and analysis of phenotypic data. Methods in Ecology and Evolution. doi:10.1111/2041-210x.12508

2015 PS Gilbert, **J Chang**, E Sobel, JS Sinsheimer, BC Faircloth, ME Alfaro. Genome-wide ultraconserved elements exhibit higher phylogenetic informativeness than traditional gene markers for the fish series Percomorpha. Molecular Phylogenetics and Evolution 92:140 doi:10.1016/j.ympev.2015.05.027

2013 DL Rabosky, F Santini, JM Eastman, SA Smith, BL Sidlauskas, **J Chang**, ME Alfaro. Rates of speciation and morphological evolution are correlated across the largest vertebrate radiation. Nature Communications 4:1958 doi:10.1038/ncomms2958

2012 *preprint* BC Faircloth, **J Chang**, ME Alfaro. TAPIR enables high-throughput estimation and comparison of phylogenetic informativeness incorporating locus-specific substitution models. arXiv: 1202.1215

Teaching

2016–2017 UCLA Graduate Writing Center. Writing Consultant.

2016–2017 MCDB/IBP 495: Preparation for Teaching Biology in Higher Education. TA Consultant

2011–2015 LS 1: Ecology, Evolution, and Biodiversity. Head TA

2013–2015 UCLA La Kretz Workshop in Conservation Genomics ⇒

Winter 2015 EEB 177: Practical Computing for Ecologists and Evolutionary Biologists. TA

2010–2016 EEB 201: Introduction to R for Ecologists and Evolutionary Biologists

Fall 2013 EEB 122: Ecology. TA

Winter 2013 EEB C174/C230: Comparative Biology & Macroevolution. TA

Service

2017 Reviewer for: Systematic Biology

2016 Reviewer for: Systematic Biology, BMC Evolutionary Biology

2016–2017 UCLA EEB Faculty-Student Liaison

2014–2015 UCLA EEB Seminar & EcoEvoPub Committee

Outreach

2013–2016	Exploring Your Universe ⇒
2014–2016	Los Angeles County Science Fair Judge
February 2016	UCLA Art|Sci LASER Symposium (invited speaker) ⇒

Mentoring

Binal Patel (UCLA), Jimmy Zheng (UCLA), Zack Herbst (Chadwick School, Palos Verdes Peninsula, CA)

Presentations

2016 **J Chang**, K Roy, JK Baum, ME Alfaro. Size-selective harvesting and the macroevolutionary impacts of the "anthropogenic filter" in ray-finned fishes. Southwest Organismal Biologists, November 19, Fullerton, CA.

2016 **J Chang**, K Roy, JK Baum, ME Alfaro. Size-selective harvesting and the macroevolutionary impacts of the "anthropogenic filter" in ray-finned fishes. Luskin Inaugural Symposium, October 19, Los Angeles, CA.

2016 **J Chang**, K Roy, JK Baum, PF Cowman, M Friedman, LC Sallan, JT Clarke, ME Alfaro. Eating away the fish tree of life: the phylogenetic distribution of human exploitation. Evolution, June 17–21, Austin, TX.

2016 ME Alfaro, **J Chang**, PF Cowman, M Friedman, LC Sallan, JT Clarke, DL Rabosky, TJ Near. An evolutionary timescale for the diversification of ray-finned fishes. Evolution, June 17–21, Austin, TX.

2016 EJ Gjesfjeld, **J Chang**, D Silvestro, ME Alfaro. A Quantitative Macroevolutionary Approach to Exploring the Pharmaceutical Drug Innovation Crisis. Evolution, June 17–21, Austin, TX.

2016 **J Chang**, ME Alfaro. The tempo of body shape evolution in ray-finned fishes: bringing morphology into the "phenomic era" with crowdsourced morphometrics. Integrative and Comparative Biology, January 3–7, Portland, OR. ★ *Best Student Presentation – Phylogenetics & Comparative Biology*

2016 ME Alfaro, DL Rabosky, **J Chang**, P Title, M Venzon. Global patterns of diversification across the ray-finned fish tree of life. Integrative and Comparative Biology, January 3–7, Portland, OR.

2016 MB Balisi, **J Chang**. Hypercarnivory and extinction risk in North American fossil dogs. Integrative and Comparative Biology, January 3–7, Portland, OR. (Poster)

2015 EJ Gjesfjeld, **J Chang**, D Silvestro, C Kelty, ME Alfaro. Investigating the Diversification of Car Models using Macroevolutionary Methods. Evolution, June 26–30, Guaruja, Brazil.

2015 **J Chang**, ME Alfaro. Patterns of shape diversity across ray-finned fishes with crowdsourced morphometrics. Evolution, June 26–30, Guaruja, Brazil. (Ernst Mayr Symposium)

2015 **J Chang**, ME Alfaro. Crowdsourced morphometrics for large-scale analysis of phenotypic data. Systematic Biology, May 20–22, Ann Arbor, MI.

2015 **J Chang**, ME Alfaro. Crowdsourced morphometric data are as accurate as traditionally collected data in 7 ray-finned fish families. Integrative and Comparative Biology, January 3–7, West Palm Beach, FL. ⇒

2015 MD McGee, SR Borstein, **J Chang**, ME Alfaro, PC Wainwright. Progressive functional innovation in cichlid adaptive radiations. Integrative and Comparative Biology, January 3–7, West Palm Beach, FL. ⇒

2014 J Zheng, **J Chang**, ME Alfaro. Novel approach measures the topological accuracy of large phylogenetic reconstruction. UCLA Annual Biology Research Symposium. May 17, Los Angeles, CA. ★ *Jimmy won Best Undergraduate Poster* ⇒

2014 **J Chang**, DL Rabosky, ME Alfaro. Crowdsourced morphometrics: a method to overcome bottlenecks in collecting phenotype data. Integrative and Comparative Biology, January 3–7, Austin, TX. ⇒

2013 **J Chang**, DL Rabosky, ME Alfaro. Morphology and exploitation in ray-finned fishes using crowdsourced data. Evolution. June 21–25, Snowbird, UT.

2013 **J Chang**, JM Eastman, ME Alfaro. Family-level analysis of exploited and at-risk ray-finned fish species shows high potential loss of biodiversity. Integrative and Comparative Biology. January 3–7, San Francisco, CA. ★ *Best Student Oral Presentation Honorable Mention* ⇒

2012 PS Gilbert, **J Chang**, BC Faircloth, ME Alfaro. Genome-wide ultraconserved elements exhibit higher phylogenetic informativeness than traditional fish markers across an *in silico* percomorph phylogeny. Evolution, July 6–10, Ottawa, Canada. Poster.

2012 **J Chang**, K Roy, JM Eastman, SA Smith, F Santini, JK Baum, PA Hastings, BL Sidlauskas, ME Alfaro. Phylogenetic clustering of commercially exploited fish species. Integrative and Comparative Biology, January 3–7, Charleston, SC. ⇒

2012 ME Alfaro, BC Faircloth, L Sorenson, **J Chang**, F Santini. A 500-locus phylogenomic study of ray-finned fishes. Integrative and Comparative Biology, January 3–7, Charleston, SC. ⇒

2012 PS Gilbert, **J Chang**, BC Faircloth, ME Alfaro. Genome-wide ultraconserved elements exhibit higher phylogenetic informativeness than traditional fish markers. Integrative and Comparative Biology, January 3–7, Charleston, SC. ⇒

2011 ME Alfaro, K Roy, **J Chang**, JM Eastman, SA Smith, F Santini, JK Baum, PA Hastings, BL Sidlauskas. Phylogenetic distribution of commercially exploited fish species: How many times has 'tastiness' evolved? Evolution, June 17–21, Norman, OK.

Professional affiliations

2012— Society of Systematic Biologists

2011— Society for Integrative and Comparative Biology

2008–2011 American Medical Student Association

2007–2011 Association for Computing Machinery

Last updated: February 21, 2017