

DAVID ADLER GOLD

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CURRENT POSITION

2018- Assistant Professor
Department of Earth and Planetary Sciences
University of California, Davis

EDUCATION

2014 Ph.D. Biology, University of California, Los Angeles.
Advisor: David K. Jacobs

2007 B.S. Ecology and Evolutionary Biology, University of California, Irvine.

PROFESSIONAL EXPERIENCE

2016-2018 Cordes Postdoctoral Fellow. California Institute of Technology.
Division of Biology and Biological Engineering
Advisor: Lea Goentoro

2014-2016 Agouron Postdoctoral Fellow. Massachusetts Institute of Technology.
Department of Earth, Atmospheric and Planetary Sciences
Advisor: Roger E. Summons

2016 Visiting researcher (March). Paula Welander lab, Stanford University.

2012 International School of Astrobiology: Origins of the Building Blocks of Life. Universidad Internacional Menéndez Pelayo. Santander, Spain.

2011 Embryology: Concepts & Techniques in Modern Developmental Biology. Marine Biological Laboratory. Woods Hole, Massachusetts.

PUBLICATIONS

Gold D.A. & Katsuki T. (co-first authors), Li Y., Yan X., Regulski M., Ibberson D., Holstein T., Steele R.E., Jacobs D.K., Greenspan R.J. (Accepted) The genome of the jellyfish *Aurelia* and the evolution of animal complexity. *Nature Ecology and Evolution*.

Gold D.A., Lau, C.L.F., Fuong H., Kao G., Hartenstein V., Jacobs D.K. (Accepted) Mechanisms of cnidocyte development in the moon jellyfish *Aurelia*. *Evolution and Development*.

Gold D.A. (2018) The slow rise of complex life as revealed through biomarker genetics. *Emerging Topics in Life Sciences*. 2:191–199.

Gold D.A. (2018) Life in changing fluids: A critical appraisal of swimming animals before the Cambrian. *Integrative and Comparative Biology*. 58(4): 677–687.

Gold D.A., O'Reilly S.S., Watson J., Degnan B.M., Degnan S.M., Kroemer J., and Summons R.E. (2017) Lipidomics of the sea sponge *Amphimedon queenslandica* and implication for biomarker geochemistry. *Geobiology*. 00:1–8.

Gold D.A., Caron A., Fournier G.P., and Summons R.E. (2017) Paleoproterozoic sterol biosynthesis and the rise of oxygen. *Nature*. 543(7645): 420–423.

Gold D.A., Grabenstatter J., de Mendoza A., Riesgo A., Ruiz-Trillo I., and Summons R.E. (2016) Sterol and genomic analyses validate the sponge biomarker hypothesis. *Proceedings of the National Academy of Sciences of the United States of America*. 113(10): 2684–2689.

Gold D.A., Nakanishi N., Hensley N.M., Hartenstein V., Jacobs D.K. (2016) Cell tracking supports secondary gastrulation in the moon jellyfish *Aurelia*. *Development Genes and Evolution*. 226(6): 383–387.

Gold D.A., O'Reilly S.S., Luo G., Briggs D.E.G., Summons R.E. (2016) Prospects for sterane preservation in sponge fossils from museum collections, and the utility of sponge biomarkers for molecular clocks. *Bulletin of the Peabody Museum of Natural History*. 57(2): 181–189.

Gold D.A., Runnegar B., Gehling J.G., and Jacobs D.K. (2015) Ancestral state reconstruction of ontogeny supports a bilaterian affinity for *Dickinsonia*. *Evolution and Development*. 17(6): 315–397.

Gold D.A., Nakanishi N., Hensley N.M., Cozzolino K., Tabatabaee M., Martin M., Hartenstein V., and Jacobs D.K. (2015) Structural and developmental disparity in the tentacles of the moon jellyfish *Aurelia* sp.1. *PLoS ONE*. 10(8): e0134741.

Nakanishi N., Camara A.C., Yuan D.C., **Gold D.A.**, and Jacobs D.K. (2015) Gene expression data from the moon jelly, *Aurelia*, provide insights into the evolution of the combinatorial code controlling animal sense organ development. *PLoS ONE*. 10(7): e0132544.

Gold D.A., Gates R.D., Jacobs D.K. (2014) The early expansion and evolutionary dynamics of POU class genes. *Molecular Biology and Evolution*. 31(12): 3136–3147.

Ghisalberti M., **Gold D.A.**, Laflamme M., Clapham M.E., Narbonne G., Summons R.E., Johnston D.T., and Jacobs D.K. (2014) Canopy flow models identify the advantage of size in the oldest communities of multicellular eukaryotes. *Current Biology*. 24(3): 305–309.

Gold D.A., Robinson J., Farrell A.B., Harris J.M., Thalmann O., and Jacobs D.K. (2014) Attempted DNA extraction from a Columbian mammoth (*Mammuthus columbi*): Prospects for ancient DNA from asphalt deposits. *Ecology and Evolution*. 4(4): 329–336.

Gold, D.A. and Jacobs, D.K. (2013) Stem cell dynamics in Cnidaria: are there unifying principles? *Development Genes and Evolution*. 223(1-2): 53-66.

Takashima, S., **Gold, D.A.**, and Hartenstein, V. (2013) Stem cells and lineages of the intestine: a developmental and evolutionary perspective. *Development Genes and Evolution*. 223(1-2): 85-102.

Jacobs, D.K., **Gold, D.A.**, Nakanishi, N., Yuan, D., Camara, A., Nichols, S.A., and Hartenstein, V. (2010) Basal metazoan sensory evolution. pp. 175-193 in Key Transitions in Animal Evolution. B. Schieirwater and R. DeSalle eds. CRC Press.

INVITED TALKS

11-08-2018. University of Arkansas. Department of Biological Sciences.

9-02-2018. University of California, Berkeley. Museum of Paleontology.

7-29-2018. Gordon Research Conference on Organic Geochemistry.

3-15-2018. California Institute of Technology. Division of Geological and Planetary Sciences.

11-15-17. Massachusetts Institute of Technology. Department of Earth, Atmospheric, and Planetary Sciences.

9-13-17. National Academy of Sciences, Committee Meeting on Astrobiology and Planetary Science.

4-7-2016. Woods Hole Oceanographic Institute. Department of Biology.

3-15-2016. Stanford University. School of Earth, Energy, and Environmental Science.

2-26-2016. NASA Astrobiology Executive Council Meeting.

CONFERENCE PRESENTATIONS

2017. Geological Society of America Annual Meeting (Talk). Using biomarker genomics to date the rise of complex life.

2017. Society for Developmental Biology West Coast Regional Meeting (Poster). Manipulating regenerative plasticity in jellyfish.

2016. Northeastern Geobiology Symposium (Talk). Sterol and genomic analyses validate the sponge biomarker hypothesis.

2015. International Meeting on Organic Geochemistry (Plenary Talk). Sterols, rocks and molecular clocks: a geochemical and genomic approach to the emergence of animals.

2015. Astrobiology Science Convention (Talk). The evolution of microbial sterol synthesis as it pertains to the sponge biomarker hypothesis.

2014. MIT Chemical Oceanography, Geology, Geochemistry & Geobiology Seminar Series (Talk). A Paleo-genomic approach to the origins of animal life.

2014. MIT Museum Soap Box Series (Talk). Why life got big.

2013. 15th UCLA Biology Research Symposium (Poster). The evolution of animal complexity: insights from the Aurelia genome. *Award: Best Graduate Student Poster.*

2012. Genomic Analysis Training Grant/Burroughs Wellcome Fund Inter-school Training Program in Metabolic Diseases Annual Research Seminar (Poster). Growth and regeneration in cnidarians reveals differential use of stem cells. *Award: First Prize Poster.*

2012. Evolution Conference (Talk). Jellyfish eyes and Pax genes: a case study for research in evo-devo.

2012. 15th UCLA Biology Research Symposium (Poster). Growth and regeneration in cnidarians reveals differential use of stem cells. *Award: Best Graduate Student Poster.*

2012. Astrobiology Science Convention (Talk). Trees on the mind: how the emerging animal phylogeny challenges our conception of brain evolution.

2012. CalPaleo (Talk). The classification of *Dickinsonia*: a genomic and developmental approach.

2011. 14th UCLA Biology Research Symposium (Poster). Diffusing the Cambrian explosion: A multidisciplinary approach to the origins of animal life. *Award: Second Prize Graduate Student Poster.*

2011. UCLA EcoLunch Series (Talk). Diffusing the Cambrian explosion: A multidisciplinary approach to the origins of animal life.

2010. NAI/MIT Annual Meeting (Talk). Mechanics behind the evolution of the Mistaken Point fauna.

2010. Evolution Conference (Talk). Development in Aurelia and the beginnings of animal evolution.

2010. UCLA Biology Research Symposium (Poster). Conserved genes are expressed in the eyes of the moon jellyfish *Aurelia* species 1. *Award: First Prize Graduate Student Poster.*

2010. Astrobiology Science Convention (Talk). Constraints on the evolution of the Mistaken Point rangeomorph fauna.

2010. Southern California Geobiology Symposium (Talk). Constraints on the evolution of the Mistaken Point rangeomorph fauna.

2008. Astrobiology Science Convention (Talk). Intelligence in basal Metazoa.

GRANTS, FELLOWSHIPS, AND AWARDS

2018 Norman Newell Early Career Grant. Paleontological Society

2017-2018 Center for Environmental Microbial Interactions (CEMI) research award (Caltech)

- 2016-2018 James E. and Charlotte Fedde Cordes Postdoctoral Fellowship in Biology (Caltech)
- 2014-2016 Agouron Institute Geobiology Post-Doctoral Fellowship (MIT)
- 2014 Robert E. Lasiewski award for outstanding research accomplishments by a graduate student in organismal biology (UCLA)
- 2011-2014 NIH Genomic Analysis Training Program Fellowship
- 2012 NASA Astrobiology Institute Scholarship
To cover the full cost of the International Summer School of Astrobiology in Santander, Spain.
- 2012 Development Cover Contest Winner (Issue 139, volume 12)
<http://dev.biologists.org/content/139/12.cover-expansion>
- 2012 NAI Student Travel Award
- 2010 UCLA Departmental Research/Travel Award
- 2011 Collegium of University Teaching Fellows (UCLA)
Funding to design and teach EEB 98T: Current Debates in Animal Evolution
- 2011 The Company of Biologists Ltd Scholarship; Lorus & Margery Milne Scholarship (Marine Biological Laboratory)
- 2010 UCLA Departmental Research/Travel Awards
- 2009-2010 GANN Graduate Support Fellowship
- 2009 UCLA Departmental Research/Travel Awards (March; June; November)
- 2008 Volunteer Recognition Award: Five Years of Service
George C. Page Museum at the La Brea Tar Pits, Los Angeles
- 2007-2008 UCLA Departmental Fellowship
- 2003-2007 UC Irvine Chancellor's Scholar
To cover the cost of undergraduate tuition at UC Irvine
- 2006 UC Irvine Excellence in Biological Research Award

TEACHING EXPERIENCE / PUBLIC OUTREACH

Graduate Student Mentoring

Noemie Sierra (UC Davis), Roxanne Banker (UC Davis).

Undergraduate/ Post-baccalaureate Student Mentoring

Micah Battson (UCLA), Paóla Benefo (Caltech) Abigail Caron (MIT), Kira Cozzolino (Northwestern), Holly Fuong (UCLA), Nicholai Hensley (UCLA), Gregory Kao (UCLA),

Irrawaddy Lamouth (UCLA), José Andrade López (Berkeley), Michelle Martin (UCLA), Ignacio Navarrete (UCLA), Dhruv Patel (UCLA), Kia Safatian (UCSD), Megan Sailors (UCLA), Aubrey Silva (UCLA), Andrew Suh (UCLA), Mariam Tabatabaee (UCLA).

Lecturer

EPSS 17: Dinosaurs and their Relatives (UCLA, Spring 2017); EEB 98T: Current Debates in Animal Evolution (UCLA, Spring 2011)

Guest Lecturer

12.007: Geobiology (MIT, Spring 2015/2016); EEB 186: Evolutionary Medicine (UCLA, Spring 2014)

Teaching Fellow

EEB 186: Evolutionary Medicine (Fall 2013); EEB 495: Departmental TA Training Course (Spring 2012/2013/2014)

Teaching Assistant

Evolution (Winter 2007, Winter 2009); Molecular Evolution (Spring 2009); Invertebrate Zoology (Spring 2010)

REVIEWING

Scientific Journals – *Nature Ecology and Evolution, Nature Microbiology, Science Advances, Geobiology, PLoS One, Development Genes and Evolution, Biology Letters, Biological Journal of the Linnean Society*