David Černý

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Education

2018–Present	Ph.D. candidate in Geophysical Sciences; University of Chicago
2014–2018	B.S. (Honors) in Ecology, Behavior, and Evolution; University of California, Los Angeles

Research Experience

Fall 2018–Present: Slater Lab

Affiliation:	Department of the Geophysical Sciences, University of Chicago
Position:	Ph.D. candidate
Ph.D. advisor	Graham J. Slater

Winter 2022–Spring 2022: Jablonski Lab

Affiliation:	Department of the Geophysical Sciences, University of Chicago
Position:	Research assistant
Principal investigator:	David Jablonski
Project:	Inferring a taxonomically comprehensive molecular phylogeny of cardiid bivalves

Fall 2015–Summer 2018: Alfaro Lab

Affiliation:	Department of Ecology and Evolutionary Biology, University of California, Los Angeles
Position:	Undergraduate research assistant
Principal investigator:	Michael E. Alfaro
Projects:	Phylogenomic divergence dating of vertebrates; Exploration of form-function mapping using a C++ simulation of polygenic trait evolution

Winter 2018: Field & Marine Biology Quarter in Mo'orea

Affiliation:	Department of Ecology and Evolutionary Biology, University of California, Los Angeles
Position:	Undergraduate student
Principal investigator:	Daniel T. Blumstein
Project:	Applying Lanchester's laws to the interspecific competition of coral reef fish

Summer 2017: Kondrashov Lab

Affiliation:	Evolutionary Genomics Group, Centre de Regulació Genòmica (Centre for Genomic Regulation), Barcelona, Spain
Position:	Research intern
Principal investigators:	Fyodor Kondrashov, Dinara Usmanova
Project:	Detecting positive selection using molecular phylogenies

Publications

Peer-reviewed publications

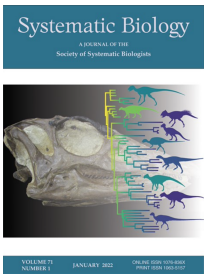
- 261 citations
- h-index: 5
- i10-index: 5
- Google Scholar profile

In review Pol D, Baiano MA, **Černý D**, Novas FE, Pittman M. A new abelisaurid dinosaur from the end Cretaceous of Patagonia and evolutionary rates among the Ceratosauria. *Cladistics*.

2023 **Černý D**, Simonoff AL. Statistical evaluation of character support reveals the instability of higher-level dinosaur phylogeny. *Scientific Reports* 13: 9273. doi:10.1038/s41598-023-35784-3

2023 **Černý D**, van Els P, Natale R, Gregory SMS. A new genus-group name for *Burhinus bistriatus* (Wagler, 1829) and *Burhinus superciliaris* (Tschudi, 1843). *Avian Systematics* 1(3): 31–43.

2022 **Černý D**, Natale R. Comprehensive taxon sampling and vetted fossils help clarify the time tree of shorebirds (Aves, Charadriiformes). *Molecular Phylogenetics and Evolution* 177: 107620. doi:10.1016/j.ympev.2022.107620



2021 **Černý D**, Madzia D, Slater GJ. Empirical and methodological challenges to the model-based inference of diversification rates in extinct clades. *Systematic Biology* 71(1): 153–171. doi:10.1093/sysbio/syab045 (cover article)

2019 Friedman M, Feilich KL, Beckett HT, Alfaro ME, Faircloth BC, **Černý D**, Miya M, Near TJ, Harrington RC. Ancient adaptive radiation in the open ocean: rapid divergence in Pelagiaria (Acanthomorpha: Percomorpha) near the Cretaceous-Palaeogene boundary. *Proceedings of the Royal Society B* 286(1910): 20191502. doi:10.1098/rspb.2019.1502

2018 **Černý D**, Lee K, Medal J, Blumstein DT. Applying Lanchester's laws to the interspecific competition of coral reef fish. *Behavioral Ecology* 30(2): 426–433. doi:10.1093/beheco/ary182

2018 Lima MGM, de Sousa e Silva-Júnior J, **Černý D**, Buckner JC, Aleixo A, Chang J, Zheng J, Alfaro ME, Martins A, Di Fiore A, Boubli JP, Lynch Alfaro JW. A phylogenomic perspective on the robust capuchin monkey (*Sapajus*) radiation. *Molecular Phylogenetics and Evolution* 124: 137–50. doi:10.1016/j.ympev.2018.02.023

2018 Alfaro ME, Faircloth BC, Harrington RC, Sorenson L, Friedman M, Thacker CE, Oliveros CH, **Černý D**, Near TJ. Explosive diversification of marine fishes at the Cretaceous-Paleogene boundary. *Nature Ecology and Evolution* 2: 688–96. doi:10.1038/s41559-018-0494-6

Other publications

2020 **Černý D**. Palaeontology's greatest ever graphs: Stadler's sampled tree: *The Palaeontology Newsletter* 105: 63–65.

2018 **Černý D**. [Review of] *Birds of Stone: Chinese Avian Fossils from the Age of Dinosaurs*. *Fossil News*, Summer 2018: 23–27.

Presentations & Posters

Invited presentations

2023 **Černý D***. Integrating fossils into the inference of time-calibrated phylogenies and diversification rates: using dinosaurs as a case study. Institut für Paläontologie, Friedrich-Alexander-Universität Erlangen-Nürnberg, October 24, Erlangen, Germany.

2023 **Černý D***. Addressing heterotachy in morphological clock analyses using reversible-jump Markov chain Monte Carlo. XL Annual Meeting of the Willi Hennig Society, July 9–13, Ithaca, NY. (Symposium talk)

2022 **Černý D***, Schwery O. Inferring diversification rates from fossil data: assumptions, choices, challenges. Evolution, June 24–28, Cleveland, OH. (Symposium talk)

Contributed presentations

2023 **Černý D***. Investigating the extent of heterotachy in discrete morphological data using a novel relaxed clock model. 5th Annual Great Lakes Student Paleoconference, November 10–12, Ann Arbor, MI.

2023 **Černý D***, Slater GJ. Bayesian Least-Squares Supertrees (BLeSS): a novel method for estimating large time trees. Evolution, June 21–25, Albuquerque, NM.

2023 **Černý D***, Slater GJ. Bayesian Least-Squares Supertrees (BLeSS): a flexible method for inferring large time-calibrated phylogenies. Society of Systematic Biologists Standalone Meeting, January 14–15, Ciudad de México, Mexico. (Poster)

2022 **Černý D***. Relative impact of character coding differences and stratigraphic information on the support for alternative early dinosaur phylogenies. GSA Connects, October 9–12, Denver, CO. doi:10.1130/abs/2022AM-381871

2021 Schwery O*, **Černý D**. Investigating mammal/dung beetle co-diversification. Entomology Annual Meeting, October 31–November 3, Denver, CO. (On-demand virtual talk)

2021 **Černý D***, Natale R. Vetted calibrations and comprehensive taxon sampling clarify the timescale of shorebird evolution. Evolution, June 21–25, online. (Faux-live talk)

2019 **Černý D***, Madzia D, Slater GJ. Evaluating the performance of diversification rate estimation methods in extinct clades with empirical and simulated data. 3rd Annual Great Lakes Student Paleoconference, November 8–10, Ann Arbor, MI.

2019 **Černý D***, Madzia D, Slater GJ. Inferring macroevolutionary dynamics of extinct clades: a test using 'bird-hipped' dinosaurs (Ornithischia). Evolution, June 21–25, Providence, RI.

2018 **Černý D***, Lee K, Medal J, Blumstein DT. A fish eat fish world: Applying Lanchester's laws of combat to the interspecific competition of coral reef fish. 21st UCLA Annual Biology Research Symposium, May 23, Los Angeles, CA. (Poster)

2016 **Černý D***, Alfaro ME. Phylogeny and divergence times of tetraodontiform fishes based on a new multi-locus dataset. 19th UCLA Annual Biology Research Symposium, May 11, Los Angeles, CA. (Poster, Honorable mention)

* Presenting author.

Fellowships & Awards

2018–Present Neubauer Family Distinguished Doctoral Fellowship. (Neubauer Family Foundation)

Spring 2022 SSB Graduate Student Research Award. *Bayesian inference of large-scale fossil time trees using a novel supertree method.* (Society of Systematic Biologists). $3,000

2014–2018 Bakala Foundation Scholarship. (Bakala Foundation)

Summer 2016 Whitcome Undergraduate Summer Research Fellowship. *Inferring the evolutionary timescale of tetraodontiform fishes (Acanthomorpha: Eupercaria).* (Department of Ecology and Evolutionary Biology, UCLA). $3,000

Travel awards

Summer 2023	CloudForest Workshop Travel Award (Louisiana State University). $1,260
Winter 2023	SSB Standalone Meeting Travel Award (Society of Systematic Biologists). $500
Winter 2018	A. R. Wallace Scholarship for International Field and Marine Research. (Department of Ecology and Evolutionary Biology, UCLA). $350

Teaching

Winter 2024, Winter 2020, Winter 2019	GEOS 27300/13900: Biological Evolution. Teaching assistant. (3×)
Summer 2023, Spring 2023, Fall 2021	PHSC 13410: Global Warming: Understanding the Forecast. Instructor of record. (3×)
Winter 2023, Winter 2021	PHSC 13600: Natural Hazards. Teaching assistant. (2×)
Fall 2022	GEOS 26100: Phylogenetics and the Fossil Record. Teaching assistant.
Spring 2021, Fall 2020, Spring 2020	PHSC 13410: Global Warming: Understanding the Forecast. Lecturer. (3×)
Fall 2019, Fall 2018	PHSC 10800: Earth as a Planet: Exploring Our Place in the Universe. Teaching assistant. (2×)
Spring 2019	PHSC 11000: Environmental History of the Earth. Teaching assistant.

Service

Professional

2019–Present	Reviewer for *Communications Biology*, *Ecology and Evolution*, *Nature Ecology & Evolution*, *Palaeontology*, *Proceedings of the Royal Society B*, *Systematic Biology*. (Publons profile)

University

Spring 2016	Stats 13 Focus Group: participated in a panel organized by the UCLA Department of Ecology and Evolutionary Biology to redesign its undergraduate statistics curriculum.

Outreach

Fall 2021	Helped organize a virtual Open House for Chicago area high school students; gave a talk titled "Figuring Out the Shape of the Tree of Life" and shared experiences of getting into research.
Winter 2019	Volunteered at the 2nd Annual UChicago Science Olympiad Invitational; helped with grading and general logistics.
2015–2016	Edited the Czech online popular science magazine *Wild Prehistory*; contributed articles focusing on vertebrate paleontology and evolutionary history.

Professional Organizations

2023–Present	Society for the Study of Evolution (student member)
2022–Present	Geological Society of America (student member).
2017–Present	Society of Systematic Biologists (student member).

Fieldwork Experience

Winter 2019	Coastal geology and marine biology fieldwork. University of Chicago One week of fieldwork focused on modern and ancient tropical carbonate environments in San Salvador, The Bahamas.
Winter 2018	Marine ecology fieldwork. University of California, Los Angeles Three weeks of fieldwork in algology and behavioral ecology in Mo'orea, French Polynesia.
Summer 2013, Summer 2012	Paleontological fieldwork. Opole University / University of Warsaw Two-week field seasons of paleontological excavations focused on collecting Triassic vertebrate macrofossils in Krasiejów, Poland.

Workshop & Hackathon Participation

Fall 2023	Global RevBayes workshop and hackathon. Ludwig-Maximilians-Universität München, Munich, Germany, October 9–20.
Summer 2023	CloudForest: A robust computational platform for visualizing and exploring structure in sets of phylogenetic trees. Pre-conference workshop at Evolution, Albuquerque, NM, June 21.
Fall 2021	Global RevBayes hackathon. Online-only, October 25–29.
Spring 2020	Global RevBayes hackathon. Iowa State University, Ames, IA, March 10–13.
Summer 2019	Taming the BEAST, eh! workshop. Quest University, Squamish, British Columbia, August 12–16.

Skills

Computing	Shell scripting Computer programming (R, some Python, some C++) Version control (git) Document markup (Markdown, XML, LaTeX) Text editing and regular expressions (vim, sed, awk) Batch processing (Slurm) Software development (gdb, RStudio, Xcode)
Software	Gblocks, Geneious, MUSCLE, PartitionFinder, Phyluce, PRANK, SATé, SortaDate (multiple sequence alignment, partitioning, and filtering), ASTRAL, ExaBayes, IQ-TREE, MrBayes, PAUP*, RAxML, RAxML-NG, RevBayes (phylogenetic inference), BEAST (1 & 2), DPPDiv, Multidivtime, PAML, PhyloBayes, treePL (divergence time estimation), BAMM, PyRate (diversification rate estimation)
Languages	Fluent in Czech Good understanding of written scientific Spanish Good understanding of written scientific Russian Basic knowledge of Latin
Certificates	Tensorflow 2 and Keras Deep Learning Bootcamp, Udemy (in progress).

Last updated January 26, 2024