

DANIEL SMITH-PAREDES

daniel.smith-paredes@college-de-france.fr / danielsmithsp@gmail.com

+33 744897916

Collège de France, Paris

Smith Paredes, Daniel

ORCID ID: **0000-0003-3108-1969**

- **Education and key qualifications**

Current: Chercheur postdoctoral CNRS, Collège de France

June 2024- May 2026: MSCA postdoctoral fellow, **Institut de la Vision**, Paris, France

May 2022-March 2024: Alexander von Humboldt Postdoctoral Fellow, **Museum für Naturkunde**, Berlin, Germany

23/12/2021: Doctor in Philosophy, Graduate School of Arts and Sciences, Department of Earth and Planetary Sciences, **Yale University**, New Haven, USA

20/12/2018: Master of Philosophy, Graduate School of Arts and Sciences, Department of Earth and Planetary Sciences, **Yale University**, USA

18/11/2015: Master in Biological Sciences, Facultad de Ciencias, Departamento de Biología, **Universidad de Chile**, Santiago, CHILE

15/12/2012: Bachelor in Sciences, mention Biology, Facultad de Ciencias, Departamento de Biología, **Universidad de Chile**, Santiago, CHILE

- Languages:
- Spanish (native)
- English (advanced)
- French (fluent)
- German (intermediate)

Publication List

Peer reviewed papers

1. Egawa, S., Griffin, C. T., Bishop, P. J., Pintore, R., Tsai, H. P., Botelho, J. F., **Smith-Paredes, D.**, . . . Nesbitt, S. J. (2022). The dinosaurian femoral head experienced a morphogenetic shift from torsion to growth along the avian stem. *Proceedings of the Royal Society B*, 289(1984), 20220740.
2. Griffin, C. T., Botelho, J. F., Hanson, M., Fabbri, M., **Smith-Paredes, D.**, Carney, R. M., . . . Rowe, T. B. (2022). The developing bird pelvis passes through ancestral dinosaurian conditions. *Nature*, 608(7922), 346-352
3. **Smith-Paredes D***, Vergara-Cereghino ME, Lord A, Moses MM, Behringer RR, Bhullar B-AS. Embryonic muscle splitting patterns reveal homologies of amniote forelimb muscles. *Nature ecology & evolution*. 2022;6(5):604-13.
4. **Smith-Paredes D***, Griffith O, Fabbri M, Yohe L, Blackburn DG, Siler CD, et al. Hidden limbs in the “limbless skink” *Brachymeles lukbani*: developmental observations. *Journal of Anatomy*. 2021;239(3):693-703.
5. Blackburn, D. G., Barnes, M. S., Reimers, C. D., Appiah, F. A., Lestz, L. L., Bonneau, L. J., Hanson, M., **Smith-Paredes D.**, Bhullar, B. A. (2021). How do Crocodylian embryos process yolk? Morphological evidence from the American alligator, *Alligator mississippiensis*. *Journal of Morphology*, 282(7), 953-958.
6. **Smith-Paredes D***, Lord A, Meyer D, Bhullar BAS. A developmental staging system and musculoskeletal development sequence of the Common Musk turtle (*Sternotherus odoratus*). *Developmental Dynamics*. 2020.
7. **Smith-Paredes D***, Núñez-León D, Soto-Acuña S, O'Connor J, Botelho JF, Vargas AO. Dinosaur ossification centres in embryonic birds uncover developmental evolution of the skull. *Nature ecology & evolution*. 2018;2(12):1966.
8. Botelho, J. F., **Smith-Paredes, D.**, Soto-Acuña, S., Núñez-León, D., Palma, V., & Vargas, A. O. (2017). Greater growth of proximal metatarsals in bird embryos and the evolution of hallux position in the grasping foot. *Journal of Experimental Zoology Part B: Molecular and Developmental Evolution*, 328(1-2), 106-118.
9. Botelho, J. F., **Smith-Paredes, D.**, Soto-Acuña, S., O'Connor, J., Palma, V., & Vargas, A. O. (2016). Molecular development of fibular reduction in birds and its evolution from dinosaurs. *Evolution*, 70(3), 543-554.
10. Botelho JF, **Smith-Paredes D**, Vargas AO. Altriciality and the evolution of toe orientation in birds. *Evolutionary Biology*. 2015;42:502-10
11. Botelho JF, **Smith-Paredes D**, Soto-Acuña S, Mpodozis J, Palma V, Vargas AO. Skeletal plasticity in response to embryonic muscular activity underlies the development and evolution of the perching digit of birds. *Scientific reports*. 2015;5:9840.
12. Botelho JF, Ossa-Fuentes L, Soto-Acuña S, **Smith-Paredes D**, Nuñez-León D, Salinas-Saavedra M, et al. New developmental evidence clarifies the evolution of wrist bones in the dinosaur–bird transition. *PLoS biology*. 2014;12(9):e1001957.
13. Botelho JF, **Smith-Paredes D**, Nuñez-Leon D, Soto-Acuna S, Vargas AO. The developmental origin of zygodactyl feet and its possible loss in the evolution of Passeriformes. *Proceedings of the Royal Society B: Biological Sciences*. 2014;281(1788):20140765.

*Smith-Paredes Daniel as corresponding author conceived the study, performed most of the experiments, coordinated the work of other authors and wrote the manuscript.

Book chapters:

1. **Smith-Paredes D***, Bhullar B-AS. The Skull and Head Muscles of Archosauria. Heads, Jaws, and Muscles: Springer; 2019. p. 229-51
2. Botelho, J. F., **Smith-Paredes, D.**, & Verónica, P. A. (2015). Efficient detection of indian hedgehog during endochondral ossification by whole-mount immunofluorescence. *Hedgehog Signaling Protocols*, 157-166.

Conference Abstracts

- **Smith-Paredes, D.**, et al., (2025) DESARROLLO Y EVOLUCION DEL CONDRÓCRANEO AMNIOTA. II Congreso Latinoamericano de Evolucion, Tucuman, Argentina
- **Smith-Paredes, D.**, et al., (2024) NEW TOOLS AND METHODS FOR STUDYING HERP EMBRYOLOGY AND LEARN ABOUT ANATOMY, DEVELOPMENT AND EVOLUTION. World Congress of Herpetology, Kuching, Borneo
- **Smith-Paredes, D.**, et al., (2024) UNEXPLORED DIVERSITY BEHIND THE DEVELOPMENTAL PATTERNS OF THE TETRAPOD LIMB. Limb Development: Fundamental mechanisms, evolution, disease and regeneration, Dresden 2024
- **Smith-Paredes, D.**, et al., (2023) EMBRYOLOGICAL DEVELOPMENT AND EVOLUTION OF THE FLYING APPARATUS. Society of Avian paleontology and Evolution SAPE
- **Smith-Paredes, D.**, et al., (2022) THE ENIGMA OF AMPHIBIAN LIMB DEVELOPMENT. 8th Limb Conference
- **Smith-Paredes, D.**, et al., (2022) DIFFERENT DEVELOPMENTAL PATTERNS UNDERLIE LIMB MUSCLE FORMATION IN TETRAPODS. Euro Evo Devo 2022
- **Smith-Paredes, D.**, (2022) THE EMBRYOLOGY AND EVOLUTIONARY BIOLOGY OF THE TETRAPOD LIMB MUSCULATURE. Society of vertebrate paleontology SVP
- **Smith-Paredes, D.**, et al., (2021) EXPLORING THE EVOLUTION OF THE TETRAPOD LIMB MUSCULATURE BY STUDYING ITS EMBRYOLOGY. Society of Integrative and Comparative Biology SICB
- **Smith-Paredes, D.**, Bhullar, BAS. (2019) EXPLORING THE EVOLUTION OF THE TETRAPOD LIMB MUSCULATURE BY STUDYING ITS EMBRYOLOGY. 3rd biennial meeting of the PanAmerican society for Evolutionary Developmental Biology
- **Smith-Paredes, D.**, Bhullar, BAS. (2019) EXPLORING THE EVOLUTION OF THE TETRAPOD LIMB MUSCULATURE BY STUDYING ITS EMBRYOLOGY. International Congress of Vertebrate Morphology ICVM
- Vergara Cereghino MV, Fabbri M, **Smith-Paredes D**, Bhullar BAS. (2019) DEVELOPMENT OF THE EMBRYONIC ANATOMY OF THE MADGASCAR GROUND GECKO. International Congress of Vertebrate Morphology ICVM
- **Smith-Paredes, D.**, et al., (2018) LIMB DEVELOPMENT OF A LIMBLESS SKINK. Biology of Lizards.
- **Smith-Paredes, D.**, et al., (2017) COMPARATIVE DEVELOPMENT OF THE ARCHOSAUR PECTORAL MUSCULATURE. 2nd Pan America Evo Devo Meeting
- **Smith-Paredes, D.**, et al., (2017) EMBRYONIC DEVELOPMENT AND EVOLUTION OF THE AVIAN SKULL. 77th Society of Vertebrate Paleontology SVP 2016
- **Smith-Paredes, D.**, et al., (2016) LAS OSIFICACIONES CIRCUMORBITALES EN EL CRÁNEO EMBRIONARIO DE LAS AVES Y UNA PROPUESTA DE HOMOLOGÍA CON LOS HUESOS DE TERÓPODOS BASALES. 30th Jornadas Argentinas de Paleontología de Vertebrados.
- **Smith-Paredes, D.**, et al., (2016) THE EVOLUTIONARY AND DEVELOPMENTAL HISTORY OF THE AVIAN CIRCUMORBITAL BONES. 9th International Meeting of the Society of Avian Paleontology and Evolution
- Vega-Jorquera, L., **Smith-Paredes, D.**, et al., (2016) PAIRED STERNAL OSSIFICATIONS IN A KEELED BIRD. 9th International Meeting of the Society of Avian Paleontology and Evolution
- Nuñez-León, D., **Smith-Paredes, D.** and Vargas, A.O. (2016) DEVELOPMENTAL EVOLUTION OF THE AVIAN PALATE REVISITED. 9th International Meeting of the Society of Avian Paleontology and Evolution
- **Daniel Smith**, et al., DID BIRD ANCESTORS HAVE FOUR WINGS? INSIGHTS FROM THE DEVELOPMENT OF PENNACEOUS FEATHERS ON THE HINDLIMBS OF BRAHMA CHICKEN. (2010) Fifth International Meeting of the Latin American Society for Developmental Biology, At Santa Cruz, Chile

Invited Talks

- **Sevilla CSIC, Donana Biological Station, 2023**
- **Lund University, Evolutionary Biology Research Group, 2022**
- **Bristol University, Paleontology Discussion Group, 2022**
- **University of Vienna, Evolutionary Biology Department, 2022**
- **Universidad de Chile, Biology Department, 2021**