

Nicolás J. Cosentino, PhD

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EDUCATION

- 08/2010-01/2017 *PhD in Geological Sciences, Cornell University*
03/2003-07/2010 *Lic. (i.e., BSc + MSc) in Geological Sciences, Univ. of Buenos Aires*
03/2003-07/2010 *Research Assistant (i.e., BSc) in Physics, Univ. of Buenos Aires*

RESEARCH POSITIONS

- 07/2023-... *Researcher, CIMA-IFAECI, UBA-CONICET-CNRS-IRD, Argentina*
04/2023-07/2023 *Visiting Fellow, DISAT, University of Milano-Bicocca, Italy (see Awards)*
04/2020-04/2023 *Postdoctoral Fellow, Geography Institute, PUC Chile, Chile*
04/2018-03/2020 *Postdoctoral Fellow, CICTERRA, UNC-CONICET, Argentina*
08/2011-12/2014 *Research Assistant, Cornell University, USA*
08/2008-02/2010 *Research Assistant, University of Buenos Aires, Argentina*

TEACHING AND OUTREACH POSITIONS

- 11/2018, 11/2021 *Instructor (MATLAB Applied to the Geosciences), National University of Cordoba (Argentina) & Univ. of Atacama (Chile), 1-week long (twice)*
01/2018-12/2019 *Assistant Professor (Applied Chemistry for Engineers), National University of Cordoba, 1-semester long classes*
07-08/2013 *Teach. Assistant (Field Mapping in Argentina), Cornell Univer., 2-month class*
05/2008-02/2010 *Teaching Assistant (Exploration Geophysics, Tectonics and Field Tectonics), University of Buenos Aires, 1-semester long classes*
04-12/2007 *Scientific Outreach Agent, University of Buenos Aires. Scientific outreach activities mostly in high schools*

EXPERIENCE IN SCIENCE POLICY-MAKING

- 02/2015-04/2016 *Technology Transfer Coordinator, National Science Ministry (Argentina)*

DOCTORAL SUPERVISING

- 1) Diego A. Montecino Jara (02/2022-..., National University of Cordoba, Argentina): *Accumulation dynamics of Pampean loess during the Holocene: Regional paleoclimatic implications*
- 2) Victoria Nogués (04/2021-..., National University of Cordoba, Argentina): *Accumulation dynamics of Pampean loess during the last glacial period: Regional paleoclimatic implications*

PEER-REVIEWED ARTICLES

- 1) **Cosentino NJ**, Opazo NE, Lambert F, Osses A, van 't Wout E (2023) Global-Krigger: A global kriging interpolation toolbox with paleoclimatology examples. *Geochemistry, Geophysics, Geosystems*, doi:10.1029/2022GC010821.
- 2) Bia GL, García MG, **Cosentino NJ**, Borgnino L (2022) Dispersion of arsenic species from highly explosive historical volcanic eruptions in Patagonia. *Science of the Total Environment*, doi:10.1016/j.scitotenv.2022.158389.
- 3) Coppo R, **Cosentino NJ**, Torre G, del Rio I, Sawakuchi AO, Berman AL, Koester E, Delmonte B, Gaiero DM (2022) Coeval minimum South American and maximum Antarctic Last Glacial Maximum dust deposition: Causal Link? *Quaternary Science Reviews*, doi:10.1016/j.quascirev.2022.107768.
- 4) Simonella LE, **Cosentino NJ**, Montes ML, Croot PL, Palomeque ME, Gaiero DM (2022) Low source-inherited iron solubility limits fertilization potential of South American dust. *Geochimica et Cosmochimica Acta*, doi:10.1016/j.gca.2022.06.032.

- 5) Torre G, Gaiero DM, Coppo R, **Cosentino NJ**, Goldstein SL, De Vleeschouwer F, Le Roux G, Bolge L, Kiro Y, Oliveira Sawakuchi A (2022) Unraveling late Quaternary atmospheric circulation in the Southern Hemisphere through the provenance of Pampean loess. *Earth-Science Reviews*, doi:10.1016/j.earscirev.2022.104143.
- 6) Borda LG, **Cosentino NJ**, Iturri, LA, García MG, Gaiero DM (2022) Are salt-rich dust inputs from shrinking lakes a risk to soil sodification in southern South America? *JGR: Earth Surface*, doi:10.1029/2021JF006585.
- 7) **Cosentino NJ**, Gaiero DM, Lambert F (2021) Present-day Patagonian dust emissions: Combining surface visibility, mass flux and reanalysis data. *JGR: Atmospheres*, doi:10.1029/2020JD034459.
- 8) **Cosentino NJ**, Ruiz-Etcheverry LA, Bia GL, Simonella LE, Coppo R, Torre G, Saraceno M, Tur V, Gaiero DM (2020) Does satellite chlorophyll-a respond to southernmost Patagonian dust? A multi-year, event-based approach. *JGR: Biogeosciences*, doi:10.1029/2020JG006073.
- 9) Torre G, Gaiero DM, **Cosentino NJ**, Coppo R (2020) The paleoclimatic message from the polymodal grain-size distribution of late Pleistocene-early Holocene Pampean loess (Argentina). *Aeolian Research*, doi:10.1016/j.aeolia.2019.100563.
- 10) **Cosentino NJ**, Gaiero DM, Torre G, Pasquini AI, Coppo R, Arce JM, Vélez G (2020) Atmospheric dust dynamics in southern South America: A 14-year modern dust record in the loessic Pampean region. *The Holocene*, doi:10.1177/0959683619875198.
- 11) Torre G, Gaiero DM, **Cosentino NJ**, Coppo R, Sawakuchi AO (2020) New insights on sources contributing dust to the loess record of the western edge of the Pampean Plain during the transition from the late MIS 2 to the early Holocene. *The Holocene*, doi:10.1177/0959683619875187.
- 12) **Cosentino NJ**, Morgan JP, Jordan TE (2018) Modeling trench sediment-controlled flow in subduction channels: Implications for the topographic evolution of the Central Andean forearc. *JGR: Solid Earth*, doi:10.1029/2018jb016109.
- 13) **Cosentino NJ**, Jordan TE (2017) $^{87}\text{Sr}/^{86}\text{Sr}$ of calcium sulfate in ancient soils of hyperarid settings as a paleoaltitude proxy: Pliocene to Quaternary constraints for northern Chile (19.5-21.7°S). *Tectonics*, doi:10.1002/2016TC004185.
- 14) **Cosentino NJ**, Jordan TE, Derry LA, Morgan JP (2015) $^{87}\text{Sr}/^{86}\text{Sr}$ in recent accumulations of calcium sulfate on landscapes of hyperarid settings: A bimodal altitudinal dependence for northern Chile (19.5-21.5°S). *Geochemistry, Geophysics, Geosystems*, doi:10.1002/2015GC005954.
- 15) Jordan TE, Kirk-Lawlor NE, Blanco NP, Rech JA, **Cosentino NJ** (2014) Landscape modification in response to repeated onset of hyperarid paleoclimate states since 14 Ma, Atacama Desert, Chile. *Geological Society of America Bulletin*, doi:10.1130/B30978.1.

PEER-REVIEWED BOOK CHAPTERS

- 1) Depetris PJ, Gaiero, DM, **Cosentino NJ** (2021) A hydrological and biogeochemical appraisal of Patagonia's Río Gallegos, in Environmental assessment of Patagonia's water resources. *Environmental Earth Sciences*, 10.1007/978-3-030-89676-8_11.
- 2) Pasquini AI, **Cosentino NJ**, Depetris, PJ (2021) The main hydrological features of Patagonia's Santa Cruz river: An updated assessment, in Environmental assessment of Patagonia's water resources. *Environmental Earth Sciences*, doi:10.1007/978-3-030-89676-8_9.
- 3) **Cosentino NJ**, Aron F, Crempien JGF, Jordan TE (2018) Role of subducted sediments in plate interface dynamics as constrained by Andean forearc (paleo)topography, in Tectonics, Sedimentary Basins, and Provenance: A Celebration of William R. Dickinson's Career. *Geological Society of America Special Papers*, doi:10.1130/2018.2540(03).

RESEARCH PROJECTS (PRESENT)

Role: participant

- 1) 06/2023-05/2025, PICT-2021-GRF-T1-00787 (Argentina), *Study of the effect of eolian transport of dust from northern Patagonia (Argentina) on biotic and abiotic effects of the marine environment.* USD 10,900 (not counting stipend)

- 2) 06/2023-05/2027, PICT-2021-I-A-00275 (Argentina), *Holocene climate variability in southern South America based on the Pampean eolian archive (loess)*. USD 49,300 (not counting stipend)
- 3) 01/2023-12/2024, CLIMAT-AmSud 22-CLIMAT-01 (France-Chile-Argentina-Peru-Bolivia), *A-dust: Andean dust from sources to sinks*. USD 60,300 (no stipend)
- 4) 02/2023-01/2025, PIP 2022-2024 11220210100616CO (Argentina), *Mineral aerosol monitoring in 25 de Mayo island (South Shetlands - Argentine Antarctica)*. USD 9,400 (not counting stipend)

RESEARCH PROJECTS (PAST)

Role: PI

1) 05/2020-04/2023, FONDECYT POSTDOC2020 3200085 (Chile), *Dust emission and deposition in South America and the South Atlantic ocean at various times during the Holocene and last deglaciation: A combined modelling and proxy data approach*. USD 19,300 (not counting stipend)

Role: participant

1) 08/2019-07/2022, PICT 2017-2705 (Argentina), *Study of the zonal atmospheric circulation in the Southern Hemisphere through the use of aeolian sediments as climatic proxies*. USD 29,500 (not counting stipend)

2) 06/2018-05/2022, SECYT-UNC-CONSOLIDAR-Categoría C-2018-2019, 33620180100774CB (Argentina), *Regional study of the geochemical signal of water and river bottom sediments of rivers in the Ranges of Cordoba: New insights on the provenance of Pampean loess and on the chemical weathering of in situ and allochthonous materials*. USD 5,500 (not counting stipend)

3) 04/2018-03/2020, P-UE 2016 CONICET-CICTERRA (Argentina), *Geodynamic, geochemical and biological processes in the formation and evolution of the southern sector of South America and Antarctica*. USD 332,400

4) 05/2011-04/2016, NSF Standard Grant, EAR-1049978 (USA), *Forearc uplift in northern Chile*. USD 430,900

REVIEWER

Journals: Catena; Earth and Planetary Science Letters; Science of the Total Environment (x2); Geophysical Research Letters (x2); Safety; Atmosphere; Geosciences; Geochemistry, Geophysics, Geosystems

Research agencies: PICT 2020 (ANPyCT, Argentina), NKFI-FK 2021 (NRDI, Hungary), FONDECYT Regular 2019 (ANID, Chile)

PARTICIPATION IN CONFERENCES & WORKSHOPS

Co-convener/chair: XXI INQUA Congress 2023, AGU Fall Meeting 2022

Invited speaker: AndesFest 2023 (Cornell University, www.geo.cornell.edu/instoc/activities.htm), PMIP 30th Anniversary Conference 2021, SOLAS' Remote Sensing for Ocean-Atmosphere Interactions Studies and Applications 2021, EGU General Assembly 2019

Co-organizer: Blowing South 2021 (<http://dust2021.cima.fcen.uba.ar/>)

Participation: INQUA 2023 (talk x2, poster x3), AGU Fall Meeting 2022 (talk), 2021 (talk, poster x2), 2014 (talk), 2012 (poster), 2011 (poster), 2010 (poster), EGU General Assembly 2021 (talk), Chilean Geological Congress 2018 (talk), Goldschmidt Conference 2013 (talk), SCAR 2010 (talk)

AWARDS

- 1) INQUA Fellowship 2022 (EUR 7500): three-month research stay with S. Albani (UNIMIB, Italy)
- 2) AGU 2021 Editors' Citation for Excellence in Refereeing: Geophysical Research Letters
- 3) Cornell Fellowship. Highly competitive award (1st-year PhD stipend)

COMPUTER SKILLS & LANGUAGES

Advanced: Office, Illustrator, Matlab, *Intermediate:* Bash, *Beginner:* Fortran

Spanish (native), *English* (C2 level), *French* (B2 level)