

CURRICULUM VITAE

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School of Life Sciences and School of Sustainability, Global Drylands Center
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ACADEMIC TRAINING

BSc Agriculture, University of Buenos Aires, Argentina
MSc, Ecology, Colorado State University, USA
PhD, Ecology, Colorado State University, USA

AWARDS AND HONORS

2019 **American Geophysical Union**, Fellow
2019 **Regents' Professor, Arizona State University**
2018 **Asociación Argentina de Ecología**, Honorary Member
2013 **Ecological Society of America**, Fellow
2009 **American Association for the Advancement of Science**, Fellow
2004 **Andrew D. White Professor-at-Large, Cornell University**
2003 **American Academy of Arts and Sciences**, USA, Elected Member
2003 **National Academy of Physical and Natural Sciences**, Buenos Aires, Elected Member
2002 **National Academy of Sciences**, Argentina, Elected Member
1993 **Guggenheim Fellow**

ACADEMIC EXPERIENCE

2019- Regents' Professor, **Arizona State University**
2017- Director, [Global Drylands Center](#), **Arizona State University**
2010- Julie A. Wrigley Professor of Life Sciences and Sustainability, **Arizona State University**
2010- Foundation Professor, **Arizona State University**
2005-10 Sloan Lindemann Distinguished Professor of Biology, **Brown University**
2005-08 Director, Environmental Change Initiative, **Brown University**
2005-08 Director, Center for Environmental Studies, **Brown University**
1991-04 Professor, Department of Ecology, School of Agronomy, **University of Buenos Aires**
1982-04 Research Scientist, **National Research Council**, Argentina
1999 Visiting Scholar, **Imperial College** at Silwood Park
1993-94 Visiting Scholar, Department of Biological Sciences, **Stanford University**, USA
1987-88 Chairman, Department of Ecology, School of Agronomy, **University of Buenos Aires**, Argentina
1987-90 Associate Professor, Department of Ecology, School of Agronomy, **University of Buenos Aires**, Argentina

- 1985-87 Research Scientist, Natural Resource Ecology Laboratory, **Colorado State University, USA**
- 1982-83 Assistant Professor, Department of Ecology, School of Agronomy, **University of Buenos Aires, Argentina**
- 1980-82 Assistant Professor, Range Science Department, **Colorado State University, USA**

PROFESSIONAL SERVICE

- * National Academy of Sciences Committee: **Environmental Effects of Nuclear Study Committee**, 2022-
- * National Academy of Sciences Committee: **US Global Change Research Program**, 2021-
- * Scientific Advisory Board, Agrotecnio, **Center of Excellence of Catalunya**, Spain, 2021-
- * President, **Ecological Society of America**, 2018-2021
- * Chair, External Advisory Board, School of Global Environmental Sustainability, **Colorado State University**, 2012-2018
- * Co-Director, **SARAS** (South American Institute for Resilience and Sustainability Studies), 2010-16
- * LTER (Long Term Ecological Research) National Advisory Board, **National Science Foundation**, 2010-13
- * **Jury of Ramon Margalef Prize, Barcelona, Spain**, 2008-2011
- * Scientific Advisory Board, **SCOPE Biofuels Project**, 2007-10
- * **Rhode Island, Ocean Special Area Management Plan**, Science Advisory Task Force, 2008
- * Advisor, **National Science Foundation**, Environmental Research and Education, 2007-09
- * Member, Global Agenda Council, **World Economic Forum**, 2008-09
- * President, **SCOPE**, Scientific Committee on Problems of the Environment, 2005-09
- * External Evaluation **CREAF**, Universidad Autónoma de Barcelona, Spain, 2008.
- * Member, Science Council, **The Nature Conservancy**, 2005-07
- * Secretary General, **SCOPE**, Scientific Committee on Problems of the Environment, 2001-05
- * Editorial Board of **Climate Research**, Inter Research, 1992-05
- * Editor of **Global Change Biology**, Blackwell Scientific, 2003-05
- * Editorial Board of **Ecosystems**, Springer Verlag, 1997-2004
- * Editorial Board of **Oecologia**, Springer Verlag, 1994-2004
- * Member at large Governing Board of the **Ecological Society of America**, 2002-04
- * Chair of “**Red Latinoamericana de Botánica**,” 2001-2004
- * Scientific Committee for the **International Geosphere-Biosphere Programme (IGBP)**, 1994-1996
- * Scientific Steering committee of **Global Change and Terrestrial Ecosystems (GCTE)**, a core project of the International Geosphere Biosphere Programme, 1991-1999
- * Leader, Global Change and Terrestrial Ecosystems (**GCTE**). **Focus 4, Global Change and Ecological Complexity**, 1994-1999
- * Steering committee of **America's Interhemisphere Geo-Biosphere Organization (AMIGO)**, 1991-1995
- * Scientific Advisory Committee of the **Biodiversity and Ecosystem Functioning: Soils and Sediment**, a program of the Scientific Committee on Problems of the Environment (**SCOPE**), 1995-1999
- * Scientific Advisory Committee of **Diversitas**, An International Programme of Biodiversity Science, IUBS, SCOPE, UNESCO, ICSU, IGBP-GCTE, and IUMS, 1995- 2001
- * Scientific Steering Committee of **SCOPE**, Scientific Committee on Problems of the

Environment, 1998-2001

* Scientific Steering Committee of “**Red Latinoamericana de Botánica**” 1999-2001

* Biology Panel, National Research Council of Argentina, 1989-1992

* Vice-President **Ecological Society of Argentina**, 1991-1993

* President **Ecological Society of Argentina**, 1997-1999 and 1999-2001

* Editorial Board of **Vegetatio**, Kluwer academic publishers, 1990-1996

* Editorial Board of **Global Change Biology**, Blackwell Scientific, 1994-2003

RESEARCH GRANT EXPERIENCE

2023-28 Long-term ecosystem responses to directional changes in precipitation amount and variability in an arid grassland. **National Science Foundation** \$ 670,000 (PI)

2022-24 Experimental Evaluation of Drought and Grazing Duration on Grassland Productivity **USDA** \$155,067 (PI)

2020-24 LTER: Long-Term Research at the Jornada Basin (LTER VII). **National Science Foundation** \$4,508,000 (co-PI)

2019-23 Ecological responses to rainfall across the Namib Desert climate gradient. **National Science Foundation** \$299,994 (co-PI)

2018-23 Biogeochemical mismatches: decoupling of carbon, nitrogen and phosphorus cycles during drought **Australian Research Council** \$289,642 (co-PI)

2018-23 Long-term ecosystem responses to directional changes in precipitation amount and variability in an arid grassland **National Science Foundation** \$519,999 (PI)

2018-23 Forecasting dryland ecosystem vulnerability to change: a cross-system assessment of vegetation and process responses to disturbance and climate variability on DoD lands **SERDP-DOD** \$730,851 (co-PI)

2018-18 Looking for a Pulse in Dryland Ecosystems: Evaluating the Pulse Dynamics Paradigm Forty Years after its Creation **New Phytologist Trust** \$10,000 (co-PI)

2016-21 Exotic grass and woody-plant encroachment in Southwestern rangelands: Mechanisms of invasion and opportunities of containment **USDA-NIFA-AFRI** (PI) \$500,000

2015-20 Water Availability Controls on Above-Belowground Productivity Partitioning: Herbivory versus Plant Response **National Science Foundation**, (PI) \$718,935

2014-21 Drought-Net: A global network to assess terrestrial ecosystem sensitivity to drought **National Science Foundation**, (co-PI) \$499,992

2012-13 Abrupt grass-woodland transitions: Determinants and consequences for ecosystem services **National Science Foundation**, \$49,798

2012-18 LTER: Long-Term Research at the Jornada Basin (LTER VI) **National Science Foundation**, (co-PI) \$5,880,000

2012-14 Woody-plant encroachment: Degradation or a shift in the portfolio of ecosystem services? **Keck Foundation**, \$75,000

2009-13 Precipitation Controls of Carbon and Nitrogen Cycles in Arid-Semiarid Ecosystems **US National Science Foundation**, \$799,439

2009-10 Vegetation structure constraints on ANPP in arid ecosystems: assessing the meristem limitation hypothesis **US National Science Foundation**, \$14,804

2004-07 Global change and the carbon cycle in arid and semiarid ecosystems: Experiments in the Patagonian steppe. **University of Buenos Aires**

- 2004-07 Spatial and temporal controls of carbon cycling in arid and semiarid ecosystems
PICT, Agencia Nacional de Promoción Científica y Tecnológica
- 2002-04 Ecophysiological consequences of infrequent massive flowering of monocarpic bamboo grasses (*Chusquea* spp) in temperate and tropical South America
US National Science Foundation
- 2001-02 Biodiversity effect on ecosystem functioning: Diversity of species, functional groups, patches, and resources. **University of Buenos Aires**
- 2000-03 Global change effects on primary production in arid ecosystems: The Patagonian steppe as a model ecosystem. **PICT, Agencia Nacional de Promoción Científica y Tecnológica**
- 1999-06 The role of biodiversity and climate in the functioning of ecosystems: A comparative study of grasslands, savannas, and forests. **InterAmerican Institute for Global Change Research**
- 1998-01 Ecosystem responses to stratospheric ozone reduction in southernmost South America. **US National Science Foundation**
- 1998-00 Biodiversity effects on the functioning of ecosystems: Experiments and models at two scales in the Patagonian steppe. **UBA**
- 1998-00 The effect of global change on the functioning of the Patagonian steppe ecosystem. **Agencia Nacional de Promoción Científica y Tecnológica**
- 1998-01 Management technology to increase production and decrease erosion in grasslands and steppes. **Agencia Nacional de Promoción Científica y Tecnológica**
- 1997-01 Production and decomposition controls in the Patagonian steppe. **CONICET**
- 1997 Global Change Effects on Biodiversity and Ecosystem Functioning: Manipulation of a Keystone Process. **InterAmerican Institute for Global Change Research**
- 1996 Workshop “Biodiversity Scenarios” at UC Santa Barbara, California, USA. June 1996. **InterAmerican Institute for Global Change Research and National Center for Ecological Analysis and Synthesis UC Santa Barbara**
- 1995 Workshop “Global Change and Ecological Complexity” Cedar Creek, Minnesota, USA, September 1995. **Electric Power Research Institute and International Geosphere Biosphere Programme**
- 1995 Workshop “Global Change Impacts on Latin American Terrestrial Ecosystems and Feedbacks to the Globe” Buenos Aires March 1995. **Inter-American Institute for Global Change Research**
- 1995-98 Ecosystem Responses to Stratospheric Ozone Reduction in Southernmost South America, **US National Science Foundation**
- 1994-97 Seasonal dynamics of primary production, **UBA**
- 1994-97 The role of small rainfall events on nitrogen mineralization, **UBA**
- 1994-97 Constraints on Production and Decomposition in Temperate Semiarid Grasslands, **US National Science Foundation**
- 1992-95 Sustainability of natural and cultivated systems Inter American Development Bank-**CONICET**
- 1991-93 Environmental and management effects on plant available water in the Patagonian steppe, **UBA**
- 1991-93 Nutrient partitioning between shrubs and grasses in the Patagonian steppe, **UBA**
- 1991-93 Cyclical dynamics of vegetation patches in the Patagonian steppe, **UBA**
- 1991 Argentina-Chile scientific collaborative award. **Fundación Antorchas**
- 1991 Competition and facilitation between grasses and shrubs **Fundación Antorchas**
- 1989-93 Resource partitioning among grasses and shrubs in semi-arid regions, **CONICET**

1989-93 Cyclical succession in the Patagonian steppe. **CONICET**
1988-89 Water dynamics in the Patagonian steppe: A simulation modeling approach **UBA**
1988-89 Water partitioning among grasses and shrubs in the Patagonian arid steppe, **UBA**
1987-88 Grass-shrub interactions in two semi-arid regions, **US National Science Foundation**
1985-88 The effect of defoliation on the community dynamics of a grassland of the Flooding Pampas. **CONICET**
1985-88 Resource partitioning among life forms of the arid steppes. **CONICET**
1983-84 Resource partitioning among life forms in Southern Patagonia. **UBA**
1983-84 Convergence in the partitioning of resources among functional types in two semiarid regions, **US National Science Foundation-CONICET**

GRADUATE STUDENTS AND POST DOCTORAL FELLOWS

Graduate Students:

Annessa Lyle (exp 2025)
Madeline Buhman (exp 2024)
Chris Vito (exp 2024)
Sam Jordan (exp 2023)
Courtney Currier, 2023
Bryce Sutter, 2022
Luis Weber, 2021
Svenja Wagner, 2019
Amy Wiedenfeld, 2018
Aaron Boydston, 2018
Owen McKenna, 2016
Laureano Gherardi, 2014
Lara Reichmann, 2011
Pedro Flombaum, 2007
Marselle Alexander, 2007
Victoria Marchesini, 2006
M. Laura Yahdjian, 2004
Verónica Pancotto, 2004
Pablo Roset, 2000
Esteban Jobbágy, 1998
Adriana Beltrán, 1997
José M. Paruelo, 1991
Martín R. Aguiar, 1991
Rodolfo A. Golluscio, 1990

Postdoctoral fellows:

Nicholas Glass 2022-24
Mónica Ladro de Guevara 2018-20
Laureano Gherardi, 2015-21
José Anadón, 2012-13
Lara Reichmann, 2011-12
Erika Sudderth, 2009
M. Laura Yahdjian, 2005

Elisabeth Huber-Sannwald, 1996-97
Patricia Folgarait, 1995-97
Silvia Cid, 1995-96
Miguel A. Brizuela, 1991-94

TEACHING EXPERIENCE

Classes currently being taught at Arizona State University:

- Ecosystem Ecology (BIO 422/598 SOS 598)
- Human Impact on Ecosystem Functioning (SOS494/598; BIO494/598)
- Sustainability Science (SOS/ BIO 591)
- Life Sciences Career Paths (BIO 189)
- Sustainability Science: Interactions between Human and Environmental Systems (SOS 526)

Classes taught in the past:

- Human Impact on Ecosystem Functioning (BIOL1490), Brown University
- Biodiversity (BIOL2430), Brown University
- Topics in Conservation Science (BIOL1940), Brown University
- Ecology, UBA
- Ecosystem Ecology, UBA Plant Physiology, UBA
- Range Ecophysiology (RS 351), Colorado State University
- Functional Diversity in Ecosystems, University of Concepción, Chile
- Global Change and Biodiversity, UNAM, Mexico

PUBLICATIONS (H-index = 106)

247. Briske, D. D., S. R. Archer, E. Burchfield, W. Burnidge, J. D. Derner, H. Gosnell, J. Hatfield, C. E. Kazanski, M. Khalil, T. J. Lark, P. Nagler, O.E. Sala, N.F. Sayre, K.R. Stackhouse-Lawson. 2023. Supplying ecosystem services on US rangelands. **Nature Sustainability** 10.1038/s41893-023-01194-6. [PDF](#)
246. Isbell, F., P. Balvanera, A. S. Mori, J. S. He, J. M. Bullock, G. R. Regmi, E. W. Seabloom, S. Ferrier, O. E. Sala, and N. R. Guerrero-Ramírez. 2023. Expert perspectives on global biodiversity loss and its drivers and impacts on people. **Frontiers in Ecology and the Environment** 21 (2): 94-103. [PDF](#)
245. Maestre, F. T., Y. Le Bagousse-Pinguet, M. Delgado-Baquerizo, D. J. Eldridge, H. Saiz, M. Berdugo, B. Gozalo, V. Ochoa, E. Guirado, et al. M. García-Gómez. 2022. Grazing and ecosystem service delivery in global drylands. **Science** 378:915-920. [PDF](#)
244. Louw, N., L. A. Gherardi, O. E. Sala, and Y. A. Chung. Dryland soil mycobiome response to long-term precipitation variability depends on host type. 2022. **Journal of Ecology** 10.1111/1365-2745.14006. [PDF](#)
243. Garcia-Pichel, F., and O. Sala. 2022. Expanding the Pulse–Reserve Paradigm to Microorganisms on the Basis of Differential Reserve Management Strategies. **Bioscience** 72:638-650. [PDF](#)
242. Flombaum, P., L. Vivanco, F. Cabrera, and O. E. Sala. 2022. Grassland Communities and Ecosystems. **Reference Module in Life Sciences**. Elsevier 10.1016/B978-0-12-809633-8.02201-9. [PDF](#)
241. Currier, C. M., and O. E. Sala. 2022. Precipitation versus temperature as phenology controls in drylands. **Ecology**: e3793. [PDF](#)
240. Brown, R. F., O. E. Sala, R. L. Sinsabaugh, and S. L. Collins. 2022. Temporal effects of monsoon rainfall pulses on plant available nitrogen in a Chihuahuan Desert grassland. **Journal of Geophysical Research: Biogeosciences** 127: 1-15. [PDF](#)
239. Pérez-Ruiz, E. R., E. R. Vivoni, and O. E. Sala. 2022. Seasonal carryover of water and effects on carbon dynamics in a dryland ecosystem. **Ecosphere** 13: e4189. [PDF](#)
238. Davis, A. R., K. R. Hultine, O. E. Sala, and H. L. Throop. 2022. Seedling responses to soil moisture amount versus pulse frequency in a successfully encroaching semi-arid shrub. **Oecologia**:1-11. [PDF](#)
237. Sala, O.E. 2022. Open access is a misnomer. **Frontiers in Ecology and the Environment** 20 (2) 71-71. [PDF](#)
236. Ankrom, K. E., A. L. Franco, S. J. Fonte, L. A. Gherardi, C. M. de Tomasel, C. Wepking, P. Guan, S. Cui, O. E. Sala, and D. H. Wall. 2022. Ecological maturity and stability of nematode communities in response to precipitation manipulations in grasslands. **Applied Soil Ecology** 170:104263. [PDF](#)
235. Weber-Grullon, L., L. Gherardi, W. A. Rutherford, S. R. Archer, and O. E. Sala. 2022. Woody-plant encroachment: Precipitation, herbivory and grass-competition interact to affect shrub recruitment. **Ecological Applications** :e2536 [PDF](#)

234. Franco, A., P. Guan, S. Cui, C. Tomasel, L. Gherardi, O. E. Sala, and D. H. Wall. 2022. Precipitation effects on nematode diversity and carbon footprint across grasslands. **Global Change Biology**. 28 (6) 2124-2132 [PDF](#)
233. Hudson, A. R., D. P. Peters, J. M. Blair, D. L. Childers, P. T. Doran, K. Geil, M. Gooseff, K. L. Gross, N. M. Haddad, and M. A. Pastore. 2022. Cross-site comparisons of dryland ecosystem response to climate change in the US Long-Term Ecological Research Network. **Bioscience** 72:889-907. [PDF](#)
232. Peters, D. P., H. M. Savoy, S. Stillman, H. Huang, A. R. Hudson, O. E. Sala, and E. R. Vivoni. 2021. Plant Species Richness in Multiyear Wet and Dry Periods in the Chihuahuan Desert. **Climate** 9(8), 130; [PDF](#)
231. Weathers, K. C., D. Ojima, S. K. Collinge, and O. Sala. 2021. Leveraging the anthropause. **Frontiers in Ecology and the Environment** [PDF](#)
230. Iwaniec, D. M., M. Gooseff, K. N. Suding, D. Samuel Johnson, D. C. Reed, D. P. C. Peters, B. Adams, J. E. Barrett, B. T. Bestelmeyer, M. C. N. Castorani, E. M. Cook, M. J. Davidson, P. M. Groffman, N. P. Hanan, L. F. Huenneke, P. T. J. Johnson, D. M. McKnight, R. J. Miller, G. S. Okin, D. L. Preston, A. Rassweiler, C. Ray, O. E. Sala, R. L. Schooley, T. Seastedt, M. J. Spasojevic, and E. R. Vivoni. 2021. Connectivity: insights from the U.S. Long Term Ecological Research Network. **Ecosphere** 12:e03432. [PDF](#)
229. Yahdjian, L., O. E. Sala, J. M. Piñeiro-Guerra, A. K. Knapp, S. L. Collins, R. P. Phillips, and M. D. Smith. 2021. Why Coordinated Distributed Experiments Should Go Global. **Bioscience**. <https://doi.org/10.1093/biosci/biab033> [PDF](#)
228. Gherardi, L. A., and O. E. Sala. 2020. Global patterns and climatic controls of belowground net carbon fixation. **Proceedings of the National Academy of Sciences**. 117.33: 20038-20043 [PDF](#)
227. Schreiner-McGraw, A. P., E. R. Vivoni, H. Ajami, O. E. Sala, H. L. Throop, and D. P. Peters. 2020. Woody plant encroachment has a Larger impact than climate change on Dryland Water Budgets. **Scientific Reports** 10:1-9. [PDF](#)
226. Ankrom, K. E., A. L. Franco, S. J. Fonte, L. A. Gherardi, C. M. de Tomasel, W. S. Andriuzzi, E. A. Shaw, O. E. Sala, and D. H. Wall. 2020. Ecto-and endoparasitic nematodes respond differently across sites to changes in precipitation. **Oecologia**:193 (3) 761-771. [PDF](#)
225. Franco, A. L., L. A. Gherardi, C. M. de Tomasel, W. S. Andriuzzi, K. E. Ankrom, E. M. Bach, P. Guan, O. E. Sala, and D. H. Wall. 2020. Root herbivory controls the effects of water availability on the partitioning between above and belowground grass biomass. **Functional Ecology**. 34 (11) 2403-2410 [PDF](#)
224. Hoover, D. L., B. Bestelmeyer, N. B. Grimm, T. E. Huxman, S. C. Reed, O. Sala, T. R. Seastedt, H. Wilmer, and S. Ferrenberg. 2020. Traversing the Wasteland: A Framework for Assessing Ecological Threats to Drylands. **Bioscience** 70:35-47. [PDF](#)
223. Maurer, G., A. J. Hallmark, R. F. Brown, O. E. Sala, and S. L. Collins. 2020. Sensitivity of primary production to precipitation across the United States. **Ecology Letters**. 23 (3) 527-536. [PDF](#)

222. Andriuzzi, W. S., A. L. Franco, K. E. Ankrom, S. Cui, C. M. de Tomasel, P. Guan, L. A. Gherardi, O. E. Sala, and D. H. Wall. 2020. Body size structure of soil fauna along geographic and temporal gradients of precipitation in grasslands. **Soil Biology and Biochemistry** **140**:107638. [PDF](#)
221. Kimberly J. Komatsu, Meghan L. Avolio, Nathan P. Lemoine, Forest Isbell, Emily Grman, Gregory R. Houseman, Sally E. Koerner, David S. Johnson, Kevin R. Wilcox, Juha M. Alatalo, John P. Anderson, Rien Aerts, Sara G. Baer, Andrew H. Baldwin, Jonathan Bates, Carl Beierkuhnlein, R. Travis Belote, John Blair, Juliette M. G. Bloor, Patrick J. Bohlen, Edward W. Bork, Elizabeth H. Boughton, William D. Bowman, Andrea J. Britton, James F. Cahill Jr., Enrique Chaneton, Nona R. Chiariello, Jimin Cheng, Scott L. Collins, J. Hans C. Cornelissen, Guozhen Du, Anu Eskelinen, Jennifer Firn, Bryan Foster, Laura Gough, Katherine Gross, Lauren M. Hallett, Xingguo Han, Harry Harmens, Mark J. Hovenden, Annika Jagerbrand, Anke Jentsch, Christel Kern, Kari Klanderud, Alan K. Knapp, Juergen Kreyling, Wei Li, Yiqi Luo, Rebecca L. McCulley, Jennie R. McLaren, J. Patrick Megonigal, John W. Morgan, Vladimir Onipchenko, Steven C. Pennings, Janet S. Prevéy, Jodi N. Price, Peter B. Reich, Clare H. Robinson, F. Leland Russell, Osvaldo E. Sala, Eric W. Seabloom, Melinda D. Smith, Nadejda A. Soudzilovskaia, Lara Souza, Katherine Suding, K. Blake Suttle, Tony Svejcar, David Tilman, Pedro Tognetti, Roy Turkington, Shannon White, Zhuwen Xu, Laura Yahdjian, Qiang Yu, Pengfei Zhang, and Yunhai Zhang. 2019. Global change effects on plant communities are magnified by time and the number of global change factors imposed. **Proceedings of the National Academy of Sciences** **116**: 17867-17873 [PDF](#)
220. Corman, J. R., S. L. Collins, E. M. Cook, X. Dong, L. A. Gherardi, N. B. Grimm, R. L. Hale, T. Lin, J. Ramos, and L. G. Reichmann. 2019. Foundations and Frontiers of Ecosystem Science: Legacy of a Classic Paper (Odum 1969). **Ecosystems**: **22**: 1160-1172. [PDF](#)
219. Sala, O.E., C.G. Boone, B.L. Turner and C.M. Currier. 2019. The sustainability publication gap and its implications. **Current Opinion in Environmental Sustainability**: **39**: 39-43 [PDF](#)
218. Franco, A. L., L. A. Gherardi, C. M. de Tomasel, W. S. Andriuzzi, K. E. Ankrom, E. A. Shaw, E. M. Bach, O. E. Sala, and D. H. Wall. 2019. Drought suppresses soil predators and promotes root herbivores in mesic, but not in xeric grasslands. **Proceedings of the National Academy of Sciences** **116**:12883-12888. [PDF](#)
217. Delgado-Baquerizo, M., R. D. Bardgett, P. Vitousek, F. Maestre, M. Williams, D. Eldridge, H. Lambers, S. Neuhauser, A. Gallardo, L. García-Velázquez, O. E. Sala, S. Abades, F. Alfaro, A. Berhe, M. Bowker, C. Currier, N. Cutler, S. Hart, P. Hayes, Z. Hseu, M. Kirchmair, V. Peña-Ramírez, C. Pérez, S. Reed, F. Santos, C. Siebe, B. Sullivan, L. Weber-Grullon, and N. Fierer. 2019. Changes in belowground biodiversity during ecosystem development. **Proceedings of National Academy of Sciences** **116** (14) 6891-6896. [PDF](#)
216. Apodaca, M. J., J. D. McInerney, O. E. Sala, L. Katinas, and J. V. Crisci. 2019. A Concept Map of Evolutionary Biology to Promote Meaningful Learning in Biology. **The American Biology Teacher** **81**(2): 79-87. [PDF](#)

215. Gherardi, L. A., and O. E. Sala. 2019. Effect of interannual precipitation variability on dryland productivity: A global synthesis. **Global Change Biology** 25(1): 269-276. [PDF](#)
214. McKenna, O. P., and O. E. Sala. 2018. Playa-wetlands effects on dryland biogeochemistry: space and time interactions. **Journal of Geophysical Research - Biogeosciences** 123. [https:// doi.org/10.1029/2017JG004176](https://doi.org/10.1029/2017JG004176). [PDF](#)
213. Okin, G. S., O. E. Sala, E. R. Vivoni, J. Zhang, and A. Bhattachan. 2018. The interactive role of wind and water in drylands functioning: what does the future hold? **Bioscience** 68 (9): 670-677. [PDF](#)
212. Peters, D. P. C., D. N. Burruss, L. Rodriguez, D. S. McVey⁴, E. H. Elias, A. M. Pelzel-McCluskey, D. J.D., T. S. Schrade, J. Yao, P. S., J. Lombard, S. R. Archer, B. T. Bestelmeyer, D. M. Browning, C. W. Brungard, J. L. Hatfield, N. P. Hanan, J. E. Herrick, G. S. Okin, O. E. Sala, H. Savoy, and E. R. Vivoni. 2018. An integrated view of complex landscapes: a big data-model integration approach to trans-disciplinary science. **Bioscience** 68(9): 653-669. [PDF](#)
211. Munson, S. M., S. C. Reed, J. Peñuelas, N. G. McDowell, and O. E. Sala. 2018. Ecosystem thresholds, tipping points, and critical transitions. **New Phytologist** 218(4): 1315-1317. [PDF](#)
210. Petrie, M., D. Peters, J. Yao, J. Blair, N. Burruss, S. Collins, J. Derner, L. Gherardi, J. Hendrickson, and O. Sala. 2018. Regional grassland productivity responses to precipitation during multi-year above-and below-average rainfall periods: consequences for responses under climate change. **Global Change Biology** 24(5): 1935-1951. [PDF](#)
209. McKenna, O.P., and O.E. Sala. 2018. Groundwater recharge in desert playas: current rates and future effects of climate change. **Environmental Research Letters**. 13(1): 014025. [PDF](#)
208. Wilcox, K. R., A. T. Tredennick, S. E. Koerner, E. Grman, L. M. Hallett, M. L. Avolio, K. J. La Pierre, G. R. Houseman, F. Isbell, and D. S. Johnson. 2017. Asynchrony among local communities stabilises ecosystem function of metacommunities. **Ecology Letters**. 20(12): 1534-1545. [PDF](#)
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