CURRICULUM VITAE

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Jasper F. Kok, Ph.D.

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EDUCATION

2009	**Ph. D.,** Applied Physics, *University of Michigan*, USA (received Distinguished Dissertation Award)
2003	**Professional Science Master's (PSM)**, Applied Physics, *University of Arizona*, USA
2001	**B.S.,** Physics, *Leiden University,* The Netherlands

PROFESSIONAL EXPERIENCE (Post – Ph. D.)

2021 -	Professor, Department of Atmospheric and Oceanic Sciences, University of California – Los Angeles
2017 - 2021	Associate professor, Department of Atmospheric and Oceanic Sciences, University of California – Los Angeles
2013 - 2017	Assistant professor, Department of Atmospheric and Oceanic Sciences, University of California – Los Angeles
2011 - 2013	National Science Foundation Postdoctoral Research Fellow with Natalie Mahowald at Cornell University, Ithaca, NY
2009 - 2011	Postdoctoral Fellow, Advanced Study Program (ASP), National Center for Atmospheric Research (NCAR), Boulder, CO

HONORS AND AWARDS

2020	Finalist for UCLA 2020 postdoctoral mentoring award
2019	Received the American Meteorological Society's **Henry Houghton Early Career award** for "novel approaches to studying the physics of dust emissions into the atmosphere and the interactions of dust aerosols with Earth's climate and beyond"
2016	Received an **NSF CAREER award**
2015	Awarded a UCLA **Faculty Career Development Award**
2011	Awarded a **National Science Foundation Postdoctoral Research Fellowship** in Atmospheric and Geospace Sciences
2010	**Nominated** for the 2010 Council of Graduate Schools **National Distinguished Dissertation Award**
2009	Awarded an **Advanced Study Program Postdoctoral Fellowship** from the National Center for Atmospheric Research (NCAR)
2009	Received the 2009 **Distinguished Dissertation Award** from the University of Michigan (1 of 8 university-wide out of 792 dissertations)
2008	Received **Predoctoral Fellowship** from the Horace H. Rackham graduate school
2007	Received **Outstanding Student Paper Award** at American Geophysical Union Fall Meeting
2006	Received the **Thomas M. Donahue Memorial Student Award**

PUBLICATIONS (*postdocs*, graduate or *undergraduate* students)

Highly Cited Paper Denotes paper that received enough citations to be in top 1% of its academic field (Thomson Reuters / Web of Science designation)

97. *Gupta, A. K.,* T. Mittal, K. E. Fauria, R. Bennartz, and **J. F. Kok**, The January 2022 Hunga eruption cooled the southern hemisphere in 2022, in review.
96. Mahowald, N. M. L. Li, S. Albani, D. S. Hamilton, and **J. F. Kok**, Opinion: The importance of historical and paleoclimate aerosol radiative effects, *Atmospheric Chemistry and Physics,* in press.
95. Leung, D. M., **J. F. Kok**, L. Li, N. M. Mahowald, D. M. Lawrence, S. Tilmes, E. Kluzek, M. Klose, and C. Pérez García-Pando, A new process-based and scale-aware desert dust emission scheme for global climate models–Part II: evaluation in the Community Earth System Model (CESM2), *Atmospheric Chemistry and Physics,* in press.
94. Chamecki, C. and **J. F. Kok** (2023), Fundamental Causes of Model Inaccuracies in Predicting Wind-Blown Sand Fluxes, *Geophysical Research Letters*, 50, e2023GL103490.
93. Zheng, J., Z. Zhang, H. Yu, A. Garnier, Q. Song, C. Wang, C. Di Biagio, **J. F. Kok**, Y. Derimian, and C. Ryder (2023), Thermal infrared dust optical depth and coarse-mode effective diameter retrieved from collocated MODIS and CALIOP observations, *Atmospheric Chemistry and Physics*, 23, 8271-8304.
92. Leung, D. M., **J. F. Kok**, L. Li, G. S. Okin, C. Prigent, M. Klose, C. Pérez García-Pando, L. Menut, N. M. Mahowald, D. M. Lawrence, and M. Chamecki (2023), A new process-based and scale-respecting desert dust emission scheme for global climate models – Part I: description and evaluation against inverse modeling emissions, *Atmospheric Chemistry and Physics,* 23, 6487–6523, https://doi.org/10.5194/acp-23-6487-2023.
91. *Adebiyi, A. A.*, Y. Huang, B. H. Samset, and **J. F. Kok** (2023), Observations suggest that North African dust absorbs less solar radiation than models estimate, *Communications Earth & Environment*, 4, 168.
90. Rodakoviski, R., **J. F. Kok**, and M. Chamecki (2023), Dust settling from turbulent layers in the free troposphere: implications for the Saharan Air Layer, *Journal of Geophysical Research: Atmospheres*, 128, e2022JD037724.
89. Huang, Y., **J. F. Kok**, M. Saito, and O. Muñoz (2023), Single-scattering properties of ellipsoidal dust aerosols constrained by measured dust shape distributions, *Atmospheric Chemistry and Physics*, 23, 2557-77.
88. MacKenzie S.M., K.D. Runyon, X. Yu, **J. F. Kok**, C. Newman, R.D. Lorenz, and *F. Comola* (2023), Sediment-Moving Winds and Abrasion on Titan: Implications for Yardangs, *Icarus*, 394, 115433.
87. **Kok, J. F.**, T. Storelvmo, V. A. Karydis, *A. A. Adebiyi*, N. M. Mahowald, A. T. Evan, C. He, and D. M. Leung (2023), Mineral dust aerosol impacts on global climate and climate change, *Nature Reviews Earth & Environment*, 4, 71-86, https://doi.org/10.1038/s43017-022-00379-5. Highly Cited Paper
86. *Adebiyi,. A. A.*, **J. F. Kok**, B. J. Murray, C. L. Ryder, J.-B. W. Stuut, R. A. Kahn, P. Knippertz, P. Formenti, N. M. Mahowald, C. Perez Garcia-Pando, M. Klose, A. Ansmann, B. H. Samset, A. Ito, Y. Balkanski, C. Di Biagio, M. N. Romanias, Y. Huang, and *J. Meng* (2023), A review of coarse mineral dust in the Earth system, *Aeolian Research*, 60, 100849, https://doi.org/10.1016/j.aeolia.2022.100849
85. Li L., N. Mahowald, **J. F. Kok**, X. Liu, M. Wu, D. Leung, D. Hamilton, L. Emmons, Y. Huang, *J. Meng*, N. Sexton, and J. Wan (2022), Importance of different parameterization

changes for the updated dust cycle modelling in the Community Atmosphere Model (version 6.1), *Geosci. Model Dev.*, 15, 8181–8219, https://doi.org/10.5194/gmd-15-8181-2022.

84. Yizhaq, Y., **J. F. Kok**, S. Silvestro, L. Saban, and I. Katra, Numerical simulations of large martian impact ripples (2022), *Geosciences,* 12, 422.
83. Song Q., Z. Zhang, H. Yu, **J. F. Kok**, C. Di Biagio, S. Albani, J. Zheng, and J. Ding (2022), Size-Resolved Dust Direct Radiative Effect Efficiency Derived from Satellite Observations, *Atmos. Chem. Phys.*, 22, 13115–13135, https://doi.org/10.5194/acp-22-13115-2022.
82. *Meng, J.*, Y. Huang, Y., D. M. Leung, L. Li, *A. A. Adebiyi,* C. L. Ryder, N. M. Mahowald, and **J. F. Kok** (2022). Improved parameterization for the size distribution of emitted dust aerosols reduces model underestimation of super coarse dust. *Geophysical Research Letters*, 49, e2021GL097287. https://doi.org/10.1029/2021GL097287.
81. *Comola, F.*, **J. F. Kok**, J. M. Lora, *K. Cohanim*, X. Yu, C. He, P. McGuiggan, S. M. Horst, and F. Turney, Titan's Prevailing Circulation Might Drive Highly Intermittent, Yet Significant Sediment Transport, *Geophysical Research Letters*, e2022GL097913. https://doi.org/10.1029/2022GL097913.
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79. Ito, A., *Adebiyi, A. A.*, Huang, Y., and **Kok, J. F.** (2021), Less atmospheric radiative heating due to aspherical dust with coarser size, *Atmospheric Chemistry and Physics*, 21, 16869–16891, https://doi.org/10.5194/acp-21-16869-2021.
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77. Heisel, M., B. Chen, **J. F. Kok**, and M. Chamecki (2021), Gentle topography increases vertical transport of coarse dust by orders of magnitude, *Journal of Geophysical Research – Atmospheres,* 126, e2021JD034564.
76. **Kok, J. F.**, *A. A. Adebiyi*, S. Albani, Y. Balkanski, R. Checa-Garcia, M. Chin, P. R. Colarco, D. S. Hamilton, Y. Huang, A. Ito, M. Klose, L. Li, N. M. Mahowald, R. L. Miller, V. Obiso, C. Pérez García-Pando, A. Rocha-Lima, and J. S. Wan (2021), Contribution of the world's main dust source regions to the global cycle of desert dust, *Atmospheric Chemistry and Physics*, 21, 8169-93, https://doi.org/10.5194/acp-21-8169-2021. Highly Cited Paper
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70. Sullivan, R., **J. F. Kok**, H. Yizhaq, and I. Katra (2020), A broad continuum of aeolian impact ripple morphologies on mars is enabled by low wind dynamic pressures, *Journal of Geophysical Research – Planets*, 125, e2020JE006485, doi: 10.1029/2020JE006485.
69. Swet, N., **J. F. Kok**, Y. Huang, H. Yizhaq, and I. Katra (2020), Low dust generation potential from active sand grains by wind abrasion, *Journal of Geophysical Research – Earth Surface*, 125, e2020JF005545.
68. Burr, D. M., S. L. F. Sutton, J. P. Emery, E. V. Nield, **J. F. Kok**, J. K. Smith, and N. T. Bridges (2020), A wind tunnel study of the effect of intermediate density ratio on saltation threshold, *Aeolian Research*, 45, 100601.
67. *Adebiyi, A. A.,* and **J. F. Kok** (2020), Climate models miss most of the coarse dust in the atmosphere, *Science Advances,* 6, eaaz9507. (*This paper received the 2020* Richard P. and Linda S. Turco Exceptional Publication Award*)* Highly Cited Paper
66. Huang, Y., **J. F. Kok**, K. Kandler, H. Lindqvist, T. Nousiainen, T. Sakai, *A. A. Adebiyi*, and O. Jokinen (2020), Climate models and remote sensing retrievals underestimate desert dust asphericity, *Geophysical Research Letters*, 47, e2019GL086592.
65. *Adebiyi, A. A.*, **J. F. Kok**, *Y. Wang*, A. Ito, D. A. Ridley, P. Nabat, and C. Zhao (2020), Dust Constraints from joint Observational-Modeling Experimental Analysis – DustCOMM, *Atmospheric Chemistry and Physics*, 20, 829-863.
64. *Comola, F.*, **J. F. Kok**, M. Chamecki, and *R. L. Martin* (2019), The intermittency of wind-driven sand transport, *Geophysical Research Letters,* 46, 13,430-13,440, https://doi.org/10.1029/2019GL085739.
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62. Hamilton, D., R. Scanza, Y. Feng, J. Guinness, **J. F. Kok**, L. Li, X. Liu, S. Rathod, J. Wan, M. Wu, and N. M. Mahowald (2019), Improved methodologies for Earth system modelling of atmospheric soluble iron and observation comparisons using the Mechanism of Intermediate complexity for Modelling Iron (MIMI), *Geoscientific Model Development*, 12, 3835–3862, 2019.
61. *Martin, R. L.*, and **J. F. Kok** (2019), Size-independent susceptibility to transport in aeolian saltation, *Journal of Geophysical Research – Earth Surface*, 124, 1658-74.
60. *Comola*, *F.*, J. Gaume, **J. F. Kok**, and M. Lehning (2019), Cohesion-induced enhancement of aeolian saltation, *Geophysical Research Letters*, 46, 5566–5574.
59. Ito A., …, **J. F. Kok**, … (2019), Pyrogenic iron: The missing link to high iron solubility in aerosols, *Science Advances*, 5, eaau7671. Highly Cited Paper

58. Huang Y., **J. F. Kok**, *R. L. Martin*, N. Swet, I. Katra, T. E. Gill, R. L. Reynolds, and L. S. Freire (2019), Fine dust emissions from active sands at coastal Oceano Dunes, California, *Atmospheric Chemistry and Physics*, 19, 2947-64.
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56. Yizhaq, H., G. Bel, S. Silvestro, T. Elperin, **J. F. Kok**, M. Cardinale, A. Provenzale, and I. Katra (2019), The origin of the transverse instability of aeolian megaripples, *Earth and Planetary Science Letters*, 512, 59-79.
55. Swet, N. T. Elperin, **J. F. Kok,** *R. L. Martin*, H. Yizhaq, I. Katra (2019), Can active sands generate dust particles by wind-induced processes?, *Earth and Planetary Science Letters*, 506, 371-380.
54. Myriokefalitakis, S., …, **J. F. Kok**, … (2018), Reviews and syntheses: The GESAMP atmospheric iron deposition model intercomparison study, Biogeosciences, 15, 6659-6684.
53. Rodriguez, S., S. Le Mouélic, J. W. Barnes, **J. F. Kok**, S. C. R. Rafkin, R. D. Lorenz, B. Charnay, J. Radebaugh, and 22 co-authors (2018), Observational evidence for active dust storms on Titan at Equinox, *Nature Geoscience*, 11, 727-32.
52. *Martin, R. L.*, and **J. F. Kok** (2018), Distinct thresholds for the initiation and cessation of aeolian saltation from field measurements, *Journal of Geophysical Research – Earth Surface*, 123, 1546-65.
51. Gillies, J. A., V. Etyemezian, G. Nikolich, W.G. Nickling, and **J. F. Kok** (2018), Changes in the saltation flux following a step change in macro-roughness, *Earth and Planetary Science Letters*, 43, 1871-84.
50. **Kok, J. F.**, D. S. Ward, N. M. Mahowald, and A. T. Evan (2018), Global and regional importance of the direct dust-climate feedback, *Nature Comm.*, 9, 241. Highly Cited Paper
49. *Martin, R. L.*, **J. F. Kok**, C. H. Hugenholtz, T. E. Barchyn, M. Chamecki, and J. T. Ellis (2018), High-frequency measurements of aeolian saltation flux: Field-based methodology and applications, *Aeolian Research*, 30, 97-114.
48. Sullivan, R., and **J. F. Kok** (2017), Aeolian saltation on Mars at low wind speeds, *Journal of Geophysical Research – Planets*, 122, 2111-2143.
47. *Martin, R. L.*, and **J. F. Kok** (2017), Wind-invariant saltation heights imply linear scaling of aeolian saltation flux with shear stress, Science Advances, 3, e1602569.
46. Comola, F., **J. F. Kok**, J. Gaume, E. Paterna, and M. Lehning (2017), Fragmentation of wind-blown snow crystals, *Geophysical Research Letters*, 44, 4195-4203.
45. Ito, A. and **J. F. Kok** (2017), Do dust emissions from sparsely vegetated regions dominate atmospheric iron supply to the Southern Ocean? *Journal of Geophysical Research – Atmospheres*, 122, 3987-4002.
44. **Kok, J. F.**, D. A. Ridley, Q. Zhou, R. L. Miller, C. Zhao, C. L. Heald, D. S. Ward, S. Albani, and K. Haustein (2017), Smaller desert dust cooling effect estimated from analysis of dust size and abundance, *Nature Geoscience*, 10, 274-8. Highly Cited Paper
43. Ridley, D. A., C. L. Heald, **J. F. Kok**, and C. Zhao (2016), An Observationally-Constrained estimate of Global Dust AOD, *Atmospheric Chemistry and Physics*, 16, 15,097-117.
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40. Újvári, G., **J. F. Kok**, G. Varga, and J. Kovács (2016), The physics of wind-blown loess: Implications for grain size proxy interpretations in Quaternary paleoclimate studies, *Earth Science Reviews*, 154, 247-78.
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35. **Kok, J. F.**, S. Albani, N. M. Mahowald, and D. S. Ward (2014), An improved dust emission model – Part 2: Evaluation in the Community Earth System Model, with implications for the use of dust source functions, *Atmospheric Chemistry and Physics,* 14, 13,043-61.
34. **Kok, J. F.,** N. M. Mahowald, G. Fratini, J. A. Gillies, M. Ishizuka, J. Leys, M. Mikami, M.-S. Park, S.-U. Park, R. S. Van Pelt, and T. M. Zobeck (2014), An improved dust emission model – Part 1: Model description and comparison against measurements, *Atmospheric Chemistry and Physics,* 14, 13,023-41.
33. Barchyn, T. E., R. L. Martin, **J. F. Kok,** and C. H. Hugenholtz (2014), Fundamental mismatches between measurements and models in aeolian sediment transport prediction: The role of small-scale variability, *Aeolian Research*, 15, 245-51, DOI: 10.1016/j.aeolia.2014.07.002.
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24. Zhang, L., **J. F. Kok**, D. K. Henze, Q. Li, and C. Zhao (2013), Improving Simulations of Fine Dust Surface Concentrations over the Western United States by Optimizing the Particle Size Distribution, *Geophysical Research Letters*, 40, 3270-5.
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16. **Kok, J. F**. (2011), A scaling theory for the size distribution of emitted dust aerosols suggests climate models underestimate the size of the global dust cycle, *Proceedings of the National Academy of Sciences (PNAS)*, 108(3), 1016-21.
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8. **Kok, J. F.**, and D. J. Lacks (2009), Electrification of granular systems of identical insulators, *Physical Review E*, 79, 051304.
7. **Kok, J. F.**, and N. O. Renno (2009), Electrification of wind-blown sand on Mars and its implications for atmospheric chemistry, *Geophysical Research Letters,* 36, L05202.
6. Rasmussen, K. R., **J. F. Kok**, and J. P. Merrison (2009), Enhancement in wind driven sand transport by electric fields, *Planetary and Space Science*, 57, 804-808.
5. Renno, N. O., and **J. F. Kok** (2008), Electrical activity and dust lifting on Earth, Mars, and beyond, *Space Science Reviews*, 137(1-4), 419-434.
4. **Kok, J. F.**, and N. O. Renno (2008), Electrostatics in wind-blown sand, *Physical Review Letters,* 100, 014501. (*This paper was the subject of a "News & Views" article in* **Nature**, *451, 773-4, 2008*)
3. **Kok, J. F.**, and N. O. Renno (2008), The effects of electric forces on dust lifting: Preliminary studies with a numerical model, *Journal of Physics Conference Series,* 142, 012047.
2. Renno, N. O., **J. F. Kok**, H. Kirkham, and S. Rogacki (2008), A miniature sensor for electrical field measurements in dusty planetary atmospheres, *Journal of Physics Conference Series,* 142, 012075.
1. **Kok, J. F.**, and N. O. Renno (2006), Enhancement of the emission of mineral dust aerosols by electric forces, *Geophysical Research Letters*, 33, L19S10. (*This paper was selected as an* **American Geophysical Union Journal Highlight**)

FUNDED RESEARCH GRANTS

2022 Constraining the Direct Radiative Forcing of Desert Dust (2151093), *National Science Foundation*, $677,961 (PI: Jasper Kok)

2020 Accounting for the Overlooked Effects of Coarse Desert Dust on Visibility and Communications, *Army Research Office (Earth Sciences Division),* $494,595 (**PI: Jasper Kok,** co-PI Marcelo Chamecki)

2019 Improving Optical Properties of Aspherical Dust for NASA Satellite and Ground-Based Instrument Applications, NASA Future Investigators in NASA Earth and Space Science and Technology (FINESST), $90,000 (**PI: Jasper Kok**; Fellowship recipient: Yue Huang)

2019 Improving Skill in Predicting Sand and Dust Fluxes, U.S. Army Engineer Research and Development Center, $226,250 (**PI: Jasper Kok,** co-PI Marcelo Chamecki)

2019 Solving the Coarse Dust Conundrum: What Processes Cause Large-scale Models to Underestimate Coarse Dust Transport? (1856389), *National Science Foundation (Physical and Dynamical Meteorology program),* $796,536 (**PIs: Jasper Kok** and Marcelo Chamecki)

2019 Switching Matlab courses to Python, UCLA Center for the Advancement of Teaching (CAT) Instructional Improvement Program (IIP), $2,880, (PIs: Jonathan Aurnou and **Jasper Kok**)

2016 CAREER: The size of the Global Dust Cycle and its Radiative Impact on Climate (1552519), *National Science Foundation (Climate and Large-Scale Dynamics program)*, $614,523, **PI,** 9/1/2016 – 8/31/2021

2015 Fundamental Advances in Predicting Aeolian Transport: Moving Beyond the Fluid Threshold and Precipitation Control Paradigms, *Army Research Office (Earth Sciences Division) W911NF-15-1-0417*, $398,150 (**PI: Jasper Kok**, co-PI: Gregory Okin)

Generation of dust from active aeolian sand dunes, *United States – Israel Binational Science Foundation*, $71,675 (**PIs: Jasper Kok** and Itzhak Katra)

Research Experiences for Undergraduates (REU) supplement to NSF AGS 1358621, $10,374 (**PI: Jasper Kok**)

2014 Collaborative Research: From Turbulence to Weather and Climate: Unraveling the Multi-scale Nature of Dust and Sand Transport in the Atmospheric Boundary Layer (1358621), *National Science Foundation (Physical and Dynamical Meteorology program),* $344,270 (**PIs: Jasper Kok** and Marcelo Chamecki).

Aeolian sediment transport and landscape modification on Titan, *NASA Outer Planets Research*, $70,826 (PI: Nathan Bridges; co-Is: Devon Burr, **Jasper Kok**, John Marshall, Claire Newman)

2013 Accounting for turbulent effects to improve prediction of sand and dust transport by wind, *NSF Earth Sciences Postdoctoral Fellowship),* $170,000 (PI: Raleigh Martin; **hosting scientist: Jasper Kok**)

2011 Estimating the dust climate feedback by developing and using an improved parameterization of dust aerosol emission*, NSF Atmospheric and Geospace Sciences Postdoctoral Fellowship*, $172,000 (**PI: Jasper Kok**; hosting scientist: Natalie M. Mahowald at Cornell University).

SUPERVISED GRADUATE STUDENTS, POSTDOCTORAL SCHOLARS, AND RESEARCH SCIENTISTS

- Ashok Gupta, Project scientist, 2022 – current
- Olivia Salaben, PhD student, 2022 – current
- Flor Vanessa Macial, PhD student, 2022 – current
- Min (Danny) Leung, PhD student, 2018 – current
- Yue Huang, AOS department PhD candidate, 2015 – 2020
    - Received a *Future Investigators in NASA Earth and Space Science and Technology fellowship (FINESST)* fellowship
- Adeyemi Adebiyi, Postdoctoral Scholar, 2017 – 2020
    - Selected as 2019 *University of California President's Postdoctoral Fellow* (~2% funding rate)
    - Recipient of the 2021 *Chancellor's Award for Postdoctoral Research* (one of ~10 awards among ~1,400 postdocs at UCLA)
- Francesco Comola, *Swiss National Science Foundation Postdoctoral Mobility Postdoctoral Fellow*, 2018 - 2019
    - Formerly visiting PhD student, École Polytechnique Fédérale de Lausanne, 2016
- Raleigh Martin, Postdoctoral Scholar, 2013 – 2017
    - Received an *NSF Postdoctoral Research Fellowship*
- Francis Turney, AOS department graduate student, 2016 – 2018
    - Received an *NSF Graduate Research Fellowship*
- Peter (Guan) Li, AOS department Master's student, 2013 – 2014, M. Sc., 2014

SUPERVISED UNDERGRADUATE STUDENTS

- Katy Rucker, AOS/Math major, 2022
- Alana Dodero, AOS/Math major, 2020
- Robin Anthony-Petersen, physics major 2019 - 2020

- Chloe Whicker, IoES major, Winter 2018 - 2019
- Kaylie Cohanim, AOS/Math major, 2018 –2019
- Yuheng Zhang, Summer undergraduate researcher from University of Science and Technology, Summer 2018
- Yingxiao Zhang, Summer undergraduate researcher from Nanjing University, Summer 2018
- Yang (Kitty) Wang, AOS/Math major, 2018
- Miye Nakashima, Math major, 2017
- Kenyon Chow, IoES major, 2016
- John Santiago, UCLA/SMC Summer Scholars Research Program, Summer 2015
- Francis Turney, AOS major, 2014 2016
- Olivia Miller, AOS major, 2014
- Jessica De Guzman Canet, EPSS major, 2014 – 2015

TEACHING (student reviews average around 8.5/9)

A&OS 90 – Introduction to undergraduate research in the atmospheric and oceanic sciences (Winter 2018; Spring 2019, Winter 2020, 2021, 2022, 2023)
A&OS 101 – Fundamentals of Atmospheric Dynamics and Thermodynamics (Winter 2014, 2015; Fall 2015, 2016, 2017, 2018, 2019, 2020, 2022)
A&OS 144/222 – The Atmospheric Boundary Layer (Spring 2014, 2015; Winter 2017)
A&OS 200A – Introduction to Atmospheric and Oceanic Fluids (Fall 2015)
A&OS 225 - Advanced Topics in Aerosol Chemistry and Physics (Spring 2021)
A&OS 203B - Introduction to Atmospheric Physics (Spring 2023)
A&OS 245 – Aerosol – Climate Interactions (Spring 2020)

All my classes make extensive use of evidence-based techniques that education research suggests results in increased student retention and learning gains, especially for historically underrepresented students. These techniques include all-pupil response systems (clickers), in-class exercises, daily quizzes, and other active learning techniques.

INVITED SEMINARS AND CONFERENCE PRESENTATIONS

2023 Peking University
2022 Barcelona Supercomputing Center
Brookhaven National Laboratory
Dust Alliance for North America seminar
2021 University of Reading, UK
Goldschmidt 2021, Lyons, France
2019 American Geophysical Union Fall Meeting, San Francisco, CA
American Meteorological Society Annual Meeting, Austin, TX
2018 International Conference on Aeolian Research, Bordeaux, France
NASA's Goddard Space Flight Center, Greenbelt, MD
American Meteorological Society Annual Meeting, Austin, TX
2017 Workshop on Dust Emission, Chemistry & Transport, University of Notre Dame, IL
University of California, Santa Barbara, CA
University of Washington, Seattle, CA
Jet Propulsion Laboratory, California, CA
California Institute of Technology, California, CA
2016 American Geophysical Union Fall Meeting, San Francisco, CA
Geological Society of America annual meeting, Denver, CO
2015 Conference on Airborne Dust, Climate Change, and Human Health, Miami, FL

Texas A&M University, Department of Atmospheric Sciences / Department of Geology & Geophysics
American Meteorological Society Annual Meeting, Phoenix, AZ

2014 University of California – San Diego, Atmospheric Sciences, and Physical Oceanography
Chapman University, Science Forum Series, Orange, CA

2013 Kavli conference on Particle-Laden Flows in Nature, Santa Barbara, CA
Workshop on Airborne Mineral Dust Contaminants: Impacts on Human Health and the Environment, University of Arizona, Tucson, AZ
European Geophysical Union General Assembly, Vienna, Austria

2012 American Geophysical Union Fall Meeting, San Francisco, CA
Pennsylvania State University, Department of Meteorology
University of Illinois at Urbana – Champaign, Atmospheric and Oceanic Sciences
McGill University, Atmospheric and Oceanic Sciences
University of California – Los Angeles, Atmospheric and Oceanic Sciences Seminar

2011 American Geophysical Union Fall Meeting, San Francisco, CA
University of California – Irvine, Earth System Sciences Seminar
Minerva Gentner Symposium on Aeolian Processes, Ben-Gurion University, Israel
Gordon Research Conference on Radiation & Climate, Colby College, Waterville, ME
NSF review of the NCAR Earth System Laboratory (NESL), NCAR, Boulder, CO
University of Colorado – Boulder, JILA seminar

2010 Southwest Research Institute, Boulder, CO.

2009 American Geophysical Union Fall Meeting, San Francisco, CA
International Symposium on Multi-Phase Flow in the Atmospheric Boundary Layer, Lanzhou University, China.
Conference on electrification of water drops and ice particles, Telluride, Colorado.
ETH Zurich, Comphys-Group seminar, Switzerland.

PROFESSIONAL AND COMMUNITY SERVICE

University: **Chair** of the AOS Undergraduate Advisor & Curriculum Committee, Atmospheric and Oceanic Sciences since 2017; co-chair and member since 2013

Member of the AOS Graduate Advising and Curriculum Committee since 2020

Member of UCLA's Scientific Inquiry General Education Committee (2017 – present)

Chair of the Brian Bosart Award committee since 2015

Faculty Fellow, UCLA's Center for Diverse Leadership in the Science (2018 – present)

Various award, ad hoc merit review, faculty search, dissertation, and other committees

Professional: **Founding convener** of the recurring session "Mineral Dust Aerosols: From Small-Scale Insights to Large-Scale Understanding" at Fall Meetings of the American Geophysical Union since 2011.

Co-convener of the 2018, 2019, and 2020 AGU Fall Meeting sessions "Multi-sensor, Model, and Measurement Synergy: Aerosol Sources and Their Environmental Effects"

Outstanding student paper reviewer for AGU, AMS, and EGU meetings

Manuscript reviewer for the following journals**:** Aeolian Research; Applied Physics Letters; Atmospheric Chemistry and Physics; Atmospheric Environment;

Boundary-Layer Meteorology; Climate Dynamics; Earth Surface Processes and Landforms; Environmental Research Letters; European Physical Journal E; Geografiska Annaler: Series A, Physical Geography; Geomorphology; Geophysical Research Letters; Geoscientific Model Development; Icarus; International Journal of Multiphase Flow; Journal of Climate; Journal of Geophysical Research – Atmospheres; Journal of Geophysical Research – Planets; Mars Journal; Nature; Nature Geoscience; Nature Communications; Nature Sustainability; New Journal of Physics; Proceedings of the National Academy of Sciences (PNAS), Quarterly Journal of the Royal Meteorological Society; Physical Review E; Physical Review Letters; Sedimentary Geology; Space Science Reviews

Proposal reviewer for the following programs: AGU Chapman conferences; Army Research Office (ARO); Deutsche Forschungsgemeinschaft; Israeli Science Foundation; Mars Fundamental Research Program (NASA); Moon and Mars Analog Mission Activities Program (NASA); Solar System Workings (NASA); AGS - Climate & Large-scale Dynamics (NSF); AGS – Physical and Dynamical Meteorology (NSF); AGS – Atmospheric Chemistry (NSF); BCS - Geography & Spatial Sciences (NSF); Frontiers in Earth System Dynamics (NSF); EAR - Instrumentation & Facilities (NSF); EAR – Geomorphology (NSF); PREEVENTS (NSF)

Community: Developer of **UCLA's Desert Dust and Climate Change Outreach Program**, which is a series of high school lesson plans intended to inspire students to pursue careers in the sciences by exposing them to hands-on and inquiry-driven research in the geosciences. These lesson plans use evidence-based teaching techniques and were designed in collaboration with UCLA's Center for Education Innovation and Learning in the Sciences (CEILS). The lesson plans are publicly available through the SERC Teach the Earth education portal (https://serc.carleton.edu/teachearth/activities/212028.html) and have been taught yearly by UCLA undergraduate and graduate students in high-need schools in the Los Angeles area since 2016.

Various interviews with popular media, such as NPR's All Things Considered, the Economist, Wired, and Physics Today.

Member: American Geophysical Union, European Geosciences Union, American Physical Society, American Meteorological Society