ADRIAN ANTAL BORSA
Scripps Institution of Oceanography, UC San Diego
La Jolla, California, USA
ORCID: 0000-0002-9939-1480

EDUCATION

Harvard University, Cambridge, MA	Government	B.A. (1984-1988)
School of International Relations and Pacific Studies, UCSD	Int'l Relations	M.P.I.A. (1989-1991)
Scripps Institution of Oceanography, UCSD	Earth Science	PhD (1998-2005)

ACADEMIC APPOINTMENTS

Professor, Scripps Institution of Oceanography, UCSD (2022-present)
Associate Professor, Scripps Institution of Oceanography, UCSD (2020-2022)
Assistant Professor, Scripps Institution of Oceanography, UCSD (2016-2020)
Assistant Researcher and Lecturer, Scripps Institution of Oceanography, UCSD (2012-2016)
Postdoctoral Researcher, Scripps Institution of Oceanography, UCSD (2005-2007)

PROFESSIONAL EXPERIENCE

Data Products Manager, Plate Boundary Observatory, UNAVCO Inc., Boulder, CO (2008-2012)
Geophysicist, United States Geological Survey, Pasadena, CA (2007)
V.P. Marketing, International Business Simulations, San Diego, CA (1996-1997)
Planning Analyst, Matsushita Electric Company, Secaucus, NJ and Osaka, Japan (1991-1995)

SERVICE: BOARD AND EXECUTIVE COMMITTEE

EarthScope Audit and Finance Committee Member (2023-present)
Cecil H. and Ida M. Green Foundation, Vice President (2020-2022)
UNAVCO Board of Directors Member (2016) and Treasurer (2020-2022)
Science Council for Global Initiatives Founding Board Member (2009-2010)

SERVICE: PROFESSIONAL

NASA NISAR Mission Science Team Member, (2016-present)
NASA Alaska Satellite Facility DAAC User Working Group Member (2016-present)
IAG Inter-Commission Committee on Geodesy for Climate Research Member (2018-present)
GNET (Greenland GNSS Network) Advisory Committee Member (2019-present)
NASA NISAR Inclusion, Diversity, Equity and Accessibility (IDEA) Working Group Member (2021-present)
IRIS Data Products Working Group (2009-2012)
NSF EarthScope CyberInfrastructure Committee (2010-2011)

SERVICE: UNIVERSITY

SIO Education Policy Committee Chair (2023-present)
Marine Sciences Physical Planning Committee Member (2014-2017) and Chair (2018-2023)
Director, Institute of Geophysics and Planetary Physics (2020-2022)
Associate Director, Institute of Geophysics and Planetary Physics (2017-2020)
UCSD Campus & Community Environment Committee Member (2017-2020)
UCSD Campus/Community Planning Committee Member (2018-2020)
UCSD Representative Assembly, Member (2014-2016)

SCIENTIFIC AND TECHNICAL EXPERTISE

Dr. Borsa's expertise includes the analysis, interpretation, and scientific application of geodetic data from GPS/GNSS, InSAR, satellite gravimetry, and satellite altimetry. He is a pioneer in the development of methods to invert GPS positions to estimate time-varying terrestrial water storage, uses InSAR techniques to characterize groundwater changes in the western USA, and employs low resolution GRACE-derived water storage to improve high resolution GNSS water storage estimates. Dr. Borsa is a member of NASA's Science Team for the upcoming NISAR Mission (a joint US-India SAR satellite), and he was the lead PI on the OpenAltimetry portal for ICESat/ICESat-2 data, which was the first NASA ACCESS project to be adopted by NASA for permanent operation.

SELECTED PUBLICATIONS (student/postdoc authors in bold)

Neely, W.R., A.A. Borsa, J.A. Burney, M.C. Levy, **F. Silverii**, M. Sneed (2021). "Characterization of groundwater recharge and flow in California's San Joaquin Valley from InSAR-observed surface deformation." *Water Resources Research*, 57(4)

Michaelides, R., **M. Bryant**, M. Siegfried, A. Borsa (2021). "Quantifying Surface-Height Change over a Periglacial Environment with ICESat-2 Laser Altimetry." *Earth and Space Science*, 8(8)

Lau, N., A.A. Borsa, T.W. Becker (2020). "Present-day crustal vertical velocity field for the contiguous United States." *Journal of Geophysical Research: Solid Earth*, 125(10)

Johnson, C.W., **N. Lau**, A. Borsa (2021). "An assessment of global positioning system velocity uncertainty in California." *Earth and Space Science*, 8(1)

Levy, M. C., **W.R. Neely**, A.A. Borsa, J.A. Burney (2020). "Fine-scale spatiotemporal variation in subsidence across California's San Joaquin Valley explained by groundwater demand." *Environmental Research Letters*

Silverii, F., E.K. Montgomery Brown, A.A. Borsa, A.J. Barbour (2020). "Hydrologically Induced Deformation in Long Valley Caldera and Adjacent Sierra Nevada." *J. Geophys. Res. Solid Earth*, 125(5)

Adusumilli, S., A.A. Borsa, M.A. Fish, H.K. McMillan, **F. Silverii** (2019). "A decade of terrestrial water storage changes across the contiguous United States from GPS and GRACE." *Geophys. Res. Lett.*, 46(22)

Enzminger, T.L., E.E. Small, A.A. Borsa (2019). "Subsurface water dominates Sierra Nevada seasonal hydrologic storage." *Geophysical Research Letters*

Kraner, M.L., W.E. Holt, A.A. Borsa, (2018). "Seasonal non-tectonic loading inferred from cGPS as a potential trigger for the M6.0 South Napa Earthquake." *Journal of Geophysical Research: Solid Earth*, 123

Borsa, A.A., G. Moholdt, H.A. Fricker, and K.M. Brunt, (2014). "A range correction for ICESat and its potential impact on ice-sheet mass balance studies," *The Cryosphere*, 8, 345-357

Borsa, A.A., D.C. Agnew, D.R. Cayan, (2014). "Ongoing drought-induced uplift in the western United States." *Science*, 345(6204), 1587–1590

SELECTED PUBLIC OUTREACH

"Remote hydrology: water through the lens of distant machines"
25 Jan 2024. *UCSD Osher Institute for Lifelong Learning Premier Class Series*

"When the Rains Fail, The Mountains Rise"
22 Feb 2020. *Anza-Borrego Desert Natural History Association Lecture*
08 Aug 2019. *UCSD Osher Institute for Lifelong Learning Distinguished Lecture*
08 Feb 2015. *Birch Aquarium "Perspectives on Ocean Sciences" Public Talk*

"From drought to hurricanes: non-tectonic interpretations of continuous GPS time series"
07 Feb 2019. *American Association for the Advancement of Science (AAAS) Annual Meeting*

"Drought and other water loading effects on GPS reference networks"
07 Apr 2016. *League of California Surveying Organizations Annual Meeting*

"What the Plate Boundary Observatory can tell us about water resources in the western United States"
2015–2016. *EarthScope Distinguished Speaker Series*

"Water, drought, and crustal deformation in the western USA"
10 Aug 2015. *US Geological Survey Western Region Colloquium*

TEACHING

UCSD: SIO10, The Earth (undergraduate general education course) (Spring 2017-present)
UCSD: SIO229, Gravity and Geomagnetism (graduate-level core course) (Winter 2013-present)
UCSD: SIO239, Geophysical Field Methods (Spring 2015)
UCSD: SIO298, Tectonic and Volcanic Deformation (graduate directed study) (Winter, Spring 2015)

EXPEDITIONS AND MAJOR FIELDWORK

2012 salar de Uyuni, Bolivia. Led a 2-week kinematic GPS resurvey of a 2500 km^2 region of dry lakebed for surface change detection, in support of NASA's ICESat-1 and ICESat-2 missions.
2009 salar de Uyuni, Bolivia. Led a 2-week kinematic GPS resurvey of a 2500 km^2 region of dry lakebed for surface change detection, in support of NASA's ICESat mission.
2006 Bonneville Salt Flats, Utah. Led a 3-day kinematic GPS of a dry lakebed for surface change detection.
2002 salar de Uyuni, Bolivia. Co-leader of a 3-week kinematic GPS survey of a 2500 km^2 dry lakebed to characterize the surface for use as a satellite altimeter reference in support of NASA's ICESat mission.