

## DEEPAK A. CHERIAN

- Education** 2016: Ph.D., MIT-WHOI Joint Program in Oceanography, Physical Oceanography  
2010: M.Tech. & B.Tech. (Hons.), Ocean Engineering & Naval Architecture,  
Indian Institute of Technology, Kharagpur.
- Positions** 2020 Jan – present: Project Scientist I, National Center for Atmospheric Research  
2019 Mar – 2020 Jan: Postdoctoral Fellow, National Center for Atmospheric Research  
2017 Jan – 2019 Mar: Research Associate (Post-Doc), Oregon State University  
2016 Sep – 2017 Jan: Postdoctoral Investigator, Woods Hole Oceanographic Institution  
2010–2016: Graduate research assistant, Massachusetts Institute of Technology  
& Woods Hole Oceanographic Institution
- Articles** Abernathey, R., Busecke, J., Banihirwe, A., Zhang, C., Smith, T.A., **Cherian, D.A.**, Ponte, A.  
“Xgcm: A Python Package for Analyzing Data from General Circulation Models”.  
(submitted). Journal of Open Source Software
- Cherian, D.A.**, Whitt D.B., Holmes, R.M., Lien, R.-C., Bachman, S.D., Large, W.L. (submitted). “Off-equatorial deep cycle turbulence forced by Tropical Instability Waves in the equatorial Pacific”. Journal of Physical Oceanography.
- Rypina, I.I., Pratt, L.J., Entner, S., Anderson, A., **Cherian, D.A.** (2020).  
“The Influence of an Eddy in the Success Rates and Distributions of Passively  
Advected or Actively Swimming Biological Organisms Crossing the Continental  
Slope”. Journal of Physical Oceanography 50 (7): 1839–1852.
- Cherian, D.A.**, Shroyer, E.L., Wijesekera, H.W. and Moum, J.N. (2020). “The seasonal cycle  
of upper-ocean mixing at 8°N in the Bay of Bengal”.  
Journal of Physical Oceanography 50: 323–342
- Cherian, D.A.** and Brink, K.H. (2018). “Shelf flows forced by deep-ocean anticyclonic  
eddies at the shelfbreak”. Journal of Physical Oceanography. 48 (5): 1117–1138
- Cherian, D.A.** and Brink, K.H. (2016) “Offshore Transport of Shelf Water by Deep-Ocean  
Eddies.”, Journal of Physical Oceanography 46 (12): 3599–3621
- Brink, K.H. and **Cherian, D.A.** (2013) “Instability of an idealized tidal mixing front:  
Symmetric instabilities and frictional effects.”  
Journal of Marine Research 71 (6): 425–450.

Haine, T.W.N. and **Cherian, D.A.** (2013) “Analogies of Ocean/Atmosphere Rotating Fluid Dynamics with Gyroscopes: Teaching Opportunities.”  
Bull. Amer. Meteor. Soc. 94: 673–684.

**Funding** 2019-2022 NASA Physical Oceanography, **lead-PI**, \$483k  
Co-Is: Emily Shroyer (OSU), Jonathan Nash (OSU)  
“Relating SSHA-derived Eddy Diffusivity to In-situ Estimates from Microstructure and ECCO.”

**Invited Talks** “*When a deep-ocean eddy meets shelf-slope topography.*”  
**2019** : Gordon Research Conference, Coastal Ocean Dynamics.

**Talks & Posters** “*An off-equatorial deep cycle of turbulence forced by Tropical Instability Waves in the equatorial Pacific*” — presented at  
**2020** : University of British Columbia, Physical Oceanography Seminar  
(talk) AGU Ocean Sciences Meeting, 2020 - San Diego

“*The seasonal cycle of upper-ocean mixing in the Bay of Bengal*” — presented at  
**2019** : Massachusetts Institute of Technology, Sack Lunch Seminar  
Woods Hole Oceanographic Institution, Physical Oceanography Seminar  
National Center for Atmospheric Research, CGD seminar  
Oregon State University, CEOAS seminar  
**2018** : (poster) Gordon Research Conference, Ocean Mixing  
(talk) AGU Ocean Sciences Meeting, 2018 - Portland

“*Shelf flows forced by mesoscale eddies at the shelfbreak*” — presented at  
**2017** : (poster) Gordon Research Conference - Coastal Ocean Dynamics

“*Offshore export of shelf water by deep-ocean eddies*” — presented at  
**2017** : National Taiwan University  
Oregon State University, CEOAS seminar  
**2016** : Indian Institute of Science, College of Ocean and Atmospheric Sciences  
(talk) AGU Ocean Sciences Meeting, 2016 - New Orleans

“*Arresting an eddy’s cross-isobath translation*” — presented at  
**2016** : Oregon State University, CEOAS seminar  
Massachusetts Institute of Technology, Sack Lunch Seminar  
**2015** : (talk, poster) Gordon Research Conference - Coastal Ocean Modeling

Software	Extensive experience with parallel analysis of large datasets using scientific Python packages on HPC and cloud computing systems e.g. Dask, NumPy, Pandas, xarray; extensive experience with MATLAB
Service	<p>Reviewer for Ocean Science, Geophysical Research Letters, Journal of Geophysical Research - Oceans, Journal of Marine Research and Journal of Physical Oceanography.</p> <p>Core developer of open source Python package xarray, widely used for data analysis in geosciences.</p> <p>Assistance with parallel scaling of analysis workflows on various public forums; e.g. Xarray Github, Pangeo Discourse forum, ClimateGrad early career Slack group.</p>
Teaching & Outreach	<p>2020: Coiled Science Thursday Livestream Series: Demo on “Scalable computing in oceanography.” (Youtube).</p> <p>2020 Ocean Hack Week: Invited tutorial on python package xarray for analysis of geoscience datasets.</p> <p>2019 Project Mentor, Monsoon Air-Sea Interactions Winter School. International Center for Theoretical Studies, Bangalore, India</p> <p>2017 Winter Term: Guest Lecture for “Geophysical Waves” , (graduate level course), Oregon State University</p> <p>2014 Fall semester: Teaching Assistant, “Observational Physical Oceanography” (graduate level course), Massachusetts Institute of Technology.</p> <p>2013: Conducted rotating tank lab demonstrations for broad audience (public, scientists, students — graduate and K-12) at WHOI GFD Open Days</p> <p>2013: Lecturer, Four lectures on “Physical Oceanography”, WHOI Winter Semester for Undergraduates</p>
Additional Training	<p>2020 Diversity leadership training summit organised by UCAR Human Resources and the Office for Diversity, Equity and Inclusion.</p> <p>2014 Coastal and Estuarine Field Methods Summer School, Woods Hole Oceanographic Institution</p> <p>2013 Teaching Certificate Program, Massachusetts Institute of Technology</p> <p>2012 Estuarine and Coastal Fluid Dynamics Summer School, University of Washington Friday Harbor Laboratories</p>

**Fieldwork**    2018 Sep: *R/V Thomas G. Thompson*, Western Pacific. PI: Jim Moum (OSU)  
2017 Feb: *R/V Roger Revelle*, South China Sea. PI: Lou St-Laurent (WHOI)  
2014 July: *R/V Tioga*, off Martha's Vineyard. (student-run cruise for summer school)  
PI: Deepak Cherian, Jonathan Fincke, Cara Manning (WHOI).  
2013 Nov: *R/V Roger Revelle*, Bay of Bengal. PI: Emily Shroyer (OSU)  
2011 July: *SSV Corwith Cramer*, Middle Atlantic Bight. PI: Donglai Gong (WHOI)