Contact

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Information

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**EDUCATION** 

Scripps Institution of Oceanography, University of California, San Diego PhD in Physical Oceanography. GPA: 4.0.

Dissertation title:

The global meridional overturning circulation in an idealized two-basin model

Advisor: Professor Paola Cessi

2011 - 2018

Oxford University

MPhys, Second Class Upper Division

2007 - 2011

RESEARCH EXPERIENCE Lamont Doherty Earth Observatory Postdoctoral Research Fellow

June 2018-present

Scripps Institution of Oceanography

Graduate Research Assistant

 $July\ 2012\ \text{- May}\ 2018$ 

**PUBLICATIONS** 

C. S. Jones and R. P. Abernathey. Modeling tracer distributions in the modern and LGM ocean: circulation change vs. isopycnal mixing. *in prep*.

C. S. Jones and R. P. Abernathey. Isopycnal mixing controls deep ocean ventilation (2019). Geophysical Research Letters, 46 doi: 10.1029/2019GL085208

C. S. Jones and P. Cessi. Components of salt transport in the upper branch of the meridional overturning circulation (2018). *J.Phys. Oceanogr.*, 48, 2445–2456 doi: 10.1175/JPO-D-18-0005.1

C. S. Jones and P. Cessi. Size matters: another reason why the Atlantic is saltier than the Pacific (2017), *J.Phys. Oceanogr.*, 47, 2843–2859 doi: 10.1175/JPO-D-17-0075.1

P. Cessi and C. S. Jones. Warm-route versus cold-route interbasin exchange in the meridional overturning circulation (2017), *J.Phys. Oceanogr.*, 47,1981–1997 doi: 10.1175/JPO-D-16-0249.1

C. S. Jones and P. Cessi. Interbasin transport of the meridional overturning circulation (2016). *J. Phys. Oceanogr.*, 46, 1157–1169, doi: 10.1175/JPO-D-15-0197.1

**C. S. Jones**, C. Cenedese, E. P. Chassignet, P. F. Linden and B. R. Sutherland. Gravity current propagation up a valley (2015), *J. Fluid Mech.*, 762, 417–434, doi: 10.1017/jfm.2014.627

Talks

Isopycnal Mixing and Ventilation of the Deep Ocean. Conference on Atmospheric and Oceanic Fluid Dynamics 2019.

The global meridional overturning circulation in an idealized two-basin model. Lamont-Doherty Earth Observatory. February 2019.

The global meridional overturning circulation in an idealized two-basin model. Stony Brook University, January 2019. *Invited* 

The effects of basin geometry on transport, stratification and salinity in the meridional overturning circulation. Physical Oceanography Dissertation Symposium (PODS), October 2018.

The global meridional overturning circulation in an idealized two-basin model. Yale University, September 2018. *Invited* 

Size matters: another reason why the Atlantic is saltier than the Pacific. Conference on Atmospheric and Oceanic Fluid Dynamics 2017.

Posters

Size matters: another reason why the Atlantic is saltier than the Pacific. Ocean Sciences Meeting 2018.

Interbasin exchange in the meridional overturning circulation: basin width and the warm route versus the cold route. AMOC Science Team Meeting 2017.

Interbasin transport of the meridional overturning circulation. Ocean Sciences Meeting 2016.

Size Matters: Why is there overturning in the Atlantic but not in the Pacific? Conference on Atmospheric and Oceanic Fluid Dynamics 2015.

Gravity current propagation up a valley. Ocean Sciences Meeting 2014.

**FELLOWSHIPS** 

Lamont Postdoctoral Fellowship Two-year postdoctoral fellowship June 2018 - present

Geophysical Fluid Dynamics Fellowship Summer Program at Woods Hole Oceanographic Institution June - August 2013

#### TECHNICAL SKILLS

Scientific computer programming in Matlab, python and FORTRAN. Experienced with git, github and with python packages for handling large geoscience datasets, including xarray, xgcm and xmitgcm. Some experience of cloud computing. Familiar with the MIT general circulation model (including the adjoint model and state estimation capabilities), and with CESM. Proficient with LaTeX, UNIX and Microsoft Office.

# TEACHING & MENTORING EXPERIENCE

## Lamont-Doherty Earth Observatory Undergraduate Summer Intern Mentor

I mentored an undergraduate summer intern in a project that examined heat transport in the ECCOv4 data-assimilating ocean model.

### Columbia University Guest Lecturer

GU4925 Introduction to Physical Oceanography

I prepared two lectures about analytical models of the circulation and stratification of the global ocean. I gave these lectures to a mixture of undergraduate and graduate students and created notes to appear online.

Fall 2018, repeated Fall 2019

#### **UCSD**

#### Teaching Assistant

ESYS 102, The Solid and Fluid Earth

I taught two sections of thirty students every week, graded homework and proctored exams. This course covered a wide variety of Earth systems topics at an upper undergraduate level.

Winter 2013

SIO 30, The Oceans

I taught two sections of thirty students every week. This course covered physical, chemical and biological oceanography at a lower undergraduate level.

Fall 2012

# SERVICE & OUTREACH

Volunteer, Lamont Doherty Earth Observatory Open House, October 2018 & 2019

Volunteer, SUBMERGE Marine Science Festival, September 2019

Student Member, Atmospheric and Oceanic Fluid Dynamics Committee. American Meteorological Society [February 2014 - February 2018]

Volunteer, National Ocean Sciences Bowl Regional Competition. Scripps Institution of Oceanography, 2013

Reviewer: Journal of Physical Oceanography, Journal of Climate, Geophysical Research Letters, Journal of Advances in Modeling Earth Systems, Proceedings of the National Academy of Sciences