Richard P. Signell
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Summary:
Highly experienced research oceanographer with expertise in coastal ocean modeling, geoinformatics, cloud computing and collaboration with large computational datasets. Member of the Pangeo Project leadership team. Interested in collaborating with stakeholders to develop effective solutions for complex environmental data workflows. Background in coastal physical oceanography, sediment transport, and numerical modeling.

Professional Experience:

Research Oceanographer, US Geological Survey (1989 - Present)

- Conducted cutting-edge research in coastal ocean dynamics, water quality, and ecosystem health, focusing on the integration of field observations, numerical models, and data analytics.
- Developed and applied advanced computational methods for simulating ocean circulation, wave propagation, and contaminant transport in coastal environments.
- Collaborated with federal, state, and local agencies, as well as academic institutions and private organizations, to address pressing environmental concerns, such as beach erosion, harmful algal blooms, and marine pollution.
- Coordinated interdisciplinary projects involving experts from diverse fields, including engineering, biology, chemistry, and computer science.
- Communicated scientific findings and technical results to various audiences through peer-reviewed publications, conference presentations, and public outreach programs.

Adjunct Faculty Member, Woods Hole Oceanographic Institution (1990 - Present)

- Instructed graduate students and postdoctoral investigators in courses related to physical oceanography, numerical modeling, and data analysis.

- Supervised several successful thesis projects and mentored numerous young scientists in their career development.

Visiting Scientist, NATO Undersea Research Centre (2001-2004)

- Participated in international research initiatives aimed at advancing our understanding of ocean processes, improving underwater technologies, and enhancing environmental sustainability.
- Contributed to the development of novel sensors, instruments, and sampling techniques for measuring ocean properties and monitoring ecological changes.

Education:

Ph.D., Physical Oceanography, Woods Hole Oceanographic Institution / Massachusetts Institute of Technology Joint Program (1989)

M.S., Physical Oceanography, Massachusetts Institute of Technology (1987)

B.S., Atmospheric and Oceanic Science, University of Michigan School of Engineering (1983)

Skills:

- Scientific data analysis and visualization using open-source Python frameworks
- Cloud computing (HPC and HTC on AWS)
- Creating cloud-optimized data
- Training to transition researchers from closed systems like Matlab to open Python-baseCoastal ocean modeling
- Project management and collaboration
- Science communication and education

Publications:

Using Environmental Data on the Cloud With Open-Source Tools   2021
Y Rao, RP Signell, Z Flamig, P Martin, J Dissen
AGU Fall Meeting 2021

Cloud-performant reading of NetCDF4/HDF5/Grib2 using the   2021
Zarr library
L Sterzinger, M Durant, R Signell, C Gentemann, K Paul, J Kent
AGU Fall Meeting Abstracts 2021, U51B-19

Science storms the cloud   15   2021
CL Gentemann, C Holdgraf, R Abernathey, D Crichton, J Colliander, ...
AGU Advances 2 (2), e2020AV000354

Cloud-native repositories for big scientific data   42   2021
RP Abernathey, T Augspurger, A Banihirwe, CC Blackmon-Luca, ...
Computing in Science & Engineering 23 (2), 26-35

Pangeo: A Community Platform for Big-Data Geoscience   2020
RP Signell, R Abernathey, L Clement, A Marzocchi
Ocean Sciences Meeting 2020

The Pangeo Platform: a community-driven open-source big data   2020
environment
J Hamman, S Henderson, A Arendt, A Tan, D Fatland, A Pawloski, ...
Earth and Space Science Open Archive ESSOAr

Bringing Unstructured Grid Support to the THREDDS Stack   2019
SC Arms, K Wilcox, RP Signell
AGU Fall Meeting Abstracts 2019, IN31B-0798

Spatial distribution of water level impacting back-barrier bays   3   2019
AL Aretxabaleta, NK Ganju, Z Defne, RP Signell
Natural Hazards and Earth System Sciences 19 (8), 1823-1838

From the oceans to the cloud: Opportunities and challenges for data, models, computation and workflows   24   2019
TC Vance, M Wengren, E Burger, D Hernandez, T Kearns, ...
Frontiers in Marine Science 6, 211

Analysis and visualization of coastal ocean model data in the cloud   9   2019
RP Signell, D Pothina
Journal of Marine Science and Engineering 7 (4), 110

Spatial distribution of water level impact to back-barrier bays   2018
AL Aretxabaleta, NK Ganju, Z Defne, RP Signell
Natural Hazards and Earth System Sciences Discussions, 1-30

Ocean Modeling Simulation, Analysis and Visualization in the Cloud   2018
RP Signell
AGU Fall Meeting Abstracts 2018, IN54A-06

Selected Papers from the 13th Estuarine and Coastal Modeling Conference   2018
HJ Bokuniewicz, RP Signell
MDPI

Selected Papers from the 14th Estuarine and Coastal Modeling Conference   2018
RP Signell
MDPI

Community for Data Integration fiscal year 2017 funded project report   2018
L Hsu, KE Allstadt, TM Bell, EE Boydston, RA Erickson, AL Everette, ...
Open-File Report

Reducing Time to Science: Unidata and JupyterHub Technology Using the Jetstream Cloud   2017
J Chastang, RP Signell, JL Fischer
AGU Fall Meeting Abstracts 2017, IN23A-0083

Advancing coastal ocean modelling, analysis, and prediction for the US Integrated Ocean Observing System   18   2017
J Wilkin, L Rosenfeld, A Allen, R Baltes, A Baptista, R He, P Hogan, ...

Journal of Operational Oceanography 10 (2), 115-126

Observations and a linear model of water level in an interconnected inlet‑bay system

AL Aretxabaleta, NK Ganju, B Butman, RP Signell

Journal of Geophysical Research: Oceans 122 (4), 2760-2780

23   2017

NetCDF Climate and Forecast (CF) Metadata Conventions. 2011

B Eaton, J Gregory, B Drach, K Taylor, S Hankin, J Caron, R Signell, ...

Online at http://cfconventions. org/cf-conventions/v1 6