

## Curriculum Vitae

### **David W. Caress**

Monterey Bay Aquarium Research Institute

7700 Sandholdt Road

Moss Landing CA 95039 USA

ORCID: [0000-0002-6596-9133](https://orcid.org/0000-0002-6596-9133)

#### Education:

1984 B.S., Physics, Harvey Mudd College, Claremont, CA  
1989 Ph.D., Geophysics, Scripps Institution of Oceanography, La Jolla, CA  
Graduate Advisors: John A. Orcutt and Richard N. Hey

#### Professional Experience:

2018-Present Principal Engineer III, Monterey Bay Aquarium Research Institute (MBARI), Moss Landing, CA  
2017-2018 Software Engineer V, MBARI, Moss Landing, CA  
2011-2017 Software Engineer IV, MBARI, Moss Landing, CA  
2009-2011 Software Engineer III, MBARI, Moss Landing, CA  
1998-2009 Senior Research Specialist, MBARI, Moss Landing, CA  
1997-1998 Geophysicist, SAIC, Newport, RI  
1994-1997 Geophysicist, SeaBeam Instruments, East Walpole, MA  
1994-2006 Adjunct Associate Research Scientist  
Lamont-Doherty Earth Observatory (L-DEO), Palisades, NY  
1989-1994 Associate Research Scientist, L-DEO  
1985-1989 Graduate Research Assistant  
Scripps Institution of Oceanography (SIO), La Jolla, CA  
1984-1985 Regents Fellow, SIO  
1983 Undergraduate Research Fellow, L-DEO

#### Major Software Projects:

1993-Present: Principal author of MB-System, an open-source software package for the processing and display of seafloor mapping data. Funded by NSF 1993-2018 & Packard Foundation 1998-present. With co-creator D. N. Chayes of UNH/CCOM and C. Ferreira of MARUM.  
1995-1997: Principal author of SeaView realtime display and post-processing software for SeaBeam Instruments, including advanced 3D displays of sonar data and data analysis and editing tools.

#### Major Platform Projects:

2011-present: Leading development team for the MBARI Low Altitude Survey System, an ROV mounted, articulating sensor package combining lidar, multibeam, and color stereo cameras for 1-cm-scale seafloor mapping of complex terrain in the deep ocean.  
2001-2007: Conceived and led development team for the MBARI Mapping AUV, an autonomous vehicle equipped with multibeam, sidescan and subbottom profiler sonars to achieve 1-m-scale seafloor mapping in the deep ocean.

### Publications:

[Link to list of publications](#)

92 peer-reviewed journal and book articles

13 peer-reviewed conference papers

h-index: 36

### Professional Activities:

1984-Present Member, American Geophysical Union (AGU)  
1984-1985 University of California Regents Fellow  
1992 L-DGO award for best AGU abstract by MG&G Junior Staff  
1993-1996 Ocean Drilling Program Lithosphere Panel  
1994 NSF OCE Proposal Review Panel, January and July Panels  
1994 Lecturer, Multibeam Course, US/Canada Hydrographic Commission  
1999-2009 Chair, MBARI Data User's Committee  
1994 NSF SBIR Remote Sensing Proposal Review Panel, September Panel  
1994 Swath Mapping Sonar Short Course for AAPG meeting (w/G. Greene)  
1999-2000 Consultant to SeaBeam Instruments, software development.  
1999-2002 Ocean Drilling Program Site Survey Panel  
2002 Consultant to Raytheon Polar Services Co., MB-System training and RVIB Palmer multibeam sonar acceptance trials.  
2002-2003 Integrated Ocean Drilling Program Site Survey Panel  
2005-2006 Consultant to Raytheon Polar Services Co., MB-System training.  
2009 NSF OCE Proposal Review Panel, November Panel  
2010 NSF OCE EM122 Multibeam Workshop & Panel  
2011-2012 Consultant to Ocean Floor Geophysics, MB-System training.  
2014 Covener, MB-System Developers' Workshop  
2014 NSF OCE Proposal Review Panel, November Panel  
2016-Present Member of GMT Steering Committee  
2019-Present Member of DESSC (Deep Submergence Science Committee)

### Mentoring:

2014-2016: Giancarlo Troni, MBARI Postdoctoral Scholar  
2016-2019: Monica Wolfson-Schwehr, MBARI Postdoctoral Scholar  
2023-Present: Mauro Candeloro, MBARI Postdoctoral Scholar

### Research Cruises and Field Work:

1984 *R/V Thomas Washington* MRTN04; SeaBeam and magnetics survey in NE Pacific.  
1986 *R/V Thomas Washington* PPTU04; SeaBeam, magnetics, dredging in Lau Basin.  
1986 *R/V Thomas Washington* PPTU05; SeaBeam, hydrocast, dredging in Lau Basin.  
1986 *R/V Gordon Sproul* Chovy Expedition; OBS seismic noise experiment.  
1987 *R/V Thomas Washington* TUGA01; OBS microseismicity near Galapagos.  
1987 *R/V Thomas Washington* TUGA02; Sea Beam, gravity, magnetics near Galapagos.  
1988 *RRS Charles Darwin* 33B; GLORIA sidescan, magnetics, SCS in Havre Trough.  
1991 *R/V Maurice Ewing* EW9103; MCS reflection survey of Society and Marquesas Is.  
1992 *R/V Maurice Ewing* EW9204; OBS tomographic imaging of the Marquesas Is.  
1993 *R/V Maurice Ewing* EW9301; Software/hardware installation. \* #

1993 *R/V Maurice Ewing* EW9302; Coring, SCS, Hydrosweep in N. Atlantic.

1993 *R/V Maurice Ewing* EW9305; Hydrosweep, SCS, dredging, deep-tow, etc at Vema FZ.

1994 BARGE, Lake Mead, Nevada; Seismic reflection/refraction work in Lake Mead #

1996 *R/V Maurice Ewing* EW9602; Dredging, MCS, Hydrosweep survey of Austral Is.\*#

1997 *R/V Seis Surveyor*; commercial SeaBeam survey in Gulf of Mexico

1998 *R/V Ocean Alert*, EM300 survey in Monterey Bay.

2000 *R/V Point Lobos* & *ROV Ventana*, Monterey Bay OBS deployment/benthic surveys.

2001 *R/V Western Flyer* and *ROV Tiburon*; Submarine canyons and coral reefs around Hawaii.

2002 RVIB Nathaniel B. Palmer, Sea trials of EM120 multibeam sonar offshore Chile.

2002 RVIB Nathaniel B. Palmer, Sea trials of EM120 multibeam sonar offshore Los Angeles

2003 *R/V Point Lobos* and *ROV Ventana*, Submarine canyon surveys in Monterey Bay.

2003 *R/V Western Flyer* and *ROV Tiburon*; Submarine canyons in the Gulf of California.

2004-2007 *R/V Point Lobos*; *ROV Ventana* Mapping surveys in Monterey Canyon\*

2004-2008 *R/V Zephyr*; Mapping AUV surveys in and near Monterey Bay\*

2006 *R/V Western Flyer*; Mapping AUV surveys in and near Barkley Canyon

2006 *R/V Thompson*; Mapping AUV surveys and *ROV Jason* operations at Axial Seamount

2006 *R/V Zephyr*; Mapping AUV Surveys of Davidson Seamount\*

2006 *R/V Zephyr*; Mapping AUV survey off Point Conception for US Navy\*

2007 *R/V Zephyr*; Mapping AUV surveys of faults and canyons offshore Orange County, CA\*

2007 *R/V Atlantis*; Mapping AUV surveys and *ROV Jason* operations at Axial Seamount

2008 *R/V Zephyr*; Mapping AUV surveys of canyons and faults offshore Southern California\*

2008 *R/V Atlantis*; Mapping AUV surveys of Axial Seamount and Endeavour Ridge

2009 *R/V Thompson*; Mapping AUV surveys and *ROV Jason* operations in the Lau Basin #

2009 *R/V Zephyr*; Mapping AUV surveys of gas hydrate deposits and the Juan de Fuca Ridge\*

2009 *R/V Point Lobos*; *ROV Ventana* Shallow chirp refraction tests in Monterey Bay\*#

2010 *R/V Zephyr*; Mapping AUV survey of the SS Montebello Wreck \*#

2010 *R/V Zephyr*; Mapping AUV surveys of Rodriguez and Davidson Seamounts\*

2010 *R/V Zephyr*; Mapping AUV surveys of faults offshore Southern California\*

2011 *R/V Zephyr*; Mapping AUV surveys of canyons and hydrates offshore Eel River\*

2011 *R/V Zephyr*; Mapping AUV surveys along the Juan de Fuca Ridge\*

2012 *R/V Point Lobos*; Multibeam and stereo camera mapping with *ROV Ventana*\*#

2012 *R/V Zephyr*; Mapping AUV surveys in the Gulf of California\*

2012 *R/V Western Flyer*; Multibeam and stereo camera mapping with *ROV Doc Ricketts*\*#

2012 *R/V Rachel Carson*; Iceberg AUV development and testing

2013 *R/V Falkor*; Multibeam mapping of the Campeche Escarpment, Gulf of Mexico

2013 *R/V Western Flyer*; Multibeam and stereo camera mapping with *ROV Doc Ricketts*\*#

2013 *R/V Rachel Carson*; Iceberg AUV development and testing

2013 *CCGS Sir Wilfrid Laurier*; AUV surveys, ROV dives, coring in the Beaufort Sea

2014 *R/V Rachel Carson*; Mapping AUV surveys across the San Gregorio Fault\*

2014 *R/V Rachel Carson*; Mapping AUV surveys in Santa Monica Basin\*

2014 *R/V Western Flyer*; Lidar, multibeam and stereo camera mapping on *ROV Doc Ricketts*\*#

2014 *R/V Western Flyer*; Mapping AUV surveys in Santa Cruz Basin

2014 *R/V Rachel Carson*; Iceberg AUV development and testing

2014 *R/V Rachel Carson*; Mapping AUV surveys on Axial Seamount and Escanaba Trough\*

2015 *R/V Rachel Carson*; Mapping AUV surveys in Gulf of California and offshore Ensenada\*

2015 *R/V Rachel Carson*; Iceberg AUV development and testing

2015 *R/V Rachel Carson*; Mapping AUV surveys on Sur Ridge\*#

- 2015 *R/V Rachel Carson*; Mapping AUV surveys in Monterey Canyon as part of the Coordinated Canyon Experiment (CCE)\*
- 2015 *R/V Western Flyer*; Lidar, multibeam and stereo camera mapping on *ROV Doc Ricketts*\*#
- 2016 *R/V Rachel Carson*; Mapping AUV surveys in Monterey Canyon as part of the CCE\*
- 2016 *R/V Western Flyer*; Lidar, multibeam and stereo camera mapping on *ROV Doc Ricketts*\*#
- 2016 *R/V Rachel Carson*; Mapping AUV surveys on Axial Seamount and Escanaba Trough\*
- 2016 *CCGS Sir Wilfrid Laurier*; AUV surveys, ROV dives, coring in the Beaufort Sea
- 2017 *R/V Rachel Carson*; Mapping AUV surveys in Monterey Canyon as part of the CCE\*
- 2017 *R/V OR1*; Mapping AUV surveys and MiniROV dives southwest of Taiwan
- 2017 *R/V Western Flyer*; Lidar, multibeam and stereo camera mapping on *ROV Doc Ricketts*\*#
- 2017 *R/V Adolf Jensen*; AUV mapping of icebergs, Petersen Fjord, East Greenland
- 2017 *Icebreaker Araon*; AUV surveys, ROV dives, MCS, coring in the Beaufort Sea
- 2018 *R/V Rachel Carson*; Mapping AUV testing in Monterey Bay\*#
- 2018 *R/V Rachel Carson*; Low altitude survey testing in Monterey Bay\*#
- 2018 *R/V Rachel Carson*; Mapping AUV surveys offshore Morro Bay and Southern California\*#
- 2018 *R/V Rachel Carson*; Low altitude surveys offshore Southern California\*#
- 2018 *R/V Kilo Moana*; Mapping AUV surveys on Axial Seamount\*#
- 2018 *R/V Rachel Carson*; Mapping AUV and low altitude surveys on Sur Ridge\*#
- 2018 *R/V Falkor*; Mapping AUV, low altitude surveys, and ROV sampling of hydrothermal vent fields in Pescadero Basin, Gulf of California\*#
- 2019 *R/V Rachel Carson*; Mapping AUV surveys offshore Morro Bay\*
- 2019 *R/V Rachel Carson*; Mapping AUV surveys Axial Seamount\*#
- 2019 *R/V Rachel Carson*; Mapping AUV Terrain Relative Navigation testing in Monterey Bay
- 2019 *R/V Western Flyer*; Low altitude survey testing in Monterey Bay\*#
- 2019 *R/V Atlantis*; AUV *Sentry* multibeam sea trials
- 2020 *R/V Rachel Carson*; Mapping AUV surveys in Monterey Canyon and on Smooth Ridge\*
- 2020 *R/V Western Flyer*; Low altitude surveys in Monterey Canyon and on Sur Ridge\*#
- 2021 *R/V Western Flyer*; Low altitude surveys at Octopus Garden near Davidson Seamount\*#
- 2021 *R/V Rachel Carson*; Mapping AUV surveys along the Cascadia Margin\*
- 2021 *R/V Western Flyer*; Low altitude surveys of hydrothermal vents on Axial Seamount\*#
- 2021 *R/V Falkor*; Ship multibeam mapping in the southern Gulf of California, ROV heat flow and hydrothermal vent sampling in Pescadero Basin, Gulf of California\*#
- 2022 *R/V Rachel Carson*; Mapping AUV surveys at Octopus Garden & Davidson Seamount\*#
- 2022 *R/V Thomas Thompson*; AUV *Sentry* and ROV *Jason* operations on Axial Seamount#
- 2022 *Icebreaker Araon*; AUV surveys, ROV dives, MCS, coring in the Beaufort Sea
- 2023 *R/V Falkor (too)*; Mapping AUV and ROV SuBastian operation on the equatorial Mid-Atlantic Ridge#
- 2023 *R/V Rachel Carson*; Mapping AUV surveys on the Cascadia Margin and Axial Seamount\*#
- 2023 *R/V Rachel Carson*; Low Altitude surveys on Sponge Ridge\*#
- 2024 *R/V David Packard*; Multibeam Sea Acceptance Testing\*#
- 2023 *R/V Rachel Carson*; Mapping AUV surveys on Davidson Seamount\*#
- 2024 *R/V Atlantis*; AUV *Sentry* and ROV *Jason* operations on Axial Seamount#
- 2024 *R/V Rachel Carson*; Low Altitude surveys on Sponge Ridge\*#
- 2024 *R/V Rachel Carson*; Repeated AUV surveys of upper Monterey Canyon\*

\* Chief or Co-Chief Scientist                      # Principal or Co-Principal Investigator