

Curriculum Vitae  
**DAVID W. CARESS**

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, 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: Responsible for development, and maintenance of MB-System, an open source Unix package for the processing and display of swath sonar data. Funded by NSF 1993-2018 & Packard Foundation 1998-present. With D. N. Chayes of UNH/CCOM and C. Ferreira of MARUM.  
1995-1997: Responsible for conception, design, and development 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:

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 high-resolution seafloor mapping in the deep ocean. Now lead scientist for MBARI seafloor mapping operations.  
2011-present: Conceived and leading development team for the MBARI Ocean Imaging project, which seeks to develop a low altitude, ~1 cm scale autonomous survey system combining multibeam sonar, lidar, and stereo photographic imagery.

### 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*, Seatrials of EM120 multibeam sonar offshore Chile.
- 2002 *RVIB Nathaniel B. Palmer*, Seatrials 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 of 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 of 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 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\*#
- \* Chief or Co-Chief Scientist  
# Principal or Co-Principal Investigator

#### 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