

CAROL ANNE CLAYSON
SENIOR SCIENTIST

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EDUCATION

1988 B. S., Physics and Astronomy, Brigham Young University
1990: M.S., Aerospace Engineering Sciences, The University of Colorado
1995: Ph.D., Aerospace Engineering Sciences, Program in Atmospheric and Oceanic Sciences, The University of Colorado

PROFESSIONAL EXPERIENCE

2018 - Director, Center for Air-Sea Interaction and Marine Atmospheric Sciences
Woods Hole Oceanographic Institution, Woods Hole, MA

2014- Senior Scientist, Physical Oceanography Department
Woods Hole Oceanographic Institution, Woods Hole, MA

2011-2014 Associate Scientist with Tenure, Physical Oceanography Department
Woods Hole Oceanographic Institution, Woods Hole, MA

2002-2011 Associate Professor, Department of Meteorology
Director, Geophysical Fluid Dynamics Institute
Florida State University, Tallahassee, Florida

2001-2002 Associate Professor, Department of Earth and Atmospheric Sciences
Purdue University, West Lafayette, Indiana

1995-2001 Assistant Professor, Department of Earth and Atmospheric Sciences
Purdue University, West Lafayette, Indiana

1988-1995 Graduate Research Assistant, Department of Aerospace Engineering Sciences
University of Colorado, Boulder, Colorado

RESEARCH INTERESTS

Exchanges of heat, moisture, and momentum between the ocean and the atmosphere. Turbulent boundary layers. Air-sea interaction. Remote sensing of the ocean and the near-surface atmosphere. Ocean and atmosphere modeling. Water cycle variability. Role of small-scale variability on climate scales.

AWARDS

2021 Jet Propulsion Laboratory Distinguished Climate Lecture
2010 Florida State University Graduate Faculty Mentor Award
2005 Florida State University Developing Scholar Award
2000 Presidential Early Career Award for Scientists and Engineers (PECASE)
2000 ONR Young Investigator Award
1999 Purdue Teaching for Tomorrow Award
1996 NSF CAREER Award

NATIONAL/INTERNATIONAL PROFESSIONAL SERVICE/ACTIVITIES:

COMMITTEE MEMBERSHIPS:

Chair, US CLIVAR, 2020
US CLIVAR SSC Executive Committee, 2018 – 2020
TPOS2020 Backbone Task Team, 2018 – 2021
UCAR Members Nominating Committee, 2018 – present
AMS Nominating Committee, 2019 - present
AMS Council, 2015 – 2017
AMS Satellite Meteorology, Oceanography, and Climatology Committee, 2012 – 2018
UCAR Advocacy for the Science Community, 2016 - present
US CLIVAR Phenomena, Observation, and Synthesis Panel, 2014 – 2017
NASA PO.DAAC User Working Group, 2015 – present
AMS Board of Meteorological and Oceanographic Education in Universities, 2000-2003
AMS Committee on Coastal Environments, 2009 – 2016
AMS Committee on Interaction of the Sea and Atmosphere, 2000 – 2005

SCIENCE TEAM MEMBERSHIPS:

Member, NASA Planetary Boundary Layer Study Team, 2019 – 2021
Member, NASA Sea Surface Temperature Science Team, 2009 - present
Member, NASA Ocean Salinity Science Team, 2014 – present
Member, GHRSSST Science Team, 2013 - present

NATIONAL RESEARCH COUNCIL SERVICE:

Co-Chair, NASA Decadal Review, Panel on Climate Change and Variability, 2016 - 2018
Board on Atmospheric Sciences and Climate, 2005 – 2009
Panel on Water Cycle and Water, 2005 – 2007
Committee for Study on TRMM, 2004 – 2006
Committee on Earth Studies, 2002 – 2005

REVIEW BOARDS/COMMITTEES:

Chair, NOAA Earth System Science and Modeling Division Council, 2021 - present
Institute of Geophysical and Planetary Physics, Los Alamos National Laboratory, 2009 – 2017
Univ. of Colo. Aerospace Engineering Sciences' External Advisory Board, 2005 - 2018
NOAA Cooperative Institute Reviews, 2012
NASA Science Review, 2005

PROJECT LEADS:

Chair, WCRP Data and Advisory Council, Surface Flux Task Team, 2016 – present
Chair, WCRP GEWEX SeaFlux Project, 2005 - present
Chair, Global High Resolution Sea Surface Temperature (GHRSSST) Diurnal Variability Working Group, 2014 – 2018

SATELLITE SENSOR DEVELOPMENT:

Deputy PI for proposed NASA EVM-3 satellite mission Butterfly: Measuring air-sea heat and moisture fluxes from space. \$190M project.

OTHER PROFESSIONAL SERVICE/ACTIVITIES:

OUTREACH: Presentation, WHOI Board of Trustees, 24 May 2012. WHOI Trustee Partner, 2012 - . Presentation, NYC fundraising trustee event, 28 January 2013. Presentation, Massachusetts Marine Educators, 6 April 2013 at WHOI Redfield Auditorium. Congressional staff briefings at 50th Anniversary of Alvin celebrations, Washington, DC., 17 September 2014. Presentation on Non-Federal Funding to Marine Geosciences Leadership Seminar, 20 March 2015. Organized joint AMS-SWF Webinar on “Challenges in Sharing Weather Satellite Spectrum with Terrestrial Networks,” Washington, DC 27 March, 2015. 2015 Climate Science Day on Capitol Hill participant, 10-11 February 2015. Keynote presentation MassMutual Women in Technology conference, Springfield, MA 24 April 2015. Presentation to Council on Foreign Relations, Washington, DC 29 October 2015. Currently working with Dobyens-Bennett High School, Kingsport, TN to develop AP Seminar course on Oceanography. Presentation for Lunch with a View Series, July, 2018. Presentation to Scituate STEAMcollab Symposium, Scituate, MA, 1 March 2018. Briefing of House Science Committee Staff on Climate Change, 23 February, 2021.

BOARD MEMBER: StreamWorks (a non-profit STEM Education program in Kingsport, TN).

PANEL REVIEW MEMBER: NASA Physical Oceanography; NSF Physical Oceanography; NSF Atmospheric Science; NOAA Climate Prediction Program of the Americas; NASA SMAP; NASA USPI.

WORKSHOP ORGANIZER: GHRSSST (Global High Resolution SST) annual workshop, Woods Hole, MA, June 2013. Joint CLIVAR/SeaFlux Surface Fluxes: Challenges for High Latitudes, Boulder, CO, 2010. SeaFlux 4th Workshop, Amsterdam, The Netherlands, 2007.

JOURNAL REVIEWER: Journal of Atmospheric Sciences; Journal of Geophysical Research (Oceans, Atmospheres); Geophysical Research Letters; Journal of Physical Oceanography; Journal of Climate; Monthly Weather Review; Journal of Atmospheric and Oceanic Technology; Journal of Applied Meteorology; Dynamics of Atmospheres and Oceans; Journal of Applied Meteorology, Remote Sensing of the Environment; Frontiers in Marine Science

ASSOCIATE EDITOR: Monthly Weather Review, 2004 – 2006.

INSTITUTIONAL COMMITTEES: WHOI (Institution Level): Co-chair, Blueprint Analytics Task Force. Scientific Staff Executive Committee (2012 – 2015): serving as Committee Chair 2014. Served on Unrestricted Budget Task Force. Served on Presidential Search Committee. Served on Chief Financial Officer Search Committee. (Departmental Level): Recruitment Committee

SOCIETY MEMBERSHIPS: American Geophysical Union, American Meteorological Society

PROGRAM CHAIR: 12th AMS Conference on Air-Sea Interactions. Science Steering Committee upcoming 2013 EUMETSAT/AMS Satellite Meteorology and Oceanography Conference. Multiple session chairs at AMS, AGU meetings.

SCIENTIFIC STEERING COMMITTEES: Earth Observations for Water Cycle Science Conference 2015, SOOS Air-Sea Fluxes for the Southern Ocean: Strategies and Requirements for Detecting Physical and Biogeochemical Exchanges Workshop, 2015. SOOS Working Group on Enhancing Air-Sea Flux Observations in the Southern Ocean, Steering Committee, 2016 - present.

ACTING DEPARTMENT CHAIR, DEPARTMENT OF METEOROLOGY, FSU, 2006.

REFEREED PUBLICATIONS: (BOLD INDICATES GRADUATE STUDENT OF DR. CLAYSON)

- Clayson, C. A. and J. B. Roberts, 2021: SeaFlux V3: An updated satellite-based data set of ocean-atmosphere turbulent fluxes. *Remote Sensing*, submitted.
- Ferris, L., D. Gong, S. Merrifield, C. A. Clayson, and L. St. Laurent, 2021: Correctable bias in surface boundary layer scalings of shear turbulence in the Southern Ocean. *J. Phys. Oceanogr.*, submitted.
- Robertson, F. R., J. B. Roberts, M. G. Bosilovich, A. Bentamy, C. A. Clayson, K. Fennig, M. Schroder, H. Tomita, G. P. Compo, M. Gutenstein, H. Hersbach, C. Kobayashi, L. Ricciardulli, P. Sardeshmukh, L. C. Slivinski, 2020: Uncertainties in ocean latent heat flux variations over recent decades in satellite-based estimates and reduced observation reanalyses. *J. Climate*, Vol. 33(19), 8415-8437 doi:10.1175/JCLI-D-19-0954.1.
- Gentemann, C., C. A. Clayson, S. Brown, T. Lee, R. Parfitt, J. T. Farrar, M. Bourassa, P. J. Minnett, H. Seo, S. Gille, and V. Zlotnicki, 2020: FluxSat: Measuring the ocean-atmosphere turbulent exchange of heat and moisture from space. *Rem. Sens.*, 12(11), 1796, doi.org/10.3390/rs12111796.
- Cronin, M. F., C. L. Gentemann, J. B. Edson, I. Ueki, M. Bourassa, S. Brown, C. A. Clayson, C. Fairall, T. Farrar, S. T. Gille, S. Gulev, S. Josey, S. Kato, M. Katsumata, E. Kent, M. Krug, P. Minnett, R. Parfitt, R. T. Pinker, P. W. Stackhouse, Jr., S. Swart, H. Tomita, D. Vandemark, R. A. Weller, K. Yoneyama, L. Yu, D. Zhang, 2019: Air-sea fluxes with a focus on heat and momentum. *Frontiers in Marine Science*, 6:430.doi:10.3389/fmars.2019.00430.
- Rainville, L., L. R. Centurioni, W. E. Asher, C. A. Clayson, K. Drushka, J. B. Edson, B. A. Hodges, V. Hormann, J. T. Farrar, J. J. Schanze, and A. Y. Shcherbina, 2019: Novel and flexible approach to access the open ocean: Uses of sailing Research Vessel Lady Amber during SPURS-2. *Oceanography*, 32(2), 116-121.
- Clayson, C. A., J. B. Edson, A. Paget, R. Graham, and B. Greenwood, 2019: The effects of rainfall on the atmosphere and ocean during SPURS-2. *Oceanography* 32(2): 86-97.
- Clayson, C. A. and J. B. Edson, 2019. Diurnal surface flux variability over western boundary currents. *Geophys. Res. Lett.*, 46, <https://doi.org/10.1029/2019GL082826>.
- Roberts, J. B., C. A. Clayson, and F. Robertson, 2019: Improving near-surface retrievals of surface humidity over the global oceans from passive microwave observations, *Earth and Space Science*, 6,1220-1233, <https://doi.org/10.1029/2018EA000436>.
- Bentamy, A., J. F. Piollé, A. Grouazel, F. Paul, H. Azelmat, P. P. Mathieu, K. V. Schuchmann, S. Sathyendranah, H. E. King, R. Danielson, I. Esau, J. Johannessen, S. Gulev, C. A. Clayson, R. Pinker, S. Grodsky, M. Bourassa, S. R. Smith, K. Haines, Maria Valdivieso, C. Merchant, B. Chapron, A. Anderson, R. Hollmann, and J. Simon, 2017. Towards Improvement of the Estimation of Turbulent Heat Flux over Global Oceans. *Remote Sensing of the Environment*, 201, 186-218.
- Rodell, M., H. K. Beaudoin, T. S. L'Ecuyer, W. S. Olson, J. S. Famiglietti, P. R. Houser, R. Adler, M. Bosilovich, C. A. Clayson, D. Chambers, E. Clark, E. J. Fetzer, X. Gao, G. Gu, K. Hilburn, G. Huffman, D. P. Lettenmaier, W. T. Liu, F. R. Robertson, C. A. Schlosser, J. Sheffield, E. F. Wood, 2015: The observed state of the water cycle in the early 21st century. *J. Climate*, <http://dx.doi.org/10.1175/JCLI-D-14-00555.1>.
- L'Ecuyer, T., H. K. Beaudoin, M. Rodell, W. Olson, B. Lin, S. Kato, C. A. Clayson, E. Wood, J. Sheffield, R. Adler, G. Huffman, M. Bosilovich, G. Gu, F. Robertson, P. Houser, D. Chambers, J. Famiglietti,

- E. Fetzer, W. T. Liu, X. Gao, C. A. Schlosser, E. Clark, D. Lettenmeier, and M. Hilburn, 2015: The observed state of the energy budget in the early 21st century. *J. Climate*, DOI: <http://dx.doi.org/10.1175/JCLI-D-14-00556.1>.
- Luneva, M. V., C. A. Clayson, and M. S. Dubovikov, 2015: Assessment of mixed layer mesoscale parameterization in eddy resolving simulations. *Geophysical and Astrophysical Fluid Dynamics*, DOI: [10.1080/03091929.2015.1041023](https://doi.org/10.1080/03091929.2015.1041023).
- Bogdanoff, A. S.**, D. L. Westphal, J. R. Campbell, J. A. Cummings, E. J. Hyer, J. S. Reid, and C. A. Clayson, 2015: Sensitivity of infrared sea surface temperature retrievals to the vertical distribution of airborne dust aerosol. *Remote Sens. Environ.*, 159, doi:10.1016/j.rse.2014.12.002.
- Bourassa, M., S. Gille, S. Bitz, D. Carlson, I. Cerovecki, C. A. Clayson, M. Cronin, W. Drennan, C. Fairall, R. Hoffman, R. Hoffman, G. Magnusdottir, R. Pinker, I. Renfrew, M. Serreze, K. Speer, L. Talley, and G. Wick, 2013: High-Latitude Ocean and Sea Ice Surface Fluxes: Challenges for Climate Research. *Bull. Amer. Meteorol. Soc.*, 94, 402-423.
- Clayson, C.A. and **A. Bogdanoff**, 2013. The effect of diurnal sea surface temperature warming on climatological air-sea fluxes. *Journal of Climate*, 26, 2546-2556.
- Stephens, G., J. Li, M. Wild, C. A. Clayson, N. Loeb, S. Kato, T. L'Ecuyer, P. Stackhouse Jr., M. Lebsock, and T. Andrews, 2012: An update on the Earth's energy balance in light of new surface energy flux estimates. *Nature Geosciences*, 5, 691-696, doi:10.1038/ngeo1580.
- Roberts, J. B.**, F. R. Robertson, C. A. Clayson, and M. G. Bosilovich, 2011. Characterization of turbulent latent and sensible heat flux exchange between the atmosphere and ocean in MERRA. *J. of Climate*, doi: <http://dx.doi.org/10.1175/JCLI-D-11-00029.1>.
- Liu, J., J. A. Curry, C. A. Clayson, and M. A. Bourassa, 2011. High-resolution satellite surface latent heat fluxes in North Atlantic hurricanes. *Monthly Weather Review*, **139**, 9, 2735-2747.
- Kantha, L., S. Carniel, C. A. Clayson, and M. Sclavo, 2011. On the use of a simple primary productivity model to assess the skill of a physical ocean model. *Oceanological and Hydrobiological Studies*, **40**, 86-95.
- Romanou, A., G. Tselioudis, C. S. Zerefos, C. A. Clayson, J. A. Curry, and A. Andersson, 2010. Evaporation-precipitation variability over the Mediterranean and the Black Seas from satellite and reanalysis estimates. *J. Climate*, **23**, 5268-5287.
- Roberts, J. B.**, C. A. Clayson, F. R. Robertson, and D. Jackson, 2010. Predicting near-surface characteristics from SSM/I using neural networks with a first guess approach. *J. Geophys. Res.*, **115**, D19113, doi: 10.1029/2009JD013099.
- Fairall, C., B. Barnier, D. I. Berry, M. A. Bourassa, F. Bradley, C. A. Clayson, G. deLeeuw, W. M. Drennan, J. B. Edson, S. T. Gille, S. K. Gulev, E. C. Kent, W. R. McGillis, G. D. Quartly, V. Ryabinin, S. R. Smith, R. A. Weller, M. J. Yelland, H.-M. Zhang, 2009. Observations to quantify air-sea fluxes and their role in climate variability and predictability. Community White Paper, Ocean Obs '09.
- Krishnamurti T.N., R. Krishnamurti, A.D. Sagadevan, A. Chakraborty, W. K. Dewar, C. A. Clayson, and J. F. Tull 2009. Space-time Structures of Earthquakes. *Met. and Atmos. Phys.*, **105**, 69-83.
- Gille, S., M. A. Bourassa, and C. A. Clayson, 2010. Surface fluxes: Challenges for high latitudes. *Eos*, **91**, (35), 307.
- Jordan, M. R.** and C. A. Clayson, 2008. A new approach to using wind speed for prediction of tropical cyclone generated storm surge. *Geophys. Res. Lett.*, **35**, L13802, doi:10.1029/2008GL033564.
- Jordan, M. R.** and C. A. Clayson, 2008. Evaluating the usefulness of a new set of hurricane classification indices. *Mon. Wea. Rev.*, **136**, 5234-5238.
- Clayson, C.A. and L. H. Kantha, 2008. On turbulence and mixing in the free atmosphere. *J. Atmos. Oceanic Tech.*, **25**, 833 - 852.

- Clayson, C. A., M. Luneva, and P. Cunningham, 2008. Upwelling and downwelling regimes: connections between surface fronts and abyssal circulation. *Dyn. Atmos. Oceans.*, **45**, 165-186.
- Jordan, M. R.**, T. N. Krishnamurti, and C. A. Clayson, 2008. Investigating the utility of using cross-oceanic training sets for superensemble forecasting of eastern Pacific tropical cyclone track and intensity. *Weather and Forecasting*, **23**, 516-522.
- Krishnamurti, T. N., A. Chakraborty, R. Krishnamurti, W. K. Dewar, and C. A. Clayson, 2007. Passage of intraseasonal waves in the sub-surface oceans. *Geophys. Res. Lett.*, **34**, L14712, doi:10.1029/2007GL030496.
- Kantha, L., and C. A. Clayson, 2007. On leakage of energy from turbulence to internal waves in the oceanic mixed layer. *Ocean Dynamics*, **57**, 151 – 156.
- Clayson, C. A. and **D. Weitlich**, 2007. Variability of tropical diurnal sea surface temperature. *J. Climate*, **20**, 334-352.
- Luneva, M., and C. A. Clayson, 2006. Connections between surface fluxes and the deep circulation in the Sea of Japan. *Geophys. Res. Lett.*, **33**, L24602, doi:10.1029/2006GL027350.
- Krishnamurti, T. N., A. Chakraborty, R. Krishnamurti, W. K. Dewar, and C. A. Clayson, 2006. Seasonal prediction of sea surface temperature anomalies using a suite of 13 coupled atmosphere-ocean models. *J. Climate*, **19**, 6069 - 6088.
- Carniel, S., Sclavo, M., L. H. Kantha, and C. A. Clayson, 2005. Surface gravity waves and mixing in the upper ocean. *Il Nuovo Cimento*. **28**, 33 – 54.
- Clayson, C. A. and **D. Weitlich**, 2005. Interannual variability of tropical Pacific diurnal sea surface temperature warming and nighttime cooling. *Geophys. Res. Lett.*, **2**, L21604, doi:10.1029/2005GL023786.
- Curry, J. A., A. Bentamy, M.A Bourassa, D. Bourras, E.F. Bradley, M. Brunke, S. Castro, S.H. Chou, C.A. Clayson, W.J. Emery, L. Eymard, C.W. Fairall, M. Kubota, B. Lin, W. Perrie, R.R. Reeder, I.A. Renfrew, W.B. Rossow, J. Schulz, S.R. Smith, P.J. Webster, G.A. Wick, X. Zeng, 2004. SEAFLUX. *Bulletin of the Amer. Meteorol. Soc.*, **85**, 409-424.
- Clayson, C. A., and M. Luneva, 2004. Deep convection in the Sea of Japan: A modeling perspective, *Geophys. Res. Lett.*, **31**, L17303, doi:10.1029/2004GL020497.
- Kantha, L.H. and C. A. Clayson, 2004. On the effect of surface gravity waves on mixing in an oceanic mixed layer model. *Ocean Modeling*, **6**, 101-124.
- Clayson, C. A., and **A. Chen**, 2002. Sensitivity of a coupled single-column model in the tropics to treatment of the interfacial parameterizations. *J. Climate*, **15**, 1805-1831.
- Clayson, C.A., **B. Strahl**, and J. Schrage, 2002. 2-3 day convective variability in the tropical western Pacific. *Mon. Wea. Rev.*, **130**, 529-548.
- Schrage, J., C. A. Clayson, and **B. Strahl**, 2001. Statistical properties of episodes of enhanced 2-3 day convection in the Indian and Pacific Oceans. *J. Climate*, **14**, 3482-3494.
- J. A. Curry, C. A. Clayson, W. B. Rossow, G. Considine, G. Liu, R.-S. Sheu, P. J. Webster, and Y.-C. Zhang, 1999. High-resolution satellite-derived dataset of the surface fluxes of heat, freshwater, and momentum for the TOGA COARE IOP, *Bull. Amer. Meteor. Soc.*, **80**, 2059-2080.
- Clayson, C. A., and L. H. Kantha, 1999. Turbulent kinetic energy and dissipation rate in the equatorial mixed layer. *J. Phys. Oceanogr.*, **29**, 2146-2166.
- Clayson, C. A., and J. A. Curry, 1996. Determination of surface turbulent fluxes for TOGA COARE: Comparison of satellite retrievals and in situ measurements. *J. Geophys. Res.*, **101**, 28,515-28,528.
- Clayson, C.A., J. A. Curry, and C. W. Fairall, 1996. Evaluation of turbulent fluxes at the ocean surface using surface renewal theory. *J. Geophys. Res.*, **101**, 28,503-28,513.
- Webster, P. J., C. A. Clayson, and J. A. Curry, 1996. Clouds, radiation, and the diurnal cycle of sea surface temperature in the tropical western Pacific. *J. Climate*, **9**, 1712-1730.

- Liu, G., J. A. Curry, and C. A. Clayson, 1995. Study of tropical cyclogenesis using satellite data. *Meteorol. Atmos. Phys.*, **56**, 111-123.
- Kantha, L. H., and C. A. Clayson, 1994. An improved mixed layer model for geophysical applications. *J. Geophys. Res.*, **99**, 25,235-25,266.
- Emery, W. J., C. Fowler, and C. A. Clayson, 1992. Satellite image-derived Gulf Stream currents compared with numerical model results. *J. Atmos. Ocean. Tech.*, **9**, 286-304.

BOOKS:

- Kantha, L. H., and C.A. Clayson, 2000: *Numerical Models of Oceans and Oceanic Processes*. International Geophysics Series, Volume 66. Foreword by Kirk Bryan. Academic Press, pp. 940.
- Kantha, L. H., and C.A. Clayson, 2000: *Small Scale Processes in Geophysical Flows*. International Geophysics Series, Volume 67. Foreword by Walter Munk. Academic Press, pp. 888.

NON-REFEREED PUBLICATIONS:

- Teixeira, J., J. R. Piepmeier, A. R. Nehrir, C. O. Ao, S. S. Chen, C. A. Clayson, A. M. Fridlind, M. Lebsock, W. McCarty, H. Salmun, J. A. Santanello, D. D. Turner, Z. Wang, and X. Zeng, 2021: *Toward a Global Planetary Boundary Layer Observing System: The NASA PBL Incubation Study Team Report*. NASA PBL Incubation Study Team. 134 pp. [Available online at <https://science.nasa.gov/science-pink/s3fs-public/atoms/files/NASAPBLIncubationFinalReport.pdf>]
- Clayson, C. A., A. Rutgersson, B. Ward, A. Beljaars, R. Buss de Souza, J. Edson, P. Gleckler, P. Heil, K. Ichii, M. Jung, D. Miralles, P.-P. Matthieu, P. Stackhouse, 2019: A white paper outlining the need for a coordinated high-level approach to improving our understanding of surface-atmosphere fluxes. WCRP Surface Flux Task Team, 31 pp. [Available online at [https://www.wcrp-climate.org/JSC40/12.1\(a\).%20WDAC%20SurfaceFluxWhitePaper.pdf](https://www.wcrp-climate.org/JSC40/12.1(a).%20WDAC%20SurfaceFluxWhitePaper.pdf)].
- Kessler, W.S., S. E. Wijffels, S. Cravatte, N. Smith, and A. Kumar, Y. Fujii, W. Large, Y. Takaya, H. Hendon, S. G. Penny, A. Sutton, P. Strutton, R. Feely, S. Kouketsu, S. Yasunaka, Y. Serra, B. Dewitte, K. Takahashi, Y. Xue, I. Montes, C. A. Clayson, M. F. Cronin, J. T. Farrar, T. Lee, S. McGregor, X. Song, J. Sprintall, A. T. Wittenberg, W. Yu, K. Ando, F. Gasparin, D. Roemmich, J. Masich, K. O'Brien, D. Legler, I. Ueki, E. R. Kursinski, K. Hill, K. Cobb, L. O'Neill, L. Upchurch, S. Brunner, 2019: Second Report of TPOS 2020. GOOS-234, 265 pp. [Available online at [http://tpos2020.org/second-report/.](http://tpos2020.org/second-report/)]
- Clayson, C.A. 2015: Comments on EPA's Proposed New Source Performance Standards for Electric Generating Units: Understanding the Role of the Ocean in Climate Science. Docket No. EPA-HQ-OAR-2014-0495.
- Clayson, C. A., 2016: Through the ocean darkly. *Adjacent Government*, 2 January 2016.
- Clayson, C. A. and D. A. Golden, 2018: Sustainable oceans – Eastman advocates for action. Published in the official G7 Summit 2018, Quebec, Canada publication: *G7Climate Change: The New Economy*, 48-51.

BOOK CHAPTERS:

- Kantha, L. H. and C. A. Clayson, 2002: Ocean Mixed Layer, in *Encyclopedia of Atmospheric Sciences*, J. R. Holton, J. A. Pyle, and J. A. Curry, eds. Elsevier Science, 2002.

Overland, J. E., S. Solo, L. H. Kantha, and C.A. Clayson, 1999: Thermal stratification and mixing on the Bering Shelf, in *Dynamics of the Bering Sea*, T. Loughlin and K. Ohtani, eds. University of Alaska Sea Grant, Alaska.

NATIONAL RESEARCH COUNCIL REPORTS:

Steps to Facilitate Principal Investigator-led Earth Science Missions. National Academies Press, 2004. 80 pp.

Assessment of the Benefits of Extending the Tropical Rainfall Measuring Mission: A Perspective from the Research and Operations Communities, Interim Report. National Academies Press, 2004. 104 pp.

NOAA's Role in Space-Based Global Precipitation Estimation and Application. National Academies Press, 2006. 122 pp.

Earth Science and Applications from Space: National Imperatives for the Next Decade and Beyond, National Academies Press, 2007.

Review of the U.S. Climate Change Science Program's Synthesis and Assessment Product 5.2, "Best Practice Approaches for Characterizing, Communicating, and Incorporating Scientific Uncertainty in Climate Decision Making", 2007. (LEAD AUTHOR)

Earth Science and Applications from Space: Results from the Decadal Survey. National Academies Press, 2018. (Co-Chair of the Climate Panel).

PATENTS:

Clayson, Carol Anne; and Kantha, Lakshmi, granted 31 August 2010. "Systems and methods for determining turbulence and turbulent mixing in the free atmosphere". US Patent 7788035.

INVITED PRESENTATIONS:

Ocean imprints: Small-scale ocean air-sea interactions and ocean-weather-climate connections. Distinguished Climate Lecture, JPL Center for Climate Sciences, Virtual, 27 April 2021.

Oceans of change: Understanding the ocean-climate connection. *Naval War College*, Virtual, Dec 9, 2020.

Small-scale ocean variability and air-sea interactions. *NASA Goddard Space Flight Center*, Virtual, 13 October, 2020.

Impact of the surface on the marine boundary layer. *NASA PBL Incubation Workshop*, Virtual, May 19-20 & 26-27, 2020.

Ocean imprints: Air-sea interaction from space. *NASA Symposium on Earth Science and Applications from space*. Washington, DC 21 January 2020.

PBL and air-sea interaction. *First Workshop on PBL from Space*. 1 June 2018, JPL, Pasadena, CA.

Advances, Challenges, and Opportunities for Remote Sensing Of Atmospheric Surface Layer And Air-sea Fluxes. *NSF Workshop on the Future of Atmospheric Boundary Layer Observations*, 25 October 2017. Warrenton, VA.

Current state of surface flux estimates. *ISSI Workshop on Shallow Clouds, Water Vapor, Circulation, and Climate Sensitivity*. Bern, Switzerland, 10 February 2016.

WDAC and air-sea flux requirements. *SOOS-WCRP-ESA Workshop on Southern Ocean Surface Fluxes*, Frascati, Italy, 22 September 2015.

Upper-ocean mixing on short timescales and applications to air-sea fluxes. Graduate School of Oceanography, University of Rhode Island, 1 May 2015.

Variability and uncertainty in the surface heat and water fluxes over the ocean. Department of Aerospace Engineering Sciences, University of Colorado, Boulder, CO, 10 April 2015.

Air-sea Interactions: Observations and models. *2014 AGU Fall Meeting*, San Francisco, CA, 15 December 2014.

Current understanding of the observational constraints on ocean-atmosphere evaporation. The Climate Symposium, Darmstadt, Germany, 14 October 2014.

Air-sea fluxes (with S. Gulev). *1st Pan-CLIVAR conference*, The Hague, The Netherlands, 18 July 2014.

Closing water budgets over the ocean. *7th International Scientific Conference on the Global Water and Energy Cycle*. The Hague, Netherlands. 14 July 2014.

Air-sea fluxes: Introduction. *WCRP Data Advisory Council 3rd Session*. Galway, Ireland. 5 May 2014.

Air-sea satellite flux datasets and what they do (and don't) tell us about the air-sea interface in the Southern Ocean. *Workshop on Clouds, Aerosols, Radiation and Air-Sea Interface of the Southern Ocean: Establishing Directions for Future Research*. University of Washington, Seattle, WA 18 March 2014.

Observing the SST from space: what we have learned about the ocean's impact on the climate system from looking at the surface. *2013 AGU Fall Meeting*, San Francisco, CA, 12 December 2013.

High-frequency feedbacks between the ocean and atmosphere. Los Alamos National Laboratory, Los Alamos, NM 12 July, 2013.

Air-sea fluxes of heat, freshwater, and momentum over the global ocean, including SeaFlux. *CLIVAR/ESA Earth Observation Measurement Constraints on Ocean Heat Budget*. University of Reading, Reading, UK. 3 July 2013.

Turbulence parameters from HVRRD. *Workshop on Research Applications of HVRRD*, Stony Brook University, Stony Brook, NY, 27 May 2013.

Surface Turbulent Heat Fluxes. *CERES Science Team Meeting*, NASA Langley Research Center, Hampton, VA, 8 May 2013.

Lessons learned from the 2007 NASA Decadal Survey. *Water Cycle Missions for the Next Decade workshop*, Baltimore, MD, 29 April 2013.

High-frequency feedbacks between the ocean and atmosphere. Graduate School of Oceanography, University of Rhode Island, Narragansett, RI 9 November 2012.

Recent developments in the physics of air-sea exchanges (Keynote, plenary presentation). *Surface Ocean Lower Atmosphere Study (SOLAS) Open Science Conference*, Cle Elum, WA May 2012.

Thoughts on satellite-derived air-sea fluxes. *ESPC Data Assimilation Workshop*. Baltimore, MD 28 September 2011.

Sources of error in satellite-derived air-sea fluxes. *2011 GHRSSST XII Science Team Meeting*, Edinburgh, Scotland, June 2011.

High-frequency extremes and feedbacks between the ocean and atmosphere. *City College of New York, Department of Electrical Engineering*, New York, NY, 8 March 2011.

Ocean surface fluxes. *US CLIVAR Workshop on Evaluation of Reanalyses -- Developing an Integrated Earth System Analysis (IESA) Capability*. Baltimore, MD, November, 2010.

New developments and remaining issues with satellite-derived air-sea flux climatologies (Plenary talk). *2010 EUMETSAT Meteorological Satellite Conference*, Cordoba, Spain, September 2010.

SeaFlux and the Water Cycle. *5th Workshop of the International Precipitation Working Group*. Hamburg, Germany, October 2010.

SeaFlux update. *2nd Pan-GEWEX Science Meeting*, Seattle, WA, August 2010.

High-frequency feedbacks between the ocean and atmosphere: Effects on longer time scales. Physical Oceanography, Woods Hole Oceanographic Institution, Falmouth, MA, May 11, 2010.

Ocean wind and other near-surface properties from SSM/I. *NOAA 2010 Workshop on Climate Data Records from Satellite Microwave Radiometry*, Silver Spring, MD, March 23.

SeaFlux Dataset Version 1.0 *NASA Energy and Water Cycle PI meeting*, Baltimore, MD, 2 December, 2009.

An update on the SeaFlux project. 20th International GEWEX Radiation Panel meeting, Rostock, Germany, 14 October, 2009.

Project Status Report – SeaFlux. 2009 Meeting of GRP Working Group on Data Management and Analysis, College Park, MD, 3 September 2009.

Current issues in deriving surface air-sea fluxes from satellites and models. 2009 Scatterometry and Climate Meeting, Arlington, VA, 19 August 2009.

SeaFlux needs and Sea Surface Temperature. 5th Diurnal Variability Working Group meeting. Rome, Italy, 24 February, 2009.

Modeling deep convection in the Sea of Japan. University of South Carolina, 6 February, 2009.

Uncertainties in surface fluxes: The way forward. 12th U.S.-Japan Workshop on Global Change. Hosted by NSF and MEXT. Boulder/Broomfield, Colorado, 2 July 2008.

Using a new Storm Surge Index to Evaluate Changes in Surge Associated With Possible Climate Changes. *Eos Trans. AGU 89(23), Jt. Assem. Suppl., Abstract U33C-03*, AGU Joint Assembly, Ft. Lauderdale, FL.

International Public Seminar Series, sponsored by the Space Studies Board of the National Research Council. Tallahassee, FL, January 16, 2008. Title: Using satellite observations for meteorological events.

Joint EUMETSAT Meteorological Satellite Conference and 15th AMS Satellite Met. And Oceanogr., Conference, Amsterdam, The Netherlands, 26 September 2007. (Keynote). Title: An overview of SeaFlux: New science and methods in air-sea fluxes.

First Pan-GEWEX Meeting. European Space Agency, Frascati, Italy, 11 October 2006. Title: SEAFLUX Intercomparison Project.

Earth and Atmospheric Sciences Department, Georgia Institute of Technology, GA, 25 August 2006. Title: Oceanic and Atmospheric Deep Convection.

7th GHRSSST-PP Science Team Meeting, Boulder, CO, 28 March 2006. Title: Diurnal warming and SST requirements from SEAFLUX.

Office of Naval Research Southeast Meeting, Miami, FL, 15 March 2006. Title: Frontal dynamics and deep mixing in the Sea of Japan.

Department of Physics, Florida State University, 22 September, 2005. Title: The ocean boundary layer: How small-scale processes affect our climate.

National Research Council Panel on Water Resources and the Hydrologic Cycle, Irvine, CA, 29 August 2005, Title: Ocean evaporation.

Sixteenth GEWEX Radiation Panel Session, Paris, France, 5 October 2005, Title: SEAFLUX: Status report.

Office of Naval Research Southeast Meeting, St. Petersburg, FL, 11 May 2004, Title: Deep convection in the Japan (East) Sea: A modeling study.

NASA Goddard Institute for Space Studies, New York, NY, 27 November 2003, Title: Deep convection in the Sea of Japan.

GEWEX/CLIVAR Workshop on Climate Feedbacks, Atlanta, GA, 18 November 2002, Title: Feedback examination using Granger causality.

Department of Geography, Indiana University, November 21, 1997, Title: Air-Sea interaction in the tropical Pacific.

Department of Atmospheric Sciences, Colorado State University, April 19, 1996, Diurnal Variability in the Upper Ocean and Air-sea Fluxes during TOGA COARE.

CRUISE ACTIVITY:

Roundabout Leg 18, Seamounts/Sea Beam, onboard R/V Thomas Washington. Honolulu, HI – San Diego, CA, May 3 – May 30, 1989. Performed XBT survey of Fieberling Guyot.

NASA SPURS-2. August 13 – September 23rd, 2016 Tropical eastern Pacific (10N, 125W). Lead PI for meteorological measurements for this NASA-funded project.

AR41, R/V Neil Armstrong, 18 – 22 November 2019. Woods Hole, MA to Woods Hole, MA. Oversaw deployment and recovery of 2nd generation X-Spar.

GRADUATE STUDENTS AND POST-DOCS ADVISED:

Past: Brian Strahl (M.S., Purdue), Kimberly Waugh (M.S., Purdue), Brian Getzewich (M.S., Purdue), Heidi Zeleznik (M.S., Purdue), Shalini Mohleji (M.S., Purdue), Derrick Weitlich (M.S., Purdue), Aidong Chen (Ph.D., Purdue), Michael Hanggi (M.S., FSU), Jorge Lopez (M.S., FSU), Christine Haman (M.S., FSU), Bryan Rahter (M.S., FSU), Buddy Jordan (Ph.D., FSU), Jeremiah Brown (Ph.D., FSU), Alec Bogdanoff (M.S., FSU), Rebecca Hunniford (M.S., FSU), Rob Deal (M.S., FSU), Brent Roberts (Ph.D., FSU), H. Winterbottom (Ph.D., FSU), Alec Bogdanoff (Ph.D, MIT/WHOI.), Hanyuan Liu (Ph.D., MIT/WHOI).

Postdocs Advised: Jon Schrage, Maria Luneva, Gauher Shaheen.

COURSES TAUGHT:

At Purdue:

ATMS 535, Boundary Layer Meteorology (Cross-listed undergraduate/graduate)

ATMS 403, Physical Oceanography (undergraduate)

GEOS 191 (later GEOS 109), The Dynamic Earth (undergraduate)

ATMS 230, Survey of Atmospheric Science (undergraduate)

ATMS 591C, Numerical Ocean Modeling (graduate)

ATMS 591, Small-Scale Processes (graduate)

AT FSU:

OCP 5551, Physics of the Air-Sea Boundary Layers
MET 6480A, Atmospheric Turbulence
MET 1010, Introduction to the Atmosphere
MET 4159, Boundary Layer Meteorology
MET 6480B, Satellite Oceanography

In MIT/WHOI Joint Program:

12.820 Turbulence in the Atmosphere and Oceans
12.870 Air-Sea Interaction

COMMUNITY OUTREACH TALKS:

Ocean evaporation and Earth's changing water cycle. Presentation to the Massachusetts Marine Educators, Woods Hole, MA 6 April 2013.

The importance of oceans to climate variability. Presentation to the Tennessee Environmental Conference, Kingsport, TN 25 March 2014.

A dialog on our ability to predict the climate. Presentation to Eastman Chemical Company, Kingsport, TN, 26 March 2014.

The ocean's impact on water variability. Presentation to the Scituate Science Symposium, Scituate, MA 10 April 2014.

The ocean and climate change. Presentation to Eastman Chemical B. V., Capelle, The Netherlands, 17 July 2014.

The ocean and climate variability Presentation to WHOI Ocean Science Journalism Fellows. Woods Hole, MA. 8 September 2014.

Remarks on the 50th anniversary of the Alvin Submersible. Briefings to House and Senate Staff and Senators. Washington DC, 17 September 2014.

Air-sea interaction and climate change. Presentation to Fellows and Staff of the Radcliffe Institute for Advanced Study, Harvard University, 24 October 2014.

Non-federal funding. *2015 Marine Geoscience Leadership Symposium*. Washington, DC. 10 March 2015.

Keynote speech, MassMutual Women in Technology, Springfield, MA, 24 April 2015.

Climate: What we know and don't know. Presentation to Raytheon team. Woods Hole, MA, 10 July 2015.

Ocean effects on climate change, NH Joint Engineering Societies 10th Annual Conference. Bedford, NH. 13 October 2016.

Water availability in a changing world. Sustainability Leadership Forum, 2016 – All City Summit. Atlanta, GA. 19 October 2016.

Sea level rise panel presentation. World Ocean Summit (sponsored by the Economist), 23 February, 2017, Bali, Indonesia. As part of this I also did a Facebook Live interview which was seen by more than 700,000 people. I shudder to think this is my most lasting contribution.

How the ocean impacts agriculture. Ocean Leadership's 2017 Public Policy Forum. Washington, DC 8 Mar 2017. Invited. Talk.

Climate change and the ocean. AB Bernstein Boston Impact Conference 2.0, Boston, MA 4 April 2017. Invited. Talk.

Coming soon to a location near you. Presentation for WHOI Development at a Boston Harbor Cruise (New England Chapter of the Corporation), 20 June 2018.

How High Will It Go? The science of predicting sea level rise. Presentation for WHOI Development at the Edgartown Yacht Club, Lunch with a View Series, 31 July 2018.

Presentation for the Scituate STEAMcollab Symposium, Scituate, MA, 1 March 2018.

The ocean and climate change, Presentation for WHOI Board of Trustees, Woods Hole, MA 10 October 2019.

Ocean-climate connections. Presentation to the WHOI-NY Ocean Focus Series. New York City, NY. 29 January 2020.

Oceans of change: Understanding the ocean-climate connection. WHOI Evening of Science, Woods Hole, MA 5 August 2020.

NON-REFEREED PUBLICATIONS/CONFERENCE PROCEEDINGS: (BOLD INDICATES GRADUATE STUDENT OF DR. CLAYSON)

Clayson, C. A., 1993: Impact of westerly wind bursts on surface fluxes as determined from satellite data. *20th Conference on Hurricanes and Tropical Meteorology*, San Antonio, TX, Amer. Meteor. Soc.

Curry, J. A., C. A. Clayson, W. B. Rossow, Y. Zhang, and P. J. Webster, 1993: Determination of the tropical sea surface energy balance from satellite. *20th Conference on Hurricanes and Tropical Meteorology*, San Antonio, TX, Amer. Meteor. Soc., 591-594.

Wick, G. A., C. A. Clayson, W. J. Emery, and J. A. Curry, 1994: The relationship between sea surface temperature, bulk temperature and surface heat fluxes in the tropical Pacific. *Seventh Conference on Satellite Meteorology and Oceanography* Monterey, CA, Amer. Meteor. Soc., 3-5.

Clayson, C. A., and J. A. Curry, 1996: Determination of the diurnal cycle of sea surface temperature from satellite in the tropical western Pacific Ocean. *Conference on Air/Sea Interactions*, Atlanta, GA, Amer. Meteor. Soc.

Webster, P. J., C. A. Clayson, and J. A. Curry, 1996: Clouds, radiation, and the diurnal cycle of sea surface temperature in the tropical western Pacific. *Conference on Air/Sea Interactions*, Atlanta, GA, Amer. Meteor. Soc.

Clayson, C. A., J. A. Curry, P. J. Webster, and L. H. Kantha, 1996: Impact of Precipitation on the Tropical Ocean Mixed Layer. *Conference on Air/Sea Interactions*, Atlanta, GA, Amer. Meteor. Soc.

Curry, J. A., C. A. Clayson, and W. B. Rossow, 1997: An integrated approach to determining tropical ocean surface heat flux components from satellite. *22nd Conference on Hurricanes and Tropical Meteorology*, Fort Collins, CO, Amer. Meteor. Soc., 682-683.

Clayson, C. A., **A. Chen**, L. H. Kantha, and P. J. Webster, 1997: Numerical simulations of the equatorial Pacific during the TOGA/COARE IOP. *22nd Conference on Hurricanes and Tropical Meteorology*, Fort Collins, CO, Amer. Meteor. Soc., 600-601.

Chen, A., C. A. Clayson, and J. A. Curry, 1998: A study of air-sea interaction in the TOGA-COARE region using a single-column model. *Ninth Conference on Interaction of the Sea and Atmosphere*, Phoenix, AZ, Amer. Meteor. Soc.

Johnson, T. and C. A. Clayson, 1998: The use of instructional simulations and web-based interactivity for teaching numerical ocean modeling. *Seventh Symposium on Education*, Phoenix, AZ, Amer. Meteor. Soc.

- Schrage, M. M., D. G. Vincent, A. Fink, and C. A. Clayson, 1999: Modulation of intraseasonal (25-70 day) processes by the superimposed ENSO cycle across the Pacific basin. *AMS Annual Conference*, Dallas, TX.
- Strahl, B.**, C. A. Clayson, and J. Schrage, 2000: 2-3 Day convective variability in the tropical Pacific. *AMS 24th Conference on Hurricanes and Tropical Meteorology*, Ft. Lauderdale, FL.
- Zeleznik, H.** and C. A. Clayson, 2000: Upper ocean heat and salt variability in the equatorial Pacific. *AMS 10th Conference on Interaction of the Sea and Atmosphere*, Ft. Lauderdale, FL.
- Clayson, C. A. and M. Luneva, 2002: Studies of deep convection processes using a numerical ocean model: The Japan (East) Sea. *AGU Ocean Sciences*, Honolulu, HI.
- Mohleji, S.** and C. A. Clayson, 2002: Precipitation variability and barrier-layer formation in the North Indian Ocean. *AMS 25th Conference on Hurricanes and Tropical Meteorology*, San Diego, CA.
- Schrage, J., C. A. Clayson, D. M. Schultz, and **R. J. Machtmes**, 2002: Ocean model simulations of a gap wind event in the Gulf of Tehuantepec. *AMS 25th Conference on Hurricanes and Tropical Meteorology*, San Diego, CA.
- Chen, A.** and C. A. Clayson, 2002: Sensitivity of a coupled single column model in the tropics to treatment of the interfacial parameterizations. *AMS 25th Conference on Hurricanes and Tropical Meteorology*, San Diego, CA.
- Getzewich, B.** and C. A. Clayson, 2002: Use of Granger causalities to examine air-sea feedbacks in the tropical equatorial Pacific Ocean. *AMS 25th Conference on Hurricanes and Tropical Meteorology*, San Diego, CA.
- Lopez, J.**, C. A. Clayson, and M. Luneva, 2002: One-dimensional modeling of deep convection in the Sea of Japan. *AGU Ocean Sciences*, Honolulu, HI.
- Luneva, M., C. A. Clayson, and **J. Lopez**, 2002: Simulation of interaction of thermal fronts, vertical mixing and topographic processes in semi-enclosed seas by three-dimensional eddy-resolving numerical modeling. *AGU Ocean Sciences*, Honolulu, HI.
- Clayson, C.A., 2003: Effects of precipitation on the tropical Western Pacific Ocean using a coupled single-column model. *AMS 12th Conference on Interaction of the Sea and Atmosphere*, Long Beach, CA.
- Schrage, J. and C. A. Clayson, 2003: Precipitation and fresh water lens formation in the tropical Western Pacific. *AMS 12th Conference on Interaction of the Sea and Atmosphere*, Long Beach, CA.
- Clayson, C.A., S. Carniel, and L. H. Kantha, 2004: A generic two-equation turbulence model for geophysical applications. *AMS 16th Symposium on Boundary Layers and Turbulence*, Portland, ME.
- Clayson, C. A. and L. H. Kantha, 2004: A non-local second moment closure model applied to convective boundary layers. *AMS 16th Symposium on Boundary Layers and Turbulence*, Portland, ME.
- Clayson, C.A., S. Carniel, L. H. Kantha, M. Sclavo, 2004: Surface gravity waves and mixing in the upper ocean. *EOS Trans. AGU, 84(52), Ocean Sciences Meeting Supplement*, Portland, OR.
- Weitlich, D.** and C. A. Clayson, 2005: Interannual variability of the diurnal sea surface temperature. *AMS 16th Conference on Climate and Climate Variability*, San Diego, CA.
- Clayson, C. A., 2006: Third SEAFLUX workshop, *GEWEX News*, 16(2), 16-17.

- Clayson, C. A., 2007: SeaFlux: New methods in satellite-derived air-sea fluxes. *Eos Trans. AGU*, 88(23), Jt. Assem. Supple., Abstract A23E-01.
- Romanou, A., C. A. Clayson, W. B. Rossow, and R. Roehrig, 2007: Evaporation flux variability in the tropical Pacific from observations and climate models. *Eos Trans. AGU*, 88(23), Jt. Assem. Supple., Abstract A23E-07.
- Agudelo, P. A., J. A. Curry, and C. A. Clayson, 2007: Simulation of a coupled mechanism for local intraseasonal variability in the tropics. *Eos Trans. AGU*, 88(23), Jt. Assem. Supple., Abstract A23A-10.
- Cunningham, P. and C. A. Clayson, 2007: Impacts of diurnal variations in sea-surface temperature on deep convection over tropical ocean. *AMS 19th Conference on Climate and Climate Variability*, San Diego, CA.
- Haman, C.** and C. A. Clayson, 2007: Effects of a diurnal sea surface temperature on surface fluxes and atmospheric variability. *AMS 19th Conference on Climate and Climate Variability*, San Diego, CA.
- C. A. Clayson, 2007: Interannual variability of diurnal warming of the sea surface temperature. *AMS 19th Conference on Climate and Climate Variability*, San Diego, CA.
- Roberts, J. B.**, C. A. Clayson, F. R. Robertson, and D. Jackson, 2008: Investigating seasonal and interannual variability of latent heat flux using a high resolution satellite product. *Eos Trans. AGU* 89(23), Jt. Assem. Suppl., Abstract U33C-03.
- Clayson, C. A., 2008: An overview of SEAFLUX: New science and methods in air-sea fluxes. AGU Ocean Sciences Meeting, Orlando, FL.
- Roberts, J. B.** and C. A. Clayson, 2008: Investigating the geospatial and temporal patterns of diurnal warming events using remote sensing and modeling. AGU Ocean Sciences Meeting, Orlando, FL.
- Romanou, A., W. B. Rossow, C. A. Clayson, and R. Roehrig, 2008: Latent heat flux variability in the tropical Pacific from observations and models. AGU Ocean Sciences Meeting, Orlando, FL.
- Luneva, M. V. and C. A. Clayson, 2008: Effect of the coupling between the upper and lower circulations near the front on the deep mixing. AGU Ocean Sciences Meeting, Orlando, FL.
- Canuto, V. M., Dubovikov, M. S., C. A. Clayson and M. V. Luneva, 2008: Modeling mesoscales in the mixed layer. AGU Ocean Sciences Meeting, Orlando, FL.
- Clayson, C. A., 2008: Diurnal sea surface temperature variability and the transition phase of the MJO. *AMS 28th Conference on Hurricanes and Tropical Meteorology*, Orlando, FL.
- Winterbottom, H.** and C. A. Clayson, 2008: Preliminary Results Using a Coupled Ocean-Atmosphere Vortex Specification Algorithm for the WRF-ARW Using NHC/TPC Observations and Vertical Structures Derived from Analytical and Observational Models. *AMS 28th Conference on Hurricanes and Tropical Meteorology*, Orlando, FL.
- Jordan, M. R.**, M. Luneva, , and C. A. Clayson, 2008: Development of a new storm surge index for prediction of storm surge associated with landfalling tropical cyclones. *AMS 28th Conference on Hurricanes and Tropical Meteorology*, Orlando, FL.
- VanDyke, D.**, C. A. Clayson, and E. Chassignet, 2009: Modeling of cold air outbreaks and return flow over the Gulf of Mexico. *AMS 16th Conference on Air-Sea Interaction*. Phoenix, AZ.
- Winterbottom, H.**, C. A. Clayson, and E. Chassignet, 2009: A coupled ocean-atmosphere model for tropical cyclone studies – Boundary layer interactions and the response to tropical cyclone passage. *AMS 16th Conference on Air-Sea Interaction*. Phoenix, AZ, 21 January.
- Roberts, J.B.**, C. A. Clayson, and F. R. Robertson, 2009: Using neural networks to improve surface

- temperature and humidity prediction with satellite measurements. AMS 16th Conference on Air-Sea Interaction and AMS 16th Conference on Satellite Meteorology and Oceanography. Phoenix, AZ.
- Forgue, C.** and C. A. Clayson, 2009: A climatology of cold air outbreaks over the Gulf of Mexico. AMS 16th Conference on Air-Sea Interaction. Phoenix, AZ.
- Clayson, C. A., 2009: Representation of air-sea turbulent fluxes from varying satellite methodologies. AMS 16th Conference on Air-Sea Interaction and AMS 16th Conference on Satellite Meteorology and Oceanography. Phoenix, AZ.
- Deal, R. L.** and C. A. Clayson, 2010: Ocean response to hurricanes: A look at cold wake restratification. AMS 9th Annual Student Conference, Atlanta, GA, 17 January.
- Scott, J. P.**, M. A. Bourassa, and C. A. Clayson, 2010: Diurnal variation in the latent heat flux. AMS 9th Annual Student Conference, Atlanta, GA, 17 January.
- Clayson, C. A. 2010: Diurnal SST variability unknowns. NASA Sea Surface Temperature Science Team Meeting, Seattle, WA, November, 2010.
- Hunniford, R.** C. A. Clayson, and **Bogdanoff, A. S.**, 2010: The effect of cold air outbreaks on tropical cyclone potential intensity in the Gulf of Mexico. AMS Ninth Conference on Coastal Atmospheric and Oceanic Prediction and Processes, Annapolis, MD, September 2010.
- Roberts, J. B.** and C. A. Clayson, 2010: Development of an AQUA-based near-surface parameter retrieval. AMS 17th Conference on Satellite Meteorology and Oceanography. Annapolis MD, September 2010.
- Bogdanoff, A. S.** and C. A. Clayson, 2010: The inclusion of a diurnally varying sea surface temperature in surface energy budget calculations. AMS 17th Conference on Air-Sea Interaction, Annapolis MD, September, 2010.
- Clayson, C. A., 2010: Variability of sea surface temperature diurnal warming. AMS 17th Conference on Air-SEA Interaction, Annapolis, MD, September 2010.
- Clayson, C. A., **R. Hunniford**, and **A. S. Bogdanoff**, 2010: The representation of air-sea fluxes in cold air outbreaks in satellite and MERRA data. AMS Ninth Conference on Coastal Atmospheric and Oceanic Prediction and Processes. Annapolis MD, September 2010.
- Bogdanoff, A. S.** and C. A. Clayson, 2010: A diurnally varying sea surface temperature dataset using a next generation parameterization. AMS 17th Conference on Satellite Meteorology and Oceanography, Annapolis MD, September, 2010.
- Clayson, C.A., **J. B. Roberts**, **A. S. Bogdanoff**, and **J. P. Scott**, 2010: Extreme events in the SeaFlux turbulent flux dataset. AMS 17th Conference on Satellite Meteorology and Oceanography, Annapolis MD, September, 2010.
- Scott, J.**, M. Bourassa, and C. A. Clayson, 2010: Error analysis of satellite-derived SeaFlux heat and moisture fluxes with in situ-derived fluxes. AMS 17th Conference on Satellite Meteorology and Oceanography, Annapolis, MD, September 2010.
- Clayson, C. A. and **J. B. Roberts**, 2010: A new climatological air-sea flux satellite-derived data set. AGU Ocean Sciences, Portland, OR.
- Bogdanoff, A. S.**, D. L. Westphal, J. S. Reid, J. Cummings, E. Hyer, J. Campbell, and C. A. Clayson, 2010: Aerosol impact on sea surface temperature retrievals: sensitivity and modeling. AMS 2nd Symposium on Aerosol-Cloud-Climate Interactions and 12th Conference on Atmospheric Chemistry, Atlanta, GA.
- Roberts, J. B.**, F. R. Robertson, C. A. Clayson, and M. G. Bosilovich, 2010: Analysis of air-sea interactions

- in the NASA MERRA product. AMS 22nd Conference on Climate Variability and Change, Atlanta, GA.
- Hunniford, R., C. A. Clayson, and A. S. Bogdanoff**, 2010: The effect of marine cold-air outbreaks on tropical cyclone potential intensity in the Gulf of Mexico. AMS 9th Annual Student Conference, Atlanta, GA.
- Clayson, C. A., 2011: Modeling of diurnal SSTs. GHRSSST Joint Workshop, Boulder, CO, 28 February 2011.
- Gille, S., M. A. Bourassa, and C. A. Clayson, 2010: Surface fluxes: Challenges for high latitudes. *Eos*, Vol. 91, No. 35, 307.
- Clayson, C. A., 2011: NEWS Climatology Project: SeaFlux Evaporation Variability. WCRP Open Science Conference, Denver, CO, October, 2011.
- Wave effects and stable boundary layers on air-sea fluxes. *2012 AGU Ocean Sciences Meeting*, Salt Lake City, UT, February 2012.
- Clayson, C. A., 2012: Testing the KC model with additional diurnal parameters in the TWP. GHRSSST Joint Workshop, Melbourne, Australia, March, 2012.
- Clayson, C. A., 2012: Weather regimes and air-sea fluxes. AMS Air-Sea Interaction Conference, Boston, MA, July 2012.
- Clayson, C. A., 2012: Issues with satellite ocean evaporation budgets in the context of global water cycles. CLIVAR Global Synthesis and Observations Panel workshop, Woods Hole, MA, November, 2012.
- Clayson, C. A., 2012: Climatological changes in weather states over the tropical and mid-latitude oceans. 2012 AGU Fall Meeting, San Francisco, CA, December, 2012.
- Roberts, J. B. and C. A. Clayson, 2013: Tropical ocean surface energy balance variability: linking weather to climate scales. 2013 AMS Annual Meeting, Austin, TX.
- Clayson, C. A. 2013: ISCCP-defined weather regimes and air-sea interaction. ISCCP at 30: What do we know and what do we still need to know? Workshop, CCNY, NY, 24 April 2013.
- Clayson, C. A., 2013: Weather regimes and air-sea fluxes: linking the ocean heat budget and the atmosphere. EUMETSAT/AMS Satellite Meteorology, Oceanography, and Climatology Conference, Vienna, Austria, 16 September 2013.
- Clayson, C. A. and L. St. Laurent, 2013: Diurnal SST variability and the upper ocean mixed layer structure. 2013 NASA SST Science Team meeting, Seattle, WA 29 October 2013.
- Clayson, C. A., L. St. Laurent, and R. Schmitt, 2014: Small-scale mixing and stable/unstable mixed layers in the SPURS region. *2014 AGU Ocean Sciences*, Honolulu, HI 27 February 2014.
- Clayson, C. A., B. Roberts, 2014: Characteristics of and relationships between surface heat and moisture fluxes and ocean-atmosphere variability. *JCOMM Fourth Workshop on Advances in Marine Climatology*. Asheville, NC. 9 June, 2014.
- Clayson, C. A., 2014: Relationships between ocean-atmosphere surface heat and moisture fluxes and weather regimes. *EUMETSAT Meteorological Satellite Conference*, Geneva, Switzerland, 22 September 2014.
- Clayson, C. A., 2014 Air-sea flux distributions from satellite and models across the global oceans. *Earth Observation for Ocean-Atmosphere Interactions Science 2014*, Frascati, Italy 29 October 2014.
- Clayson, C. A., 2015: Diurnal SST variability and the upper ocean mixed layer structure. *2014 NASA SST*

- Science Team Meeting*, Annapolis, MD, 4 December 2014.
- Clayson, C. A. and L. St. Laurent, 2015: Upper ocean salinity structure variability and its relationship to Aquarius observations. *2015 AMS Annual Meeting*, Phoenix, AZ 7 January 2015.
- Clayson, C. A., L. St. Laurent, and R. Schmitt, 2015: Upper ocean mixing during SPURS-1. *2015 SPURS Workshop*, La Jolla, CA, 11 March 2015.
- Clayson, C. A., 2015: Surface heat fluxes and ocean heat content. *2015 U.S. CLIVAR Summit*, Tucson, AZ, 5 August 2015.
- Clayson, C. A., 2016: Diurnal warming impacts on atmospheric and oceanic evolution during the suppressed phase of the Madden Julian Oscillation. *AGU Ocean Sciences*, New Orleans, LA, 26 February 2016.
- Clayson, C. A., 2016: Overview on SeaFlux. *GEWEX 5th Data and Assessments Panel meeting*, 29 November, Washington, DC.
- Clayson, C. A., 2016: Estimating ocean surface meteorology from passive microwave observations for the development of satellite-derived turbulent fluxes. *2016 AGU Fall Meeting*, New Orleans, 11 – 15 December 2016.
- Clayson, C. A., J. B. Edson, T. Farrar, L. St. Laurent, and R. Schmitt, 2017. Near-surface stratification effects in the SPURS field campaigns. *Global Ocean Salinity and the Water Cycle Workshop*, Woods Hole, MA 24 May 2017. Invited.
- Clayson, C. A., 2017: Relationships between ocean-atmosphere surface heat and moisture fluxes and weather regimes. *William B. Rossow Celebration Symposium*, CCNY, New York, NY, 7 June 2017.
- Clayson, C. A., 2017: Information about the data is as important as the data itself. *2017 ESIP summer meeting*, Bloomington, IN, 26 July 2017. Invited.
- Clayson, C. A., and F. Bingham, 2017: Eastern and western boundary current observing systems – current status and observational gaps *US CLIVAR Phenomena, Observations, and Synthesis Panel meeting*, Baltimore, MD. 7 – 10 August 2017.
- Clayson, C.A., J. Edson, and J. T. Farrar, 2018: The effects of rainfall on the atmosphere and ocean during SPURS-2. *2018 Ocean Salinity Science Conference, Sorbonne University, Paris, France*, 6 – 9 November 2018.
- Edson, J. B., C. A. Clayson, and J. B. Roberts, 2019: Diurnal air-sea coupling, air-sea fluxes, and the upper ocean state during the suppressed phase of the Madden-Julian Oscillation. *2019 AMS/EUMETSAT Joint Satellite Conference*, Boston, MA 1 October 2019.
- Clayson, C.A., J. B. Roberts, and F. P. Robertson, 2019: Global trends in ocean evaporation from satellite products. *2019 AMS/EUMETSAT Joint Satellite Conference*, Boston, MA 1 October 2019.
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