**Chad A. Greene, Ph.D.**

**NASA / Jet Propulsion Laboratory**

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**Education**

**Ph.D.** 2017, Geological Sciences, *The University of Texas at Austin*

*Thesis*: Drivers of change in East Antarctic ice shelves

**M.S.** 2010, Mechanical Engineering, *The University of Texas at Austin*

*Thesis:* Low-frequency acoustics of methane hydrates

**B.S.** 2007, Mechanical Engineering with honors, *Virginia Commonwealth University*

**Professional Experience**

Dr. Greene is a satellite remote sensing and machine learning specialist in the Sea Level and Ice group under the Earth Science Section at JPL/Caltech, where he is a member of the NASA MEaSUREs ITS\_LIVE Earth data development team. He has conducted multiple seasons of airborne geophysical surveys in Antarctica and has carried out ship-based science in the Arctic, the Gulf of Mexico, and the Baltic Sea. Dr. Greene is a prolific coder, creator of many open-source MATLAB and Julia toolboxes, and has a passion for thorough documentation. He has served on the MathWorks Community Advisory Board and as editor of the *Proceedings of the National Academy of Sciences*.

**Peer-Reviewed Publications**

F. Paolo, A.S. Gardner, **C.A. Greene**, and others. [Widespread slowdown in thinning rates of West Antarctic ice shelves](https://doi.org/10.5194/egusphere-2022-1128), *EGUSphere*, in review.

Y. Nakayama, T. Hirata, D. Goldberg, **C.A. Greene**. [What determines the shape of a Pine-Island-like ice shelf?](https://doi.org/10.1029/2022GL101272) *Geophysical Research Letters*, 2022.

**C.A. Greene,** A.S. Gardner, N-J Schlegel, A.D. Fraser. [Antarctic calving loss rivals ice-shelf thinning](https://www.nature.com/articles/s41586-022-05037-w), *Nature,* 2022.

Y. Nakayama, **C.A. Greene,** and others. [Antarctic Slope Current modulates ocean heat intrusions towards Totten Glacier](https://doi.org/10.1029/2021GL094149). *Geophysical Research Letters*, 2021.

**C.A. Greene**, A.S. Gardner, L.C. Andrews. [Detecting seasonal ice dynamics in satellite images](https://doi.org/10.5194/tc-14-4365-2020). *The Cryosphere*, 2020.

W. Wei, D.D. Blankenship,…, **C.A. Greene**, and others [Getz Ice Shelf melt enhanced by freshwater discharge from beneath the West Antarctic Ice Sheet](https://www.doi.org/10.5194/tc-14-1399-2020). *The Cryosphere*, 2020.

**C.A. Greene**, K. Thirumalai, K.A. Kearney, and others. [The Climate Data Toolbox for MATLAB](https://www.doi.org/10.1029/2019GC008392). *Geochemistry, Geophysics, Geosystems*, 2019.

**C.A. Greene** & K. Thirumalai. [It’s time to shift emphasis away from code sharing](https://www.doi.org/10.1029/2019EO116357). *Eos*, 2019.

**C.A. Greene** and others. [Seasonal dynamics of Totten Ice Shelf controlled by sea ice buttressing](https://doi.org/10.5194/tc-12-2869-2018). *The Cryosphere*, 2018.

C.F. Dow, W.S. Lee, J.S. Greenbaum, **C.A. Greene**, and others. [Basal channels drive active surface hydrology and transverse ice-shelf fracture](https://doi.org/10.1126/sciadv.aao7212). *Science Advances*, 2018.

**C.A. Greene** & D.D. Blankenship. [A Method of Repeat Photoclinometry for Detecting Kilometer-Scale Ice Sheet Surface Evolution](https://doi.org/10.1109/TGRS.2017.2773364). *IEEE Transactions on Geoscience and Remote Sensing*, 2018.

**C.A. Greene** and others. [Wind causes Totten Ice Shelf melt and acceleration](https://doi.org/10.1126/sciadv.1701681). *Science Advances*, 2017.

**C.A. Greene**, D.E. Gwyther, D.D. Blankenship. [Antarctic Mapping Tools for Matlab](https://doi.org/10.1016/j.cageo.2016.08.003). *Computers & Geosciences*, 2017.

K.M. Thyng, **C.A. Greene**, and others. [True colors of oceanography: Guidelines for effective and accurate colormap selection](https://www.jstor.org/stable/24862699). *Oceanography*, 2016.

C.J. Wilson, P.S. Wilson, **C.A. Greene**, K.H. Dunton. [Seagrass meadows provide an acoustic refuge for estuarine fish](https://doi.org/10.3354/meps10045). *Marine Ecology Progress Series*, 2013.

**C.A. Greene** & P.S. Wilson. [Laboratory investigation of a passive acoustic method for measurement of underwater gas seep ebullition](https://doi.org/10.1121/1.3670590). *Journal of the Acoustical Society of America*, 2011.

C.J. Wilson, P.S. Wilson, **C.A. Greene**, K.H. Dunton. [Seagrass leaves in 3-D: Using computed tomography and low-frequency acoustics to investigate the material properties of seagrass tissue](http://dx.doi.org/10.1016/j.jembe.2010.08.025). *Journal of Experimental Marine Biology and Ecology*, 2010.

**Employment History**

**NASA Jet Propulsion Laboratory** Pasadena, CA   
Ice Sheet and Glacier Remote Sensing Research Scientist: Jan 2023 to present   
Postdoctoral Research Fellow: Feb 2019 to Jan 2023

**Institute for Geophysics** Austin, TX  
Research Engineering/Scientist: Sept 2015 to Feb 2019  
Graduate Research & Teaching Assistant: Aug 2011 to Sept 2015

**Applied Research Laboratories** Austin, TX  
Graduate Research Assistant: Jun 2007 to Aug 2011

**Virginia Commonwealth University** Richmond, VA  
Teaching Assistant: Jan. 2007 to May 2007

**Federal Reserve Bank** Richmond, VA  
Currency Systems Engineer Intern: May 2006 to Aug. 2006

**Field Work**

**Casey Station** Wilkes Land, Antarctica  
Airborne surveys: Dec. 2017 to Feb 2018

**Byrd Field Camp** Marie Byrd Land, Antarctica  
Airborne surveys: Dec. 2012 to Feb 2013

**Gulf of Mexico** Port Aransas, TX  
Marine acoustic habitat measurements: 2009 to 2011

**Eckernförde Bay** Kiel, Germany  
Sediment acoustics survey: Jun 2010 to Jul 2020

**Stennis Space Center** Hancock, MS  
Sediment acoustics experiments: Jun 2008 & May 2010

**Beaufort Sea** Arctic Ocean   
USCG Polar Sea expedition Sept 2009 to Oct 2009

**Awards, Accreditations, & Accomplishments**

**NASA Postdoctoral Program Fellowship** 2019–2023

**MathWorks (MATLAB) Community Advisory Board** 2016–2022

**National Science Foundation Early Career Scientist Award** June 2018

**NASA Young Investigator Award** July 2016

**Univ. of Texas Institute for Geophysics Outstanding Graduate Student Award** May 2016

**MathWorks Award for Outstanding Contributions** 2015

**MATLAB File Exchange Pick-of-the-Week** July 2012, July 2013, July 2014

**United States Congressional Antarctic Service Medal** 2013

**Univ. of Texas College of Engineering Fellowship** 2007–2008

**NCEES Fundamentals of Engineering Exam** passed 2007

**Wright Merit Scholarship** 2002–2007

**Virginia Commonwealth University Dean’s List** 2003–2005

**Virginia Commonwealth University Honors Program** 2002–2005

**Bicycled self-supported over 4200 miles from Oregon to North Carolina** 2005

**Eagle Scout** 2002

**Virginia State Certified Emergency Medical Technician** 2002

**In the News**

**CNN** 2022: [World’s largest ice sheet crumbling faster than previously thought, satellite imagery shows](https://www.cnn.com/2022/08/11/world/antarctica-ice-sheet-crumbling-climate-intl/index.html).

**Time** 2022: [NASA Satellites Paint Grim Picture For The Future of Antarctica's Ice Shelves](https://time.com/6205753/antarctica-ice-melt-doubles-nasa/).

**Forbes** 2022: [Antarctica’s Coastal Glaciers Crumbling At Faster Rate Than Previously Believed](https://www.forbes.com/sites/kylehenderson/2022/08/11/antarcticas-coastal-glaciers-crumbling-at-faster-rate-than-previously-believed-study-finds/?sh=195584b9731b).

**Washington Post** 2022: [Climate change’s impact intensifies as U.S. prepares to take action](https://www.washingtonpost.com/climate-environment/2022/08/11/climate-changes-impact-intensifies-us-is-poised-pass-major-bill/).

**Washington Post** 2022: [Foreboding new studies show the climate battle is not over](https://www.washingtonpost.com/opinions/2022/08/14/climate-change-studies-warming-antarctica/).

**Scientific American** 2018: [Why Are Glaciers Melting from the Bottom? It’s Complicated](https://www.scientificamerican.com/article/why-are-glaciers-melting-from-the-bottom-its-complicated/).

**Scientific American** 2017:[How Wind Might Nudge a Sleeping Giant in Antarctica](https://www.scientificamerican.com/article/how-wind-might-nudge-a-sleeping-giant-in-antarctica/).

**Wired** 2017: [For Scientists Predicting Sea Level Rise, Wind is the Biggest Unknown](https://www.wired.com/story/wind-is-driving-rapid-melt-in-antarcticas-biggest-glacier/).