Curriculum Vitae

Chuanmin Hu

1. *Address*

College of Marine Science (CMS), University of South Florida (USF)
140 Seventh Ave. South, St. Petersburg, FL 33701
Phone: (727)553-3987; huc@usf.edu; https://optics.marine.usf.edu

2. *Professional Preparation*

Ph.D. in Physics, 1997, University of Miami, Coral Gables, Florida, U.S.A.
M.S. in Physics, 1992, Institute of Physics, Academia Sinica, Beijing, China
B.S. in Physics, 1989, University of Sci. and Tech. of China, Hefei, China

3. *Professional Appointments*

2014 – present, Professor, University of South Florida
2009 – 2014, Associate Professor, University of South Florida
2006 – 2008, Associate Research Professor, University of South Florida
2001 – 2005, Assistant Research Professor, University of South Florida
1998 – 2000, Post-doctorate Research Associate, University of South Florida

4. *Honors & Awards*

2025 Fellow, Optica (formerly Optical Society of America)
2024 William T. Pecora Award, Department of Interior and NASA
2022 Outstanding Faculty Award, University of South Florida
2021 Fellow, American Association for the Advancement of Science (AAAS)
2020 Member, Academy of Science, Engineering & Medicine of Florida
2019 Outstanding Graduate Faculty Mentor Award, University of South Florida
2016 Global Achievement Group Award, University of South Florida
2014 Faculty Outstanding Research Achievement Award, University of South Florida
2014 Outstanding Faculty Award, University of South Florida
2013 Group Achievement Honor Award, NASA Ames Research Center
2013 Gulf Guardian Award, U.S. Environmental Protection Agency
2013 STEM Collaborative Partnership Award, ARCS

5. *Refereed Publications (as of 2/5/2025)*

Total: 368 journal articles and 20 book chapters; Hu as first author: 65 journal articles and 6 book chapters; 12 appears on journal covers, many highlighted by AGU, NASA, and IOCCG through press releases

Google Scholar citation (2/5/2025): total citations: 31,292; h-index: 96.

a. *Professional Refereed Journals*

Underlined authors are students or postdocs

2025

368 Shi, J., **C. Hu**, J. P. Cannizzaro, B. B. Barnes, Y. Zhang, C. Lambke, and M. L. Henaff (2025). Intensification of Hurricane Idalia by a river plume in the eastern Gulf of Mexico. *Environ. Res. Lett.*, 20, 024050, https://doi.org/10.1088/1748-9326/adad8a.

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2024

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using MERIS and OLCI satellite data. GIScience & Remote Sensing, 61(1), 2285166, https://doi.org/10.1080/15481603.2023.2285166

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toward more functional satellite ocean color algorithms. Remote Sens. Environment, 286, 113418, https://doi.org/10.1016/j.rse.2022.113418.

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323 **Hu, C.** (2022). Remote detection of marine debris using Sentinel-2 imagery: A cautious note on spectral interpretations. Marine Pollution Bulletin, 183, 114082, https://doi.org/10.1016/j.marpolbul.2022.114082.

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18 **Hu, C.,** S. Sathyendranath, J. D. Shutler, C. W. Brown, T. S. Moore, S.E. Craig, I. Soto, and A. Subramaniam (2014). Detection of Dominant Algal Blooms by Remote Sensing. In: IOCCG (2014). Phytoplankton Functional Types from Space. Sathyendranath, S.

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17 **Hu, C.**, and J. Campbell (2014). Oceanic chlorophyll-a content. In: Biophysical applications of satellite remote sensing (J. M. Hanes Eds), Springer Remote Sensing/Photogrammetry. Springer-Verlag Berlin Heidelberg 2014.

16 Zhang, M., **C. Hu,** and G. Amu (2014). Real-world problem solving in entry-level programming courses: A case study on the Deepwater Horizon oil spill. Frontiers in Education Conference, 2013 IEEE, 343 – 348, doi: 10.1109/FIE.2013.6684845

15 **Hu, C.** (2012). South Florida marine environments can be assessed with satellite remote sensing. pp. 134-135. In: Kruczynski, W.L. and P.J. Fletcher (eds.). 2012. Tropical Connections: South Florida's marine environment. IAN Press, University of Maryland Center for Environmental Science, Cambridge, Maryland. 492 pp.

14 Liu, Y., R. H. Weisberg, **C. Hu,** and L. Zheng (2011), Trajectory forecast as a rapid response to the *Deepwater Horizon* oil spill, in *Monitoring and Modeling the Deepwater Horizon Oil Spill: A Record-Breaking Enterprise*, Geophys. Monogr. Ser., vol. 195, edited by Y. Liu et al., pp. 153–165, AGU, Washington, D. C., doi:10.1029/2011GM001121.

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12 **Hu, C.**, J. Cannizzaro, K. L. Carder, Z. Lee, F. E. Muller-Karger, and I. Soto (2011). Red tide detection in the eastern Gulf of Mexico using MODIS imagery. In: Morales, J., V. Stuart, T. Platt, and S. Sathyendranath (Eds.) (2011). Handbook of Satellite Remote Sensing Image Interpretation: Applications for Marine Living Resources Conservation and Management, EU PRESPO and IOCCG, Dartmouth, Canada. p95 – 110.

11 He, M.-X., J. Liu, F. Yu, D. Li, and **C. Hu** (2011). Monitoring green tides in Chinese marginal seas. In: Morales, J., V. Stuart, T. Platt, and S. Sathyendranath (Eds.) (2011). Handbook of Satellite Remote Sensing Image Interpretation: Applications for Marine Living Resources Conservation and Management, EU PRESPO and IOCCG, Dartmouth, Canada. p111 – 124.

10 **Hu, C.**, X. Li, and W. G. Pichel (2011). Detection of oil slicks using MODIS and SAR imagery. In: Morales, J., V. Stuart, T. Platt, and S. Sathyendranath (Eds.) (2011). Handbook of Satellite Remote Sensing Image Interpretation: Applications for Marine Living Resources Conservation and Management, EU PRESPO and IOCCG, Dartmouth, Canada. p21 – 34.

9 Muller-Karger, F. E., R. Varela, R. C. Thunell, M. I. Scranton, G. T. Taylor, Y. Astor, C. R. Benitez-Nelson, L. Lorenzoni, K. A. Fanning, E. Tappa, M. A. Goni, D. Rueda, and **C. Hu** (2010). CARIACO: A time series of primary production and vertical export in the Cariaco Basin. p454-463. In: *Carbon and Nutrient Fluxes in Continental Margins: A Global Synthesis.* Eds., K.-K. Liu, L. Atkinson, R. Quinones, and L. Talaue-McManus, IGBP Book Series. Springer, Berlin, 744 p + XXVIII.

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5 Muller-Karger, F. E., **C. Hu**, S. Andréfouët, and R. Varela (2005). The color of the coastal ocean and applications in the solution of research and management problems In: Remote Sensing of Aquatic Coastal Environments (R. L. Miller, C. E. Del Castillom, and B. A. McKee eds.), Springer-Verlag, New York, pp 101-127.

4 Andréfouët, S., E. J. Hochberg, C. Chevillon, F. E. Muller-Karger, J. C. Brock, and **C. Hu** (2005). Multi-scale remote sensing of coral reefs. In: Remote Sensing of Aquatic Coastal Environments (R. L. Miller, C. E. Del Castillom, and B. A. McKee eds.), Springer-Verlag, New York, pp 297-315.

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6. ***Non-Refereed Publications (updated 1/1/2015)***

29 Hu, C., Z. Lee, and B. Franz (2014). Minimize CDOM impact on the band-subtraction chlorophyll algorithm through optical weighting: Preliminary results. Oct 27 – 31, 2014, Ocean Optics XXII, Portland, Maine, USA.

28 Qi, L., C. Hu, H. Duan, et al. (2014). A novel algorithm to derive cyanobacterial phycocyanin pigment concentrations in a eutrophic lake from MERIS measurements:

Theoretical basis and practical considerations. Oct 27 – 31, 2014, Ocean Optics XXII, Portland, Maine, USA.

27 English, D., M. Zhang, and C. Hu et al. (2014). Hyperspectral remote sensing of shallow coastal waters in the Florida Keys using Unmanned Aircraft Systems (UAS): Initial results from atmospheric correction and glint correction. Oct 27 – 31, 2014, Ocean Optics XXII, Portland, Maine, USA.

26 Johannessen, J. A., M.-X. He, W. Alpers, G. Chen, J.-F. Piolle, Z. Liu, L. Shao, K.-F. Dagestad, B. Chapron, L. Wan, C. Hu, and L. Guan (2013). Dragon in support to harmonizing european and chinese marine monitoring for environment and security system. European Space Agency, (Special Publication) ESA SP Volume 704 SP, 2013, 8p. Dragon 2 Final Results and Dragon 3 Kick-Off Symposium; Beijing; China; 25 June 2012 through 29 June 2012.

25 Pahlevan, N., Z. Lee, C. Hu, and J. R. Schott (2013). Analyzing radiometric requirements for diurnal observations of coastal/oceanic waters from geostationary orbits. *Proc. SPIE* 8724, Ocean Sensing and Monitoring V, 87240K (June 3, 2013); doi:10.1117/12.2016279

24 Jochens, A. E., M. K. Howard, L. Campbell, R. Mullins-Perry, G. Kirkpatrick, B. Kirkpatrick, C. Simoniello, C. Hu, R. H. Weisberg, C. Lembke, A. Corcoran, J. Ivey, and S. H. Wolfe (2012). Integrating Observing Systems to benefit stakeholders: A case study in the Gulf of Mexico. Oceans 2012 MTS/IEEE: Harnessing the Power of the Ocean. Virginia Bean, VA; United States, 14 – 19 October 2012.

23 Santhyendranath, S., B. Brewin, D. Mueller, et al. (2012). Ocean colour climate change initiative – Approach and initial results. Geoscience and Remote Sensing Symposium (IGARSS), 2012 IEEE International, p2024-2027.

22 Liu, Y., R.H. Weisberg, **C. Hu,** and L. Zheng, 2011: Combining numerical ocean circulation models with satellite observations in a trajectory forecast system: a rapid response to the Deepwater Horizon oil spill, *Proc. SPIE* 8030, 80300K. doi:10.1117/12.887983

21 **Hu, C.,** 2011: Observing MODIS ocean color patterns under severe sun glint. *Proc. SPIE* 8030, 80300M. doi:101117/12.803021.

20 Lee, Z., R. Arnone, **C. Hu,** P. J. Werdell, and B. Lubac. 2011. Quantification of uncertainties in remotely derived optical properties of coastal and oceanic waters. *Proc. SPIE* 7678, 767802.

19 He, M-X., S. He, Q. Yang, Y. Wang, Z. Liu, J. Sha, and **C. Hu** (2010). Overview of Chinese spaceborne ocean observing systems, onboard sensors and data products (1988 - 2025). DRAGONESS Symposium. 12pp.

18 Johannessen, J. A., M-X. He, W. Alpers, G. Chen, J-F Piolle, Z. Liu, L. Shao, K-F Dagestad, B. Chapron, L. Wan, **C. Hu,** and L. Guan (2010). Dagon in support to harmonizing European and Chinese marine monitoring for environment and security system (DRAGONESS). DRAGONESS Symposium, 8pp.

17 **Hu, C.**, Z. Chen, F. Muller-Karger, M. Luther, and C. Kovach (2009). High Temporal Resolution Assessments of Tampa Bay Water Quality Using Satellites. Proceedings of

the 5th Bay Area Scientific Information Symposium. 20-23 October 1999. Tampa, Florida. 13 pp.

16 English, D., **C. Hu**, C. Lembke, R. Weisberg, D. Edwards, L. Lorenzoni, G. Gonzalez, and F. Muller-Karger (2009). Observing the 3-dimensional distribution of bio-optical properties of West Florida Shelf waters using gliders and autonomous platforms. 7pp. Oct 26-29, MTS/IEEE Oceans'09 conference, Biloxi, Mississippi. Paper published in conference proceedings (ISBN CD-ROM: 978-0-933957-38-1).

15 Cheng, W., L. O. Hall, D. B. Goldgof, I. Soto, and **C. Hu** (2009). Automatic red tide detection from MODIS satellite images. IEEE International Conference on Systems, Man and Cybernetics, 2009. **ISSN:** 1062-922X, p1864-1868. DOI 10.1109/ICSMC.2009.5346189

14 Gramer, L. J., E. M. Johns, J. C. Hendee, and **C. Hu** (2009). Characterization of biologically significant hydrodynamic anomalies on the Florida Reef Tract. Proceedings of the 11th International Coral Reef Symposium, Ft. Lauderdale.

13 He, M-X., Y. Wang, L. Hu, Q. Yang, S. He, **C. Hu,** and R. Doerffer (2008). Detection of red tides using MERIS 681 nm and 709 nm bands in the East China Sea: A case study. Proc. Dragon 1 Programme Final Results 2004-2007, Beojing, P. R. China, 21-25 April 2008 (ESA SP-655, April 2008).

12 **Hu, C.,** and F. E. Muller-Karger (2008). On the connectivity and "black water" phenomena near the FKNMS: A remote sensing perspective. In: Connectivity – Science, People and Policy in the FKNMS (B. D. Keller and F. C. Wilmot eds, 263pp). 47-55.

11 Lee., Z. P., **C. Hu,** et al., MERIS-derived bio-optical properties of the US coastal waters. ENVISAT Symposium proceedings, 23-27 April 2007, Montreux, Switzerland.

10 He, M.X., S. He, L. Hu, Y. Wang, Q. Yang, T. Zhang, J. Fischer, Z. P. Lee, and **C. Hu.** MERIS performance in the East China Seas: Evaluation of atmospheric correction and optical inversion algorithms. ENVISAT Symposium proceedings, 23-27 April 2007, Montreux, Switzerland.

9 **Hu, C.,** Y. Wang, Q. Yang, S. He, L. Hu, and M. X. He. Comparison of ocean color data products from MERIS, MODIS, and SeaWiFS: Preliminary results for the East China Seas. ENVISAT Symposium proceedings, 23-27 April 2007, Montreux, Switzerland.

8 Dogliotti, A. I., O. Ulloa, F. E. Muller-Karger, **C. Hu,** B. Murch, et al. (2005). The Antares observation network. SPIE proceedings 5885. DOI: 10.1117/12.617971, (Remote sensing of the coastal oceanic environment, edited by R. J. Frouin, M. Barbin, and S. Sathyendranath), p182-187.

7 **Hu, C.,** and F. E. Muller-Karger (2003). MODIS monitors Florida's ocean dispersal of the Piney Point phosphate treated wastewater. *The Earth Observer* (NASA), 15(6):21-23.

6 **Hu, C.,** Z.P. Lee, F. E. Muller-Karger, and K. L. Carder (2003). Application of an optimization algorithm to satellite ocean color imagery: A case study in Southwest Florida coastal waters. SPIE proceedings 4892. (*Ocean Remote Sensing and Applications*, edited by R. J. Frouin, Y. Yuan, and H. Kawamura. SPIE, Bellingham, WA, 2003), p 70-79.

5 **Hu, C.** (2003). A simple instrument for measurement of remote sensing reflectance in coastal environment. SPIE Proceedings 4897 (*Multispectral and Hyperspectral Remote Sensing Instruments and Applications*, edited by Allen M. Larar, Qingxi Tong, and Makoto Suzuki. SPIE, Bellingham, WA, 2003), p. 219-226.

4 **Hu, C.,** I-I Lin, and S. Shang (2002). Ocean color climatology using multiple sensors. Proceedings of the Fifth cross-strait symposium, 14-16 May 2002, Taipei, Taiwan. pp259-261.

3 Gasch, J., T. Arvidson, S. N. Goward, S. Andrefouet, **C. Hu**, and F. E. Muller-Karger (2000). Assessment of Landsat 7/ETM+ coverage of coral reefs worldwide. DIG INT GEOSCI REMOTE SENS SYMP(IGARSS), 6:2687-2689.

2 **Hu, C.,** K. L. Carder, and F. E. Muller-Karger (2000). Preliminary algorithm to derive chlorophyll pigment concentration and DOM absorption in turbid coastal waters from SeaWiFS imagery. Proceedings of the 4th Pacific Ocean Remote Sensing Conference, Qingdao, China, 28–31 July. P78-82.

1 **Hu, C.,** and K. J. Voss (1997). Solar-stimulated inelastic light scattering in clear seawater. *Proc. SPIE* 2963, Ocean Optics XIII, 266 (February 6, 1997); doi:10.1117/12.266453, p266-271.

7. Invited Talks (updated 2/28/2023)

Hu, C. (2022, invited talk), A few notes on marine debris detection using passive optical remote sensing. IOCCG workshop on marine litter remote sensing, March 7-8, 2022.

Hu, C. (2022, invited seminar). Thinking out of the box: How two coastal events led to a new algorithm concept for global ocean biology. University of Miami, Physics Department, March 2, 2022.

Hu, C. (2022, invited talk). Sargassum Watch from Space, Ocean Decade Laboratories. Laboratory 4: "A Safe Ocean". April 6, 2022.

Hu, C. (2021, invited online seminar), Rising green tides and golden tides. University of Florida seminar, September 1, 2021.

Hu, C. (2021, invited online seminar), Rising green tides and golden tides: An oceanographic regime shift? Sun Yat-Sen University, School of Marine Science, October 14, 2021.

Hu, C. (2021, invited talk), Monitoring floating macroalgae from space: Current status and challenges. EuroSea workshop "Towards a coordinated European Observing System for marine macroalgae", November 23 – 25, 2021

Hu, C. (2021, invited talk), Remote detection of marine debris using vis-NIR satellite observations: challenges and potentials, Remote Sensing and Smart Tech for Marine Litter - Ocean Decade Laboratory Satellite Activity, November 18 – 19, 2021.

Wang, M., and C. Hu (2020, invited talk). Monitoring Sargassum using satellite imagery. OBPS Workshop IV, September 2020.

Hu, C. (2020, invited talk). *Sagassum* Watch from Space. The 6th High-Level Industry-Science-Government Dialogue on Atlantic Interactions. October 8, 2020.

Hu, C. (2020, invited talk). The Great Atlantic Sargassum Belt as observed from satellites. Technical Webinar on Atlantic Sargassum Belt, sponsored by the European Algae Biomass Association (EABA). November 3-24, 2020.

Hu, C., et al. (Plenary talk). Rising green tides and golden tides: An oceanographic regime shift? International Ocean Color Science (IOCS) conference, 9-12 April 2019, Busan, South Korea.

Hu, C., et al. (Plenary talk). Rising green tides and golden tides. Annual Meeting at the Mexican Geophysical Union (RAUGM) 2019, Oct 28 – Nov 1, 2019, Puerto Vallarta, Jalisco, Mexico

Hu, C. (2019, invited talk). *Sargassum* Watch from Space.

Hu, C. (2019, invited talk). Brown tides are coming. State of Science, 23 September 2019, St. Petersburg, Florida.

Hu, C. (2019), invited talk). Remote sensing of Atlantic Basin Sargassum blooms. IAEA Interregional Workshop on the Use of Nuclear Techniques for Sargassum Control. 5-7 November 2019, Kingston, Jamaica.

Hu, C., et al. (2018). EO monitoring of Sargassum aggregations and movements: opportunities and applications. Workshop on Utilising Earth Observation to support Blue Growth & Risk Management in the Caribbean 23 - 26 January, 2018, St. Lucia.

Hu, C. (2018). SaWS system: potential tailored applications. EO monitoring of Sargassum aggregations and movements: opportunities and applications. Workshop on Utilising Earth Observation to support Blue Growth & Risk Management in the Caribbean 23 - 26 January, 2018, St. Lucia.

Hu, C. (2018). The Satellite-based Sargassum Watch System (SaWS). Workshop Sargassum and Oil Spills Monitoring Pilot Project for the Caribbean and Adjacent Regions. 2 – 4 May 2018, Mexico D.F., Mexico.

Hu, C. (2017). The beauty of subtraction: new concepts in algorithm development. 11/1/2017 – 11/3/2017, 17th Chinese Ocean Color Remote Sensing Symposium, Xiamen, China.

January 27, 2016, NOAA Coastal Watch workshop, NOAA/AOML, Miami, Florida
Presentation: Near real-time data products at USF by C. Hu

3/21/2016 – 3/22/2016, Sargasso Sea Commission workshop, Key West, Florida,
Presentation: “Remote sensing of Sargassum blooms” by C. Hu

9/13/2016 – 9/14/2016, Conferencia Internacional Maritima Oceanografica (CIMO) 2016, Santo Dominica Republic
Presentation: “Sargassum Watch from Space” by C. Hu

10/5/2016, Invited seminar at University of Maryland Baltimore County
Presentation: “From green tides, oil spills, to global ocean biology: How two coastal events led to a new remote sensing algorithm concept for the global ocean” by C. Hu

Sept 28, 2015, Invited seminar at Texas A&M University Dept of Oceanography & Dept of Atmosphere. “From green tides, oil spills, to global ocean biology: How two coastal events led to a new remote sensing algorithm concept.”

April 27, 2015, Invited talk to celebrate Dr. Howard Gordon’s retirement at University of Miami, Physics Department: “The beauty of subtraction.”

June 4, 2014, Invited talk at Wuhan University, Wuhan, China: “Satellite based virtual buoy system” by C. Hu.

June 10, 2014, Invited seminar at Nanjing Institute of Geography and Limnology, Nanjing, China: “Satellite remote sensing of coastal environment” by C. Hu

September 25, 2013. Invited seminar at University of Masachusetts at Boston: “Remote sensing of coastal water quality and blooms – from research to management decision support”

February 16, 2012. Invited presentation for Sarasota Power & Sail Squadron, Sarasota, Florida: “Monitoring the coastal ocean using optical remote sensing.”

March 8, 2011. Invited seminar at TAMU Galveston: “Satellite remote sensing of coastal environments: New applications using old concepts”

May 16-17, 2011, SECOORA annual meeting, Jacksonville, Florida, Invited talk: “SECOORA satellite remote sensing component”

Dec 13 – 17, 2010, AGU Fall Meeting, San Francisco, California, USA. Invited talk by Weisberg, R.H., Y. Liu, L. Zheng, C. Hu, and C. Lembke: “Rapid Response to Deepwater Horizon Oil Spill from University of South Florida: Numerical Models, Remote Sensing, and In-situ Observations”

Oct 28 – 29, 2010, Hongkong, China, Second International Conference on Global Change and the Environment in Asia and Pacific (GCEAP, 28-29 Oct 2010). Plenary talk: "A remote sensing view of aquatic hazards in East China and the US Gulf Coast"

Oct 14 – 17, 2010, CSDMS Meeting, San Antonio, Texas, USA, Invited keynote talk by Weisberg, R.H., Y. Liu, L. Zheng, and C. Hu: “The Oil Trajectory: How it behaved in the Gulf of Mexico and why, and where might residual oil be heading?”

Sept 27 – Oct 1, 2010, Ocean Optics XX conference, Anchorage, Alaska. Invited talk: “One index, many applications”

May 12 – 13, 2010, Southeast Coastal Ocean Observing Regional Association (SECOORA) 2010 Annual Board & Member Meeting, Savanna, Georgia, USA, Invited keynote talk by Liu, Y., R.H. Weisberg, L. Zheng, and C. Hu: “Tracking Gulf of Mexico Oil Spill with Numerical Models and Satellite Imagery”.

March 5, 2010, Invited seminar at Dalhousie University, Department of Oceanography, Canada, “Satellite remote sensing of coastal environments: Maximizing the power of MODIS”

Feb 4, 2010, Estuarine Nutrient Criteria Workshop, FWCC, St. Petersburg, Florida. Invited talk: “Satellite Chl in Near-shore Waters of the West Florida: Influence of River Discharge”

Dec 18-19, 2009, The 9th National Symposium on Ocean Color Remote Sensing of Case-II Waters, Nanchang, China, invited presentation: “Assessment of blue-green algae blooms in two freshwater lakes of China using MODIS”

Dec 8-10, 2009, NASA Applied Sciences Gulf Workshop, New Orleans, Louisiana, Invited presentation: “An overview of NASA ocean color data products”

Sept 22-24, 2009, NASA GEO-CAPE working group meeting, Columbia, Maryland, Invited presentation: “GEO-CAPE requirements on measurement sensitivity, saturation, and solar angles”

May 6-8, 2009, NASA Ocean Color Research Team meeting, Westin New York at Times Square Hotel, New York, invited presentation: “Coastal ocean color from space: where are we and what’s next”

8. Projects and Grants (9/1/2009 – 2/5/2025)

Number of funded projects: 73 (PI on 39)

Amount to C. Hu: $19.5M.

9. Graduate Education and Mentoring

Courses Taught

OCE6934, Ref#90356, Practical IDL Programming	Spring 2003
OCE6934, Ref# 17172, Optical Oceanography	Spring 2010
OCE6934, Ref# 90356, Practical IDL Programming	Fall 2010
OCE6934, Ref# 16698, Environ. Optics & Remote Sens.	Spring 2011
*OCE4930, Ref# 92020, Deepwater Horizon: Whole Story (UG)	Fall 2011
*OCE6934, Ref# 91966, Remote Sensing in Oceanography	Fall 2011
*OCE6934, Ref# 86692, Deepwater Horizon: Whole Story (G)	Fall 2011
OCE6934, Ref# 21613, Marine Resource Remote Sensing	Spring 2012
OCE6934, Ref# 15656, Optical Oceanography	Fall 2013
OCE6934, Practical IDL Programming	Spring 2014
OCE6934, Readings in Optical Oceanography	Fall 2014
OCE6934, Ref# 94911, Marine Resource Remote Sensing	Fall 2015
OCE6934, Optical Oceanography	Fall 2016
OCE6934, Practical IDL Programming	Spring 2017
OCE6934, Readings in Optical Oceanography	Fall 2017
*OCE6934, Biological Oceanography	Fall 2017
OCE6934, Marine Resource Remote Sensing	Spring 2018
OCE6934, Optical Oceanography	Fall 2019
*OCE6934, Biological Oceanography	Fall 2019
OCE6934, Marine Resource Remote Sensing	Spring 2020
OCE6934, Optical Oceanography	Fall 2021
*OCE6934, Biological Oceanography	Spring 2022
OCE6934, Marine Resource Remote Sensing	Fall 2022
OCE6934, Optical Oceanography	Fall 2023
OCE6934, Marine Resource Remote Sensing	Fall 2024

Many Directed Research, Independent Study, MS Thesis, and PhD Dissertation courses from Spring 2009 to fall 2024

*courses taught by others where Hu gave lectures

Master's Thesis Advisory Committees

Hu as major or co-major advisor

Junpeng Liu (**graduated at OUC**, co-major advisor: Ming-Xia He of Ocean University of China): Spring 2007 – Fall 2010, thesis title: "A multi-satellite service system to monitor *Ulva prolifera* blooms and their marine environment off Qingdao, China". 86pp, in Chinese with English abstract.

Feng Yu (**graduated at OUC**, co-major advisor: Ming-Xia He of Ocean University of China): Spring 2007 – Fall 2010, thesis title: "Satellite remote sensing of *Ulva prolifera* in coastal waters off Qingdao, China". 73 pp, in Chinese with English abstract.

Daniel Sensi (**graduated at USF/CMS**): Fall 2010 – Fall 2012, thesis title: "Optical Detection and Classification of Phytoplankton Taxa through Spectral Analysis", 71 pp. Manuscript in preparation.

Ryan Lloyd (**graduated at USF/CMS**): Fall 2010 – Fall 2012, thesis title: "Remote Sensing of Whitings in the Bahamas", 117 pp. Manuscript in preparation.

Robert Hardy (**graduated at USF/CMS**): Spring 2010 – Fall 2014, thesis title: "Assessments of Surface-Pelagic Drift Communities and Behavior of Early Juvenile Sea Turtles in the Northern Gulf of Mexico". Published 3 papers as co-author and made 2 presentations. Won the Outstanding Thesis and Dissertation (OTD) Award from USF for the 2014-2015 academic year.

Jacqueline Long **(graduated at USF/CMS)**: Fall 2013 – Fall 2016, thesis title: Whitings in SW Florida coastal waters. Published 3 papers as 1st author. Recipient of Sackett Prize award (one student per year) in 2018.

Chih-Wei Huang (**graduated at USF/CMS):** Fall 2016 – Spring 2019, thesis title: Estimating Coastal Water Turbidity Using VIIRS Nighttime Measurement.

Sarah Sullivan (**In progress at USF/CMS**): Fall 2021 – Summer 2024, thesis title: *Sargassum* in the Florida Keys: Assessment using High Resolution Remote Sensing.

Samuel Bunson (**in progress at USF/CMS**): Fall 2021 – present.

Brad Nemeth (**in progress at USF/CMS):** Fall 2023 – present.

Siarah Hall (**in progress at USF/CMS)**: Fall 2024 - present

Hu as thesis committee member

Ana Odriozola (**graduated at USF/CMS**, major advisor: Frank Muller-Karger of USF), Spring 2003 – Spring 2006, thesis title: "On the Orinoco River plume in the Caribbean". Published 1 paper as 1st author (Odriozola et al., 2007) and another one as coauthor.

Haiying Zhang (**graduated at USF/CMS**, major advisor: Frank Muller-Karger of USF), Spring 2004 – Fall 2006, thesis title "Remote detection of red tides using a fuzzy k-mean classification". Manuscript published in a conference proceeding.

Bredan O'Connor (**graduated at USF/CMS**, major advisor: Frank Muller-Karger of USF), Fall 2011 – Summer 2013, thesis title: "Assessment of the Mississippi River diversions and characterization of the oil from the

Deepwater Horizon oil spill". Made a presentation at the GoMRI conference in New Orleans, January 2013.

Lewis Stuwart (**graduated at USF/CMS, Dec 2017),** major advisor: David Naar of USF).

Doctor's Dissertation Advisory Committees

Hu as major or co-major advisor

Kun Yu (**graduated at Nanjing Univ.**, **visiting student at USF 2009 - 2011**, co-major advisor: Ying Wang of Najing University, China): Fall 2007 - Spring 2012, dissertation title: "Different lowland plain wetlands formation and a decadal vegetation coverage". 160 pp, in Chinese with English abstract. Published 2 papers as 1st author (Yu et al., 2011; Yu and Hu, 2013), 1 paper as coauthor, and another one in preparation.

Lian Feng (**graduated at Wuhan Univ.**, **visiting student at USF 2010 - 2012**, co-major advisor: Xiaoling Chen of Wuhan University, China): Fall 2008 - Spring 2013, dissertation title: "Remote sensing of the Poyang Lake and its environment". Published 7 papers as 1st author and 4 papers as coauthor. Won Top-10 Student Researcher Award (2012) and Top-5 Student Innovation Award (2012) at Wuhan University.

Brian Barnes (**graduated at USF/CMS in Dec 2013**), Fall 2009 – Fall 2013, dissertation title: "On the combined Effects of Light and Temperature on Coral Bleaching: A case study of the Florida Reef Tract using satellite and in situ data". USF/CMS Knight Fellowship winner (Fall 2012); published 5 papers as 1st author and 3 papers as co-author from dissertation. Won the Outstanding Thesis and Dissertation (OTD) Award from USF for the 2013-2014 academic year. Made numerous presentations in professional meetings.

Lin Qi (**Graduated at Nanjing Institute of Geography and Limnology in Nov 2014).** Dissertation title: "Remote sensing of phytoplankton pigment concentrations in Taihu Lake: Algorithm development and applications". Published 3 first-authored papers and 1 coauthored paper. One paper was highlighted by IOCCG in its November 2014 news bulletin.

Mengqiu Wang **(Graduated at USF/CMS in August 2018)**: Fall 2013 – Aug 2018, Dissertation topic: Remote sensing of pelagic Sargassum. Published 6 manuscripts as 1st author and 7 papers as co-author. Recipient of numerous fellowships and awards.

Shuangling Chen **(Graduated at USF/CMS in fall 2018)**: Fall 2013 – Fall 2018, Dissertation topic: Remote sensing of surface pCO2 in the Gulf of Mexico. Published 5 manuscripts as 1st author and two as coauthor. USGS graduate assistantship recipient 2014 – 2016 and winner of several scholarships.

Shaojie Sun **(Graduated at USF/CMS in fall 2018)**: Fall 2013 – Fall 2018, Dissertation topic: oil spill remote sensing. Published 6 papers as 1st author and several others as co-author. NASA fellowship recipient since Fall 2016.

Yingjun Zhang (**Graduated at USF/CMS in summer 2022):** Fall 2016 – summer 2022. Dissertation topic: eddies and fronts. Published 4 papers as 1st author, 3 papers as coauthor, and submitted 2 others.

Jing Shi (**in progress at USF/CMS):** Fall 2019 – present.

Yao Yao (**in progress at USF/CMS):** Fall 2019 – present.

Keyu Mao (**in progress at USF/CMS):** Fall 2023 – present.

Hu as dissertation committee member

Bisman Nababan (**graduated at USF/CMS**, major advisor: Frank Muller-Karger of USF), Fall 1998 – Spring 2005, dissertation title: "Bio-optical variability of surface waters in the Northeastern Gulf of Mexico", 167pp. Published two papers as 1st author and two others as co-author.

Zhiqiang Chen (**graduated at USF/CMS**, major advisor: Frank Muller-Karger of USF), Fall 2000 – Fall 2006, dissertation title: "Monitoring water quality in Tampa Bay: Coupling *in situ* and remote sensing". Published 4 papers as 1st author, 4 papers as co-author.

Marina Marrari (**graduated at USF/CMS**, major advisor: Kendra Daly of USF), Fall 2002 – Spring 2008, dissertation title: "Characterization of the Western Antarctic Peninsula Ecosystem: Environmental Controls on the Zooplankton Community". 174pp. Published 3 papers as 1st author.

Carrie Wall (**graduated at USF/CMS**, major advisor: David Mann of USF), Fall 2008 - Fall 2012, dissertation title: "Shelf-scale Mapping of Fish Distribution Using Active and Passive Acoustics", 164 pp. Published 3 papers from dissertation as 1st author with 2 in preparation, and published 2 papers as coauthor and 2 others in preparation.

Kara Radabaugh (**graduated at USF/CMS**, major advisor: Ernst Peebles of USF), Fall 2009 – Spring 2013, dissertation title: "Light-Environment Controls and Basal Resource Use of Planktonic andBenthic Primary Production", 189pp. Published 1 paper as 1st author, submitted 2, and had one in preparation.

Inia Soto (**graduated at USF/CMS**, major advisor: Frank Muller-Karger of USF), Fall 2006 – Fall 2013, dissertation title: "On the Harmful Algal Blooms of the West Florida Shelf and Campeche Bank: Visualization and Quantification using Remote Sensing Methods". Published 3 papers as 1st author, 2 as coauthor

Sennai Habtes (**graduated at USF/CMS**, major advisor: Frank Muller-Karger of USF), Fall 2006 – Fall 2014, dissertation title: "Variability in the Spatial and Temporal Patterns of Larval Scombrid Abundance in the Gulf of Mexico"

Brian Zielinski (**graduated at USF/CMS**, major advisor: John Paul of USF), Fall 2008 – Fall 2014, dissertation title: "Using Gene Expression as a Tool to Understand Biogeochemical Cycling in Various Marine Communities", Published 2 papers as co-author, and several others in preparation.

Maria Vega-Rodriguez (**graduated in fall 2016 at USF/CMS**, major advisor: Frank Muller-Karger of USF), Fall 2010 – Fall 2016, dissertation title: "Influence of temperature and water quality variability on coral reef diversity in the Florida Keys". Won ARCS Scholar award in 2012.

Katie Wirt (**graduated in February 2016 at USF/CMS**, major advisor: Pam Muller of USF), Fall 2011 – spring 2016, dissertation title: "Critical Habitat of *Acropora spp.* On reefs of Florida, Puerto Rico and the U.S. Virgin Islands". Published 1 paper as 1st author.

Ellen Hudson-Heck (**graduated in spring 2021 at USF/CMS,** major advisor: Robert Byrne of USF), Fall 2016 – Spring 2021.

Luis Lizcano Sandoval (August 2019 – present, major advisor: Frank Muller-Karger)

Catherine Dietrick (August 2019 – present, major advisor: David Naar)

Kristina Confessor (August 2020 – present, major advisor: Phoebe Chappell)

Mentor of post-doctorate researcher:

Dr. Jun Zhao, USF/CMS, Fall 2010 – Fall 2012. Focused on algal blooms and light penetration on the West Florida Shelf and Florida Keys, published 3 papers as 1st author and 2 papers as coauthor.

Dr. Chengfeng Le, USF/CMS, Fall 2010 – Spring 2013. Focused on estuarine water quality and blooms to assist management decision support, published 6 papers as 1st author and 1 paper as coauthor.

Dr. Minwei Zhang, USF/CMS, Fall 2013 – Fall 2018. Focused on atmospheric correction of airborne and satellite sensors.

Dr. Brian Barnes, USF/CMS, Spring 2014 – spring 2017. Focused on ocean color algorithm and data products of coastal oceans as well as their applications in addressing Earth science questions.

Dr. Lian Feng, USF/CMS, Spring 2015 – Summer 2017. Focused on algorithm development and global ocean data quality.

Dr. Lin Qi, USF/CMS, January 2015 – July 2015. Focused on coastal algal blooms and water quality

Dr. Mengqiu Wang, USF/CMS, August 2018 – March 2021. Continued PhD work on Sargassum remote sensing and dynamics.

Dr. Shaojie Sun, USF/CMS, December 2018 – August 2019. Focused on oil spills and other pollutions.

Dr. Min Xu, USF/CMS, June 2020 – May 2023. Algal blooms in estuaries and coastal waters

Dr. Shuai Zhang, USF/CMS, Oct 2020 – June 2023. GEE applications in aquatic science.

Dr. Yuyuan Xie, USF/CMS, February 2021 – present. Phytoplankton dynamics.

Dr. Yingjun Zhang, USF/CMS, September 2022 – present, bio-physical interactions

Dr. Cheng Xue, USF/CMS, December 2022 – present, ocean color remote sensing

Dr. Madjid Hadjil, USF/CMS, December 2023 – present, ocean color remote sensing

Dr. Junnan Jiao, USF/CMS, August 2024 – present, big data remote sensing

10. Synergistic Activities

Editorship and Reviewership

2008 – 2014, Topical Editor (ocean optics and remote sensing), *Applied Optics* (C. Hu handled 40 – 60 papers per year)

2015 – 2017, Editor-in-Chief, *Remote Sensing of Environment* (C. Hu handled 300 – 400 papers per year)

2024 – present, Executive Guest Editor, special issue of *Harmful Algae*

2009 – present, Reviewer (about 15 – 20 papers per year), many professional journals: *Applied Optics, Chinese Science Bulletin, Continental Shelf Research, Earth System Science Data, Environmental Research Letters, Environmental Science and Pollution Research, Environmental Science & Technology, Geophysical Research Letters*, *Harmful Algae*, *IEEE Transactions on Geosci. & Remote Sens., IEEE Geosci. & Remote Sens Letters, International Journal of Applied Earth Observation and Geoinformation, International Journal of Digital Earth, International Journal of Remote Sensing, Journal of Applied Remote Sensing, Journal of Geophysical Research-Oceans, Journal of Great Lakes Research, Journal of Oceanography, Journal of Phycology,Journal of Remote Sensing, Journal of Selected Topics in Applied Earth Observations and Remote Sensing, Limnology & Oceanography*, *Limnology & Oceanography:Methods, Marine Chemistry*, *Marine Pollution Bulletin, Nature, Nature Communications,Oceanography*, *Progress in Oceanography, Remote Sensing of Environment*, *Science, Science, Science Advances, Scientific Reports, Sensors, The Science of Total Environment, etc.*

2009 – present, Reviewer and Panel member, NASA, NOAA, NSF, EPA

2015 – present, Reviewer and Evaluator, tenure and/or promotion of faculty members of U.S. and international universities

National and International Committees

2010, Member, Program Committee, Second International Conference on Global Change and the Environment in Asia and Pacific (GCEAP, 28-29 Oct 2010)

2010 – present, Member, Products and Service Committee, GCOOS (https://gcoos.org)

2010 – 2015, NASA GEO-CAPE mission science definition team

2011, Organizer, Bi-national training workshop on harmful algal blooms, Veracruz, Mexico

2012, Member, Program Committee, Asia-Pacific Remote Sensing Symposium, Fall 2012

2012 – 2014, Member, NSF Ocean Observatories Initiative (OOI) Advisory Committee

2014 – 2015, Member, Advisory Committee of NASA/GSFC Ocean Ecology Lab

2018 – present, Member, International Ocean Color Coordination Group (https://ioccg.org)

2021 – 2024, Member, Biodiversity of the Coastal Ocean: Monitoring with Earth Observation (BiCOME) Scientific Advisory Group (https://bicome.info)

2022 – 2023, Organizer, sponsor, and host of the 5th International Ocean Color Science meeting (about 300 participants), St. Petersburg, Florida, November 2023 (https://iocs.ioccg.org).

USF Committees

2009, Member, USF search committee for Dean of College of Marine Science (ad hoc)

2011, USF/CMS Faculty Annual Evaluation Committee (ad hoc)

2011, Member, USF/CMS Faculty Evaluation Committee (ad hoc), spring 2011

2011 – 2015, Member, USF Honors and Awards Committee

2011 – present, Member, USF Standing Committee for Research Misconduct (SCRM)

2012 – 2022, Chair, USF/CMS Curriculum Committee

2013 – present, Coordinator, USF/CMS faculty seminar series

2014 – present, USF/CMS faculty tenure and promotion committee

2014 – 2019, Chair, USF/CMS Integrated Marine Science Exam (IMSE) committee

2016, Member, USF/CMS search committee for geological oceanogaphers (ad hoc)

2020, USF/CMS Faculty Annual Evaluation Committee (ad hoc)

2020 – present, USF/CMS non-tenure earning faculty evaluation committee

2022, Member, USF/CMS search committee for biological oceanogaphers (ad hoc)

2023, Member, USF/CMS search committee for physical oceanographers (ad hoc)

2023 – present, Member, USF/CMS Dean's Advisory Committee

2023 – present, Chair, USF/CMS seminar committee

Community Service

2009 – present, Developer of Virtual Buoy System to monitor coastal water quality in near real-time with retrospective time series since 2003 (https://optics.marine.usf.edu/projects/vbs.html)

2014 – present, Developer of Integrated Redtide Information System to integrate *in situ* observations, remote sensing, and numerical models on red tides (harmful algal blooms), with daily updates for the eastern Gulf of Mexico (https://optics.marine.usf.edu/projects/iris.html);

2018 – present, Developer of *Sargassum* Watch System to provide daily and weekly maps of floating *Sargassum* spanning the Intra-Americas Sea (https://optics.marine.usf.edu/projects/saws.html). This includes providing monthly *Sargassum* outlook bulletins to all stakeholders to help make informed decisions.

These data service portals received thousands of daily visits from > 60 countries, with data downloads of multiple gigabytes per day.

These data products served by C. Hu's group, along with his knowedge, have made him a local contact person on red tides, oil spills, water quality degradation, hurricane impacts, and *Sargassum* inundations, where he delivered information to the public through local

group meetings and interviews by television channels and newspapers. Below is an incomplete list of examples.

- https://www.youtube.com/watch?v=PvIK0ZGX3og
- https://www.cnn.com/2023/07/09/us/sargassum-blob-florida-shrinks-scn-trnd/index.html

- https://stjohntradewinds.com/an-inundation-of-sargassum-seaweed-is-moving-westward-usvi-in-the-path/
- https://www.telemundo51.com/noticias/local/enorme-ola-de-sargazo-amenaza-a-playas-del-sur-de-la-florida-para-el-verano/2400008/
- https://www.theguardian.com/environment/2023/mar/07/great-atlantic-sargassum-belt-seaweed-visible-from-space
- https://www.cnn.com/2023/05/01/us/sargassum-seaweed-key-west-florida-tourism-scn-trnd/index.html
- https://apnews.com/article/sargassum-seaweed-climate-change-florida-beaches-travel-gulf-of-mexico-caribbean-550da1abf9c0906fd30740d1687d5b05
- https://www.scientificamerican.com/article/heres-the-real-story-behind-the-massive-blob-of-seaweed-heading-toward-florida/
- https://www.washingtonpost.com/climate-environment/2023/03/15/sargassum-seaweed-bloom-florida-beaches/
- https://www.bbc.com/news/world-us-canada-64971586
- https://www.nytimes.com/interactive/2023/04/19/climate/seaweed-florida-sargassum.html
- https://www.nytimes.com/2023/07/07/us/seaweed-blob-florida-sargassum-shrinking.html
- https://www.nytimes.com/2010/05/18/us/18spill.html
- https://www.usatoday.com/story/graphics/2023/03/20/sargassum-seaweed-beaches-florida-caribbean-mexico/11427906002/