NAME/Title: **Yang Hong**, Gallogly Chair Professor of Hydrology and Remote Sensing
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ACADEMIC APPOINTMENT & EDUCATION

2008-2012-2017-Present: **Associate Prof.-Full Prof.-Endowed Gallogly Chair Professor of** Hydrology and Remote Sensing, School of Civil Engineering Environmental Science, Univ. of Oklahoma
2009-present **Adjunct Professor**, School of Meteorology (SoM), University of Oklahoma
2005-2008 **Research Scientist**, NASA Goddard Space Flight Center, TRMM/GPM/PATH Mission
2004-2005 **Post-doc,** Center for Hydrometeorology and Remote Sensing, Univ. of California Irvine
1999-2003 **Ph.D., University of Arizona,** Dept. of Hydrology and Atmospheric Science
PhD Major: Hydrology and Water Resources; PhD Minor: Remote Sensing/GIS
1996-1999 **M.S. Peking University,** Environmental Sciences and Environmental Planning
1991-1996 **B.S. Peking University,** Earth Science, College of Earth and Space Science

RESEARCH ADMINISTRATIVE SERVICE

- **Founding Director**, OU/NWC HyDROS Hydrometeorology and Remote Sensing Lab, 2008-
- **Founding Director**, OU Cross-campus Hydrology and Water Security Program, 2018-
- **Associate Director**, OU WaTER Center-Water Technology for Emerging Regions, 2009-
- Affiliated Professor, Advanced Radar Research Center; Center for Analysis and Prediction of Storms; NOAA/OU CIWRO Council Fellow; NOAA/OAR Scientific Fellow
- **University Representative/Committee**, AGU, AMS, CUASHI, AWRA, UCOWR, IAHS, IEEE-GRSS

PUBLICATION, RESEARCH & GRANTS SUMMARY

Publication Summary: 390 peer-reviewed journal articles primarily published by AGU/AMS/IEEE (**65** in Nature Index Journals); **5** books and **42** chapters, **405** abstracts, and **275** presentations, and 15 Registered Technologies and global precipitation data and hazard database used worldwide. Citation/H-index: **44,500/98** (Google Scholar), **39,910/94**(Web of Sci.), placing Hong among the most highly cited researchers in *hydrology, hydrometeorology, remote sensing and natural hazards.* A repeated Clarivate Highly Cited Researcher and Elsevier/Stanford Top cited scientist, Hong's senor-to-society remote sensing hydrology paradigm has shaped global precipitation and hydrological hazard systems.

Foundational contributions to remote sensing hydrology and globally recognized leadership: shaping the modern sensor-to-society research paradigm, spanning how global precipitation is measured from space, how distributed hydrologic modelling systems are co-evolved with Earth observations, and how these advances are translated into actionable hazard-risk intelligence for society and climate justice.

- Pioneer of cloud-system–based, physics-informed AI precipitation retrieval: establishing the PERSIANN-CCS framework and its direct algorithmic lineage into TMPA and GPM IMERG—now core global precipitation products supporting research and operations worldwide (data: 1983–present).
- Founder of remote-sensing–native hydrologic model family: through the CREST/EF5/CREST-iMAP/CREST-VEC/iCRESLIDE/iCRESTRIGRS model family, enabling scalable, Earth observation-driven flood prediction and landslide risk intelligence, particularly in ungauged and data-scarce regions.
- Architect of national and global hydrologic hazard systems: translating high-resolution satellite and weather radar observations into real-time hazard actionable intelligence adopted by NASA, NOAA, and World Bank–supported water and disaster-risk programs across US, Africa, Asia and Latin America.
- Builder of the end-to-end modern sensor-to-society framework: transforming Earth observations into operational hazard intelligence and quantitative assessments of climate risk and environmental justice, with direct mitigation relevance and policy impact to vulnerable and underserved communities.

Research Grants: $40M across 50+ projects since 2005, predominately as PI/Science PI/Co-PI spanning remote sensing algorithms, hydrologic model development, hazard risk intelligence and international capacity building (NSF, NASA, NOAA, National Academy/USAID, USGS, USACE, DoE, DOT, EPA, State Water Board, State DoT, World Bank, UN/IFPRI, Google and Private Sectors)

SELECTED AWARDS & HONORS

- 2023 Best Research Award for paper "Flood Hazards in Urban Environment", Taylor & Francis
- 2022 OU Vice President for Research and Partnership Award for Excellence in Research and Grants
- 2022-2024 Nation's Top 10 Online Master Degree Program Award for OU HWS Program, USNEWS
- 2016 OU Vice President for Research Award for Scholarly Dissemination and Research Creativity
- 2015 NASA Group Achievement Award for GPM Mission Post-launch Success, NASA HQ
- 2014 NASA R. H. Goddard Award–Exceptional Achievement for NASA/JAXA GPM Algorithm Retrieval
- 2014 NASA R. H. Goddard Award–Exceptional Achievement for NASA/JAXA GPM Ground Validation
- 2014 OU Regents Award for Superior Research and Creative Activities in Scholarship
- 2008 NASA Group Achievement Award in Applied Science Mission: "*For significant achievements of applying Earth observations for societal benefits*", by the NASA HQ on May 8, 2008
- World's most cited researcher (top 0.1%) at cross-field: 2024, 2022, 2018, 2016 by Clarivate
- ELSEVIER/Stanford Top 2% Scientist list: 2024, 2022, 2020, 2018, 2016, 2012
- 2011-2021, Clarivate Decadal Highly Cited Researcher Honor in Cross-field
- 2019 Among the 2019 Reuters List of World's Top 100 Environmental Scientists
- 2019 Invited Panelist/Speaker, UN Water Expert/Task Forces on Water and Climate
- 2018-present, Senior Advisor, World Bank/Africa Center of Excellence for Water Management
- 2010 NOAA/OAR Scientific Fellow, *advice to National Severe Storm Laboratory Director*
- 2010, NASA Goddard Invited Lecture, Goddard Space Flight Center, Greenbelt, MD
- 2007 US Representative/Member, UNESCO International Panel on Landslide Hazards

EDITORSHIP/MEMBERSHIP & PROFESSIONAL SERVICE

- **Editor, EIC and Editor board Senior Advisor for 20 Journals** (Spanning 2003-2026)**:** *J. of Hydrology, Int' J. of Remote Sensing, Remote Sensing Review, Sensor, Remote Sensing, J. of Landslides, Natural Hazards, Geophysical Research Letter, J. of Hydrometeorology, J. of Applied Meteorology and climatology, Scientific Report, IEEE GRSS Letter, Water, Science Bulletin etc.*

Members/Executive Council Members of 15 Societies: AGU (2000-), AMS (2003-), IEEE (2003-), EGU (2005-), IAHS (2005-), AWRA (2018-), AOGS (2014-), IPWG (2002-), IPACES (2008-), UN Water (2018-2022), CUAHSI (2015-), UCOWR (2017-), IWA(2024-), GFP(2009-), ASCE(2010-)

- **UN Water Experts and Task Force Panels** on Water and Disasters, 2019-2023
- **Invited Panelist:** NSF,NASA,NOAA,NCAR,EPA, Nat. Labs, World Bank, UN-Water, UNESCO
- NASA: TRMM & GPM Science Team 2009-2019; NASA PATH Science Team 2013-2017

EDUCATION AND MENTORSHIP

- **Founding Director**, OU Cross-campus Hydrology and Water Security Graduate Program since 2018, 300+ graduates and 100+ enrolled currently, National Top 10 online Program Award 2022, USNEWS
- **Published 5 Textbooks** adopted by Remote Sensing, Hydrology, Natural Hazards Educational Courses
- Advised **85 Ph.D** and Post-doc researchers, **35** of them with **faculty** positions in Univ. of Florida, Univ. of Arizona, Univ. of Iowa, Iowa State, Univ. of Colorado-Boulder, Univ of Wisconsin, IIT Delhi, Univ. of Singapore, Peking/Tsinghua/Wuhan Univ., Middle East Tech, Univ Macao, Addis Ababa Univ. etc. and **20 other** research leadership roles in Government (NOAA, NASA, USGS, EPA; OK/TX/CA/AR States), Industry (CTO/CEO of startups, Amazon Cloud), UNESCO, NGOs and International Agencies

BIBLIOGRAPHY: SENSOR-TO-SOCIETY REMOTE SENSING HYDROLOGY PARADIGM

Author of **390** peer-reviewed journal articles primarily published by AMSAGU/IEEE (**65** in Nature Index Journals); **5** books and **42** chapters, **405** abstracts, and **275** presentations. Citation/H-index: **44,500/98**(Google Scholar), **39,910/94**(Web of Sci.), placing Hong among the most highly cited researchers in *hydrology, hydrometeorology, remote sensing and natural hazards.* A repeated Clarivate Highly Cited Researcher and

Elsevier/Stanford Top cited scientist, Hong's senor-to-society remote sensing hydrology paradigm has shaped global precipitation and hydrological hazard systems.{Google Scholar as of 1/2026}; *=student/postdoc author

AREA 1 {~21,000 total}: Precipitation Science (Multi-Sensor Algorithms, Datasets and Hydrologic Uncertainty)

1. **Hong, Y**, K.L. Hsu, X. Gao, and S. Sorooshian, 2004: Precipitation estimation from remotely sensed imagery using Artificial Neural Network–Cloud Classification System (PERSIANN-CCS), *J. Applied Meteorology*, **43(12)**, 1834–1853.{1081} *Introduced the cloud-system–based, physics-informed AI retrieval paradigm, a foundational algorithmic lineage for global precipitation data used worldwide*
2. **Hong, Y**, K.L. Hsu, H. Moradkhani and S. Sorooshian, 2006: Uncertainty quantification of satellite precipitation estimation and Monte Carlo assessment of the error propagation into hydrologic response, *Water Resources Research*., **42(8)** {297} *Established the multi-dimension (temporal-spatial-intensity) multiscale end-to-end framework for quantifying satellite precipitation uncertainty and its nonlinear propagation into hydrologic response, providing a benchmark for research and operational users*
3. **Hong, Y.**, D. Gochis, K.L. Hsu, and S. Sorooshian, 2007: Evaluation of PERSIANN-CCS Rainfall Measurement Using the NAME Rain Gauge Network, *J. Hydrometeorology*, 8(3), 469-482. {285}
4. Huffman, G., R. Adler, D. Bolvin, E. Nelkin, K. Bowman, **Y. Hong**, E. Stocker, and D. Wolff, 2007: The TRMM multi-satellite precipitation analysis: Quasi-global, multi-year, combined-sensor precipitation estimates at fine scale. *J. Hydrometeorology*, **8(1)**, 38-55.{8147} *Defined the global standard for multi-sensor precipitation estimation (TMPA), with Hong's contributions establishing hydrologic credibility and diurnal variability characterization, the most cited global precipitation paper in the field and the most cited article in AMS J. of Hydrometeorology (as of 12/2025).*
5. *Su F., **Y. Hong** and D.P. Lettenmaier, 2008: Evaluation of TRMM Multi-satellite Precipitation Analysis and its utility in hydrologic prediction of La Plata basin, *J. Hydrometeorology*, **9(4), 622-640**. {661} *Validated rigorous basin-scale hydrologic utility right after TMPA's release, establishing satellite precipitation as a credible forcing for global hydrologic prediction in sparsely-gauged regions*
6. *Yong, B., L. Ren, **Y. Hong** et al. 2010: Hydrologic evaluation of multi-satellite precipitation analysis standard precipitation products in high latitude basins, *Water Resources Research*, **46(7)**. {355}
7. *Tang, G., Y. Ma, D. Long, **Y. Hong**, 2016, Evaluation of GPM Day-1 IMERG and TMPA V7 Legacy Products over China at Multiple Spatiotemporal Scales, J. of Hydrology, 533, 152-167 {594}
8. *Wen, Y., P. Kirstetter, **Y. Hong et al.** 2013: Incorporating NASA spaceborne radar data into NOAA National Mosaic QPE system for improved precipitation measurement: A physically based VPR identification and enhancement method. J. Hydrometeorology, 14 (4), 1293–1307. {31}
9. *Kirstetter, P.E., J.Gourley, **Y. Hong et al.** 2015: Probabilistic precipitation rate estimates with ground-based radar networks. *Water Resources Research*, **51** (3), 1422-1442. {125}
10. *Ma and **Hong** et al., 2020, AIMERG: A new Asian precipitation dataset (0.1/half-hourly) by calibrating GPM IMERG using APHRODITE, Earth System Science Data, 2020, 1-52, {125}
11. *Li, Z., Y.Wen, A.Behrangi, **Y.Hong,** B.Lambrigtsen 2021: Advancing satellite precipitation retrievals with data driven approaches: Is black box model explainable? Earth and Space Science, 8(2). {32}
12. *Zhu, S. Sorooshian, G. J. Huffman, Q. Duan, **Y. Hong et al.**, 2026, A Comprehensive Review of the past half-century Satellite Observations for Global Precipitation Estimation. IEEE GRSS, in press

AREA 2 {~12,000}: Remote-Sensing–Native Hydrologic Model Development in global settings

13. **Hong, Y.**, R. Adler, F. Hossain, S. Curtis, and G. Huffman, 2007: A first approach to global runoff simulation using satellite rainfall estimation, *Water Res. Research,* **43(8)**. {230} *The first satellite-driven global runoff real-time modeling system in supporting multi-continental hydrologic prediction*
14. **Hong, Y.**, R.F. Adler, A. Negri, and G.J. Huffman, 2007: Flood and landslide applications of near real-time satellite rainfall estimation, *Natural Hazards*, **43(2)**, 510-521 {238}
15. *Wang and **Hong** et al. 2011: The Coupled Routing and Excess STorage (CREST) distributed hydrological model. *Hydrol. Sciences Journal*, **56**, 84-98. {299} *Introduced the remote-sensing–native, coupled routing-storage distributed model that became the foundation of the CREST model family*

(CREST/EF5/CRES-iMAP/CREST-VEC/iCRESLIDE/iCRESTRIGRS) used worldwide.

16. *Zhang and **Hong,** 2016, iCRESTRIGRS cascading flood-landslide forecasting, HESS, 20(12) {80}
17. *Li and **Hong** et al. 2021: CREST-iMAP: A fully coupled hydrologic-hydraulic modeling framework for flood inundation mapping and prediction. Environ. Modelling & Software, 141, 105051. {52}
18. *Li and **Hong** et al. 2022, CREST-VEC: a framework more accurate and realistic flood simulation across scales. Geoscientific Model Development, 1-30.{9}
19. *Li and **Hong** et al. 2023, A decadal review of the CREST model family. J. Hydrology X 20,100159.
20. *Khan and **Hong et al.**, 2011: Satellite Remote Sensing and Hydrologic Modeling for Flood Mapping in Lake Victoria Basin: Hydrologic Prediction in Ungauged Basins, *IEEE TGRS*, 49(1), 85-95. {395}
21. *Xue and **Hong**, G.J. Huffman et al. 2013: TRMM-based Multi-satellite Precipitation Analysis: Are the Latest Satellite Products Ready for Use in Ungauged Basins? J. Hydrology, 499, 91-99. {403}
22. *Yan and **Hong**, 2026, AI Agent for Hydrological Modeling: Definition&Development, GRL in press

AREA 3{~11,000}: To Actionable Hydrologic Hazards Intelligence and Societal & Climate Justice

23. **Hong, Y**., R. Adler, and G. Huffman, 2006: Evaluation of the potential of NASA multi-satellite precipitation in global landslide hazard assessment, *GRL* 33(22). {287} *the scientific foundation for NASA's global landslide monitoring system (2010-current) and other regional hazard alert systems*
24. **Hong, Y.**, R. Adler, and G.J. Huffman, 2007: Using Satellite Remote Sensing Technology for Natural Disaster Prediction: Emerging Frontier and Challenges, *Natural Hazards*, 43(2), 245-246. {358}
25. Kirschbaum, D., R. Adler, **Y. Hong**, A Lerner-Lam, 2010: A global landslide catalog for hazard applications – Method, Results and Limitations, *Natural Hazards*, **52(3)**, 561-575 {551}
26. *Adhikari and **Hong** et al. 2010: A digitized global flood inventory, *Natural Hazards*, 55(2).{249}
27. Gourley and **Hong** et al., 2013: A Unified Flash Flood Database over the US, BAMS, 94 (6). {158}
28. *Li and **Hong** et al. 2021: A multi-source 120-year US flood database, Earth Sys Sci Data, 1-25 {26}
29. Gourley, J., Z. Flamig, H. Vergara, P. Kirstetter, R. Clark III, J. Erlingis, **Y. Hong** and K. Howard, 2016: The Flooded Locations And Simulated Hydrographs (FLASH) project: improving the tools for flash flood monitoring and prediction across the United States. Bull. Amer. Meteor. Soc.,98(2) {211} *As university PI co-led the development of the first real-time flash flood prediction framework at radar native scale (500-meter/5minute) for NOAA National Weather Service actionable decision support*
30. *Saharia, M., P. Kirsteer, H. Vergara, J. Gourley, **Y. Hong**, M. Giroud, 2017, Mapping flash flood severity in the United States, J. Hydrometeorology, 18(2), 397-411. {159}
31. Li and **Hong** et al. 2023, Introducing Flashiness-Intensity-Duration-Frequency (F-IDF): A New Metric to Quantify Flash Flood Severity. GRL, 50(23). {15} *Introduced the physically interpretable metric to quantify flashness, intensity, frequency, and severity of the lethal flash flood hazards*
32. *Li, Z., S. Gao, J. Gourley, N.Mizukami, **Y. Hong** 2022: The Conterminous US are projected to become more prone to flash floods in the high-end emission scenario, Nature Comm. Earth & Envir. 3(1).{75}
33. *Li, Z., J.Gourley, **Y.Hong,** 2022: Spatiotemporal characteristics of US floods: Current status and forecast under a future warmer climate. AGU Earth's Future, 10(10), e2022EF002700. {20}
34. *Li and **Hong** et al.,2024: Future Heavy Rainfall and Flood Risks for Native Americans under Climate and Demographic Changes in Oklahoma, *Weather, Climate, and Society*, 16 (1), 143-154. {5}

Section 4. Selected Authoritative Books for Education and International Capacity Building

35. **Hong** and Gourley, 2014, Radar Hydrology: Principles, Models and Applications, *adopted textbook*
36. **Hong** et al. (2016), Environmental Remote Sensing for Hydrological Capacity Building and Sustainability (pp. 392). CRC Press. Adopted textbook for Remote Sensing Hydrology Course
37. K. Zhang, **Y. Hong** and Amir Ibrahim, 2022: *Remote Sensing of Water-related Natural Hazards*, ISBN: 978-1-119-15914-8, AGU John Wiley & Sons, 272 page Adopted textbook
38. Chang and **Hong**, 2015, Principles of Remote Sensing for Sustainable Environmental Systems
39. Chang and **Hong**, 2012, Multi-scale Hydrologic Remote Sensing: Prospects and Applications, Taylor & Francis Group-CRC Press, ISBN 978-1-4398-7745-6, 550 Page