EMC Award Winners

(EMC Employees/Organizations in boldface)

2021

Commerce Department Group Bronze Medal – Scientific/Engineering Achievement

Georg Grell - Rick Saylor - Gregory Frost - **Ivanka Stajner**- **Jeff McQueen** - **Jun Wang** - Shobha Kondragunta

For the development of the Global Ensemble Forecast System – Aerosols (GEFS-Aerosols) model to support air quality alerts and visibility forecasts.

Distinguished Career Award - Scientific Achievement

Suranjana Saha

For her illustrious 33-year career at NCEP developing and advancing the science of coupled earth system modeling for seasonal climate forecasts.

Thomas L. Black

For his 34 years of advances in both weather prediction modeling and computer science, and their application to the weather service mission.

2020

Commerce Department Group Gold Medal – Scientific/Engineering Achievement

Vijay Tallapragada – Fanglin Yang – Russ Treadon – Jun Wang – Geoff Manikin – Steven Earle – Carissa Klemmer – Rusty Benson – Lucas Harris – Jeffrey Whitaker

Recognized for development and accelerated implementation of a new FV3 dynamic core-based state-of-the-art Global Forecast System (GFS) v15.1 in June 2019, replacing the 38-year old spectral model-based legacy operational GFS. Such an implementation of this magnitude typically takes 5–10 years, and the group accomplished it in less than 3 years after the selection of FV3 dynamic core by the Next Generation Global Prediction System (NGGPS) Program. This advancement initiates the use of NOAA's community-based Unified Forecast System for operations and research, and is the cornerstone of the National Centers for Environmental Prediction's production suite for numerical guidance.

AMS Banner I. Miller Award

Jun Zhang - David S. Nolan - Robert F. Rogers **- Vijay Tallapragada**

For their paper, “Evaluating the impact of improvements in the boundary layer parameterization on hurricane intensity and structure forecasts in HWRF” which significantly advanced the prediction of hurricanes in an operational numerical weather prediction model

AMS Weather Analysis and Forecasting Distinguished Scientific or Technological Achievement Award

Vijay Tallapragada

In recognition of his exceptional leadership of the HWRF and FV3 model implementations and noteworthy scientific achievements in numerical weather prediction over a twenty-year period.

National Isaac Cline Award

Yuejian Zhu, Dingchen Hou, Jeff McQueen, Jessica Meixner, Lin Gan, Jun Wang, Geoff Manikin, Alicia Bentley

For accomplishing significantly improved probabilistic guidance for medium-range and sub-seasonal predictions from UFS global ensemble forecast system.

NOAA Administrator’s Award

Pius Lee, Rick Saylor, **Jeff McQueen, Ivanka Stajner**, Dorothy Koch

For implementing and upgrading NOAA’s Air Quality Forecasting Capability for improving the lives of Americans and saving billions of dollars per year.

NOAA Silver Sherman Award

Curtis Alexander, **Jacob Carley**

For leadership and exceptional cross Line Office collaboration in development, improvement and operational implementation of NOAA convection-allowing weather models and nowcasting capabilities.

2019

Distinguished Career Award - Scientific Achievement

Dennis A. Keyser

Nominated by NWS for over thirty-two years of scientific and technical contributions towards the improvement of United States Weather, Water, and Climate Prediction.

American Meteorological Society Editors Award (Monthly Weather Review/Weather and Forecasting)

Daryl Kleist

For thorough, constructive, and scientifically insightful reviews that assisted authors in strengthening their work while providing an operational perspective.

NOAA Silver Sherman Award

Geoffrey Manikin

For leading the GFSv15 field evaluation, the most extensive model evaluation ever performed on a new NCEP modeling system.

2017

Regional Isaac Cline Award – Leadership

Avichal Mehra

For leading significant improvements in operational hurricane track and intensity forecast guidance through model systems for the 2016-2017 seasons

NOAA Administrator's Award

Vijay Tallapragada - Frederick Toepfer - Jeffrey Whitaker - Timothy Schneider - **Ivanka Stajner**

For leading and executing the selection of the new dynamical core, the engine of a numerical weather prediction model, 2 years ahead of schedule.

Commerce Department Group Bronze Medal – Scientific/Engineering Achievement

Yuejian Zhu, Dingchen Hou, Shrinivas Moorthi, Steven Earle

For implementing GEFS to improve probabilistic guidance for public safety, quality of life and business decisions that drive U.S. economic growth.

2016

Regional Isaac Cline Award – Meteorology

Russell E. Treadon, Shrinivas Moorthi, Hui-Ya Chuang, Qingfu Liu, and Lin Gan

For accomplishing significantly improved forecast guidance from Global Forecast System upgrades using NOAA environmental modeling system framework

2015

Commerce Department Group Gold Medal – Scientific/Engineering Achievement

Assimilation and Modeling Branch (Office of Oceanic and Atmospheric Research) - NCEP Central Operations – **NCEP Environmental Modeling Center**

The organizations are honored for success in transitioning an innovative weather research model into operations. The High-Resolution Rapid Refresh model increases resolution fourfold, giving forecasters and others highly localized guidance when hazardous weather looms. Development of a novel radar data assimilation procedure and new supercomputing capacity were critical to this success, and the ultimate outcome is that decision makers such as emergency managers and wind farm operators have more time to prepare for high-impact weather. This team's work will save lives and property.

Commerce Department Group Gold Medal – Scientific/Engineering Achievement

NCEP EMC Global Climate and Weather Modeling Branch – NCEP Central Operations Production Management Branch – MDL Statistical Modeling Branch

The organizations are honored for development and operational implementation of the 13-km Global Forecast System. Changes include increased horizontal resolution, improved data assimilation, physics and post-processing. The system will deliver more accurate predictions of the onset and location of high-impact weather associated with hurricanes, blizzards, excessive rainfall, heat, and cold. Only 2 weeks after implementation, the system outperformed all other global models in predicting the complex heavy snow distribution associated with the New England Blizzard of January 2015.

Commerce Department Group Silver Medal – Scientific/Engineering Achievement

Annarita Mariotti - Gabriel Vecchi - Rich Gudgel - William Stern - Jin Huang - Huug van den Dool - Qin Zhang - **Suranjana Saha**

Recognized for developing the North American Multi-Model Ensemble (NMME), a research to operations transition project coordinated between OAR and NWS, with contributions from DOE, NASA, and NSF. The NMME system adheres to NOAA's

operational launch schedules, providing the Nation with timely, credible seasonal forecasts that enhance decision making to protect life and property. The NMME has enabled pioneering research on seasonal predictability, stimulated model improvements at operational and research centers, and provided critical information for risk management.

2014

Commerce Department Group Gold Medal – Scientific/Engineering Achievement

Vijay Tallapragada - Qingfu Liu - William Lapenta - Richard Pasch - James Franklin - Simon Tao-Long Hsiao **- Frederick Toepfer** - Sundararaman Gopalakrishnan - Thiago Quirino - Frank Marks, Jr.

For development and implementation of an advanced Hurricane Weather Research and Forecast System model for the 2013 hurricane season. The model — operating at 3-km resolution with ocean coupling and inner-core aircraft reconnaissance data assimilation — is the world's highest resolution operational hurricane model and the first dynamic model to demonstrate intensity forecast skill that exceeds statistical models and official National Hurricane Center forecasts. This advance promises the first substantial improvement in hurricane forecasts in more than two decades.

Commerce Department Group Silver Medal – Scientific/Engineering Achievement

Annarita Mariotti - Roger Pulwarty - Martin Hoerling - Chad McNutt- Kingtse Mo - Brian Cosgrove - Jin Huang - Arun Kumar - **Michael Ek**

Honored for outstanding scientific assessment of the origins of the 2012 Central Great Plains Drought. Precipitation deficits May–August 2012 were the most extreme since official measurements began in 1895, eclipsing the driest summers of 1934 and 1936 that occurred at the height of the Dust Bowl. By early September, nearly half the contiguous U.S. was experiencing unprecedented severe drought that official seasonal forecasts in April 2012 did not anticipate. The team's assessment of causes has helped to identify pathways for improved predictions of future drought events.

National Isaac Cline Award – Outreach

Katherine Howard, Mark Iredell and Shrinivas Moorthi

For providing an important step forward in developing interactions and collaboration with the academic community and outside agencies for NCEP/EMC.

2013

Commerce Department Group Bronze Metal – Superior Federal Service

Luis Cano **- Michael Young - Mark Iredell - Geoff DiMego** - Kathryn Gilbert

For dedication in acquiring supercomputing services to sustain production of the Nation's operational numerical weather and climate forecast systems.

National Isaac Cline Award – Leadership

Vijay Tallapragada

For leading development and operational implementation of the 2013 HWRF Model, providing the National Hurricane Center and the Nation with improved guidance on hurricane prediction.

2012

WMO 57th International Meteorological Organization (IMO) Prize

Zavisa Janjic

In recognition of his outstanding life-long contributions to the advancement of theory and practice of atmospheric modeling and numerical weather prediction, in particular, for the development of generations of atmospheric models based on his innovative numerical and parameterization schemes.

Commerce Department Group Bronze Metal – Superior Federal Service

Eric Rogers – Thomas L. Black – Zavisa Janjic – Geoffrey S. Manikin – Wan-Shu Wu – Matthew E. Pyle – Hui-ya Chuang – Rebecca L. Cosgrove – Christine C. McGee – Brian S. Gockel

For implementing a new North American prediction system providing improved numerical guidance/products to the Nation’s weather enterprise

American Meteorological Society Editors Award (Weather and Forecasting)

Jun Du

For completing several prompt reviews that were beneficial, constructive and of high quality.

2011

Commerce Department Group Silver Medal – Scientific/Engineering Achievement

Shrinivas Moorthi - Jordan C. Alpert - Glenn H. White - Hui-Ya Chuang - Yu-Tai Hou

For the development and implementation of significant upgrades to the NCEP Global Forecast System (GFS), which resulted in major improvements to the numerical forecast guidance products. Major areas of forecast guidance improvement include a 30 percent reduction in Hurricane Track Error in the Eastern Pacific and a significant reduction in erroneous excessive precipitation associated with small-scale convective activity. These improvements represent the largest single improvement in Global Model Performance in the last 15 years.

2010

Commerce Department Group Bronze Medal – Scientific/Engineering Achievement

Stan Benjamin, John Brown, **Geoff Manikin**, Steve Weygandt

For developing the first NCEP operational radar reflectivity assimilation technique and improving convective storm forecasting.

2008

Commerce Department Group Silver Medal – Scientific/Engineering Achievement

Edward O'Lenic - Dan Collins - Jon Hoopingarner - **Zoltan Toth** - David Unger - **Yuejian Zhu**

Honored for collaborating with Canada and Mexico to develop and implement the North American Ensemble Forecast System (NAEFS). The NAEFS combines state-of-the-art weather forecast tools developed at the Meteorological Service of Canada and the U.S. National Weather Service. Combined, these tools provide weather and climate forecast guidance for the extended range that is much higher quality than previous operational guidance. This has contributed to all-time record high skill scores for Climate Prediction Center's extended range temperature forecasts and North American temperature forecasts, seamless across national boundaries.

2007

AMS Francis W. Reichelderfer Award

Zavisa Janjic

For outstanding contributions to developments and implementation of NCEP limited-area weather prediction models (Eta and NMM). The numerical and parameterization schemes he developed ideally combine theoretical and technical solutions, as well as a balance between elegance and practicality.

Commerce Department Group Gold Medal – Scientific/Engineering Achievement

Geoffrey J. DiMego - Thomas Lee Black - Dennis A. Keyser - Geoffrey Stephen Manikin - Matthew E. Pyle - Eric Rogers - Wan-Shu Wu - Ying Lin - David L. Michaud - **David Franklin Parrish**

Honored for the implementation of a new Weather Research and Forecast (WRF) system, a common modeling system which promotes efficient transition of scientific collaborative research into operations. This collaboration is an advance for the Nation's scientific community and binds the operational and research communities to realize full societal benefits of the WRF system. In addition, there has been an accelerated use of this model by training groups supporting the advancements of the workstation version of the model in underdeveloped areas, such as Africa.

2006

Commerce Department Group Gold Medal – Scientific/Engineering Achievement

Morris Bender - Timothy Marchok - **Naomi Surgi** - David Michaud

Cited for development of critical improvements to the Geophysical Fluid Dynamics Laboratory Hurricane Prediction System and its implementation into operational hurricane forecasts. In addition, this group greatly expanded the suite of model guidance available to forecasters. These improvements were crucial in producing outstanding operational track and intensity forecasts of Hurricanes Katrina and Rita, two of the most powerful storms to hit the U.S. in 2005. Advanced warning of these devastating catastrophes was vital to mitigating the loss of life and property.

2005

Commerce Department Group Gold Medal – Scientific/Engineering Achievement

Mitchell Goldberg - Fuzhong Weng - Larry McMillin - **John Derber - Russell Treadon**

Recognized for developing and testing scientific techniques to assimilate the observations of advanced satellite instruments into NOAA operational numerical weather prediction models. The team developed innovative techniques for rapidly processing and extracting information from massive amounts of new, high-quality satellite observations of the atmosphere. Tests show that the new data will significantly improve the accuracy and extend the range of weather predictions. As a result of the group's accomplishments, NOAA is better prepared for uses of these data to improve operational weather forecasts at least one year earlier after the satellite's launch and realize a 20 percent productivity increase, assuming a satellite life span is typically 4 to 5 years.

Commerce Department Group Gold Medal – Scientific/Engineering Achievement

Hua-Lu Pan - Shrinivas Moorthi - Yu Tai Hou - Wanqiu Wang - Jae Kyung Schemm - Wesley Ebisuzaki - Huug Vandendool - **Suranjana Saha - David Behringer - Diane Stokes**

Honored for implementing a new Climate Forecast System for Seasonal-to-Interannual (S/I) prediction one year ahead of schedule, with groundbreaking results. The goal was to develop an advanced technology system producing superior results to all incumbent models and to obtain sufficient computing resources for the system to become operationally useful. The group implemented an atmosphere-ocean coupled Climate Forecast System (CFS) for S/I climate prediction. The CFS is a fully-coupled, dynamical system representing critical weather and climate interactions between the earth's oceans and atmosphere. Historical forecasts demonstrated the CFS to be at least as accurate as the best statistical models for S/I forecasting, a breakthrough for dynamically-based models.

Commerce Department Group Silver Medal – Scientific/Engineering Achievement

Kenneth L. Schere - Jonathan Pleim - George Pouliot - Tanya Otte - Jeffrey Young - Paula Davidson - Wilson Shaffer - **Geoffrey DiMego - Jeffery McQueen** - Allan Darling

Honored for the development, testing, and deployment of the National Air Quality Forecast Capability. The group implemented an initial operational capability for predicting ground-level ozone for the northeastern United States through the next day, at hourly time intervals. The forecast guidance improves the basis for state and local health-based alerts and provides information for those at risk from poor air quality. NOAA's air quality forecast capability was developed and implemented in partnership with the U.S. Environmental Protection Agency, combining the two agencies' strengths in air quality measurements and atmospheric modeling.

EMC/NCEP Extraordinary Performance Award

Jun Du

For developing and implementing the WRF ensemble system.

Presidential Rank Award

Stephen Lord, Director, Environmental Modeling Center

For contributions to numerical weather prediction models for hurricanes for the 2004 season.

AMS Honorary Members

Lev Gandin

Eugenia Kalnay

Norman A. Phillips

AMS Fellows

Geoffrey J. DiMego

Joseph P. Gerrity, Jr

James E. Hoke

Paul R. Julian

Eugenia Kalnay

Masao Kanamitsu

Fedor Mesinger

Kenneth E. Mitchell

Hua-lu Pan

Ralph A. Petersen

Desiraju B. Rao