SHERRIE M. FREDRICK

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Louisville, CO 80027

303-673-0214 Home

Education University of Colorado, Denver Completed all course work towards a master's degree

in Computer Science. This work included one

year of graduate numerical analysis.

University of Colorado, Denver Graduated with a BS in Computer Science. Course work included one year of undergraduate

numerical analysis. Graduated on the Engineering

Deans List.

University of Northern Colorado Graduated with a BA in Physics, Minor in Math.

Work

Experience

September 2016 – present NOAA/FMD

My responsibilities have included the running of Numerical Models

on NOAA machines Gaea, Hera. I am responsible for writing

post-processing software for the display of model fields. I have written

a web-page to display model fields and statistics. I have used

MET and more recently METplus for the calculation of model statistics.

Currently I am responsible for the download and processing of observation

data. After processing the observation data I have written a web-page for the

display of the processed data.

I am also responsible for the post-processing of the reanalysis model

simulations and writing the post-processed data to the AWS.

1997-August 2016 NCAR/Mesoscale and Microscale Meteorology (MMM) Laboratory

My responsibilities included the compilation, initial set up and the running of

NCAR WRF and MPAS numerical models.

Along with the running of the models, I was also responsible for writing the post-

processing software for the re-gridding and display of both WRF and MPAS model fields. I have written post-processing software to calculate diagnostic WRF fields and to do the interpolation of WRF fields to different vertical levels. Some of the routines I have wrote are available on the WRF utilities web pages for download and use by the public.

I also ran WRF in real time for support of the field project MIRAGE. For this project I was responsible for the setup and running of the model, and all post-processing of the model fields.

I prepared a web-based application for the display of fields from WRF model runs producing a large data set for the CISL data portal that can be downloaded and cited.

In the past I ran the Data Assimilation Research Testbed (DART) with WRF.

1992- 1997 NCAR/ATD

I was part of a software team that developed a display program for radar data written in C. I wrote an interactive program in C++ that displayed images from the Weather Avoidance Radar on the NCAR Electra aircraft.

Other responsibilities included porting code written on other platforms and writing routines to assist scientists in the analysis of radar data.

Honors Nominated in 1996 for Outstanding Technical Support for work done on a display program for radar data.

In February 2016 I received a MMM recognition award along with my team mates for doing a large 24 ensemble run done with WRF.

Skills and Experience

- Extensive use of Fortran 90, C ,NCL and MET.
- Unix shell scripting including the use of cron.
- I am very familiar with the NetCDF , GRIB1 and GRIB2 data formats.
- I have produced web-pages using python and HTML for the display of model data and more recently observation counts.
- I am very familiar with ImageMagick.
- I have experience writing Python code to read and display Netcdf, Grib1 and Grib2 data files.

Published Datasets:

- Bruyère, C.L., J.M. Done, S. Fredrick, and A. Suzuki-Parker. 2013. NCAR Nested Regional Climate Model (NRCM), Research Data Archive at the National Center for Atmospheric Research, Computational and Information Systems

Laboratory, doi:10.5065/D6Z899DW.

Publications

- Bruyère C.L. , J.M. Done, G.J. Holland, and S. Fredrick, 2014: Bias Corrections of Global Models for Regional Climate Simulations of High-Impact Weather. *Climate Dynamics*, **43**, 1847-1856, doi:10.1007/s00382-013-2011-6.

- Davis, C.A., W. Wang, S. Cavallo, J.M. Done, J. Dudhia, S.M. Fredrick, J. Michalakes, G.A. Caldwell, T.M. Engel, and R. Torn, 2010: High-resolution hurricane forecasts. *Computing in Science & Engineering*, **13**, 22-30, doi: 10.1109/MCSE.2010.74

- Miller, L.J., S.M. Fredrick, and C.A. Davis, 2002: CEDRIC as a software tool for analyzing WRF model output. *21st Conference on Severe Local Storms*, San Antonio, TX, American Meteorological Society JP4.8.

- SOLO: Window Based Software to Peruse and Edit Radar Data, presented at the Ninth Symposium On Meteorological Observations and Instrumentation, March 1995, Charlotte, North Carolina

- SOLO: A Program to Peruse and Edit Radar Data, presented at the 26th International

Conference on Radar Meteorology, May 1993, Norman, Oklahoma.