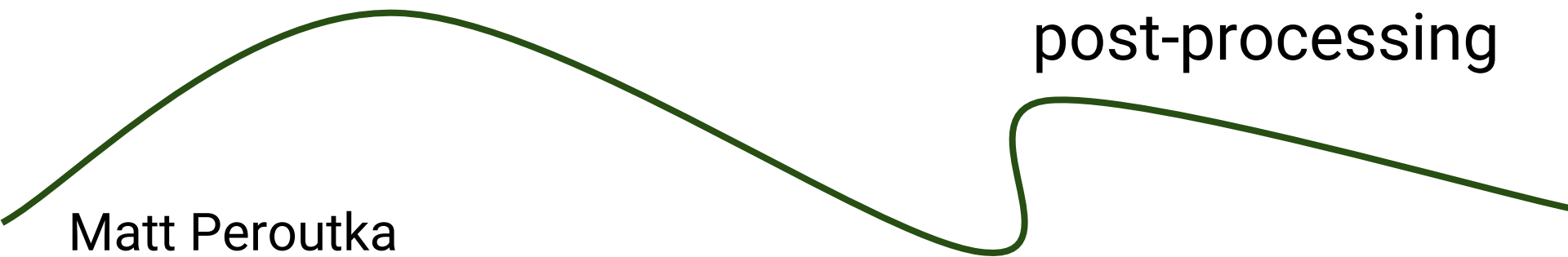


A vision of a community infrastructure that  
encourages collaboration in statistical  
post-processing



Matt Peroutka  
Meteorological Development Laboratory  
NOAA/National Weather Service  
Silver Spring, Maryland

*Thanks*

“I guess I have to learn  
a whole new software  
infrastructure.”

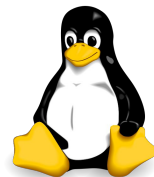
# Why?



“I guess I have to learn  
a whole new software  
infrastructure.”

# Successful Free and Open-source Projects

- Linux
- Apache



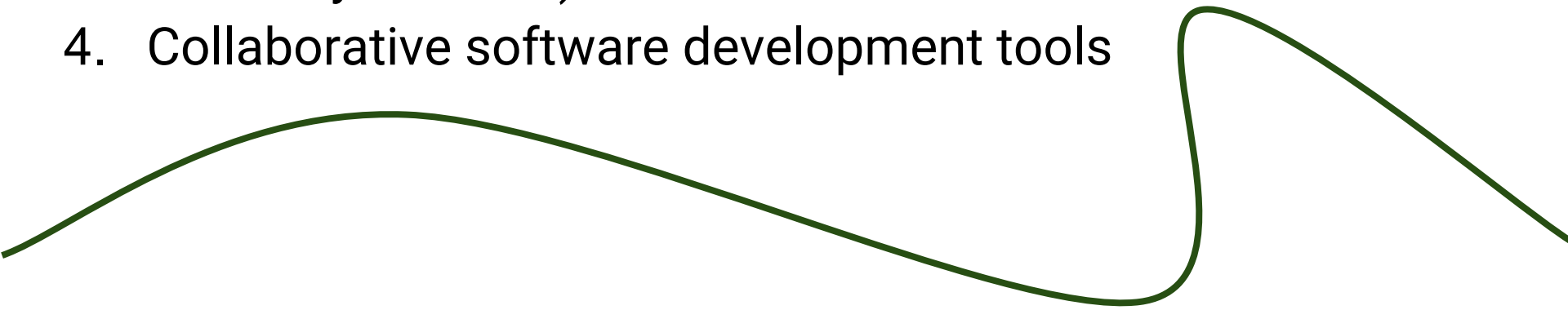
- Earth System Modeling Framework
- Mozilla Thunderbird and Firefox
- Wikipedia





***What are the ingredients?***

# Elements of a community infrastructure for statistical post-processing

1. Great name
  2. Standards that enable data sharing
  3. Overarching software design (Define the components and how they interact.)
  4. Collaborative software development tools
- 



**Ideas to “seed” the discussion..**

**Great name**



Weather Information Statistical Post-processing  
System (WISPS)

Community Infrastructure for Statistics and  
Meteorology (CISM)

Community Software for Statistical  
Post-processing (CSSP)



Ideas to “seed” the discussion...

Standards that enable data sharing



# Candidate standards that enable data sharing

- GRIB2: Standard for gridded data transmission; no support for stations
  - Well supported throughout the weather enterprise
  - Table-driven structure lacks hierarchy
  - WMO-maintained (both good news and bad news)
  - Operates on full grids
  - Issues with current GIS standards



# Candidate standards that enable data sharing (2)

- NetCDF with Climate and Forecast (CF) Conventions:  
Standard for sharing multi-dimensional data
  - Well supported throughout the weather enterprise
  - Attribute information lacks hierarchy
  - Unidata maintained
  - CF standard names may not serve the needs of statistical post-processing well

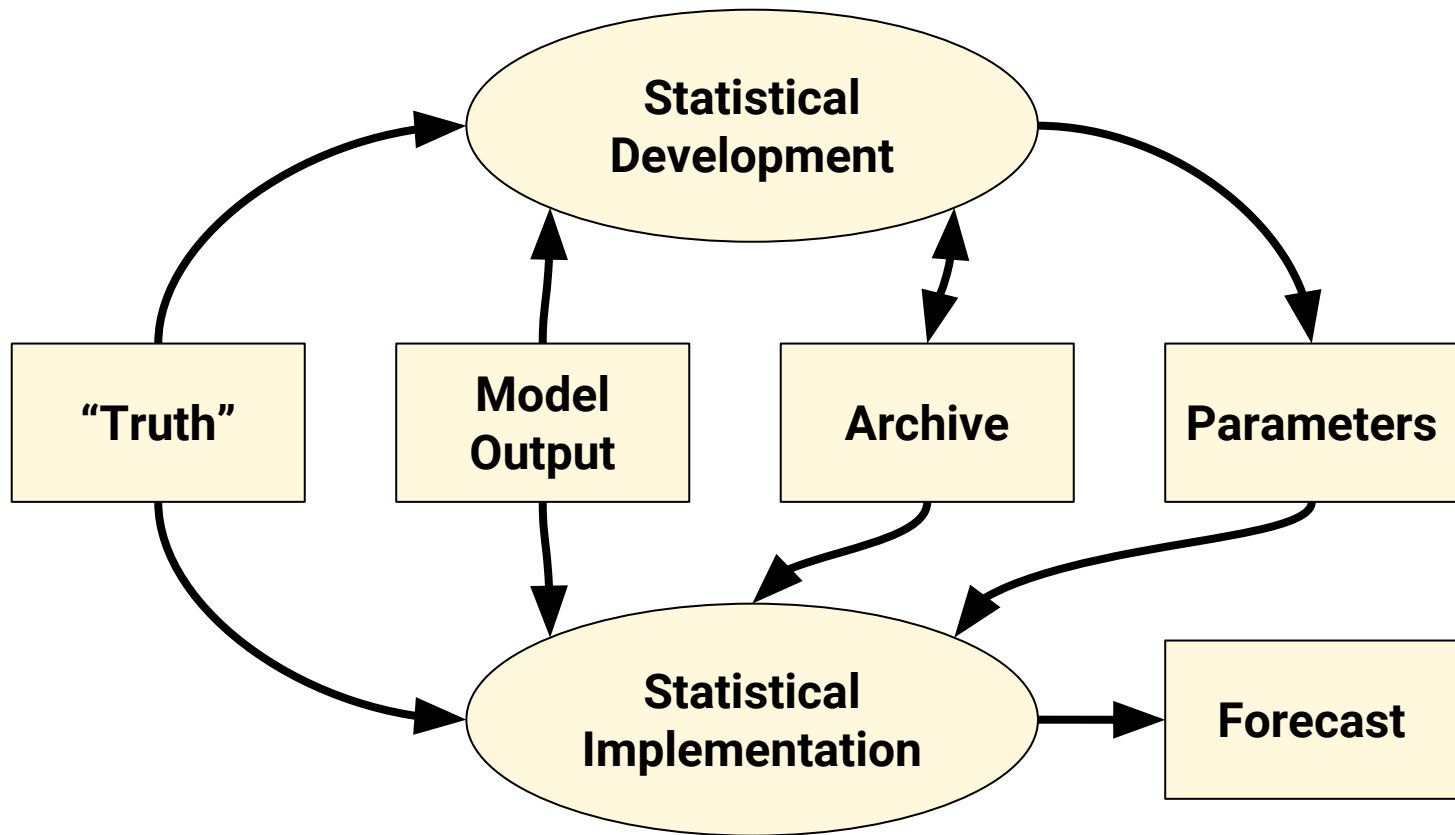


# Candidate standards that enable data sharing (3)

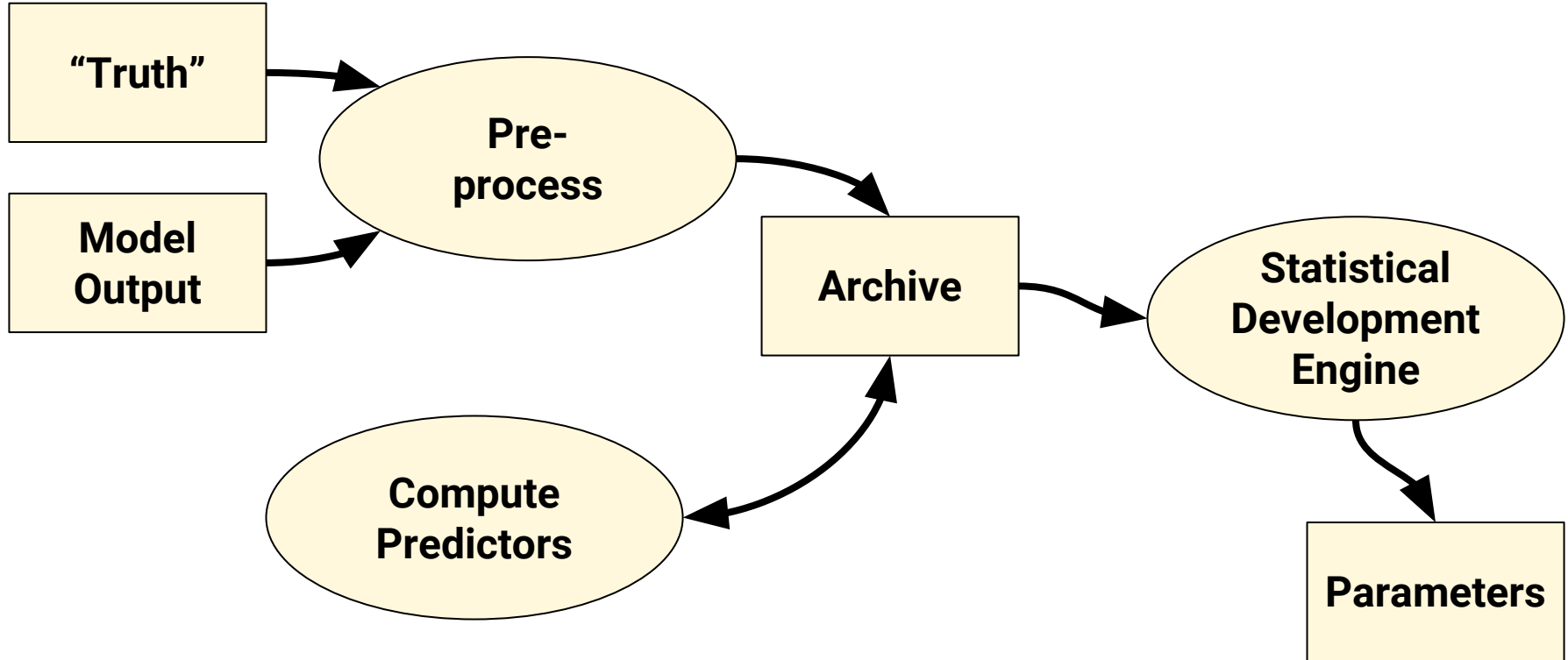
- Hierarchical Data Format (HDF): Standard for sharing multi-dimensional data
  - Well supported with some acceptance in the weather enterprise
  - Strong support for hierarchical data
  - HDF Group maintained



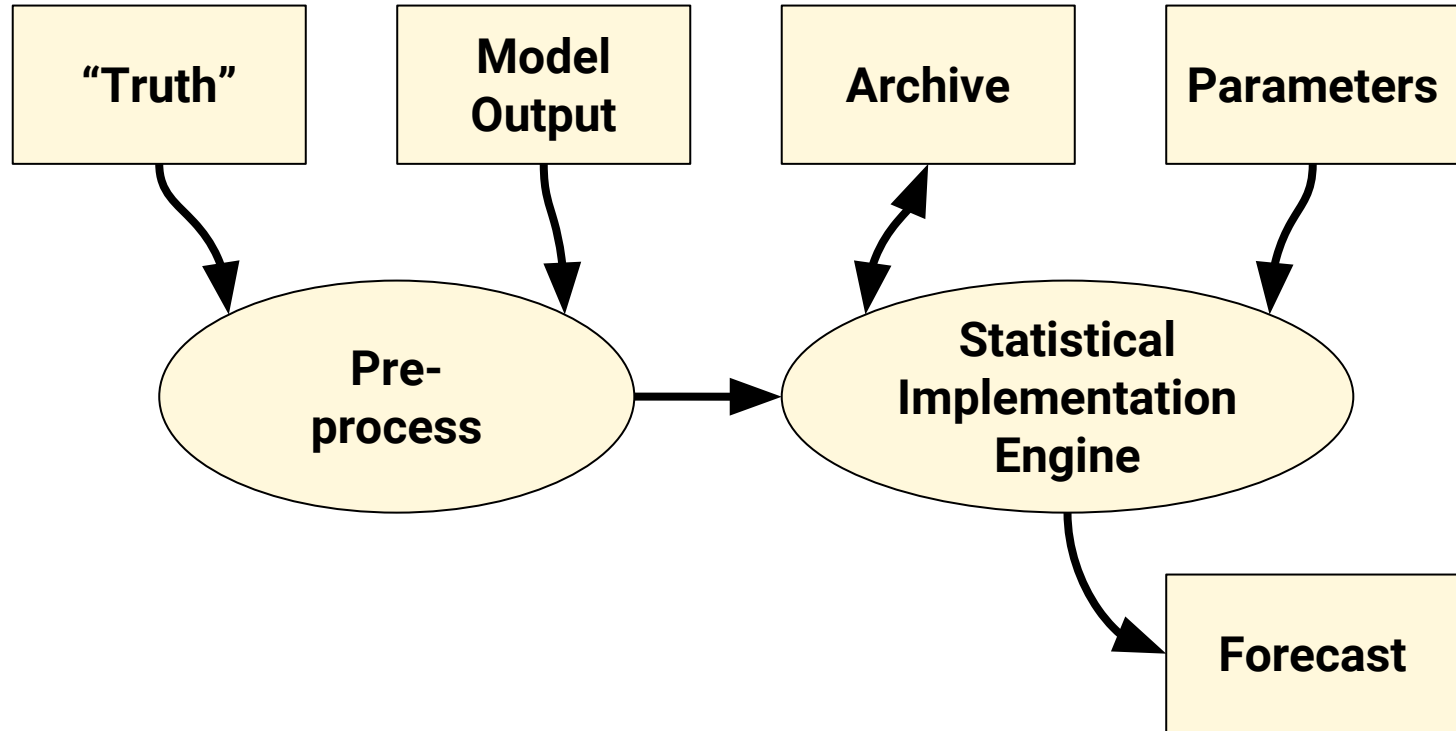
# Overarching software design



# Statistical Development



# Statistical Implementation





# Ideas to “seed” the discussion...

## Collaborative software development tools



# Candidate collaborative software development tools

- Software Repository (GitHub, GitLab)
- Codes Registry (WMO Example)
- Documentation engine (Wiki, Git, Read the Docs)
- Integrated Development Environment (Eclipse) Plug-ins

