



# Building an Open Platform for Sustaining Data Science Innovation

A Whirlwind Tour of NumFOCUS Projects

Presented by ANDY R TERREL, PHD  
at SUPERCOMPUTING 18,  
BOF - Software Engineering and Reuse in  
Computational Science and Engineering  
on Nov 14, 2018



# NUMFOCUS

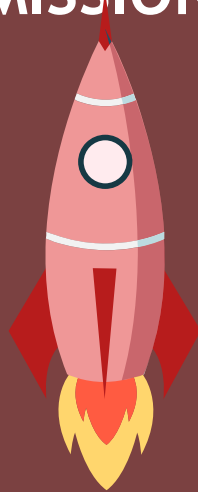
OPEN CODE = BETTER SCIENCE

## MISSION

Promote sustainable high-level programming languages, open code development, and reproducible scientific research.

NUMFOCUS

# WE ACCOMPLISH THIS MISSION.



## EDUCATIONAL PROGRAMS

Scholarships,  
Diversity,  
Sustainability



## FISCAL SPONSORSHIP

Legal and Fiscal  
services



## EVENTS

Conferences and  
Meetups



## DATA SCIENCE AND SCIENTIFIC COMPUTING COMMUNITY

Common  
challenges and  
communication



## FIRST

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### **BUILD TOOLS FOR SCIENCE**

Yes, science happens everywhere.  
Corporations,  
laboratories, backyards, in  
trenches.

## SECOND

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### **BE KIND TO EACH OTHER**

Write down a code of  
conduct, tell the world  
how you make decisions,  
share your decisions

## THIRD

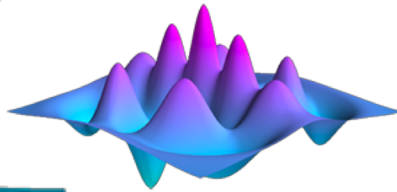
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### **LEAD OPENLY**

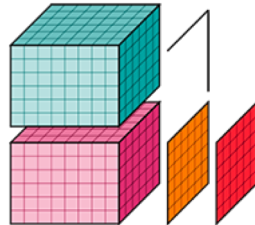
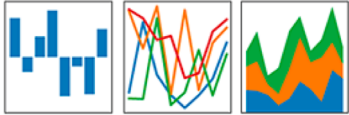
More than a license, but  
take comments in public,  
develop on an open  
platform, use best  
practices so all can see.



Domain Experience

# pandas

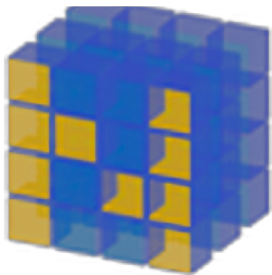
$$y_{it} = \beta' x_{it} + \mu_i + \epsilon_{it}$$



## xarray

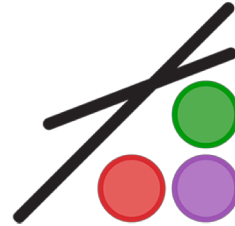
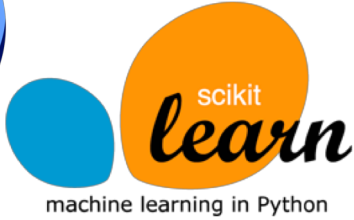
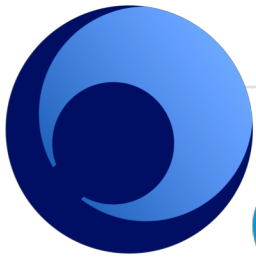


## DyND



## Data Wrangling

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pomegranate



Econ  
ARK



Modelling



IP[y]:  
IPython

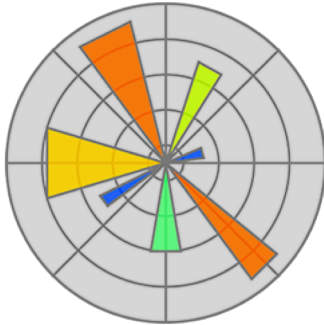


theano

**Computation**

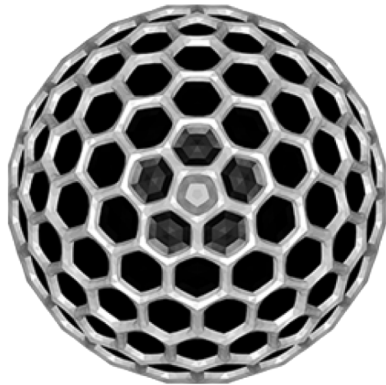
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**Visualize the Result**

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**Share the Story**

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CONDA



**CONDA-FORGE**



SPYDER



**Tools to Build**

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