Addressing the Resource Problem Through Community

SasView

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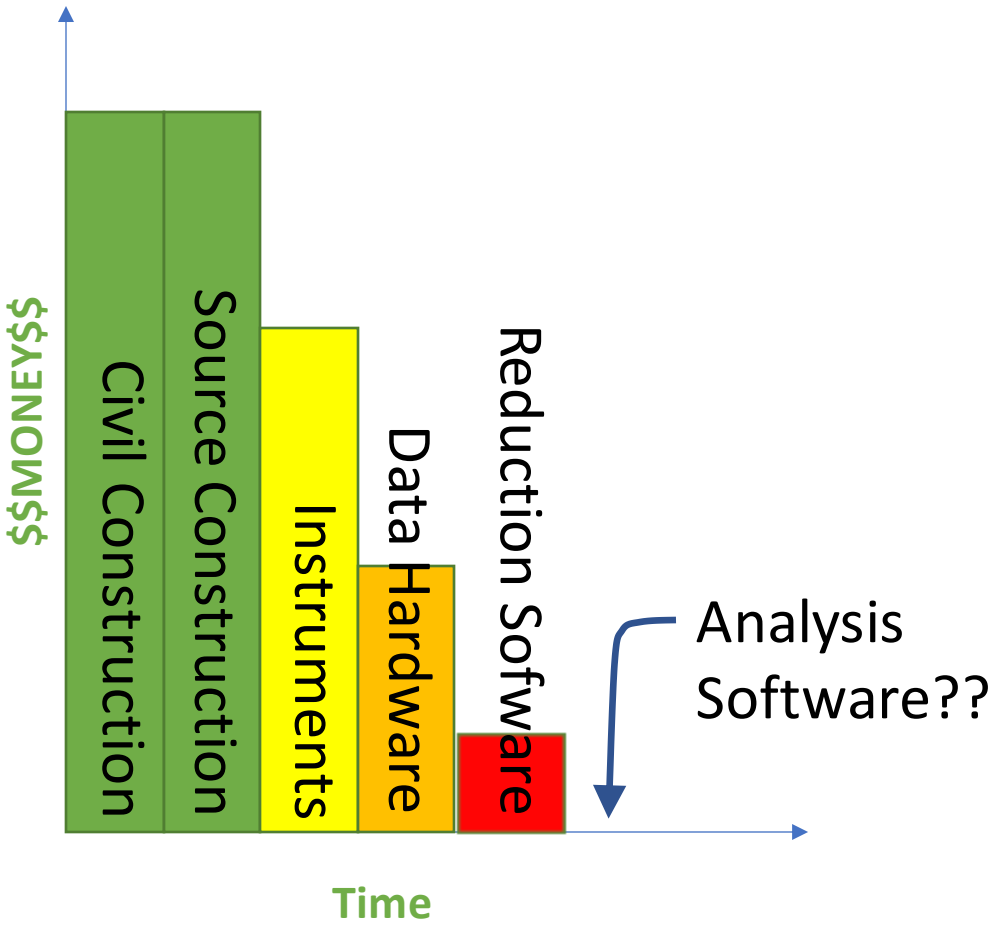
The resource Problem Part I



Analysis Software - Who's Job is it Anyway?

Scattering is an analysis tool and part of providing the tool should be the necessary software

→ the FACILITY'S JOB

Analysis is where the science is

→ the USER'S JOB

Or maybe …..

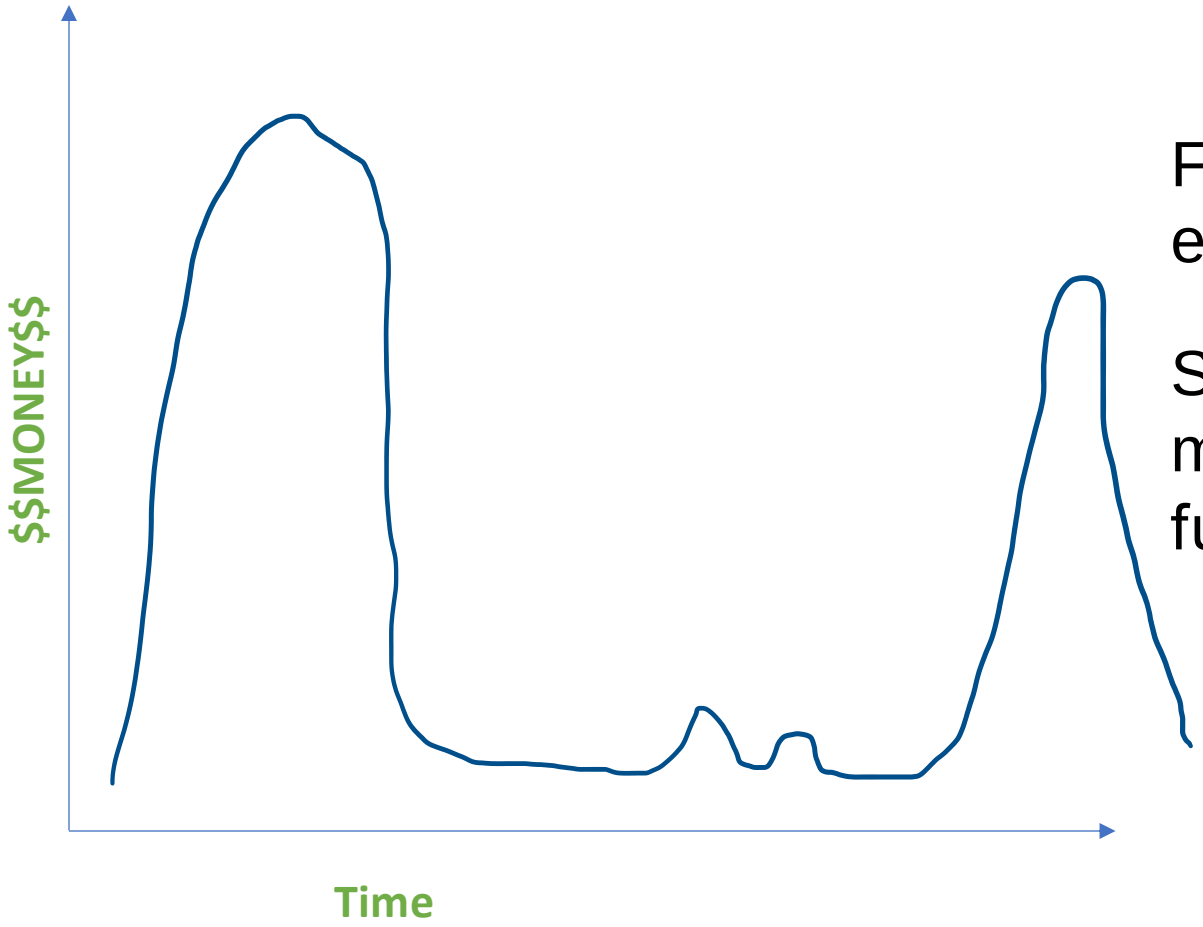
→ The Domain Science funding agencies?

The resource Problem Part II
The feast and famine roller coaster

The Valley(s) of death

Analysis Software - Who's Job is it Anyway?

- The domain science funding agencies

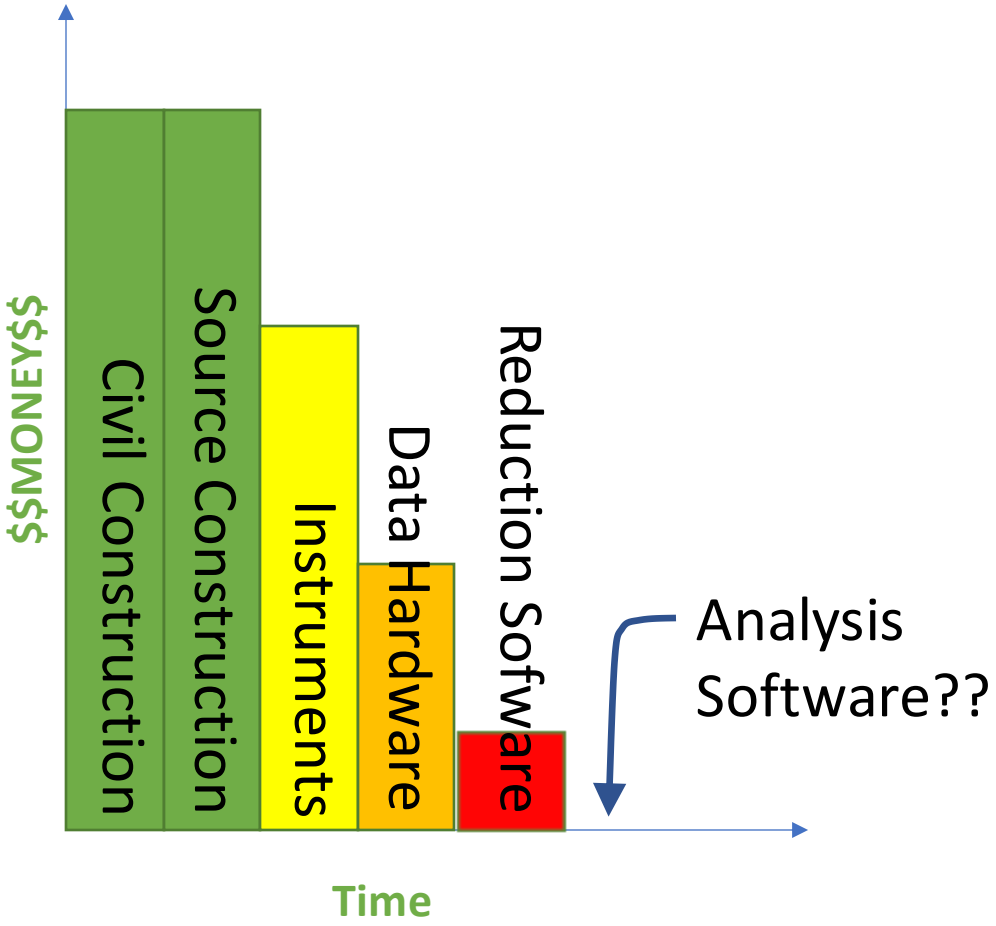


Facility directors discretion, NIH, NSF, DOE, etc.

Special funding (grants) do no fund long term maintenance and ongoing development. They fund "big new (transformative) ideas"

The resource Problem Part III

The unbounded problem



Fundamentally all these elements are relatively well defined problems…

EXCEPT ...

Analysis Software is really unbounded. The needs are nearly infinite and constantly evolving.

HOWEVER --- Analysis as defined here is also uniquely universal and ripe for collaborative pooling of finite resources

…. But beware the monoculture?

The resource Problem Reframed – The Need

- A way to focus limited resources on top priorities (most useful to the science being done) in a world of infinite possibilities
- A way to harness funding for bold new ideas without losing the investment in the valleys of death
- A way to provide sustained maintenance and development in an uncertain funding environment (thriving through the famines)

FACTS OF LIFE:

- **Resources are finite**
- **Needs are infinite**

The SasView Aproach

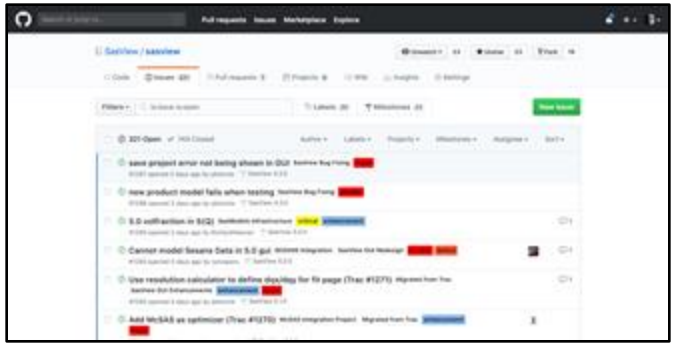
An
"open, collaborative, community development"
platform for
Small Angle Scattering Data Analysis

Open, Collaborative, Community Development

Code is open source and publicly hosted at Github
Released under BSD 3-clause license

(Zenodo) DOI for **each release**

Code Hosting, **Issue Tracking,** Developer Wiki & CI on Public Github repos



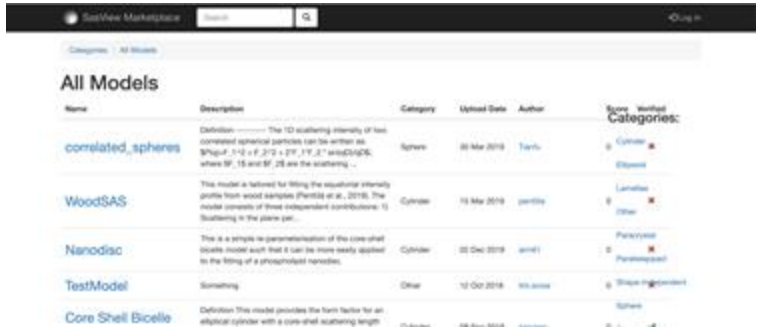
https://github.com/SasView

- Website
- Documentation: in-program & online
- Written Tutorials
- Video Tutorials (YouTube)
- scattering schools/workshop
- university courses
- Bootcamps & regional workshops
- Twitter

- help@sasview.org
- users@sasview.org

Rolling **5 Year Roadmap**

Model Marketplace for Users to share their models



http://marketplace.sasview.org

python™

https://www.sasview.org

matplotlib

Open, Collaborative, Community Development

- Twice monthly zoom calls
- Regular ‘camps’ & ‘hackathons’
- Developer's mailing list
- SasView slack
- Expertise sharing and helping
- Small leadership team to facilitate

Collaboration also builds Community

http://www.sasview.org

http://github.com/SasView

Open, Collaborative, Community Development

Ask not what the community is going to do for you,
ask what you can do for the community

- P. Butler, March 2019

No MOU ... all are invited and welcome

Two Basic "Rules"

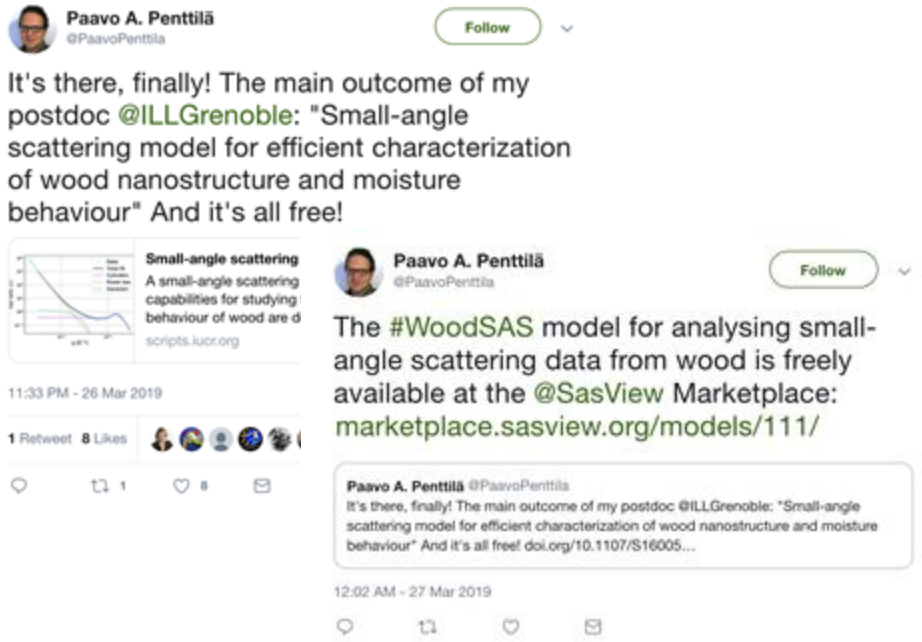
He who pays the piper ...

Those who bring the resources (time and effort, or funds to buy time and effort) choose what to work on.

And ...

You cannot break existing experiences ...

- New dependencies vs long term maintenance (sustainability)
  - Code quality vs long term sustainability
  - Changing/degrading the current user experience for the existing user base



http://www.sasview.org

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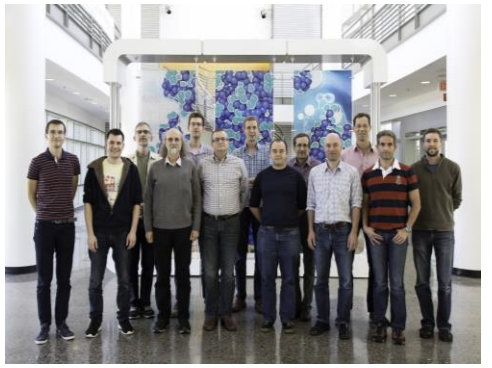
History and Status of SasView

- 2006; originates in NSF *DANSE* project
- 2013; transitions into a community project
- 2016; Sine2020 project funded
- 2022; Essentially a “volunteer army”

- ~40 contributors from 9 organizations so far (~10-15 active at any one time)
- 1 to 2 releases/year (5.0.5 JUST RELEASED)
- Documentation/tutorial projects ongoing
- Usage? Seems to be "everywhere?"
- Publications? > 100/year



SasView Model: Some Current Problems

The price of success:

- Many people view the project as a well-funded group of professionals → barrier to contribution – e.g: Old website and no graphics = not serious; Nice graphic slick website = professional → way beyond my skills – how to navigate?
- Large project with many moving pieces is a barrier to new volunteer coders
- The tragedy of the commons: somebody else will take care of the problem.
- Hard to get non-coders to believe they can contribute equally – it is unfortunately in the name “code camp” … words matter → SasView camp?
- Building community, especially during a pandemic is HARD WORK
- Lack of funds for small things … but beware too much money?
- Hard to keep up with increasing security issues with these resources so far.

The resource Problem Reframed – The Solution

- Facilities provide foundational support through participation of data and instrument scientists
- Grants and other projects provide “bold new functionality”
- Community, writ large, helps provide support and functionality
- New ideas tested and developed as before by individuals or larger groups (the community)
- Once validated and deemed ready for the larger community these groups provide resources (their labor) to integrate while active developer community helps with training on where things go and on parts of interest to them (collaborative)

Thoughts? Ideas? Suggestions? I'd love to talk to anyone interested