

# OpenDreamKit

Open Digital Research Environment Toolkit  
for the Advancement of Mathematics

A personal perspective

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OpenDreamKit.org

For me, it all started there



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A question of Bruce Westbury at FPSAC 2013

Given unlimited funding, what would you do with it for Sage?

## Context

Emergence in the last decade(s) of a vibrant ecosystem of open source software for pure mathematics

- Specialized libraries: GAP, Linbox, Pari/GP, MPIR, Singular, ...
- General purpose systems: Sage, ...
- Online databases: LMFDB, ...
- Interactive computing environments:  
IPython/Jupyter, SageMathCloud, ...
- Together with the wider Scientific Python ecosystem

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Viable open source alternatives to Maple, Mathematica, Matlab, Magma, ...

- Research
- Education
- Industry?

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- Some highly technical tasks are lagging behind:
  - Hard to justify work on them for a researcher
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- Impeding the wide adoption of those systems
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## A need for funding for:

- A couple full time developers
- Community building



An opportunity suggested by Eugenia, January 2014

## Virtual Research Environments

A call of the H2020 European Research Infrastructures Work Programme

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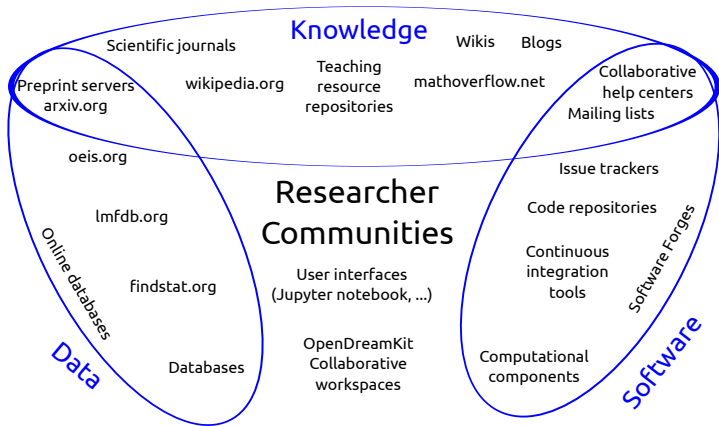
## Virtual Research Environments

A call of the H2020 European Research Infrastructures Work Programme

### Definition

Groups of researchers, typically widely dispersed who are working together through ubiquitous, trusted and easy access to services for scientific data, computing and networking, in a *collaborative virtual environment*.

# Virtual Research Environments in Math



Storage resources  
(local, shared folder, cloud)

Computational resources  
(local, super computer, cloud)

# OpenDreamKit (2015-2019)

## Open Digital Research Environment Toolkit for the Advancement of Mathematics

- H2020 European Research Infrastructures Work Programme  
Call: Virtual Research Environments
- Budget: 7.6 million euros
- 15 sites
- 50 participants

# OpenDreamKit (2015-2019)

## Aims

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## Aims

- Deliver a flexible Virtual Research Environment toolkit supporting collaborative work on soft, data, and knowledge
- Foster the ecosystem of open source software for pure mathematics and beyond

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Listen to your heart and do what's right