

IP[y]:  
IPython



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# IPython & Project Jupyter

# Future Directions

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# Project Jupyter gets \$6M to expand collaborative data science software

JULY 7, 2015

Tags: [CRD](#)

PALO ALTO, Calif. July 7, 2015 — Three foundations pledged \$6M over the next three years to Project Jupyter, an open-source software project that supports scientific computing and data science across a wide range of programming languages via a large, public, open and inclusive community.

Fernando Perez of University of California, Berkeley and [Lawrence Berkeley National Laboratory \(Berkeley Lab's\) Computational Research Division](#) and Brian Granger of California Polytechnic University, San Luis Obispo will lead the project at their institutions. Perez and Granger's efforts with Project Jupyter are the result of their work developing IPython, a popular user interface for interactive computing across multiple programming languages.

With this award from the Leona M. and Harry B. Helmsley Charitable Trust, Alfred P. Sloan Foundation, and Gordon and Betty Moore Foundation, these researchers will expand and improve the capabilities of the Jupyter Notebook, a web-based platform that allows scientists, researchers and educators to combine live code, equations, narrative text and rich media into a single, interactive document.



Fernando Perez and Brian Granger discuss the architecture of Project Jupyter, as its scope expands to reach data science applications in over 40 programming languages. Photo credit: Adriana Restrepo



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# Project Jupyter: Computational Narratives as the Engine of Collaborative Data Science

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## ❖ Interactive Computing

- ❖ Notebooks as interactive applications
- ❖ Modular, reusable UI/UX
- ❖ Software engineering with notebooks

## ❖ Computational Narratives

- ❖ nbconvert
- ❖ Element filtering
- ❖ Documentation

## ❖ Collaboration

- ❖ Real time collaboration
- ❖ JupyterHub

## ❖ Sustainability

- ❖ People
- ❖ Events



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# UI refactor: Bloomberg/Continuum

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- ❖ Using phosphor JS framework:
  - ❖ <https://github.com/phosphorjs/phosphor>
- ❖ Tiled layout, plugins, much more
- ❖ Enable richer layouts, beyond the notebook
  - ❖ Text editor, output, variable inspectors, debuggers, ...
- ❖ Work just started!



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# Hiring

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- ❖ At UC Berkeley
  - ❖ Two new postdocs
  - ❖ Project manager
  - ❖ Web developer, tech writer (short contracts)
  - ❖ One administrative assistant.
- ❖ At Cal Poly
  - ❖ Three software engineers (one already hired)
  - ❖ One designer
  - ❖ One administrative assistant.



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# Deployments across the West Coast

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- ❖ Collaboration led by Larry Smarr @ UCSD
- ❖ Part of Pacific Research Platform proposal
- ❖ Jupyter as UI/ frontend for data-intensive research environments
- ❖ NSF project, ESNet team participating (Eli Dart).
- ❖ Initial phase moving forward with UCSD resources.



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# Deployments @ UC Berkeley

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- ❖ Data Science 10: Courses this fall
- ❖ Building atop what Jess Hamrick did
- ❖ Ryan Lovett, Aaron Culich...

New Jupyter in Education Mailing List:

<https://groups.google.com/forum/#!forum/jupyter-education>

OpenDreamKit · Open Dig

Fernando

← → ↻ opendreamkit.org ☆ ⓧ Ⓜ Ⓟ Ⓠ Ⓡ Ⓢ Ⓣ Ⓤ Ⓥ Ⓦ Ⓧ Ⓨ Ⓩ ⓐ ⓑ ⓓ ⓔ ⓕ ⓖ ⓗ ⓙ ⓚ ⓛ ⓜ ⓝ ⓞ ⓟ ⓠ ⓡ ⓢ ⓣ ⓤ ⓥ ⓦ ⓧ ⓨ ⓩ ⓪ ⓫ ⓬ ⓭ ⓮ ⓯ ⓰ ⓱ ⓲ ⓳ ⓴ ⓵ ⓶ ⓷ ⓸ ⓹ ⓺ ⓻ ⓼ ⓽ ⓾ ⓿



# OpenDreamKit

A project funded by the Horizon 2020 European Research Infrastructures Work Programme.

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

OpenDreamKit is a [Horizon 2020 European Research Infrastructure](#) project that will run for four years, starting from September 2015. It will provide substantial funding to the open source computational mathematics ecosystem, and in particular popular tools such as [LinBox](#), [MPIR](#), [SageMath](#), [GAP](#), [Pari/GP](#), [LMFDB](#), [Singular](#), [MathHub](#), and the [IPython/Jupyter](#) interactive computing environment.

From this ecosystem, OpenDreamKit will deliver a flexible toolkit enabling research groups to set up [Virtual Research Environments](#), customised to meet the varied needs of research projects in pure mathematics and applications, and supporting the full research life-cycle from exploration, through proof and publication, to archival and sharing of data and code.

Altogether the project involves about 50 people spread over 15 sites in Europe, with a total budget of about 7.6 million euros. The largest portion of that will be devoted to employing an average of 11 researchers and developers working full time on the project. Additionally, the participants will contribute the equivalent of six other people working full time.

[Read more...](#)



## Raleigh McElvery

# Thank You!

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Try it out at  
[try.jupyter.org](http://try.jupyter.org)