



# NeuroFedora

Free Software for Free Neuroscience

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Ankur Sinha

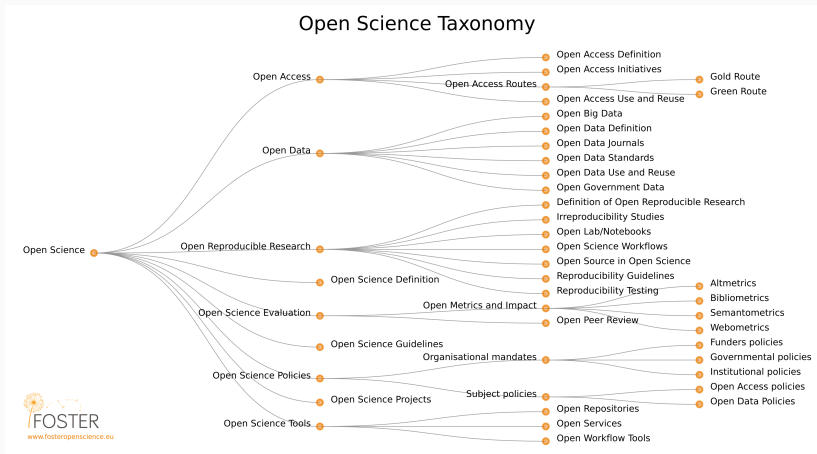
Ph.D. candidate: UH Biocomputation Group, UK,

Volunteer: Fedora Project.

## Free/Open (neuro) Science

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# Modern Free/Open Science



<sup>1</sup>Petr Knoth and Nancy Pontika (CC BY 3.0)

## The ideal, in short:

Free/Open Science:

Everyone should have the freedom to share, study, and modify scientific material.

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<sup>2</sup>Free software foundation

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FOSS:

Everyone should have the freedom to share, study, and modify software<sup>5</sup>.

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## A Commitment to Open Source in Neuroscience

Padraig Gleeson • Andrew P. Davison • R. Angus Silver • Giorgio A. Ascoli  

Open Access • DOI: <https://doi.org/10.1016/j.neuron.2017.10.013> •

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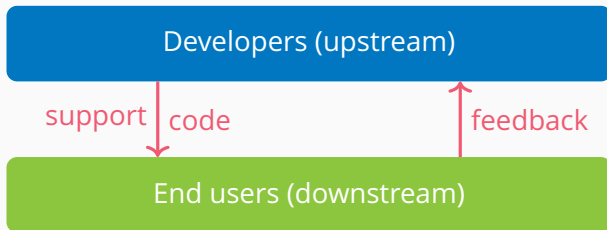
<sup>6</sup>Open source for neuroscience

## NeuroFedora: why, how, what?

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# FOSS: Developers and users



## Neuroscience community: highly multidisciplinary

- **various specialities:** biologists, mathematicians, physicists, chemists, psychologists, ... ,

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- **various specialities:** biologists, mathematicians, physicists, chemists, psychologists, ... ,
- **small proportion of trained software developers**

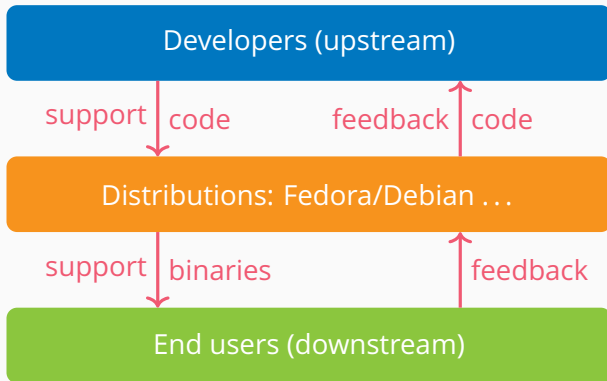
## (Anecdotal) notes on development of research software

- often **single developer**, or small development teams
- limited **maintenance**, short-lived projects
- limited **access to hardware/resources**
- limited **code quality**
- limited **use of established best practices**
- limited **testing for correctness (!)**
- **complex dependency chains**
- lack of **documentation and support**
- lack of **community development know-how**

## (Anecdotal) notes on users of research software

- waste time and effort installing (and reinstalling) their software stacks
- rarely run test suites (!)
- rarely report bugs upstream
- rarely send improvements upstream
- are unaware of helpful development tools

# Distributions liaison between developers and users



## Distributions, like Fedora, are in a unique position:

- liaison between upstream and users
- have the infrastructure
- follow best practices in software development
- constantly work community development
- learn from one another—train while working
- disseminate information to end-users

## Primary goal:

- Provide a ready to use, integrated FOSS platform for neuroscientists<sup>7</sup>.

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## Secondary/collateral goals:

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## Primary goal:

- Provide a ready to use, integrated FOSS platform for neuroscientists<sup>7</sup>.

## Secondary/collateral goals:

- help improve the standard and maintenance of tools
- help users develop software development skills
- make neuroscience accessible to non-specialists

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<sup>7</sup> Researchers, academics, hobbyists, anyone!

- less than a year old<sup>8</sup>,

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<sup>8</sup>in its second iteration

<sup>9</sup>[src.fedoraproject.org: Neuro-SIG](https://src.fedoraproject.org/Neuro-SIG)

<sup>10</sup>[pagure.io: Neuro-SIG: issues](https://pagure.io/Neuro-SIG/issues)

# NeuroFedora: current metrics

- less than a year old<sup>8</sup>,
- 20 active contributors:
  - 15 package maintainers
  - 5 designers, newcomers
  - only 5 from a neuroscience background

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- software:
  - 120 tools (packages) ready to install<sup>9</sup>.
  - ~170 in queue<sup>10</sup>.

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# NeuroFedora is at:



Mailing list: [neuro-sig@lists.fedoraproject.org](mailto:neuro-sig@lists.fedoraproject.org)

IRC: [#fedora-neuro](#) on Freenode

Telegram: [t.me/NeuroFedora](https://t.me/NeuroFedora)

Documentation [neuro.fedoraproject.org](https://neuro.fedoraproject.org)

Blog: [neuroblog.fedoraproject.org](https://neuroblog.fedoraproject.org)

Pagure.io (FOSS Git forge): [neuro-sig/NeuroFedora](https://pagure.io/neuro-sig/NeuroFedora)