

# Galaxy

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# Galaxy is

An open web-based platform for *accessible, reproducible, and transparent* computational biomedical research.

- Accessible:
  - Don't need programming experience to use
- Reproducible:
  - Captures information so any user can repeat a complete computational analysis
- Transparent:
  - Share, publish, and explain analyses via the web

## 5 URLs

- [UseGalaxy.org](https://UseGalaxy.org)
- [GetGalaxy.org](https://GetGalaxy.org)
- [UseGalaxy.org/cloud](https://UseGalaxy.org/cloud)
- [GalaxyProject.org](https://GalaxyProject.org)
- [UseGalaxy.org/galaxy101](https://UseGalaxy.org/galaxy101)

## Use Case: Encouraging tomorrow's scientists

Your 9 year old daughter asks:  
Dad (or Mom), we have been  
studying *science* at school, and  
I know you aren't a *real  
scientist*, but  
which coding exon on  
chromosome 22 has the most  
known SNPs?

If you are me,  
you say:  
Um, ...  
Sweetheart, ...  
Go to sleep.

# A rough plan: Galaxy

- Get some data
  - Coding exons on chromosome 22
  - SNPs on chromosome 22
- Mess with it
  - Identify which exons have SNPs
  - Count number of SNPs in each such exon
  - Identify the exon with most SNPs.
- UseGalaxy.org, UseGalaxy.org/galaxy101

# Some other worked examples

- Shared Data → Published Pages\*
  - Heteroplasmy
  - Windshield Splatter (metagenomics)
  - Variant Analysis
  - RNA-Seq
  - ...
- All examples of Galaxy Pages

\* Also accessible at [usegalaxy.org/page/list\\_published](https://usegalaxy.org/page/list_published)

# Things we didn't talk about

- Data libraries and genome builds
- Tool Shed
- Sample Tracking
- API – programmatic access to Galaxy
- Community
- Mailing Lists
  - [galaxy-user@lists.bx.psu.edu](mailto:galaxy-user@lists.bx.psu.edu) (~ 2000 members)
  - [galaxy-dev@lists.bx.psu.edu](mailto:galaxy-dev@lists.bx.psu.edu) (~ 400 members)

# Thanks



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