

Software Engineering for Bioinformatics: a Bioconductor Perspective

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Software Sustainability Institute Fellow 2026

Bioconductor Community Advisory Board

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Agenda

A bit about myself

The Software Sustainability Institute

The Bioconductor project

The BioFAIR Pathfinder Projects

My plan for the coming year / Bringing it all together

FLOSS @ Oxford

Thank you [Laura, Oliver](#), and the [mailing list](#)!

Open to everyone in Oxford (not just University members).

See also: University-based [Open-Source at Oxford initiative](#) organised by [Miguel Arana-Catania](#)

Apologies for missing the first meetings this year.

Looking forward to future meetings / talks / coffee hours!

How can I help?

A bit about myself

Postdoctoral computational biologist

Oxford Biomedical Data Science (OBDS) trainer

Research Software Engineer

Community Advisory Board (CAB), Code of Conduct (CoC) committee, ...

Certified Carpentries instructor

Software Sustainability Institute Fellow

[Sims Group](#)



The Software Sustainability Institute



Founded in 2010.

First organisation in the world dedicated to improving software in research.

Fellowship programme since 2012

Green Digital Sustainability Certification (DiSC) since 2024.

Research Software Maintenance Fund since 2025.

Programmes

- Fellowship programme
- Research Software Maintenance Fund
- Green DiSC
- Social Sciences Research Software
- Research and policy

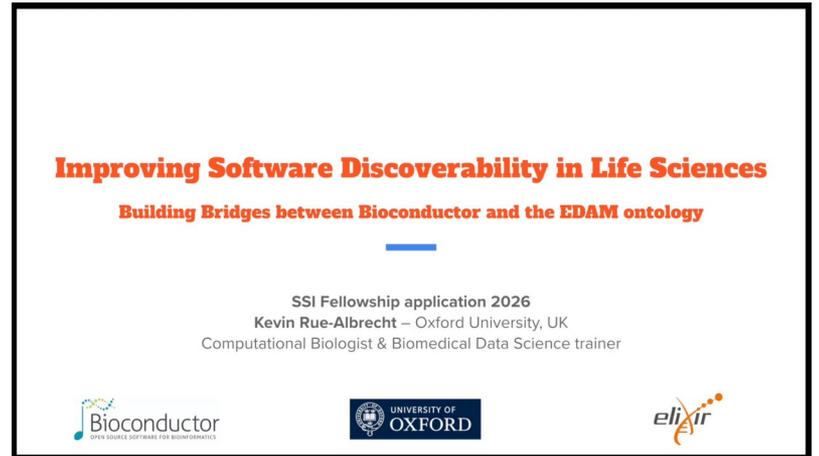
My role in the SSI

Fellowship 2026 ([my profile and application screencast](#))

Improving Software Discoverability in Life Sciences

Jan 2026 - Mar 2027

£4,000 to support research-related events ([T&C's](#))



The Bioconductor Project

Started 2001.

Open source software for Bioinformatics.

Aims to develop and share open source software for precise and repeatable analysis of biological data.

Over 2,000 software packages (predominantly in the R programming language)

Worldwide community with a [Core Team](#) based in the USA.

Annual major community-driven conferences in [North America](#), [Europe](#), and [Asia](#)

Great emphasis on [education and training](#).

My role in Bioconductor

2011 - User (PhD student)

2013 - Developer (first package, now 10+)

2021 - [Community Advisory Board](#), [Code of Conduct committee](#), [Working groups](#): Education, Conference planning, EDAM collaboration, Multilingual, Website

2024 - European Bioconductor Meeting local co-organiser (Oxford, Department of Statistics)

2026 - BioFAIR Pathfinder project lead

“Connecting Bioconductor, Galaxy, and nf-core: FAIR, AI-ready workflows and training for single-cell analysis”

Bioconductor as a software engineering project

[Bioconductor build system \(report\)](#) - Different schedules for software, annotations, workflows, books, ...

[Single Package Builder](#) - Triggered by version bump on new package submissions (via [GitHub issues](#))

[Common classes](#) (OOP)

[Contribution Guide](#) "Development, Maintenance, and Peer Review"

[Git repository](#) (formerly Subversion pre-2017)

Online [Git Browser and Code Search](#)

Contributing to Bioconductor

Software

Training materials

Event organisation (conferences, hackathons, ...)

Package review

Code of conduct

Getting involved

Contributing - Software

The screenshot displays the GitHub interface for the 'Bioconductor / Contributions' repository. The 'Issues' tab is active, showing 79 open issues. The search bar contains the query 'is:issue state:open'. The issue list is sorted by 'Newest' and includes the following items:

Issue Title	Progress Status	Author	Opened	Comments
AnVILVRS			Oct 16, 2025	23
geneslator	1. awaiting moderation	GMicale	3 hours ago	1
BiocBuildReporter	2. review in progress OK	Ishep	2 days ago	4
GOaGO	OK pre-review	ajank	last week	7
CGRphylo2	1. awaiting moderation 3e. pending pre-review changes	amarinderthind	last week	8
atacInferCnv	OK pre-review	kokonech	last week	5
phylobar	1. awaiting moderation 3d. needs Interop 3e. pending pre-review changes	krirs1128	last week	2

Image credit: fair dealing screenshot of <https://github.com> (O Geer thinks)

E.g. <https://github.com/Bioconductor/Contributions/issues/111>

Contribution - Training materials

Education and training committee

Monthly meeting, Google group, Zulip chat

Carpentry lessons:

bioc-intro, bioc-rnaseq, bioc-scrnaseq, bioc-project

Publications

Learning and teaching biological data science in the Bioconductor community (2025)

Contributing - Event organisation

Annual North American Bioconductor Meeting (BioC, [2025](#))

Annual European Bioconductor Meeting (EuroBioC, [2025](#))

Annual Bioconductor Asia Meeting (BioC Asia, [2025](#))

Carpentries workshops

Africa: Delivering High-Quality Bioconductor Training for a Worldwide Community ([CZI E OSS 6](#))

[Developers' Forum](#)

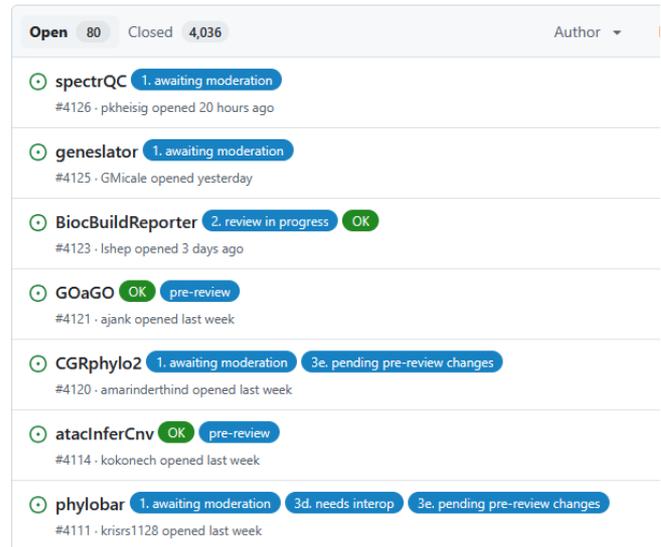


Contributing - Package review

[Volunteer community members](#)

[Review expectations](#)

Open invitation to comment on [packages under review](#)



Open	80	Closed	4,036	Author		
1. awaiting moderation	spectrQC	#4126	pkheisig	opened 20 hours ago		
1. awaiting moderation	geneslator	#4125	GMicale	opened yesterday		
2. review in progress	OK	BiocBuildReporter	#4123	Ishep	opened 3 days ago	
OK	pre-review	GOaGO	#4121	ajank	opened last week	
1. awaiting moderation	3e. pending pre-review changes	CGRphylo2	#4120	amarinderthind	opened last week	
OK	pre-review	atacInferCnv	#4114	kokonech	opened last week	
1. awaiting moderation	3d. needs interop	3e. pending pre-review changes	phylobar	#4111	krissr1128	opened last week

Contributing - Code of conduct

<https://bioconductor.org/about/code-of-conduct/>

Maintained on [GitHub](#)

Community-translated in [14 languages](#)

Anonymous online reporting [form](#)

Contributing - Getting involved

<https://bioconductor.org/about/get-involved/>



- 🎉 **Attend Bioconductor Events**

Join conferences and workshops to engage with the community, learn, and network.
Learn more at [Bioconductor Events](#).

- 🗣️ **Spread the Word**

Help us reach a wider audience by sharing Bioconductor updates from [LinkedIn](#), [Bluesky](#) and [Mastodon](#) with your network.

- 🤝 **Support the Community**

Ask for help or offer guidance through our forums, mailing list, and Zulip group.
Explore our community resources [here](#).

- 📝 **Share on Our Blog**

Publish your experiences, tips, or success stories with the community.
Contribute to the blog [here](#).

- 🎓 **Learn and Teach**

Engage with Bioconductor's training community by participating in or contributing to educational efforts.
Check out [Bioconductor Training](#) [here](#).

- 🤝 **Collaborate in Working Groups**

Join special initiatives and work together to advance Bioconductor's goals.
Find out more about [Bioconductor Working Groups](#) [here](#).

- 🔍 **Review Packages**

Maintain Bioconductor's high standards by reviewing package submissions.
Learn how to get involved in package reviewing [here](#).

- 🌟 **Shape the Future**

Take a leadership role by joining the [Technical Advisory Board \(TAB\)](#) or [Community Advisory Board \(CAB\)](#) during the annual call for new members. Share your ideas to guide Bioconductor's development.

Bioconductor - Summary

As a user: High-quality tools and training materials, open and supportive community

As a developer: Reliable and trusted infrastructure, dedicated Core Team, organic peer mentoring

As a Community Advisory Board member: Promote impactful initiatives, Represent community perspectives

As Code of Conduct member: Uphold and signal community values

As Working Group(s) member: Join focused initiatives

All of the above: Network, collaborate, learn, grow personally and professionally

Bioconductor package licenses

Apache License 2.0	5	GPL (>= 3) + file LICENSE	5
GPL-2 GPL-3	5	GPL(>=2)	5
LGPL-2	5	MIT	6
BSD_2_clause + file LICENSE	8	LGPL (>= 2.0)	8
LGPL (>= 3)	8	GPL (>=3)	9
Artistic-2.0 file LICENSE	13	GPL-3 file LICENSE	14
BSD_3_clause + file LICENSE	16	AGPL-3	17
LGPL (>= 2)	18	GPL	21
LGPL-3	36	file LICENSE	39
GPL-3 + file LICENSE	39	GPL (>=2)	47
GPL (>= 2)	63	GPL (>= 3)	72
MIT + file LICENSE	177	GPL-2	233
Artistic-2.0	353	GPL-3	491
	521		

Credit: https://csoneson.github.io/bioc_pkg_licenses/bioc_pkg_licenses.html

BioFAIR pathfinder

<https://biofair.uk/pathfinder-projects/>

Opportunity to tackle real-world barriers to making life sciences data and workflows FAIR and AI-ready

Decisions announced 17 Feb 2026

The proposal “**Connecting Bioconductor, Galaxy, and nf-core: FAIR, AI-ready workflows and training for single-cell analysis**” that I lead was selected.

Directly connects with my SSI fellowship (Improving Software Discoverability in Life Sciences)

My plan for the coming year

1 Jan 2026 - 30 Mar 2027 - SSI Fellowship

1 Apr 2026 - 30 Mar 2027 - BioFAIR Pathfinder Project

28-30 April 2026 - SSI Collaborations Workshop (CW26)

Mini-workshop “Building Stronger Research Software Communities: Insights From Multiple Perspectives”

22-26 June 2026 - Galaxy Community Conference 2026 + CoFest

Participant and contributor to CoFest.

By September 2026 - Bioconductor/Galaxy Workshop + Sprint

Co-led with BioFAIR Fellow Marisa Loach (The Open University). Possible [ELIXIR Staff Exchange](#).

9-13 November 2026 - BioHackathon Europe (Barcelona)

Inspired by [Knowledge graphs for metadata on training at ELIXIR BioHackathon Europe 2025](#)

Questions?

Thank you for your attention!

Please reach out to connect, collaborate, suggest, plan, brainstorm, partner, **volunteer**, support, ... !