



# Galaxy PROJECT



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[galaxyproject.org/events/gcc2019](http://galaxyproject.org/events/gcc2019)

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# Galaxy Community Conference

Konzerthaus, Freiburg, DE  
1-8 July, 2019



#usegalaxy

[galaxyproject.org/gcc2019](http://galaxyproject.org/gcc2019)

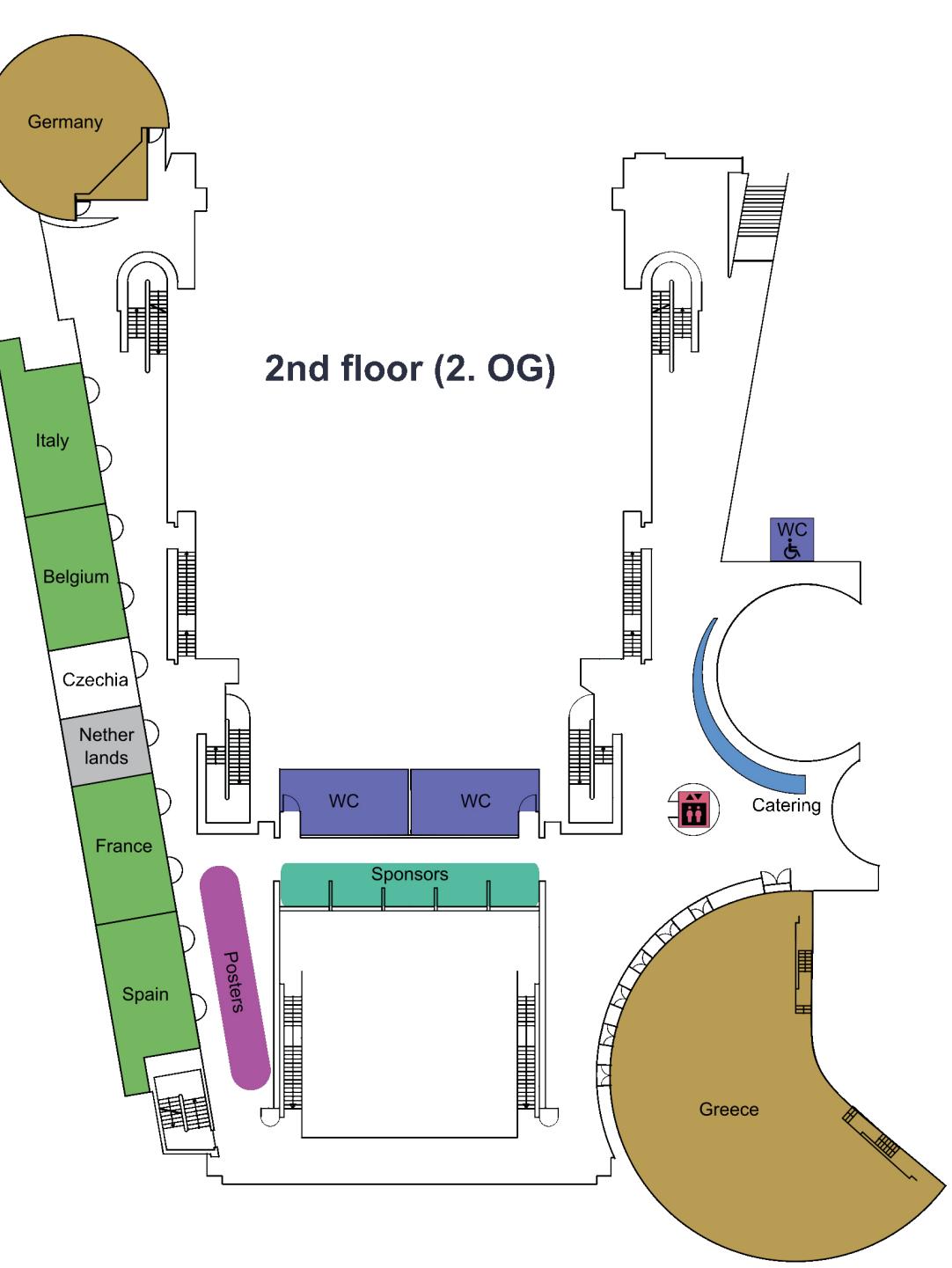
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Talks, posters & demos  
Trainings  
BoF gatherings  
CoFest

A Community event!



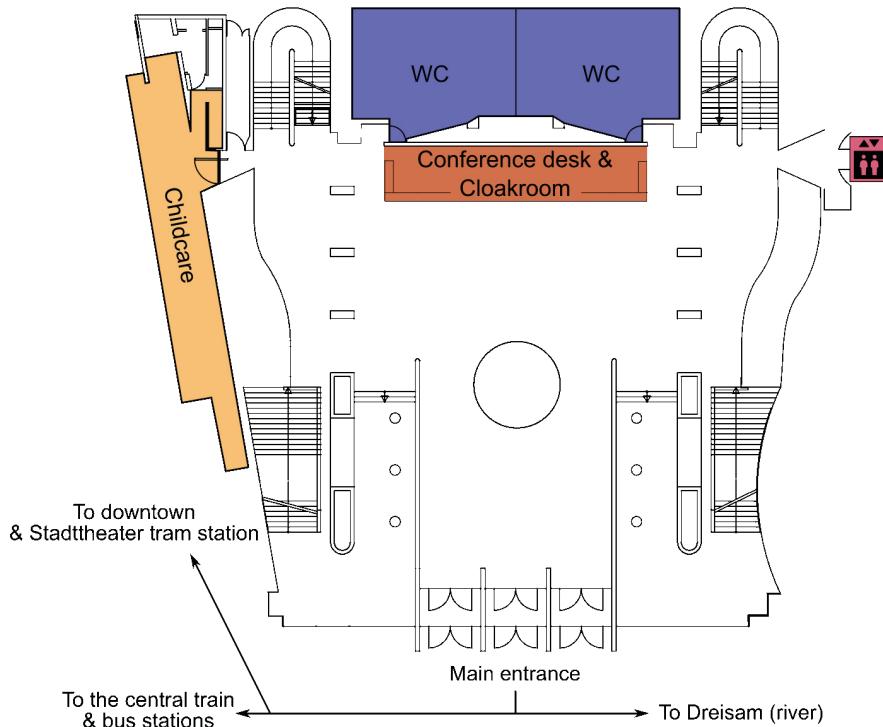


# Map: Konzerthaus

In the Konzerthaus, most of the events will take place on the 2nd floor, only the conference desk (where you can always ask for help) and the childcare room are located on the ground floor.

The entire location is a non-smoking area. Please go outside or use the balcony to smoke.

## Ground floor (EG)



Talks + Training rooms  
*Greece & Germany*

Training rooms  
*Italy, Belgium, France, Spain*

Quiet / BoF rooms  
*Netherlands, Czechia*

Conference desk & Cloakroom

Sponsor area

Poster area

Childcare

Catering

Elevator

WC Toilets

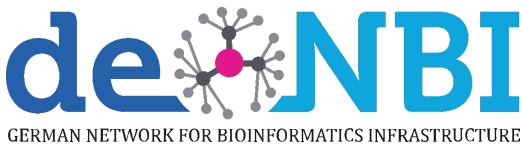
# Willkommen!

Welcome to the 2019 Galaxy Community Conference (GCC2019), the 10th annual gathering of the Galaxy Community. GCC2019 features one day of training, three days of mixed meeting and training, and then up to four days of CollaborationFest. Every day of the meeting will include plenary & parallel sessions; invited, accepted, and lightning talks; poster and demo sessions; Birds-of-a-Feather (BoF) meetups; social events; and training sessions. GCC2019 is all about data-intensive research and its supporting compute infrastructure. We also include plenty of time for networking and impromptu gatherings.

We would like to give an enormous thank you to our sponsors and hosts, our instructors, the Scientific Committee, BoF organisers, speakers, demo and poster presenters, and to everyone who contributed to making this event a success.

Vielen Dank!

The GCC2019 Organising Committee



# Venue & getting around

GCC2019 takes place in Konzerthaus Freiburg, located in the center of Freiburg, and is easily reached via foot, bike, public transportation or car.

Freiburg has an extensive and integrated public transportation network - Zone 1 (Preisstufe 1) ticket for Freiburg - 2 x 4-trip tickets is a convenient option. Consider using the Freiburg transport website and app (<https://www.vag-freiburg.de>) to get routes, schedules, and ticket information.

Restaurants, bars, and things to do are located everywhere around and in the city center. Check out the map at the end of the program or online (<http://bit.ly/gcc2019map>).

In the Konzerthaus, most of the events will take place on the 2nd floor, only the conference desk (where you can always ask for help) and the childcare room are located on the ground floor. Food will be served on the 2nd floor, where the breaks also take place. Check out the Konzerthaus floor plan on the last page to know where events are.

The plenary sessions will take place in the **Greece** room and the parallel track in the **Germany** room. Training will be in these rooms and also in the rooms **Italy**, **Belgium**, **France** and **Spain**. All previous rooms as well as the **Czechia** room can be used for BoFs. The **Netherlands** room is a quiet room for relaxing, so please respect it.

All floors can be accessed using stairs or the elevators. All rooms and stages are accessible by wheelchairs. In the **Germany** room, there is assistive listening technology with an audio induction loop system.

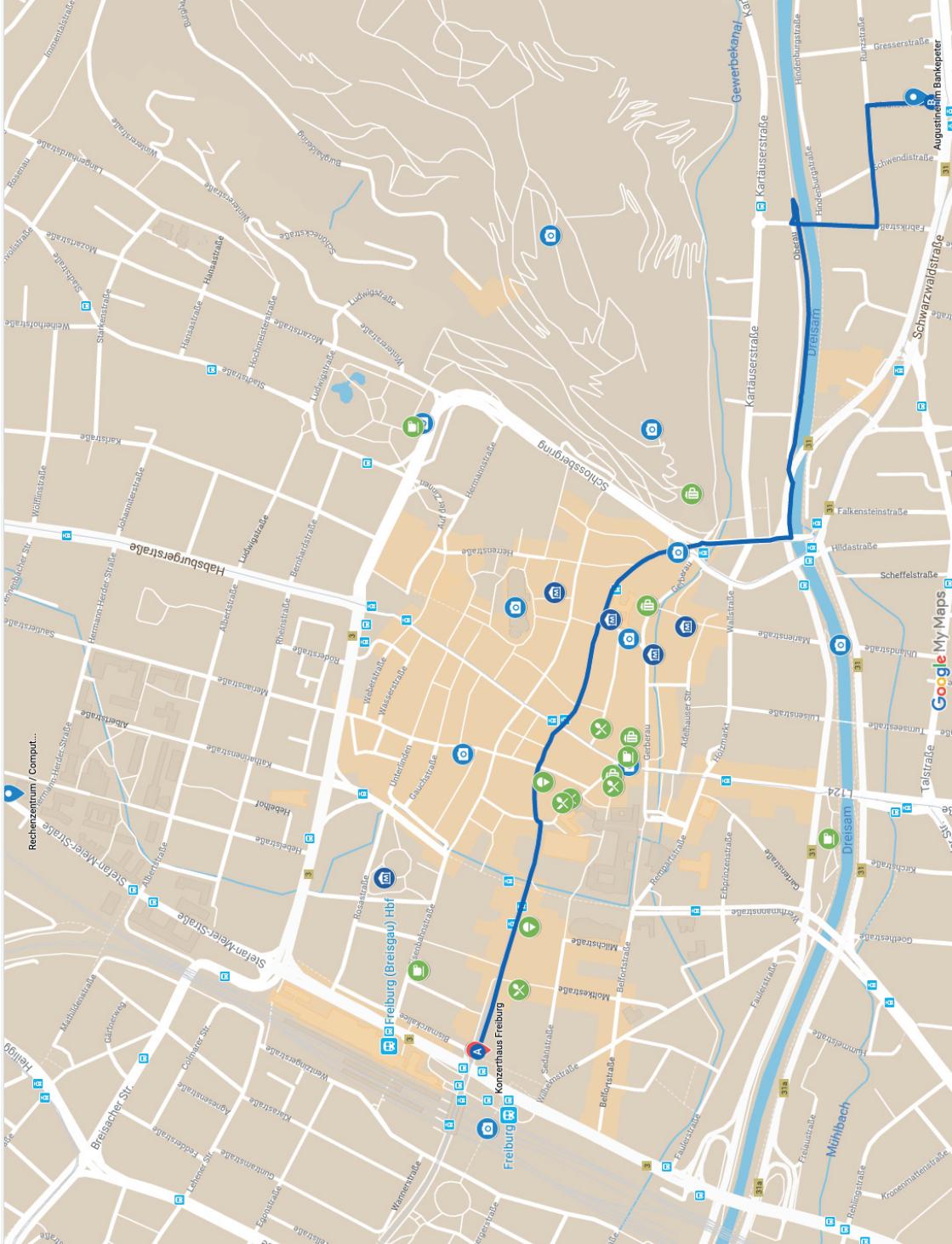
The entire location is a non-smoking area. Please go outside to smoke.

**REGISTER NOW**  
[www.frelo-freiburg.de](http://www.frelo-freiburg.de)



**Students of the University  
of Freiburg get 30 minutes  
per rental for free!**

Simply enter your e-mail address when registering.



An interactive online map can be found at <http://bit.ly/gcc2019map>

# Freiburg challenge

Take 1 picture of at least 5 of the next items and show them to Stephan F. to win a special gift

- Sit or walk on the Blue "Wiwili" Bridge
- Have a swing on the Dreisam
- Walk in the Bächle to cool down
- Do the "I am the king of the world" pose on top of the Schlossbergturm
- Identify the obscene gargoyle at the Freiburg Münster
- Observe aquatic turtles in the Seepark
- Enjoy a refreshment in the Biergarten of Feierling or Kastaniengarten
- Eat a Lange Rote or a tofu Curry Wurst at the Münsterplatz
- Ignore the Säule der Toleranz on the Augustinerplatz
- Find out what is a Herrgottsbescheißerle
- Find out what happens if you accidentally step into a Bächle
- Find out the meaning of the curious markings on the outside wall on the entrance of the Münster

## Useful German sentences

Hello, how are you?	Hallo, wie geht's?
Good morning / day / evening / night	Guten Morgen / Tag / Abend / Nacht
Thank you very much	Vielen Dank / Danke
My name is ... and I am from ...	Mein Name ist ... und ich komme aus ...
I am sorry	Es tut mir Leid / Entschuldigung
May I have the menu please?	Kann ich bitte die Speisekarte haben?
May I have the bill please?	Die Rechnung bitte
One beer please.	Ein Bier bitte
One, two, three, four, five, six, seven , eight, nine, ten	Eins, zwei, drei, vier, fünf, sechs, sieben acht, neun, zehn
What time is it please?	Wie spät ist es?
Where is ...	Wo ist ...
How much is ...	Was kostet das
Yes / No	Ja / Nein



## Network

Wifi is available throughout all conference facilities.  
SSID: **Konzerthaus Besucher** - Password: **F68beWmtT**

## Social Media

Unless requested otherwise by the speaker, tweeting and other social media activity are actively encouraged. Post early, post often. Twitter is the most active platform in the Galaxy community.

#usegalaxy @galaxyproject

## Chat

GCC2019, like the general Galaxy Community, will use Gitter to chat. Gitter requires a GitHub, GitLab, or Twitter account to post. Join the conversation: <https://gitter.im/galaxyproject/gcc>.

## Meals

Coffee, beverages, and light snacks will be available during breaks. Lunch is provided on the Training Day and all 3 days of the conference.

The official conference dinner is on Wednesday evening. A separate registration ticket is required to attend. The dinner venue (Augustiner im Bankepeter) is within walking distance (~ 30 minutes) from the Konzerthaus, but also easily reachable by public transport or car.

## Code of Conduct

GCC2019 has a code of conduct that describes what is expected of conference participants. Please read it (<https://bit.ly/gcc2019coc>) and help to make GCC2019 a welcoming and safe environment for all.

## Pictures

Pictures will be taken during the conference. If you do not want to be photographed, ask for a different lanyard. You can share your pictures at <https://bit.ly/gcc2019pictures>, but please respect people's choice.

## Childcare

GCC2019 provides an inhouse childcare thanks to our sponsors.

## There's more online

The list of posters and demos, the full speaker lists for accepted talks and their abstracts are available online at [gcc2019.sched.com](http://gcc2019.sched.com).

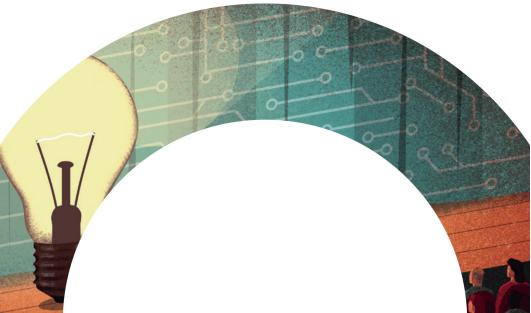
# Events Overview

Mon 1 July	Tue 2 July	Wed 3 July	Thu 4 July
<b>Training Day</b> 2 tracks about using and administering Galaxy		<b>Conference</b> 3 days of plenary and parallel sessions, training sessions, poster & demo session, BoFs, and plenty of time for networking <b>Conf. dinner</b>	
Fri 5 July	Sat 6 July	Sun 7 July	Mon 8 July
<b>CollaborationFest: Core</b> 2 days of collaborative work and learning about contributing to the Galaxy ecosystem		<b>CollaborationFest: Encore</b> 2 more days of collaborative work and contributing to the Galaxy ecosystem	



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We're listening

Share your ideas with  
[innovation@elifesciences.org](mailto:innovation@elifesciences.org)  
or visit [elifesciences.org/labs](http://elifesciences.org/labs)



# City Information

The old city center is accessible via the two medieval city gates **Schwabentor** and **Martinstor**.

Don't forget to look down at the mosaic designs that are spread all over the city. **Bächle** are water channels that are fed by the local river Dreisam and had several functions in medieval times like fire protection and open water sewers. Nowadays the Bächle cool down your feet and the city center in summer and the children use them for their boat.



**Freiburger Münster** is the Catholic cathedral at the center of the Freiburg. And lucky you, it's the first time in a decade that the tower is free of scaffolding surrounds. A pedestrian square, the **Münsterplatz**, is surrounding the cathedral and some of the most beautiful buildings in Freiburg are located here. Except Sundays, there is a market that trades everything from flowers to handicrafts and local food.

**Schlossberg** with **Kanonenplatz** is a former fortified hill in the middle of Freiburg leading to scenic viewpoints and castle remains. If you don't want to walk, there are elevators near the Schwabentor and a funicular railway Schlossbergbahn near the city center. The **Schlossbergturm** on the top of the hill offers an impressive 360° panoramic view of the city.

**Mundenhof** (tip for kids) is a large animal park with native and domestic breeds kept in paddocks. Together with an aquarium, a terrarium and a couple of petting zoo areas, it's one of the best things to do in Freiburg with kids. There is no entry fee, but a donation is welcome.  
<https://www.mundenhof.de>. Access via bus line 19 or tram line 5 + walk.

**Seepark** is one of the most popular parks in Freiburg and offers numerous opportunities for relaxations and outdoor activities, such as pedal boats, a viewing tower, mini golf course, a Japanese garden, a Biergarten, and you can swim in the lake as well. Access via tram line 1.

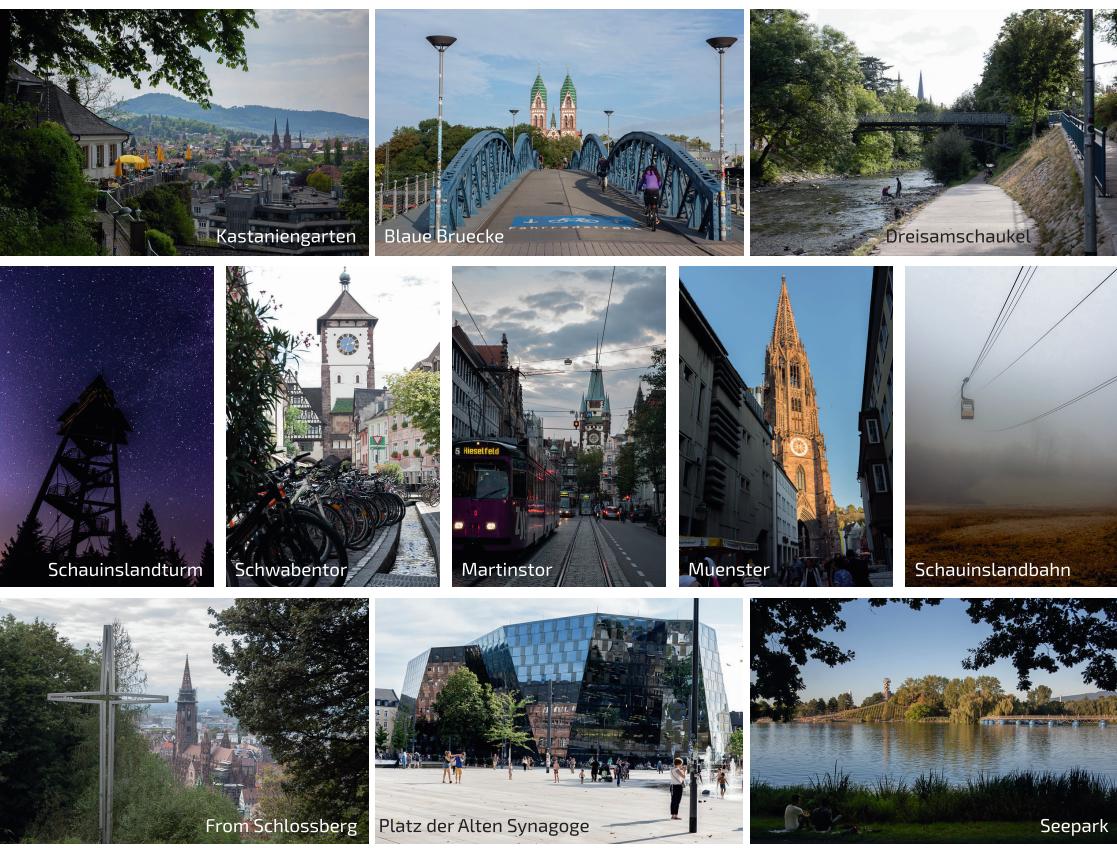
**Schauinsland** is the local mountain of Freiburg with 1,284 meter high. It can be reached with Germanys longest cable car and offers a panoramic view over the Schwarzwald area. Access via tram line 2 and bus line 21.

# What to do in Freiburg?

## Dishes and drinks

**Spätzle** (a kind of noodle), one of the most famous German dishes, are usually served with cheese and fried onions. **Maultaschen**, either served in a soup or fried in a pan, are also famous in the Freiburg area, even though they are originally from Swabia. The Münstermarkt is a must for visitors of Freiburg to eat a **Lange Rote** or enjoy the local food. In a restaurant Wurstsalat is a nice option. When you order it as **Elsässer Wurstsalat**, it will be served with cheese. In nearly every traditional restaurant and Biergarten a broad variety of **Flammkuchen** ist served. And finally, you cannot leave without trying a **Schwarzwalder Kirschtorte** (Black Forest cake).

There are a couple of breweries located in the area, whereas **Ganter**, **Braukollektiv**, **Feierling** and **MartinsBräu** are located directly in Freiburg. You have the choice between dozens of different types.



# Training Day

Monday is a dedicated training day with two tracks, one for learning how to use Galaxy for research, and one for learning how to administer a Galaxy server. Additional training sessions will happen during the 3 following days of the meeting as well.

9:00	Conference Desk Open	
10:00	Using Galaxy <b>Introduction to Using Galaxy (Galaxy 101)</b> . M. Heydarian, J. Hillman-Jackson	Germany
	Admin & Dev <b>Introduction to Galaxy Administration I</b> . M. Čech, E. Afgan, S. Gladman, M. van den Beek, J. Chilton, N. Coraor, H. Rasche	Greece
12:00	Catered lunch	
13:00	Using Galaxy <b>Beyond the Intro: Further Adventures in Using Galaxy</b> . M. Heydarian, J. Hillman-Jackson	Germany
	Admin & Dev <b>Introduction to Galaxy Administration II</b> . M. Čech, E. Afgan, S. Gladman, M. van den Beek, J. Chilton, N. Coraor, H. Rasche	Greece
15:00	Break	
15:30	Using Galaxy <b>Analyzing Large / Complex Experimental Designs with Galaxy</b> . D. Blankenberg, M. van den Beek, M. Heydarian, J. Hillman-Jackson	Germany
	Admin & Dev <b>Introduction to Galaxy Administration III</b> . M. Čech, E. Afgan, S. Gladman, J. Chilton, N. Coraor, H. Rasche	Greece
17:30	Dinner on your own & Birds-of-a-Feather	

During the entire day, check out also **BeerDEcoded, Here and Now!** and the **Nanopore Loading Zone!** in the **Italy** room.



## Limagrain, a key player in field seeds and vegetable seeds research

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- More than 110 research stations and centers in the world
- More than 60 crops worked

Limagrain is an international cooperative group created and directed by French farmers.

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#Limagrain

# Conference Days

The conference will be from Tuesday 2 July to Thursday 4 July. Each day will have 1 plenary & 2 parallel sessions with talks, 2 sessions of up to 6 parallel trainings, 1 poster & demo session, BoF meetups, and plenty of time for networking. The conference dinner will be on Wednesday evening.

## Tuesday 2 July - Talks I

8:00	Conference Desk Open	
9:00	Talks - 1 plenary track	
	Plenary. Moderator: B. Grüning	Greece
9:00	<b>Opening and Welcome.</b> A. Erxleben, B. Grüning	
9:10	Invited Talk <b>Evolution of X chromosome recognition during Drosophila Dosage Compensation.</b> C. I. Keller Valsecchi	
9:40	<b>Galaxy Australia - inside the national vision of a data commons</b> G. Price	
10:00	<b>A Machine Learning Tool Suite for Galaxy.</b> J. Goecks	
10:20	<b>An Update on Galaxy Workflows: More Accessible, Expressive, Robust, and Scalable.</b> J. Chilton, M. van den Beek	
10:30	Break & Sponsors	
11:00	Talks - 2 parallel tracks	
	Admin & Dev. Moderator: H. Rasche	Greece
11:00	<b>GalaxyCloudRunner: Streamlined Cloud Bursting for Galaxy.</b> N. Goonasekera	
11:07	<b>Laniakea: A Galaxy-on-demand Provider Platform Through Cloud Technologies.</b> M. A. Tangaro	
11:27	<b>Enabling Single Sign-On for Multiple Galaxy Instances.</b> E. Afgan	
11:34	<b>How - And How not - to manage successful local Galaxies.</b> P. Mabon	
11:54	<b>Building a Pulsar Network across Europe.</b> G. Cuccuru	
	Outside the Genome & Community. Moderator: Y. Le Bras	Germany
11:00	<b>Galaxy Computational Chemistry.</b> C. Barnett	
11:20	<b>Climate Analysis with Galaxy.</b> A. Fouilloux	
11:40	<b>Galaxy Image Analysis: Web-based microscopy image analysis and cellular phenotyping.</b> T. Wollmann	
12:00	Lunch & Birds-of-a-Feather	

# German Network for Bioinformatics Infrastructure



32 Institutes

250 Researchers

450,000+ Users per Month



## Service

100+ Services developed and maintained



200+ Training Courses

4,000+ Participants

## Training

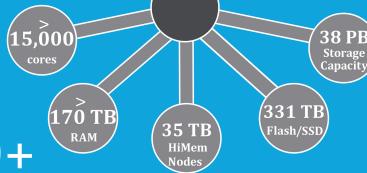


## Cloud

200+ Developers

50+ Projects

100,000+ Jobs performed



6 Cloud Centers



Access via



## Impact

### Bioinformatics Services

- Human Bioinformatics
- Microbial Bioinformatics
- Plant Bioinformatics
- RNA Bioinformatics
- Proteomics & Lipidomics
- Integrative Bioinformatics
- Reference Databases
- Systems Biology

### German Node in ELIXIR





# Tuesday 2 July - Trainings

13:20

Training - 6 parallel workshops

Epigenetics.

**ChIP-seq data analysis.** L. Rabbani, D. Ryan

Italy

**EWAS data analysis for population epigenetics integrated into Galaxy.** K. Poterlowicz

France

Admin & Dev.

**How to create a Galaxy Tool.** J. Chilton, N. Soranzo

Greece

Variation, Metagenomics & Assembly.

**Variant calling I - from sequenced reads to variant lists.**

Spain

W. Maier

**16S analysis with Mothur.** S. Hiltemann

Belgium

General.

**Quality control of HTS data**

Germany

14:50

Poster, Demos & Sponsors

15:50

Training - 5 parallel workshops

Epigenetics.

**Hi-C analysis.** J. Wolff, L. Rabbani

Italy

Admin & Dev.

**Scripting Galaxy through BioBlend.** N. Soranzo, M. van den Beek

Greece

Variation, Metagenomics & Assembly.

**Variant Calling II - causative variant discovery.**

Spain

W. Maier

**Metatranscriptomics & multi-omics microbiome analysis.**

Belgium

T. Griffin, B. Batut, R. Sajulga, P. Jagtap

General.

**Machine learning with Galaxy.** A. Kumar, J. Goecks

Germany

17:20

Group picture

Our foresight. Your inspiration.

KWS is one of the world's leading plant breeding companies. With the tradition of family ownership, KWS has operated independently for some 160 years. It focuses on plant breeding, production and sale of seed. KWS uses leading-edge plant breeding methods. 4.850 employees represent KWS in more than 70 countries.

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THE FUTURE  
SINCE 1856



## Tuesday 2 July - Talks II

17:30

Talks - 2 parallel tracks

Epigenetics. Moderator: D. Ryan

Greece

17:30 **HiCExplorer 3: A toolbox for Hi-C data analysis.** J. Wolff

17:50 **Histone Deacetylases 1/2 In Microglia Function During Development And Neurodegeneration.** M. Frosch

17:57 **Analysis and visualization of the human cardiac myocyte epigenome using Galaxy.** R. Gilsbach

Outside the Genome & Community. Moderator: A. C. Fouilloux

Germany

17:30 **Using Galaxy for Creation and Execution of Text Mining Workflows in the OpenMinTeD platform.** D. Galanis

17:50 **To Better Benefit from Shared Tasks in Biomedical Text Mining.** M. Ba

17:57 **The LAPPs Grid/Galaxy Platform for Mining Scientific Publications.** A. Mahmoud

18:17 **Infrastructure for Healthier Living: Galaxy at Quadram Institute Bioscience.** T. Le Viet

18:24 **How Usable is Galaxy? A Usability Evaluation of Galaxy.** N.-H. Truong

18:30

Dinner on your own & Birds-of-a-Feather

## Wednesday 3 July - Talks I

8:00

Conference Desk Open

9:00

Talks - 2 parallel tracks

Transcriptomics & Genomics. Moderator: A. Syme

Germany

9:00 Invited Talk

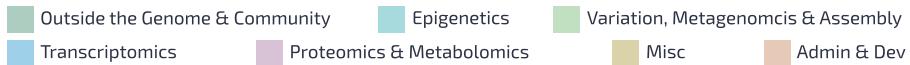
**Pou5f3, SoxB1 and Nanog control the Zygotic Genome Activation in Zebrafish.** M. Veil

9:30 **Single-cell RNA Analysis in Galaxy on 10X Datasets.** M. Tekman

9:50 **Biology-driven classification of Single-Cells RNAseq data in Galaxy.** C. Antoniewski

10:10 **Improving Transcriptome Analysis with Molecular Indices and Galaxy.** B. W. Langhorst

10:17 **Transposon Insertion Sequencing Analysis in Galaxy.** D. Larivière



# Share ideas and feedback

Got feedback about the conference? Or ideas to make Galaxy great? Share them with us: Write them here, cut the page and pin it on the wall

# Sponsors

Special thanks go to all of our sponsors for their generous support and for helping make GCC2019 a great one! The details can be found here <https://galaxyproject.org/events/gcc2019/sponsors>.

## Silver



## Bronze



## CollaborationFest



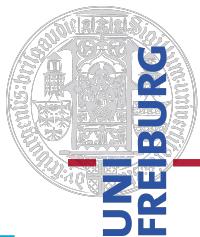
## Childcare



eLIFE



## Hosts



## Funding



Bundesministerium  
für Bildung  
und Forschung



# Wednesday 3 July - Talks I

9:00

Talks - 2 parallel tracks

Admin & Dev. Moderator: B. Langhorst

Greece

- 9:00 **Containerizing Galaxy server as a Singularity application on HPC clusters for GenAP.** D. Morais
- 9:20 **Galaxy on Kubernetes: where we are and future challenges.** P. Moreno
- 9:40 **A Minimal Docker Image for Galaxy.** S. Golitsynskiy
- 9:47 **CVMFS-CSI for Galaxy: Efficient Access to Read-only Data in Kubernetes.** A. Mahmoud
- 9:54 **gxadmin: usegalaxy.\* administration wisdom.** H. Rasche
- 10:14 **Galaxy container for Hinxton Single Cell Interactive Analysis Portal (HiSciAP).** J. Manning

10:30

Break & Sponsors

11:00

Talks - 2 parallel tracks

Transcriptomics & Genomics. Moderator: A. Bhardwaj

Germany

- 11:00 **Aequatus.js: a plugin to visualise gene trees in Galaxy.** A. Thanki
- 11:20 **Visual Refinement of Genome Annotations with Apollo in a Community Environment.** N. Dunn
- 11:27 **Architectural and Systems Improvements to G-OnRamp, a Collaborative Eukaryotic Genome Annotation Platform.** L. Sargent
- 11:34 **ChiRA: an integrated framework for Chimeric Read Annotation.** P. Videm
- 11:54 **Training experience on "Data analysis and interpretation for clinical genomics" using Galaxy.** G. Cuccuru

Admin & Dev. Moderator: D. Morais

Greece

- 11:00 **Working Effectively with Remote Data in Galaxy - A Progress Report.** J. Chilton
- 11:07 **Testing and Visualizing the State of Galaxy Tools and Workflows.** M. Čech
- 11:27 **Setting up a Galaxy Platform in a HPC Infrastructure for Genomics Implementation into Diagnosis Routines for a Health Reference Center.** M. Juliá
- 11:34 **RealTimeTools: Integrating, Customizing, and Accessing UI-based Tools in Galaxy.** D. Blankenberg
- 11:54 **Creating a Universe of Galaxies: The UseGalaxy.\* Project.** N. Coraor

12:00

Lunch & Birds-of-a-Feather



**Did you know?** When ordering something to drink, klein (small) means 0,33l and groß (big) 0,5l.

# Wednesday 3 July - Trainings & Talks II

13:20	Training - 5 parallel workshops	
	Transcriptomics & Genomics.	
	<b>Single cell RNA-seq analysis I.</b> M. Tekman, A. Ostrovsky	Germany
	<b>The RNA workbench, best practices for RNA and high-throughput sequencing bioinformatics in Galaxy.</b> J. Fallmann, F. Eggenhofer	France
	Admin & Dev.	
	<b>Galaxy Code Architecture.</b> J. Chilton, N. Coraor	Greece
	General.	
	<b>Visualization of HTS data</b>	Italy
	<b>Train the Galaxy Trainer.</b> S. Gladman, A. Syme, B. Batut, S. Hiltemann, H. Rasche	Spain
14:50	Poster, Demos & Sponsors	
15:50	Training - 5 parallel workshops	
	Transcriptomics & Genomics.	
	<b>Single cell RNA-seq analysis II.</b> M. Tekman, A. Ostrovsky	Germany
	Admin & Dev.	
	<b>Running Galaxy on Kubernetes.</b> E. Afgan, N. Goonasekera, A. Mahmoud, S. Golitsynskiy, P. Moreno	Greece
	<b>Visualisation development in Galaxy.</b> A. Guerler, J. Goecks, A. Kumar	France
	General.	
	<b>Beyond the Intro: Further Adventures in Using Galaxy?</b> M. Heydarian, J. Hillman-Jackson	Italy
	<b>Making your open source project awesome.</b> Y. Yehudi, B. Batut	Spain
17:30	Talks - 1 plenary track	
	Plenary. Moderator: F. Coppens	Greece
17:30	Invited Talk	
	<b>Galaxy Community Update.</b> J. Goecks, D. Blankenberg, A. Nekrutenko, J. Taylor	
18:00	<b>Tool Prediction in Galaxy Workflows using Deep Learning.</b> A. Kumar	
18:07	<b>Street Science Community: make science tangible &amp; accessible by bringing it to the "street" with open science workshops.</b> T. Müller	
18:30	Conference dinner at Augustiner im Bankepeter	

Anton Nekrutenko	Beata Scholz
Penn State University	University of Debrecen
Krzysztof Poterlowicz	Nicola Soranzo
University of Bradford	Earlham Institute
Helena Rasche	Peter van Heusden
University of Freiburg	University of the Western Cape
Devon Ryan	Ralf Weber, University of Birmingham
Max Planck Institute of Immunobiology and Epigenetics	

## GCC2019 CollaborationFest

# Travel Fellowship

The Galaxy Community Fund offers conference fellowships to students, post-docs, and other early career researchers to attend and present their work at GCC. This year's travel fellowship recipients are:

Christopher Barnett	Miguel Juliá
University of Cape Town, South Africa	Bioinformatics Unit (BU-ISCI), Core facility, Health Institute Carlos III (ISCI), Spain
Glory Basumata	Ziphozakhe Mashologu
Indian Institute of Technology Guwahati, Assam, India	South African Medical Research Council Bioinformatics Unit, South African National Bioinformatics Institute, University of the Western Cape, South Africa
Patricia Mirela Bota	Lizzette Perez-Perez
Universitat de Vic (UVic) - Universitat Central de Catalunya, Vic, Spain	Smith College, United States
Tamara Drljača	
Laboratory for Bioinformatics and Computational Chemistry, Vinca Institute of Nuclear Sciences, University of Belgrade, Serbia	
Nadia Goué	
Clermont Auvergne University, France	

# Organizers

The conference is made possible with the help of many volunteers. On behalf of us, thanks go to the following people:

## GCC2019 Organising Committee

Bérénice Batut	Anika Erxleben
University of Freiburg	University of Freiburg
Dave Clements	Björn Grüning
Johns Hopkins University	University of Freiburg
Frederik Coppens	Mo Heydarian
VIB, UGent, ELIXIR Belgium	Johns Hopkins University
Monika Degen-Hellmuth	Helena Rasche
University of Freiburg	University of Freiburg
Rolf Backofen	Devon Ryan,
University of Freiburg	Max Planck Institute of Immunobiology and Epigenetics

## GCC2019 Scientific Program Committee

Matthias Bernt	Björn Grüning
Helmholtz Centre for Environmental Research – UFZ	University of Freiburg
Dan Blankenberg	Jennifer Hillman-Jackson
Cleveland Clinic Lerner Research Institute	Penn State University
Gildas Le Corguillé	Saskia Hiltemann
Station Biologique de Roscoff	Erasmus MC
Maria Doyle	Hans-Rudolf Hotz
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Anika Erxleben	Nancy Ide
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Melanie Föll	Pratik Jagtap
University of Freiburg	University of Minnesota
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Jeremy Goecks	Pablo Moreno
Oregon Health & Science University	EMBL-EBI



**Did you know?** Tip (Trinkgeld) is not included in the bill and 10% is usual.

# Thursday 4 July - Talks I

8:00	Conference Desk Open	
9:00	Talks - 2 parallel tracks	
Proteomics & Metabolomics. Moderator: M. Föll		Greece
9:00	<b>Metaproteomics Powered By Metatranscriptomics: Towards a Multi-omic Functional Microbiome Analysis Within Galaxy.</b> P. Jagtap	
9:20	<b>Interactive Galaxy Visualizations for Multi-omics Research.</b> R. Sajulga	
9:27	<b>ProteoRE, a Galaxy-based platform for the annotation and the interpretation of proteomics data in biomedical research.</b> F. Combes	
9:47	<b>Galaxy Wrapper for MaxQuant.</b> D. Glätzer	
9:54	<b>Application of Halogen Bonding in Molecular and Drug Design Facilitated by a Galaxy Webserver.</b> F. M. Boeckler	
Outside the Genome & Community. Moderator: B. Batut		Germany
9:00	Invited Talk <b>Data visualisation by citizen science participants: the case of birds and bats monitoring schemes and Galaxy-E.</b> R. Lorrilère, Y. Bas	
9:30	<b>Galaxy-Bricks a Tool for Data Literacy and Scientific Approach Education in the Context of Citizen Science.</b> S. Bénateau	
9:37	<b>Citizen Science Project in Ecology with the Galaxy-E Platform.</b> B. Yguel	
9:44	<b>Galaxy-E project: 2019 news.</b> Y. Le Bras	
10:04	<b>The ChemicalToolBox - Computational Chemistry in Galaxy.</b> S. Bray	
10:11	<b>Improved Reference Data Management in Galaxy: Towards a Plant Data Analysis Platform.</b> I. Eguinoia	
10:18	<b>Use Galaxy, Right Now!</b> D. Clements	
10:25	<b>Galaxy Publication Library.</b> D. Clements	
10:30	Break & Sponsors	

## Conference dinner

Augustiner im Bankepeter  
Schwarzwaldstraße 93, Freiburg

*Restaurant | Bar | Cocktaillounge*

**B** on the map  
**Walk:** ~ 30 minutes through the city and along the Dreisam  
**Public transport:** tram line 1, direction Littenweiler, stop Freiburg Maria-Hilf-Kirche

**Augustiner**  
im Bankepeter

# Thursday 4 July - Talks I & Trainings

11:00

Talks - 2 parallel tracks

Proteomics & Metabolomics. Moderator: P. Jagtap	Greece
11:00 <b>Analysing and organising large-scale metabolome annotation studies with Django, ISA and Galaxy.</b> T. N. Lawson	
11:20 <b>Reproducible and accessible analysis of spatially resolved proteomics and metabolomics data.</b> M. Föll	
11:40 <b>Workflow4Metabolomics: an international computing infrastructure for Metabolomics.</b> G. Le Corguillé, M. Petera, R. Dallet	
Variation, Metagenomics & Assembly. Moderator: S. Hiltemann	Germany
11:00 <b>The IRIDA Platform for Microbial Genomics.</b> A. Petkau	
11:20 <b>Combat-tb: Workbench, A Customizable Platform For Variant Discovery And Annotation, Phylogeny Construction And Variant Prioritisation.</b> Z. Mashologu	
11:27 <b>High throughput HIV next generation sequence analysis in Galaxy.</b> D. Bouvier	
11:47 <b>NanoGalaxy: A Galaxy toolkit and workflows for long-read sequencing.</b> W. de Koning	
11:54 <b>MITOLINK: An integrated Web-based Workflow System to Evaluate Genotype-Phenotype Correlations in Human Mitochondrial Diseases.</b> A. Bhardwaj	

12:00

Lunch & Birds-of-a-Feather

13:20

Training - 5 parallel workshops

Proteomics & Metabolomics.

<b>Metabolomics data analysis I.</b> G. Le Corguillé, M. Petera, R. Weber, T. Lawson	France
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<b>Proteomic data analysis.</b> M. Föll, M. Fahrner, M. Stillger	Belgium
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Variation, Metagenomics & Assembly.

<b>Assembly, annotation and analysis of bacterial genomes.</b> D. Larivière, A. Syme, S. Gladman	Italy
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Admin & Dev.

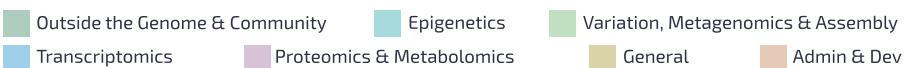
<b>CVMFS and Pulsar.</b> H. Rasche, S. Gladman, N. Coraor, G. Cuccuru	Greece
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Outside the Genome & Community.

<b>Import, handle, visualize and analyze biodiversity data in Galaxy.</b> Y. Le Bras, S. Bénateau	Spain
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General.

<b>Machine learning with Galaxy.</b> A. Kumar	Germany
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# Demos

Demos are numbered and arranged consecutively. In addition each demo has an A, B or C after it that indicates which day it will be presented (A = Tuesday, B = Wednesday, C = Thursday) from 14:50 to 15:50. Each demo will be officially presented during one of those sessions.

The full author lists, affiliations, abstracts and last-minute additions can be found online at <http://bit.ly/gcc2019demo>.

- 1A **Galaxy Computational Chemistry.** B. Barnett
- 2A **Climate Analysis with Galaxy.** A. C. Fouilloux
- 3A **Analysing and organising large-scale metabolome annotation studies with Django, ISA and Galaxy.** T. Lawson
- 4A **GalaxyCloudRunner: Streamlined Cloud Bursting for Galaxy.**  
N. Goonasekera
- 5B **Combat-tb Workbench, A Customizable Platform For Variant Discovery And Annotation, Phylogeny Construction And Variant Prioritisation.**  
Z. Mashologu
- 6B **ProteoRE, a Galaxy-based platform for the annotation and the interpretation of proteomics data in biomedical research.** F. Combes
- 7B **Knockdown Effects of MAGOHB on Alternative Splicing Via RNA-Seq Analysis.** G. Basumata
- 8B **Predicting Gene Expression from Histone Modifications and Chronological Age by RNA-Seq Data using Galaxy Machine Learning Tools.** A. Khanteymoori
- 9B **Mining hot topics in stem cells by combining text mining and scientometrics.** X. Wang
- 10A **Interactive Galaxy Visualizations for Multi-omics Research.** R. Sajulga
- 11C **NanoGalaxy: A Galaxy toolkit and workflows for long-read sequencing.**  
W. de Koning
- 12C **Visual Refinement of Genome Annotations with Apollo in a Community Environment.** N. Dunn
- 13C **The IRIDA Platform for Microbial Genomics.** A. Petkau



**Did you know?** Trash needs to be separated and placed in specific bins: plastic (yellow), paper (blue or green), glas (by color) and residual waste (grey or black).

- 36C **EDAM: the ontology of bioinformatics operations, types of data, topics, and data formats (2019 update).** M. Kalaš
- 37A **Galaxy Genome Annotation Project: Easier Genome Annotation Using Galaxy and GMOD Tools.** A. Bretaudeau
- 38B **Visual Refinement of Genome Annotations with Apollo in a Community Environment.** N. Dunn
- 39C **Deployment of Genome Databases for Algae Using Galaxy Genome Annotation.** L. Brillet-Guéguen
- 40A **Aequatus.js: a plugin to visualise gene trees in Galaxy.** A. Thanki
- 41B **Training experience on "Data analysis and interpretation for clinical genomics" using Galaxy.** G. Cuccuru
- 42C **Experience of Galaxy training at a biomedical institute.** M. Doyle
- 43A **Galaxy and Training: 2019 updates from the Galaxy Training Network.** B. Batut
- 44B **A brief overview on how bilille is using Galaxy for sharing knowledge, computational resources & tools.** L. Coudrec
- 45C **Galaxy-Bricks a Tool for Data Literacy and Scientific Approach Education in the Context of Citizen Science.** S. Bénateau
- 46A **Galaxy-E project: 2019 news.** Y. Le Bras
- 47B **Climate Analysis with Galaxy.** A. C. Fouilloux
- 48C **The ChemicalToolBox - Computational Chemistry in Galaxy.** S. Bray
- 49A **Mining hot topics in stem cells by combining text mining and scientometrics.** X. Wang
- 50B **Using Galaxy for Creation and Execution of Text Mining Workflows in the OpenMinTeD platform.** D. Galanis
- 51C **How Usable is Galaxy? A Usability Evaluation of Galaxy.** D. Brand
- 52A **Science Data Center BioDATEN in relation to the Galaxy Community.** B. Grüning



**Did you know?** Often it is not possible to pay by card and only cash is accepted.

## Thursday 4 July - Trainings & Talks II

14:50	Poster, Demos & Sponsors	
15:50	Training - 5 parallel workshops	
	Proteomics & Metabolomics	
	<b>Metabolomics data analysis II.</b> G. Le Corguillé, M. Petera, R. Weber, T. Lawson	France
	<b>MALDI imaging of peptides data analysis.</b> M. Föll, M. Fahrner, M. Stillger	Belgium
	Variation, Metagenomics & Assembly	
	<b>Genomic assembly and data analysis in Galaxy with Nanopore ONT long read sequencing.</b> S. Hiltemann, M. Miladi, W. de Koning	Greece
	Admin & Dev.	
	<b>ELIXIR Galaxy AAI.</b> K. Klepper	Italy
	Outside the Genome & Community.	
	<b>Populations genomics with RADseq.</b> Y. Le Bras, S. Bénateau	Spain
	General.	
	<b>Handling integrated biological data using Python, Jupyter, and InterMine.</b> Y. Yehudi	Germany
17:30	Talks (1 plenary track)	
	Plenary. Moderator: A. Lonnie	Greece
17:30	Invited Talk <b>UseGalaxy: Elucidating chromatin biology of mouse cardiomyocytes.</b> S. Nothjunge	
18:00	<b>Galaxy and Training: 2019 updates from the Galaxy Training Network.</b> B. Batut	
18:20	<b>Closing.</b> B. Grüning, A. Erxleben	
18:30	Dinner on your own	

### Did you see?

The conference bag is organic and fair: it is made out of high quality organic cotton with a sturdy organic cotton cord and it is certified fair trade and following social standards.



During or after GCC, it can be used as gift packaging, as a bread bag or as a shoe bag.

You do not want to keep it? No worries! Put it in the dedicated box and we will reuse or donate them.

= Galaxy  
PROJECT

**Publish** your articles,  
presentations and posters in our  
dedicated community space.

**F1000Research**

[f1000research.com/gateways/galaxy](http://f1000research.com/gateways/galaxy)

# CollaborationFest

GCC2019 will finish with the CollaborationFest, a multi-day collaborative work event where our community gathers to contribute code, documentation, training materials, and challenging analysis problems and use cases. If you are interested in learning and contributing in an intensely collaborative environment, then the CollaborationFest is for you.

CollaborationFest is split in two parts this year:

## Fri & Sat 5-6 July - Core CollaborationFest

There will be lots of collaborative work, but also lots of learning about projects and software. This will be the larger of the two stages and will take place at the Konzerthaus. All you need to attend is an interest and motivation to contribute.

8:00	Conference Desk Open
9:00	Core CollaborationFest
12:00	Lunch
13:00	Core CollaborationFest
18:00	Core CollaborationFest: summary of the day
19:00	Dinner on your own

## Sun & Mon 7-8 July - Encore CollaborationFest

The smaller (and dare we say more intense) of the two stages, these two days will focus on collaboration, collaboration, collaboration. It will take place at the Compute Center (10-15 minutes by foot from the Konzerthaus)

8:00	Conference Desk Open
9:00	Encore CollaborationFest
12:00	Lunch on your own
13:00	Encore CollaborationFest
18:00	Encore CollaborationFest: summary of the day
19:00	Dinner on your own



**Did you know?** A waiter will never ask guest's to pay. You have to order the bill.

- 15C **A new Galaxy Wrapper for MaxQuant.** D. Glaetzer
- 16A **Predicting Gene Expression from Histone Modifications and Chronological Age by RNA-Seq Data using Galaxy Machine Learning Tools.** A. Khanteymoori
- 17B **Analysis and visualization of the human cardiac myocyte epigenome using Galaxy.** R. Gilsbach
- 18C **Applying new model for predicting effects of gene variants in epigenetic regulators within Galaxy environment.** T. Drljaca
- 19A **EpiGeEC allows fast comparison of user datasets with thousands of public epigenomic datasets through Galaxy.** J. Laperle
- 20B **Testing and Visualizing the State of Galaxy Tools and Workflows.** M. Čech
- 21C **Improved Reference Data Management in Galaxy: Towards a Plant Data Analysis Platform.** I. Eguinoia
- 22A **Laniakea: A Galaxy-on-demand Provider Platform Through Cloud Technologies.** M. A. Tangaro
- 23B **Galaxy on Kubernetes: where we are and future challenges.** P. Moreno
- 24C **Galaxy on Kubernetes.** N. Goonasekera
- 25A **Building a Galaxy Trusted Server to Ensure Privacy and Ownership in Genomic Research.** G. Zhang
- 26B **RealTimeTools: Integrating, Customizing, and Accessing UI-based Tools in Galaxy.** D. Blankenberg
- 27C **Galaxy on Site: Flexibility without Tears.** A. Eschenlauer
- 28A **InteractoMIX integration in Galaxy.** P. Mirela Bota
- 29B **ARIAWeb: a new web service for automated NMR structure calculation with ARIA.** F. Mareuil
- 30C **Towards a platform for genomics medicine.** W. Maier
- 31A **Development and implementation of a Galaxy instance geared towards microbiological applications within an applied public health setting.** J. Van Braekel
- 32B **The IRIDA Platform for Microbial Genomics.** A. Petkau
- 33C **HiCExplorer 3: A toolbox for Hi-C data analysis.** J. Wolff
- 34A **A Newly Opened Galaxy Platform at Clermont Auvergne University.** N. Goué
- 35B **NanoGalaxy: A Galaxy toolkit and workflows for long-read sequencing.** W. de Koning



**Did you know?** Bottles and cans with soft drinks, sparkling water and beer have a deposit and can be handed back in a supermarket.

# Posters

Posters are numbered and arranged consecutively. In addition each poster has an A, B or C after it that indicates which day it will be presented (A = Tuesday, B = Wednesday, C = Thursday) from 14:50 to 15:50. Each poster will be officially presented during one of those sessions.

Posters will remain up for 3 days (Tuesday-Thursday). Please put up your poster on Tuesday morning, and leave it up until the end of the last poster session on Thursday.

The full author lists, affiliations, abstracts and last-minute additions can be found online at <http://bit.ly/gcc2019poster>.

- 1A Alternative Splicing Analysis: The Silencing of the Human Colon Oxidase Complex. B. Scholtz
- 2B Galaxy container for Hinxton Single Cell Interactive Analysis Portal (HiSciAP). J. Manning
- 3C Galaxy in fields, gardens and greenhouses for better seeds. M. Faubladier, F. Sapet, C. Segard
- 4A Gene Expression Analysis of In vitro Anti-filarial Activity of Natural and Synthetic Sesquiterpene Lactones from the Plant Neurolaena lobata. L. Perez-Perez
- 5B Improving Transcriptome Analysis with Molecular Indices and Galaxy. B. Langhorst
- 6C miRGalaxy: Galaxy tool for miRNA Analysis of NGS datasets (sRNA-seq). I. Glogovits
- 7A Knockdown Effects of MAGOHB on Alternative Splicing Via RNA-Seq Analysis. G. Basumata
- 8B Transposon Insertion Sequencing Analysis in Galaxy. D. Lariviere
- 9C Development and Deployment of a Workflow for the Genomic Analysis of *Campylobacter Jejuni*. J. A. Barbero Aparicio
- 10A Dima: Data-driven recommendation for a high-performing imputation algorithm. J. Egert
- 11B LC-MS/MS tool and interactive visualizations integration on Galaxy Workflow4Metabolomics infrastructure. R. Dallet
- 12C Reproducible and accessible analysis of spatially resolved proteomics and metabolomics data. M. Föll



**Did you know?** When ordering any juice as a Schorle it will be served mixed with sparkling water.

# Social Events

GCC is one large social event for our community. When you're free, skip checking your email and introduce yourself to the person next to you. You have at least one thing in common - you both have excellent taste in choosing conferences! If you dig deeper, you'll likely find that you have much more in common and maybe shared interests. Many fruitful collaborations have been initiated at a GCC. Strike up a conversation!

## Icebreaker

You should have received an icebreaker card with instructions on the back. Your goal is to fill and hand in your card, no later than Wednesday evening. Some prize winners will be drawn randomly from all completed entries on the last joint session.



The advertisement features a green and white color scheme with a background image of green leaves. At the top, it says "PUBLISH YOUR WORKFLOW RELATED RESEARCH WITH". Below that is the journal title "(GIGA)n SCIENCE" with "The Big Data Journal for Open Science" underneath. To the right, there's a call to action: "Submit work presented at GCC2019 to our Galaxy series and get a 15% Article Processing Charge discount". Below that, it says "Learn more at: academic.oup.com/gigascience Contact: editorial@gigasciencejournal.com". At the bottom left, it says "华大基因 BGI | OXFORD UNIVERSITY PRESS". A small green box at the bottom right says "Winner of the 2018 Prose Award for Innovation from the Association of American publishers".

## Conference Dinner

The conference dinner will be on Wednesday evening at **Augustiner im Bankepeter** (Schwarzwaldstraße 93, Freiburg). It is within walking distance from the conference center (see the map of Freiburg), but also easily reachable by public transport (tram line 1, direction Littenweiler, stop Freiburg Maria-Hilf-Kirche). You will need a separate registration ticket to attend.

## Dinners on your own

Except for the conference dinner on Wednesday, the dinners are on your own. Some BoFs will happen during the dinners either in the Konzerthaus or in nearby restaurants. The times and locations will be announced. We also created a map (end of program or online at <http://bit.ly/gcc2019map>) with suggested restaurants and bars in Freiburg. Check out the Gitter channel (<https://gitter.im/galaxyproject/gcc>) to find where others go and also post there to coordinate.



**Did you know?** Water without carbonation is called Stilles Wasser (silent water).

# Birds-of-a-Feather Meetups

There is no better place than a Galaxy Community Conference to meet and learn from others doing high-throughput data analysis. GCC2019 includes Birds-of-a-Feather (BoF) meetups, which are informal gatherings based on participants' shared interests. BoFs are encouraged throughout GCC2019, particularly during the lunch each day.

If you are interested in a BoF then just show up. The BoFs below were planned when this program was printed. See <http://bit.ly/gcc2019bofs> for the most up-to-date list.

If you want to organize a BoF, see <http://bit.ly/gcc2019createbof> for how to get one going. It's never too late to start a BoF, and once one is proposed the organizers will get the word out about it.

## Monday 1 July

17:45

Dinner on your own & Birds-of-a-Feather

**Genome Annotation.**

Orga: N. Dunn, H. Rasche

TBA

**The Computational Chemistry.**

Orga: C. Barnett, B. Gruening, S. Bray

TBA

## Tuesday 2 July

12:15

Lunch & Birds-of-a-Feather

**Art & Craft.**

Orga: S. Hiltemann, H. Rasche

Czech Rep.

**Using Galaxy in automated production setups.**

Orga: P. Moreno

Italy

19:00

Dinner on your own & Birds-of-a-feather

**The Freiburg City Tour.**

Guided tour, 30 people max., English

In front of  
the venue

**The Galaxy Training Network.**

Orga: S. Hiltemann, H. Rasche, B. Batut

TBA



**Did you know?** Usually you do not get tap water in restaurants.

## Wednesday 3 July

12:15

Lunch & Birds-of-a-Feather

### Art & Craft.

Orga: S. Hiltemann, H. Rasche

Czech Rep.

### Galactic Visualization!

Orga: A. Thanki, S. Hiltemann, H. Rasche

Italy

## Thursday 4 July

12:15

Lunch & Birds-of-a-Feather

### Art & Craft.

Orga: S. Hiltemann, H. Rasche

Czech Rep.

### Metabolomics: Tools, Resources, and Needs.

Orga: A. Eschenlauer

Italy

### Galaxy Containers.

Orga: E. Afgan, N. Goonasekera

France

19:00

Dinner on your own & Birds-of-a-feather

### The Freiburg City Tour.

Guided tour, 30 people max., English

In front of  
the venue

### Intergalactic Utilities Commission (IUC).

Orga: IUC team

TBA

## ELIXIR: A DISTRIBUTED INFRASTRUCTURE FOR LIFE-SCIENCE DATA

ELIXIR unites Europe's leading life science organisations in managing and safeguarding the increasing volume of data being generated by publicly funded research.

## ELIXIR Galaxy Community

- Builds a European network of data-specific Galaxy communities and fosters interaction between them
- Improves tools and data integration
- Develops a Galaxy cloud infrastructure across Europe
- Improves access and transfer of data
- Promotes FAIR principles in Galaxy
- Expands the Galaxy training provision and develops new training materials

[www.elixir-europe.org/galaxy](http://www.elixir-europe.org/galaxy)

 [@ELIXIREurope](https://twitter.com/ELIXIREurope)

