

FCCEARLY**CAREER**FORUM

TUESDAY
20 MAY 25
17:00 - 19:00

HOFBURG
VIENNA



**YOUNG
PERSPECTIVES
ON THE
FUTURE OF
PARTICLE
PHYSICS
AND THE
FUTURE
CIRCULAR
COLLIDER**



<https://indico.cern.ch/event/1486281/>

An attempt at a summary

Organisers:

Maximilian Babeluk (HEPHY)

Sanje Fenkart (CERN)

Andreas Gsponer (HEPHY)

Armin Ilg (University of Zurich)

Jacqueline Keintzel (CERN)

Elisabeth Renner (TU Wien)

Sarah Louise Williams (University of Cambridge)

Idea behind FCC Early Career Forum

What is it?

- A place to meet other early career researchers (ECRs) and collaborators working or interested in FCC, from all fields relevant for the FCC

Who is it for?

- Whoever identifies as early career :-)

What are the goals?

- Strengthen the FCC ECR community
- Enable exchange between ECRs of different backgrounds (theory, experiment, engineering, accelerator, etc.)
- Keep ECRs up to date on important matters, potentially act as an ECR voice

FCC Early Career Fora so far

- 13.01.2025 @ FCC Physics Workshop 2025: *FCC beginners guide*
- 19.02.2025: *Deep dive across the FCC*
- 09.04.2025: *t \bar{t} bar threshold scan, ESPPU ECR White Paper, cultural impact, and FCC communication*
- *20.05.2025 @ FCC Week 2025*



First FCC Early Career Forum

Agenda

17:00 - 17:30: Networking
between ECRs and seniors

17:40 - 18:35: Parallel group
discussions

18:40 - 19:00: Plenary
discussion and conclusions

Also accessible via
Zoom breakout rom



Discussion topics

1. What makes a future large-scale research infrastructure environmentally, economically and socially **sustainable**? [Birgit Stapf \(CERN\)](#), [Christof Falkenberg \(BOKU University\)](#)
2. What new ideas do we have on how to **engage the public** and communicate the societal benefits? [Sylvain Girod \(CERN\)](#)
3. What are common **concerns** and how can we address them? [Matteo De Franchis \(CERN\)](#)
4. What do we think are the major challenges in **building and operating FCC**? [Audrey Piccini \(CERN\)](#)
5. What do we **still need to learn** to fully benefit from FCC? [Francesco Pio Ucci \(University of Pavia\)](#)
6. How to make a **career** working on FCC? [Armin Ilg \(University of Zürich\)](#)
7. How should the FCC be **governed**? [Jacqueline Keintzel \(CERN\)](#)
8. How can we engage & fascinate the **next generation of researchers**? [Elisabeth Renner \(TU Wien\)](#)

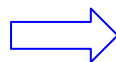
93 ECRs registered (~1/4 locals new to FCC), fully packed networking event



Highlights: Sustainability and communication

Sustainability

- Of utmost importance
- Social, environmental, economic sustainability
- Thoughts on local income disparities?



What to communicate?

- Physics case always first
- Highlight positive impact of FCC project for society
- Science diplomacy for peace
- Misinformation needs to be addressed
- Stress crucial role of universities and labs worldwide

How to communicate?

- Positive, proactive storytelling and outreach
- “Discovery” to be replaced with “exploration”
- “Failure” as integral part of research process
- New forms of outreach? (festivals, bike tours around FCC?)
- Outreach as integral part to being a researcher, even more for FCC community

Highlights: Concerns and careers

*: Huge differences between experiment, theory, accelerator, and engineering communities

(Some of) our concerns on FCC

- The obvious “what if FCC is not approved”
- Multi-targeted project, how to define success?
- Enough people power to build, operate and analyse in the next couple of decades?
 - ECRs are split on this
- Crucial to reach consensus in EPPSU and then give strong and clear message to society on the future of HEP

Career*

- Different profiles needed for FCC:
 - Part-time: Keep connection to operating machines/experiments
 - Full-time: Build and keep expertise over decades!
- Development of skills more important than selection of (collider) project
- Need to “having analysed data” for career in hep-ex?
 - Actual requirement is high-quality papers
- “Career risk management”
- Unique composition of FCC community seen as a key advantage for FCC ECRs

Highlights: Challenges ahead

- Funding and timeline, not only on project but also for careers!
 - **(When) will labs/universities open permanent positions focusing on FCC?**
- Input from theory on clear BSM models helpful to guide experiment design and motivate us!
- Knowledge of today \neq knowledge of tomorrow
- Balance between exploration of new technologies and consolidation of existing ones
- **Resource allocation inside FCC** \rightarrow make sure that **crucial topics are covered**
- Documentation, enable **easy start for FCC newcomers**
- Lots of work still needed on interplay between experiment/accelerator/theory
- **Opportunity** to look again at **LHC data** given **new ideas in FCC study**

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**FUTURE
GOVERNANCE
MEETING**

Alternative poster...



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FUTURE GOVERNANCE MEETING



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*Wer die Vergangenheit nicht ehrt,
verliert die Zukunft.
Wer seine Wurzeln vernichtet,
kann nicht wachsen.*

*Those who do not honor the past
lose the future.
Those who destroy their roots
cannot grow.*

Friedensreich Hundertwasser



Hundertwasserhaus, © C.Stadler/Bwag; CC-BY-SA-4.0

Governance

Guiding principles

- Clear structure with clear responsibilities
- Transparent, open, and inclusive
- Mandates for limited duration, open announcement, as e.g. in LHC collaborations

How could governance look like?


- Advisory board: Seniors, from within and outside of FCC
- Executive board: Also ECRs → Community should be able to vote on these
- Reviewing board: Outside of FCC, expertise

Governance structure to grow and evolve with FCC project

Need strong **communication channels between management and FCC community**

Getting involved

- Join our fcc-early-career-forum e-group to get informed about our events
- Bookmark the indico page where our events are listed
 - Every ~6 weeks, on Wednesdays, 16:00-18:00, in-person and online
- Consider contributing to the organisation!
 - Propose topics and speakers for future events
 - Join the organisation team
 - Contact fcc-early-career-forum-organisers@cern.ch



We need more **FCC merchandise** to
openly display our passion for the
future of particle physics