



Diversity Efforts within Geo-INQUIRE

Fabrice Cotton (GFZ, project coordinator)

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Outline: Geo-INQUIRE diversity framework

- Equality, Diversity and Inclusion Panel (EDIP) planed in the proposal
- Recommendations from the EDIP
- Validation of EDIP recommendations by the first general assembly
- Implementation and monitoring
- Sharing our experience and practices with others
- Struggles and challenges



EDIP - Equality, Diversity and Inclusion Panel

Formed at project start to “assesses equality, diversity, and inclusiveness in the project. It identifies best practices and meets at least twice a year to enhance project inclusivity.”



Laura Sandri (Researcher, INGV), Fatemeh Jalayer (Professor, UCL), Annett Hüttges (HR, University of Lübeck), Elisabeth Köhler (senior science policy officer, CNRS), Fabrice Cotton (Geo-INQUIRE coordinator, GFZ)

EDIP suggestions formulated at project start:

- Participation target (40% women, 35%widening countries)
- Website communication (inclusive verbal and visual communication)
- Question and Answer sessions before application deadline of Transnational Access (TA) Call and Personalized Training Call
- Family friendly meetings & training (on-site childcare, short on-site meetings)
- Meetings between 9 am – 15 pm, during child care hours
- Rotating EDIP member join Transnational Activity Review Panel (TARP)
- Controls and support the evaluation of TA and Personalized Training



Validation of participation targets by the first general assembly

40% women

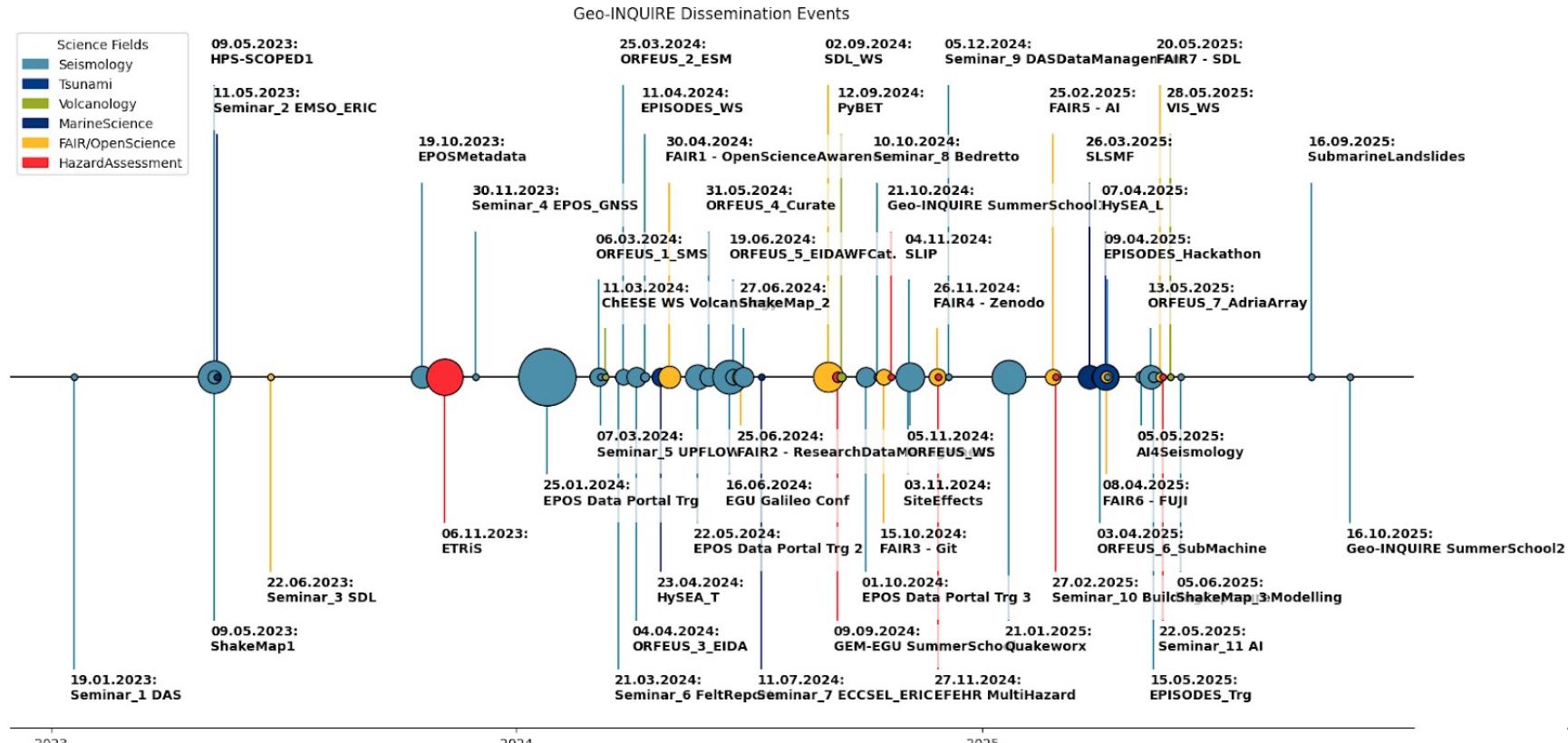
35% widening countries

Widening Countries are Bulgaria, Croatia, Cyprus, Czechia, Estonia, Greece, Hungary, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Slovakia and Slovenia. Associated countries (eligible to coordinate widening projects) include Albania, Armenia, Bosnia and Herzegovina, Faroe Islands, Georgia, Kosovo, Moldova, Montenegro, Morocco, North Macedonia, Serbia, Tunisia, Turkey and Ukraine. Outermost regions include La Réunion, Mayotte, Canarias, Azores, Madeira, Saint-Martin, Guadeloupe, Martinique and Guyana.



Networking and training

50+ events, 2500+participants, from 85+ countries



Implementation and monitoring

- Hybrid meetings for colleagues with care-taking duties (childcare, eldercare); disadvantage: less young parents and female colleagues on-site (missing networking)
- Application templates included a request field for additional needs (child care, mobility, Visa).
- All annual meetings were fully accessible for people with mobility issues.



Geo-INQUIRE summer school
held in Oct 2024 in Greece.
(Photo: IGF PAS)



First Transnational Access visit:
In June 2024, Zoe Yin visited Dr.
Mathilde Marchandon to work with
SeisSol on SuperMUC-NG
(Photo: LMU)



Geo-INQUIRE-Workshop on
Simulation Data Lakes and
Earthquake Ground Motions
Recordings and material available
on the Geo-INQUIRE website
(Photo: GFZ)



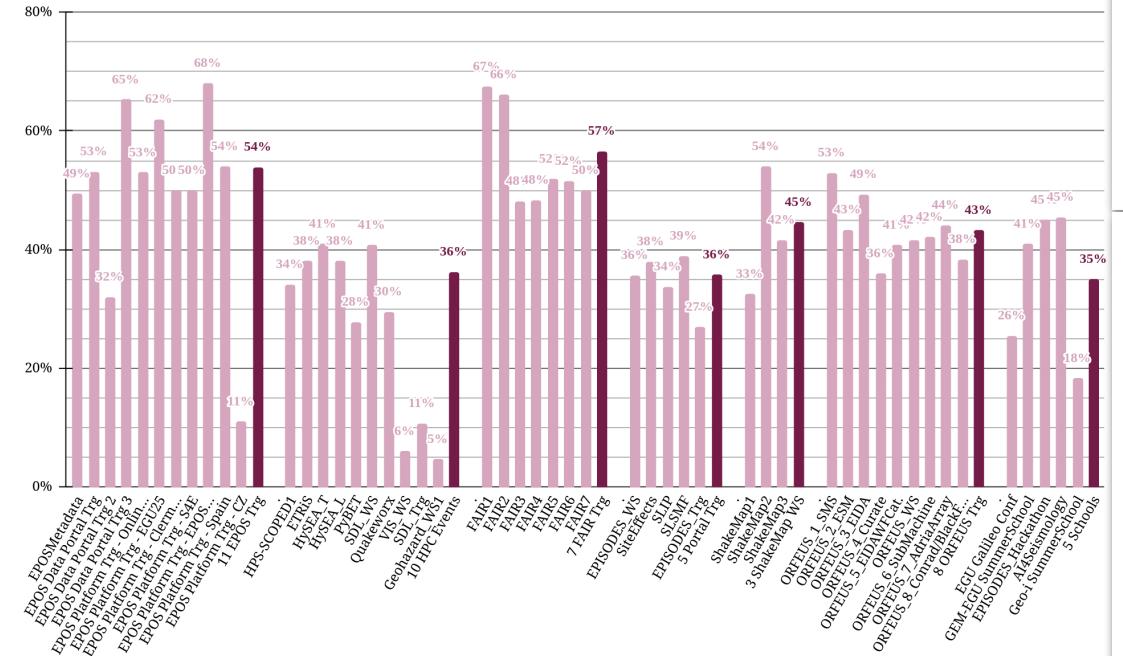
Implementation and monitoring

Geo-INQUIRE Gender Balance Achieved

Geo-INQUIRE Gender Balance

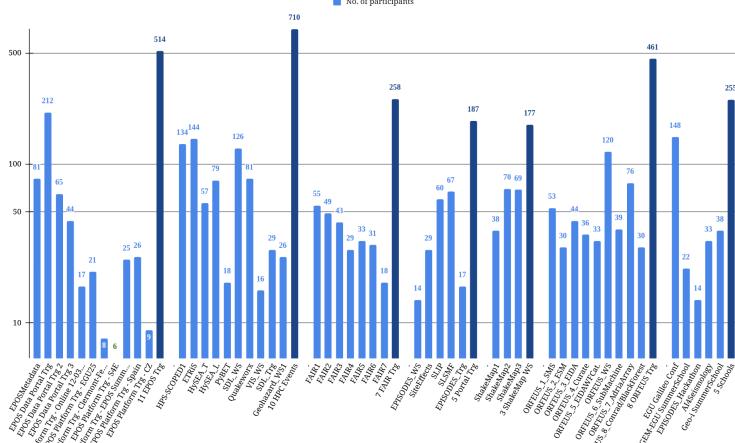
including events up to October 2025

■ Percentage of female registrations



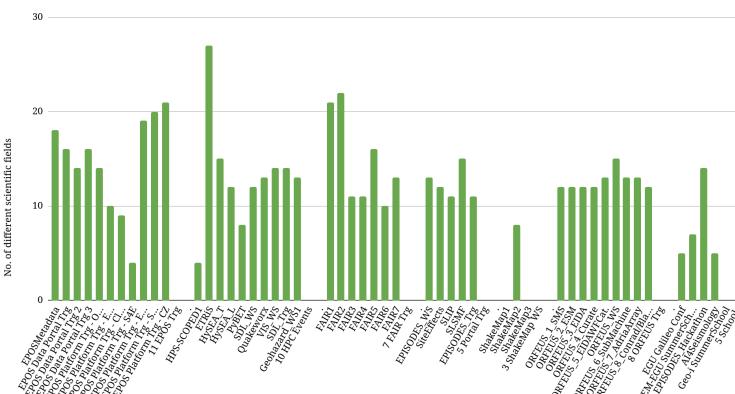
Geo-INQUIRE Training Events

including data up to October 29



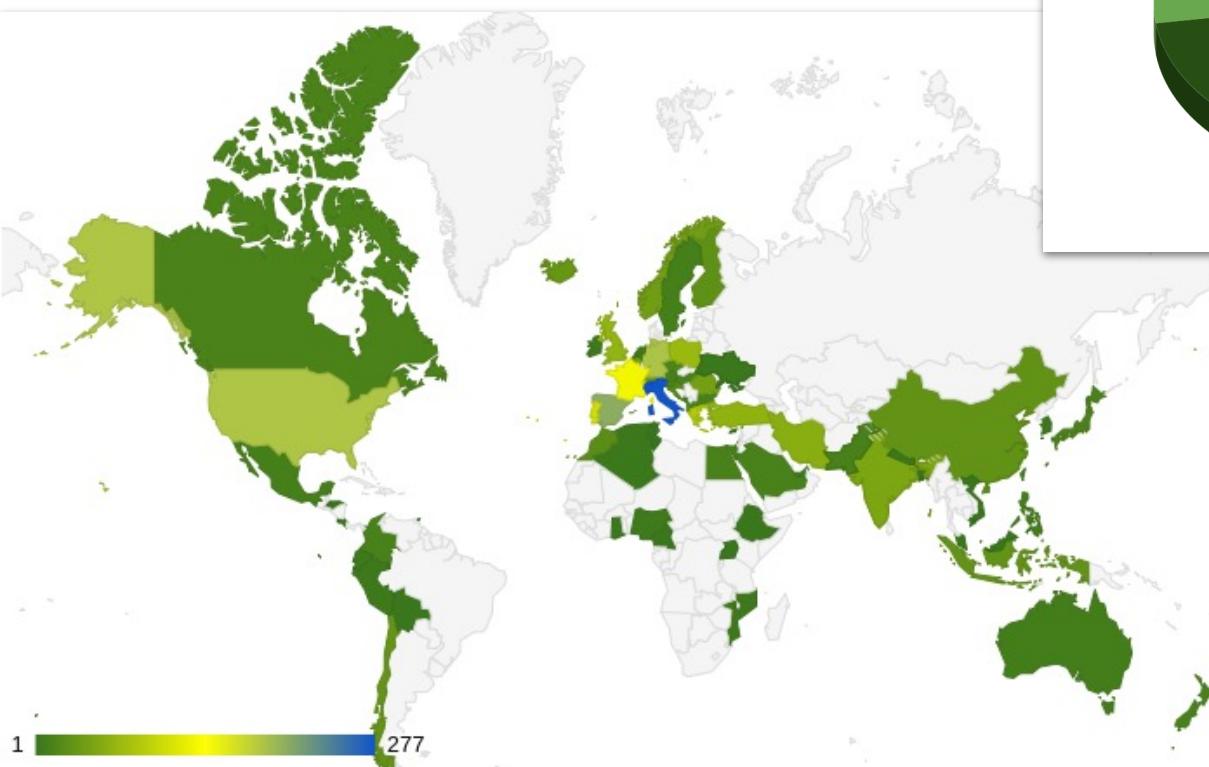
Cross-Disciplinarity of Geo-INQUIRE Events

including events up to October 2011

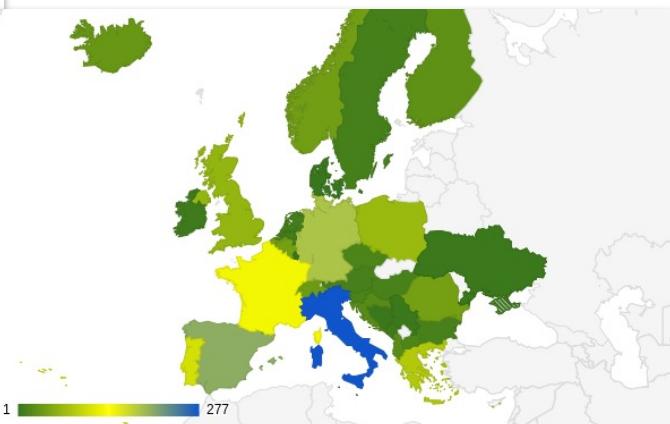
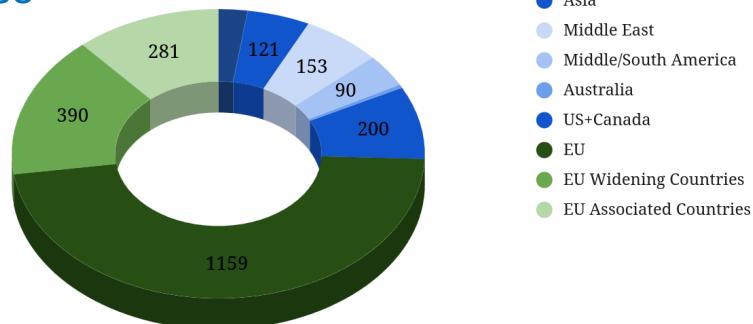


Implementation and monitoring

World-wide coverage and Widening/Associated Countries



Registrations for Geo-INQUIRE Events
Until October 2025, for the 34 events for which detailed information is available



The importance of role models

Leading scientists presenting their work in Geo-INQUIRE seminars



Anne Socquet

Laura Ermert



Helle Pedersen



Diane Rivet



Mathilde Cannat



Carine Bruyninx



Alice Gabriel

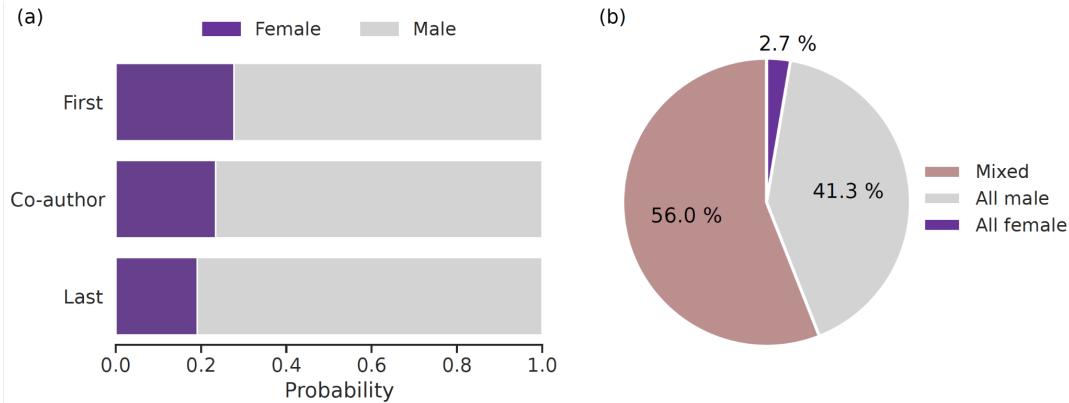


Ana Ferreira



Increasing awareness and identifying challenges

Keynote: Laura Ermert “Gender differences in authorship in seismology”
on 19 November 2024



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<https://doi.org/10.5194/se-14-485-2023>
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Gender distribution in the authorship list of peer-reviewed publications in seismology. **(a)** The probability of having a female- or male-gendered first-author, co-author, and last-author name in a publication. **(b)** Percentage of publications with an authorship list with all-female, all-male, or mixed-gender author names.

Quantifying gender gaps in seismology authorship

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Abstract. According to 2018 demographic data of the American Geophysical Union Fall Meeting, seismology is among the geoscience fields with the lowest representation of women. To understand whether this reflects seismology more generally, we investigate women's authorship of peer-reviewed publications, a key factor in career advancement. Building upon open-source tools for web-scraping, we create a database of bibliographic information for seismological articles published in 14 international journals from 2010 to

1 Introduction

In seismology, as in many fields of research, peer-reviewed articles are one of the most important ways to disseminate new scientific findings. They are also increasingly used as a metric of the performance and productivity of individual researchers and constitute a critical factor of career advancement, along with citation scores and the impact factor of journals.



Sharing our experience with others

Geo-INQUIRE Poster at ISC'25 International Supercomputing Conference

We could show that the percentage of females attending HPC training events within Geo-INQUIRE doubles the numbers for female International Supercomputing Conference visitors.

There was specific interest in the measures taken by Geo-INQUIRE to increase the percentage of female attendees.



Geo-INQUIRE summer school held in Oct 2024 in Greece.
(Photo: IGF PAS)



First Transnational Access visit:
In June 2024, Zoe Yin visited Dr.
Mathilde Marchandon to work with
SeisSol on SuperMUC-NG
(Photo: LMU)



Geo-INQUIRE-Workshop on
Simulation Data Lakes and
Earthquake Ground Motions
Recordings and material available
on the Geo-INQUIRE website
(Photo: GFZ)

Increasing female attendance and the Geo-INQUIRE training program

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What is Geo-INQUIRE?

Fabrice Cotton (GFZ, project coordinator)

“Since 2022, researchers from 51 European institutions have been collaborating on Geo-INQUIRE, a multidisciplinary Horizon Europe project. This initiative aims to enhance the use of Earth Observation and High-Performance Computing (HPC) tools critical for studying temporal variations in the solid Earth, forecasting multi-hazard and analysing interactions between the solid Earth and its surrounding environments, including the oceans and atmosphere. Geo-INQUIRE is designed to become cross-domain barriers, by using cutting-edge data management techniques, advanced modeling and simulation methods, developments in AI and big data, and the extension of existing data infrastructures.”

Gender-balance is important for every project!
Set clear and ambitious goals right from the start

- Measures taken:
 - Find good role models
 - Involve men in visibility
 - Monitor goals, implement countermeasures if necessary
 - Clearly state that female participation is desired
 - Vacancies are advertised inclusively (multiple genders, gender-neutral, gender-inclusive, gender-specific, slides, ...)
 - Provide daycare if necessary
 - “Female Friendly” Environment
 - open discussions, encourage questions, meet regularly)
 - “Family Friendly” Environment
 - flexible working hours, remote work, flexible working hours, schedule meetings and realistic deadlines early)

Geo-INQUIRE offers

Geo-INQUIRE strives for gender-balance in all its offers:

- Summer Schools** (60% female attendees), next in Catania (Oct. 2025)
- Virtual Access (VA)** open to everyone (data products, catalogues, software, workflows, etc.)
- Transnational Access (TA) (41%)** regular calls to visit hosting sites, receive training-through-research and HPC computing budget (e.g., training on HPC workflows, use of CEFERI, targeted to advanced PhD students or Postdocs).
- Training and Workshops (43%)** are organized to attract and facilitate access to many Visa and TAAs. Trainings are usually online and free to attend for everybody. Workshops are on-site with limited seats & a selection process.
- Personalized training (57%)** travel funds to work on your own project and receive training from the hostsite (targeted at early career researchers).
- Recordings and material** from trainings and workshops asynchronously available at www.geo-inquire.eu



50% female students

41% female TA applications

43% females in training events

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(Photo: IGF PAS)

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held in Oct 2024 in Greece.
(Photo: Dr. Mathilde Marchandon to work with SeisSol on SuperMUC-NG)

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The link between HPC and Geo-INQUIRE

On the www.geo-inquire.eu side, Geo-INQUIRE offers many CHESS codes from Seismology, Volcanology and Tumour computation as VIsa and several CHESS workflows through TAAs. If a software TA is granted, applicants will also receive a computing budget on European Tier-0 or Tier-1 machines (Leonardo@CINECA, SuperMUC-NG@LMU, SuperMUC@BSC, etc.).

Big data geo-inquire.eu offers data from mobile phones, GNSS data from satellites and distributed acoustic sensing (DAS) data from fibre optic cables.

Simulation Data Lake (SDL) Stores data from HPC simulation runs but also from TAAs. The SDL is part of CINECA infrastructure for Leonardo and allows a tight connection between this Tier-0 machine and simulation data e.g., for analysis and visualization.



Acknowledgments
I would like to thank the Women in HPC (WHP) Mentor Aikaterini Kozolits for her invaluable support & guidance and Ayseh Ataai for running the Women in HPC mentorship program. I greatly acknowledge support from Vasilis K. Tsirigos for a great deal to achieve this goal.

Conclusions

Geo-INQUIRE, an interdisciplinary Geosciences project on the boundaries of Earth Science, HPC and Big Data, incorporated several measures to increase female participation in all their offers. Data and Big Data training programs, which attracted in total more than 2,000 participants (from 85 countries) for the 30+ training events from October 2022 to May 2025 shows that, contrary to many expectations, their gender balance goal of striving for 40% female engagement could be reached. All female women were represented in the training events. In the HPC, the participation of women was not far from having a third of the total (thirdly). The percentage of female participants in all Geo-INQUIRE training events is 43%. Two thirds of the successful applicants to personalized training and half of those for the first summer school were women. About 40% of the TA applications and admitted projects are from female PhDs.

We have shown that the measures taken have been very successful and would like to encourage other HPC projects to follow similar paths and put focus on gender balance and diversity from the start on.



Funded by
the European Union
see <https://www.geo-inquire.eu/> for information on Virtual and Transnational Access,
Training & Workshops (incl. material and recordings), Personalized Training & Summer Schools

Geo-INQUIRE is funded by the European Commission under project number 101058518 within the HORIZON-INFRA-2021-SERV-01 call.



Sharing our experience with others

Presentation at EGU 2025 by Elif Türker-Bakir

Lessons learned from Geo-INQUIRE



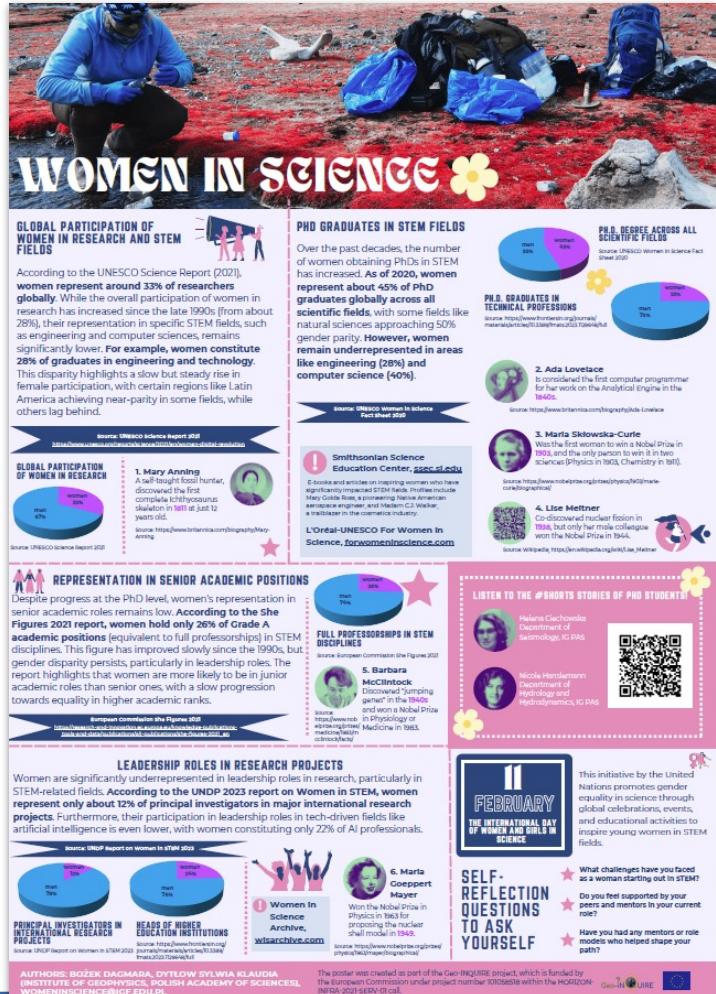
- Need a clear, structured plan
- EDIP input was valuable — provided clear guidance
- Ensure flexibility (recordings, hybrid events)
- Promote family-friendly practices (short meetings on site, childcare..)
- Include Q&A sessions for clarifying questions



Getting feedbacks

Poster & Survey “Women in Science”

IGF PAS prepared a poster to highlight the persistent gender disparities in science, technology, engineering, and mathematics (STEM) fields and aims to raise awareness, share experiences, and support early-career female researchers. To better understand these challenges, they launched an [online survey](#) during the Geo-INQUIRE Summer School in Greece. The [answers to the questionnaire](#), provided valuable insights into gender bias, work-life balance difficulties, and underrepresentation of women in leadership roles. Despite these obstacles, many respondents pointed to the importance of supportive work environments, visible female role models, and systemic institutional changes.



Developing good practices

Leaflet “Good Practices to Support Women in Science”

As a result of the survey, IGF PAS (Dagmara Bożek and Sylwia Klaudia Dytłow) prepared a leaflet



01 PROMOTE WORK-LIFE BALANCE

- Introduce flexible working hours and remote work options.
- Ensure availability of parental leave for all genders.
- Provide institutional support for caregivers (e.g. on-site childcare, family-friendly policies).



02 ADDRESS GENDER BIAS AND DISCRIMINATION

- Conduct regular training on unconscious bias and gender awareness.
- Establish clear, confidential mechanisms for reporting discrimination and harassment.
- Monitor gender equity in recruitment, promotion, and leadership decisions.

03 ENSURE EQUAL ACCESS TO OPPORTUNITIES

- Guarantee fair access to funding, scholarships, and research grants.
- Promote transparency in hiring and promotion criteria.
- Support gender-neutral evaluation procedures for applications.

04 SUPPORT CAREER DEVELOPMENT

- Provide mentorship programs, especially for early-career female scientists.
- Organize networking events targeted at underrepresented groups.
- Create and promote leadership training tailored to women in science.

05 INCREASE VISIBILITY AND REPRESENTATION

- Highlight female role models in science through talks, media campaigns, and publications.
- Ensure gender-balanced speaker line-ups at conferences and workshops.
- Involve women in decision-making bodies and scientific committees.

06 ENGAGE POLICYMAKERS AND INSTITUTIONS

- Advocate for national and institutional policies promoting gender equality in STEM.
- Encourage funding agencies to consider gender diversity in grant evaluations.
- Support institutional audits and gender action plans.

07 FOSTER INCLUSIVE SCIENTIFIC CULTURE

- Promote open dialogue about challenges women face in STEM.
- Recognize and value diverse career paths and personal experiences.
- Ensure inclusive language and respectful communication in scientific environments.

08 MONITOR PROGRESS

- Collect and analyze gender-disaggregated data in academic institutions.
- Regularly assess the effectiveness of gender equality initiatives.
- Adapt and refine strategies based on feedback from the community.



LISTEN TO THE #SHORTS STORIES OF PHD STUDENTS!



Helena Člechovská
Department of Seismology, IGF PAS



Geo-INQUIRE



Nicole Handermann
Department of Hydrology and Hydrodynamics, IGF PAS



Struggles and Challenges

General struggles:

- Maternity leave and “Eltern-Kind-Kur” (parent child cure) not covered by EU projects
- No regular framework to extend contracts after parental leaves after the end of projects
- When existing, high complexity of travel refund for children and child care person (e.g. GFZ)

Struggles within the project:

- deadlines were often moved requiring attention, input and meetings on short notice (very difficult to align with child care duties)
- wherever “big money” (Workshops, TARP) or “important decisions” (PMB) were involved we see less females in charge



Conclusions

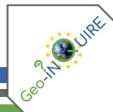
Key efforts

- Female role models for seminars, training, etc.
- Offering child care for selected on-site events
- Admit 50% female for summer schools & workshops (if possible)
- Advertising Transnational Access, Personalized Training, Summer Schools through online Q&A events
- Monitoring !

Key results

- 40+% participants in Training and Workshops are females
- 50% females approved for summer school
- Over 50% female applications for personalized training
- Results recognized by the mid-term evaluation (June 2025)

More Information: <https://www.geo-inquire.eu/about/equality-diversity-and-inclusion>



Looking to the future

- White paper on the lessons learned from Geo-INQUIRE ?
- Monitor/discuss other components of diversity (e.g. cross-disciplinarity, international mobility)
- Funding agencies and evaluators are actually asking us to increase/demonstrate the impact of our work (scientific impact and impact on society and industry)
- Diversity is important because diverse teams perform better and have a greater impact



Thank you for your attention!

Geo-INQUIRE is a joint effort of 51 institutions



Geo-INQUIRE is funded by the European Commission under project number 101058518 within the HORIZON-INFRA-2021-SERV-01 call.