



RRI IN PRACTICE: SCIENCE EDUCATION AS A TRIGGER FOR STRUCTURAL CHANGE

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29/05/2020; Final Starbios2 Event



Goals

- RRI structural transformation process at the Faculty Biology and Chemistry
- Core Team: Scientists and Science Educators
- Common shared RRI vision
- Whole-institutional-approach
- Bottom-up top-down approach involving stakeholders and status groups (students, doctoral students, researchers)
- Identifying of supportive and hindering factors



Faculty Biology and Chemistry,
18 research groups (in biosciences)
about 1700 students;



Action Plan with 7 major streams

- Setting up criteria for successful **societal engagement** and **technology transfer**
- Promoting **societal engagement** through socio-scientific contextualization
- Raising awareness of **gender issues**
- Raising awareness of **ethical issues**
- Promotion of **open access** publications
- **Education** to raise the awareness of **RRI keys**



Road Map

State-of-the-art analysis

- Literature analysis
- Interviews with

Development RRI building blocks

- Workshops and
- Reflective Activities

Intervention

- Conduct and evaluation of RRI

Structural change

- Negotiation with stakeholders at

Negotiation with focus groups and important stakeholders

- Questionnaire survey

- → First draft of

Engagement,
Gender, Open
Access, Ethics

blocks with different
focus groups

- → **Flexible RRI**

level

- Highlighting Good Practices

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Doris Elster, University Bremen

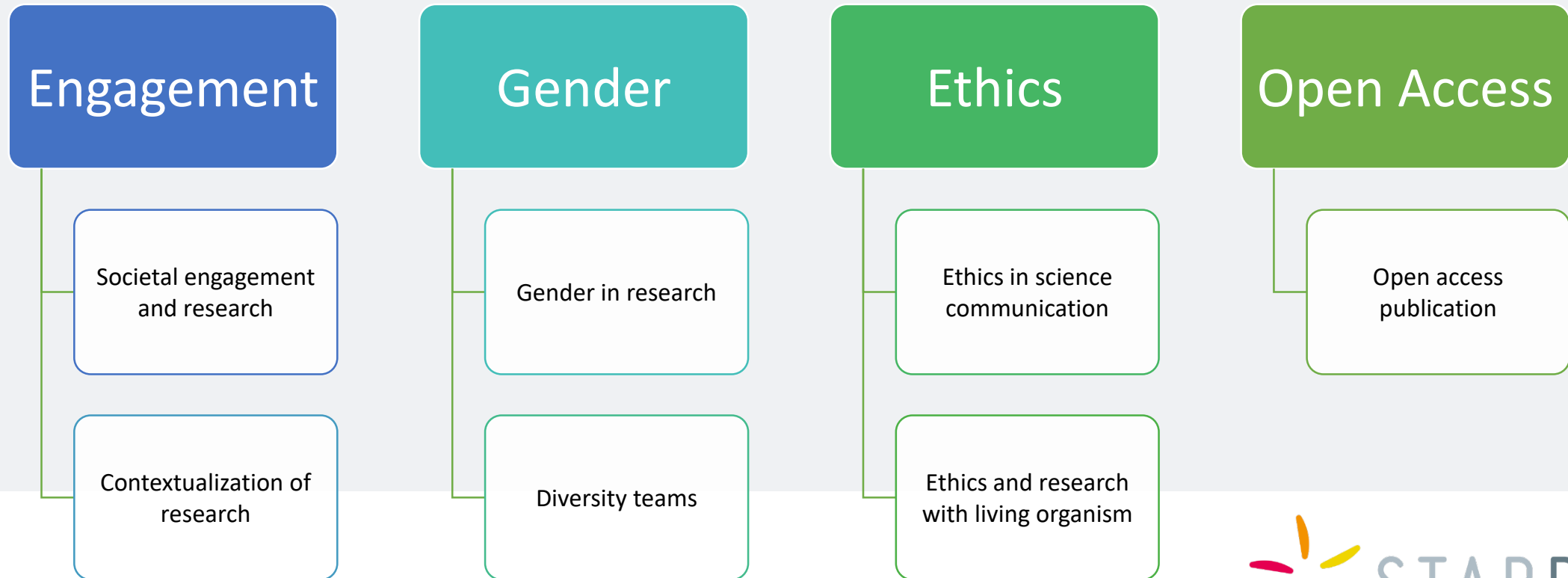


STARBIOS2



Traces of sustainable change

- **Website and RRI Toolbox** with educational building blocks, and good practice examples of research projects





Traces of sustainable change

- **Modules and workshops:**
- How risky is nanotechnology?
- Stem cell donation and leukemia
- Superfood Moringa

- Outreach lab “Backstage Science”



Workshop “How risky is nanotechnology” by Marie Eschweiler and Doris Elster, Biotechnology Summer School in Gdansk, 2018-09.



RRI and PhD programs

Graduate School NanoCompetence

- Research, Mediation, Design
- Natural scientists and social scientists work together
- 8 PhD projects
- The risk of nanoparticles for humans and the environment



Final Symposium October, 2019, in the “House of Science”.



Booklet of RRI Recommendations



Towards a Sustainable and Open Science

Enhancing Responsible Research and Innovation
in the Biosciences at the University of Bremen

Starbios2 Team Bremen
04.07.2019



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	Grouping of RRI recommendations
Public Engagement in practice	<ul style="list-style-type: none">▪ Research and Transfer▪ Research and popularization▪ Openness and conflict of interest
Gender in practice	<ul style="list-style-type: none">▪ Fostering gender balance in research teams and decision making bodies▪ Integrating the gender dimension in the research and innovation content
Ethics in practice	<ul style="list-style-type: none">▪ Good scientific practice▪ Anchoring ethics in the curricula for young scientists▪ Protection of animals in research
Open Access in practice	<ul style="list-style-type: none">▪ Anchoring Open Access in curricula for young scientists▪ Transparency about Open Access policy of University of Bremen▪ Transparency about Open Access support of the University Library (SuUB)
Education in practice	<ul style="list-style-type: none">▪ Promotion of RRI in lectures▪ Promotion of RRI in curricula▪ Promotion of RRI in outreach events





Sustaining change

Future Concept 2025 of the Faculty

All research groups of the faculty are strongly involved in

- 1) Expansion of **Responsible Research and Innovation (RRI)**
- 2) Implementation of the university's **transfer strategy**.
- 3) Further development of a high-performance **didactics**
- 4) Further development of the existing **concept for RRI (Starbios)**
- 5) Participation in the follow-up project of Starbios2 entitled **RESBIOS**

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Sustainability





Future

- African initiative in cooperation with the University Zanzibar: **Teaching ways to healthy nutrition:**
- Professionalization in the context of sustainable health education in Zanzibar
- States University Zanzibar (medical department), University of Bremen

MENTION –
Increased
Competencies for
Nutrition in
Zanzibari Health
Care



What we learned

- Education can be a successful trigger of RRI structural change processes
- Take a whole-institutional approach with a bottom-up top-down process
- Open your perspectives - get support by university-internal structures and external experts
- Recognize that change needs time



To read more

Elster D., Barendziak T., Birkholz J. (2019): Towards a Sustainable and Open Science. Enhancing Responsible Research and Innovation at the University of at the University of Bremen. Bremen, University of Bremen

Elster D. (2018): Raising Awareness of Responsible Research and Innovation (RRI) in Biosciences. In: Pixel: New Perspectives in Science Education, Conference Proceedings 2018, Edition 7, Florence/Libreria Universitaria Edizioni

- <https://starbios2.eu>
- <https://blogs.uni-bremen.de/starbiosbremen/>



Thank you for your attention.

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