The impact of Open Science on Research Careers:
How to integrate Open Science into Higher Education Policy?
Zürich, Switzerland, 5 Sept. 2017

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HR EXCELLENCE IN RESEARCH

Tips and tricks to make your HRSR4 implementation a success

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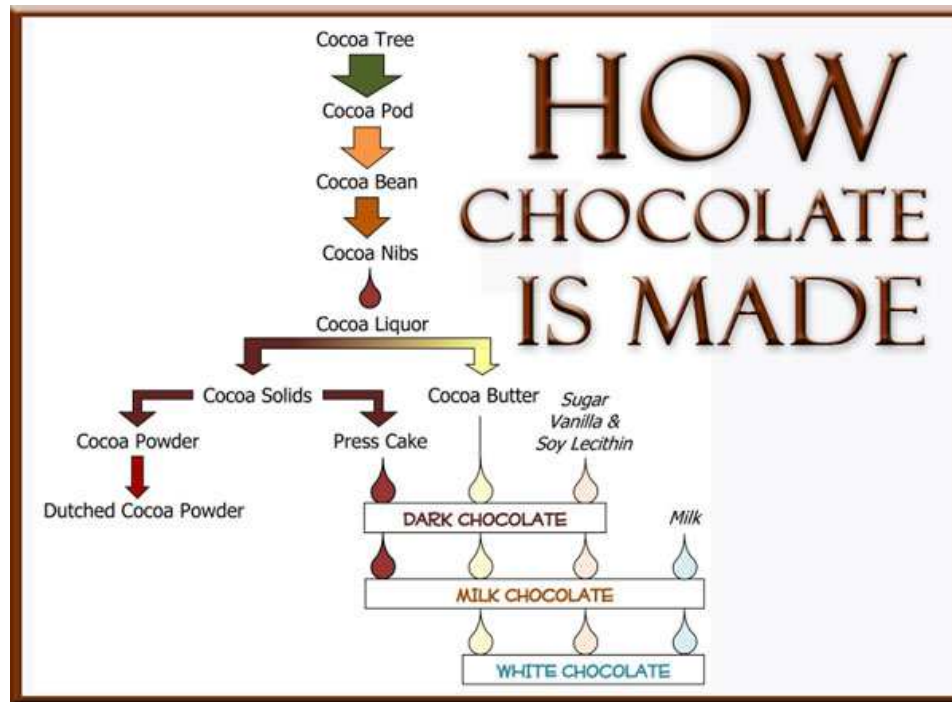Isabelle.Halleux@ulg.ac.be

LIÈGE université

We share a passion for... chocolate!

« LE CHOCOLAT EST DIVIN, MOELLEUX, SENSUEL, PROFOND. »

ELAINE SHERMAN

HRS4R is just like… making chocolate!

HEALTHY HOMEMADE
CHOCOLATE RECIPE

Beyond the recipe …

The secrets of the Belgian choclatiers

« The basis is easy to collect »

- ✓ Willingness to ensure that the relations with the researchers is conductive to successful performance in research

- ✓ Knowledge of what you achieved and what is still on track

- ✓ Structure, possibilities and competencies to improve the working conditions of the researchers

« Rely on chocolate lovers »

« Only simple key ingredients »

Cocoa powder	Cocoa butter	Sugar	Milk
President Board	**Steering Committee**	**Working Group**	**Researchers**
Endorses the C&C	Leads the process	Prepares the GA & AP	Know about their
Validates the AP	Leads the assessment	Link to stakeholders	working conditions
Support the process	Suggest/give priorities	Deliverables	Give their opinion
			Approve the HR
President	University managers	Project leader	
Vice-rectors	Administrative officers	Administrative panel	
(...)	Researchers	Researchers & PhDs	

All chocolate is made from basic ingredients that are mixed together in varying quantities and at various points in the making process. Cocoa powder is the basis for the product, butter for the smooth texture, sugar gives sweetness, and milk, if from the Alps, gives the soul of the swiss chocolate. Spices or can also be added for a unique character.

HRS4R chocolate recipe & process
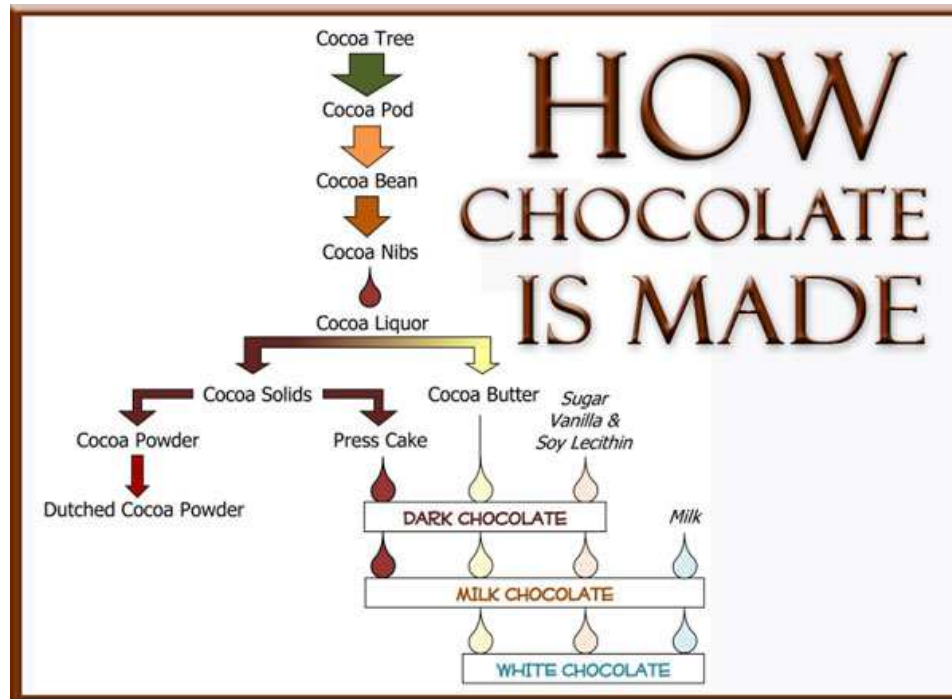
1. Initiate the process

2. Bottom-up & Top-Down

3. Gap analysis

4. Action Plan

5. Finalize the project

1. Initiate the process

- ✓ Endorse the Charter & Code
- ✓ Commit strongly to the process
- ✓ Embed it in the organisation's strategy
- ✓ Let it know to the EU-Commission

- ✓ Create the steering committee
- ✓ Create the working group
- ✓ Involve the researchers
- ✓ Give responsibility and mission

- ✓ Inform your community

« Vertrauen in Kakao »

(Translation : Be confident in your cocoa powder)

2. Bottom-up & Top-down

- ✓ Know about the tools and templates

- ✓ Include the input from the researchers
    - Survey (on pertinent questions)
    - Focus groups
    - Interviews
    - Discriminate between R1,2,3,4
    - Don't be selective at this point

- ✓ Involve other stakeholders if any

« Le client est roi »

(Translation : the customer first)

3. Gap analysis

- ✓ Review each of the principles
- ✓ Describe all the gaps
- ✓ Imagine potential actions
- ✓ Check the OTM-R list

- ✓ Fill Template 1
  - ✓ Describe the process
  - ✓ Fill the table with principles
  - ✓ Fill the OTM-R checklist

- ✓ Ask feedback from the researchers

« Elke parameter is belangrijk »

(Translation : Each parameter is of importance)

4. Action plan

- ✓ Select priorities for action (short term, mid-term, long term)
- ✓ Define who wil be responsible of what
- ✓ Define milestones and indicators

- ✓ Fill Template 2
- ✓ Summarize your strengths and weaknesses (gap analysis)
- ✓ Describe the implementation process

- ✓ Ask feedback from the researchers

« Djusse çou qu'i fåt »

(Translation : No more than necessary)

5. Finalize the process

✓ Request approval from the board
✓ Disseminate to the community

✓ Publish Template 2 on your web site
✓ Apply to the award

« Design e lusso »

(Translation : Design and luxury)

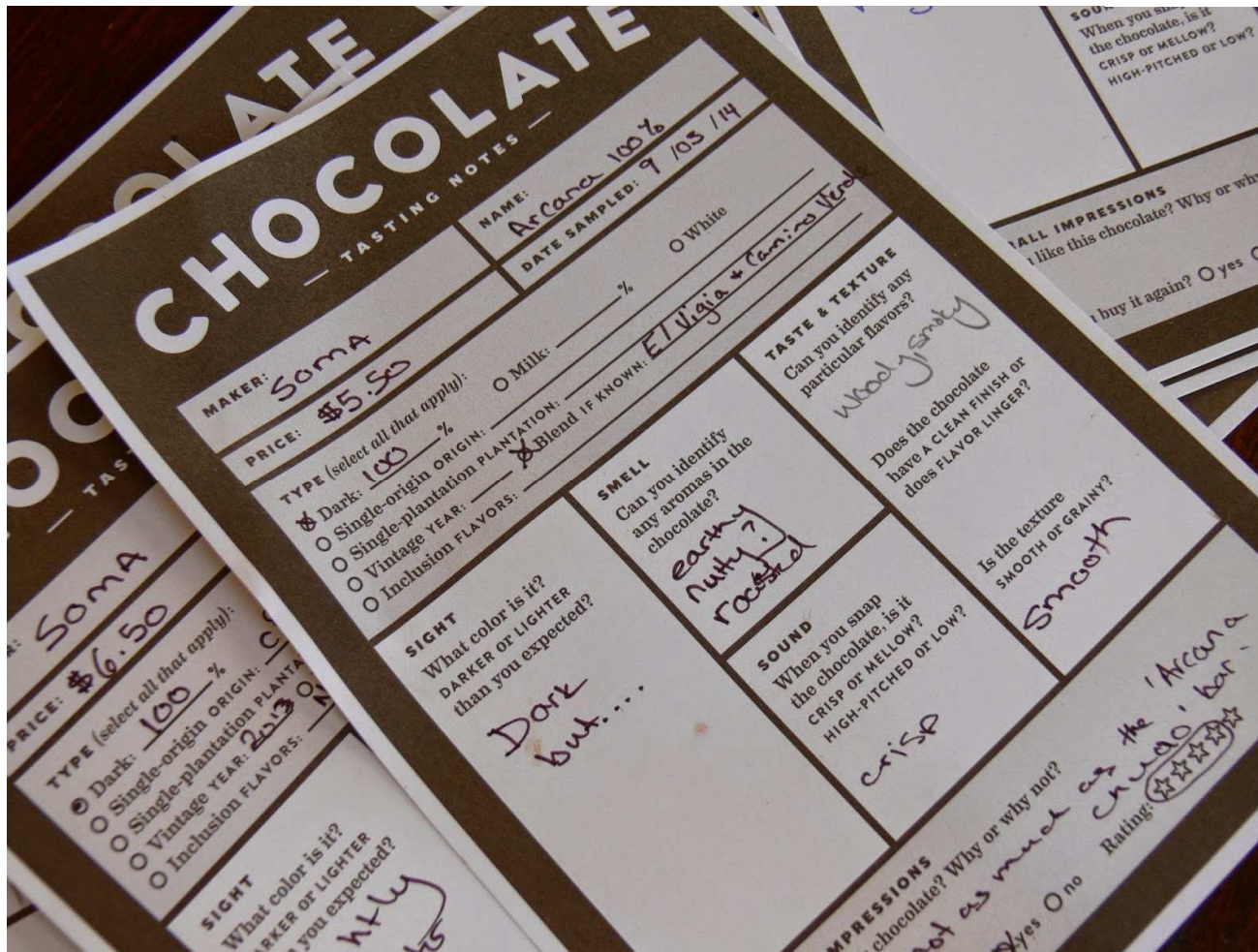Your luxury chocolate is sent to Brussels and the award is requested

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The assessors are experienced, trained for the job. They know well about the applications and applicants. Do not lie, nor hide difficulties …

« Celebrate! »

(Translation : You get it!)

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Then the real work begins ...

- ✓ Do what you plan to do
- ✓ Stop regularly and analyse your progress
- ✓ Explain divergences
- ✓ Update the Action plan and gap analysis
- ✓ Communicate to the community

- ✓ Work more and more on OTM-R

- ✓ Proceed to intermediate assessment
- ✓ Ask for the feedback of the researchers
- ✓ Disseminate to the community

« Stay involved »

Start the process today! You can do it! You will love it!

«Nine out of ten people like chocolate. The tenth person always lies.»
(John G. Tullius)

Conference report

The Impact of Open Science on Research Careers:

How to integrate Open Science into Higher Education Policy?
(September 5, 2017, ETH Zurich, Switzerland)

"Open Science is a complete change of mindset – it´s all about collaboration, cooperation and thus getting better research results."

A warm welcome!

It is a warm, late summer day and around 60 national and international delegates have gathered at ETH Zurich: Perfect conditions for an **indepth conference** on "The Impact of Open Science on Research Careers".

Opening the conference are Ariane Studer, Head of EURAXESS, swissuniversities, and Dr. Gabriela Obexer-Ruff, Programme Coordinator of the programme P-7 "Equal Opportunities and University Development", swissuniversities. They briefly introduce the European Commission´s priorities on Open Science before presenting **EURAXESS**, the EU-wide network to promote researcher careers in Europe. swissuniversities coordinates EURAXESS in cooperation with the **EU GrantsAccess** of the **University of Zurich/ETH Zurich** with the **funding of** the **Swiss State Secretariat for Education, Research and Innovation (SERI)**.

1. Rewards for Open Science and Open Education: Reflections and Recommendations of the Steering Group on Human Resources and Mobility (SGHRM)

"The European Commission has set two priorities: Open Science and an open labour market for researchers."

Cecilia Cabello Valdés delivers the opening presentation. She is part of the Steering Group on Human Resources and Mobility (SGHRM) and Department Director for Indicators and Monitoring Science and Technology Policy at the Spanish Foundation for Science and Technology FECYT.

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SGHRM **monitors the implementation** of the objectives of the Mobility Strategy of the Europan Commission and **improves coordination** at national level with the relevant ministries.

The EU framework for the mobility of researchers has thus gone from strenght to strength thanks to the following: **EURAXESS** network, the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers (Charter & Code), Human Resources Strategy for Researchers (HRS4R), Scientific Visa and European Partnership for Researchers, the Innovation Union, the European Framework for Research Careers and the ERA Memorandum of Understanding.

BACKGROUND INFORMATION:
  ➢ In 2005, the European Commission adopted the Charter & Code. These documents are intended for researchers and research employers as well as funders in public and private sectors. They are key elements in the EU´s policy to support researchers´career development.

The HR Excellence in Research Award
To promote the implementation of the Charter & Code, the European Commission has developed the HR Excellence in Research Award, which recognises institutions that are committed to improving their human resources practices in general and their recruitment practicesin particular.

  ➢ **A large number of Swiss higher education and research institutions have signed the Charter & Code. Six have implemented its principles and received the HR Excellence in Research Award.**

Open Science Policy Background
This includes five lines for policy actions such as encouraging and creating incentives for Open Science, developing research infrastructure as well as removing barriers.

  ➢ The goal is **implementation at EU level and national levels.**

  ➢ **FAIR** (Findable, Accessible, Interoperable, Reusable) data sharing is the default for funding scientific research.

October 2nd, 2017

SGHRM Policy Background
The key issues here are rewards and skills.
Rewards: modernising scientific career assessment based on recognition, rewards, and incentives guaranteeing fair and equal career development.
Skills: tailoring Open Science education and training to all career stages.
SGHRM is responsible for promoting and encouraging best practices across all Open Science issues.

"For Open Science to become reality, researchers need appropriate discipline-dependent skills training and development at all stages of their research careers."

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Skills in the follwoing areas are deemed crucial to Open Science:
- open access publishing
- research data such as data management, dissemination and a change of paradigm from "protected data by default" to *"*open data by default"
- acting in and beyond the researchers´ community
- legal and ethical aspects of professional research and integrity
- Citizen Science – researchers interact with the general public to enhance the impact of science.

BUT: WHAT DO RESEARCHERS THINK ABOUT OPEN SCIENCE?
➢ Results of the survey (March-May 2017) by the Working Group on Education and Skills under Open Science:
A majority of the 1.277 researchers surveyed, who at various career levels, are unaware of the concept of Open Science. 3 out of 4 researchers indicate that they have not yet participated in an Open Access or Open Data course but would like to. They also say that there is insufficient data archiving support at the instutional level.

So: What does the SGHRM recommend?
It is of utmost importance to **raise awarness of Open Science practices**, particularly Open Access, Open Data, Open Education, Open Peer Review and Citizen Science. Researchers should also be made aware of Open Science policy initiatives such as OpenAire, the FOSTER project etc. Furthermore, researchers should receive **tailored training on all skills necessary** for Open Science.

➢ On an institutional level, the **technical infrastructure** for Open Science should be provided as well as professional support staff such as **data stewards, IT technicians**, and **legal experts**. Moreover, a **data management plan** should be implemented and promoted. Universities and research institutions should also ensure that a **legal framework** is in place for secure, legal and ethical data sharing.

Cecilia Cal
FE

➢ The practice of Open Science should be **an integral part of professional training**, career development and part of **grant evaluation criteria**. Institutions should recognise and reward Open Science training.

To support the researchers in their Open Science activities, the SGHRM strongly recommends **financial incentives**, rewards and recognition, such as **acclaims for achievement.** Furthermore, the current researchers´ career evaluation system which relies

mostly on number and quality of publications and NOT on reproducibility, **needs to be transformed.**

➢ Universities and research centers are required to **change their approach** to career assessment for recruitment and promotion, funding agencies are required to **reform methods for awarding grants**, and senior researchers should reform the assessment.

➢ This could be implemented by using the instrument **Open Science-Career Assessment Matrix (OS-CAM)**. It takes into account what is expected from a researcher and what is relevant for the post, grant or career development such as research impact, teaching, service and leadership.

➢ At European level, the **HRS4R should integrate Open Science assessment criteria** for recruitment, career progression and grant evaluation.

➢ Open Science should become a **cross-cutting theme in Horizon 2020** and in the next Framework Pogramme for Research and Innovation (**FP9).**

➢ At national, regional and institutional level, **best efforts** should be made to integrate the recognitions and rewards for researchers who are pioneering Open Science into existing and future funding structures.

2. How to change research evaluation? The Swiss Open Access Action Plan

"Open Access is a winning strategy in terms of impact and visibility of research, but we need to communicate and take into account the questions and fears of the researchers."

Prof. Dr. Yves Flückiger is president of the swissuniversities Delegation for International Relations and Rector of the University of Geneva. He promotes an approach towards Open Science via the **Swiss National Strategy on Open Access**. It is the joint strategy by swissuniversities and the Swiss National Science Foundation from January 31, 2017.

Its **guiding principles** are:
- powerful and unified approach
- support and commitment from research communities
- cost transparency and cost neutrality
- secured control and diversity of the scientific process
- revision of quality assessment system

The vision for 2024 is that the complete scholarly activity in Switzerland should be Open Access and scholarly publications funded by public money must be freely accessible on the internet. There will be a mix of Open Access models.

Open Access will be implemented through increasing the Open Access rate. This requires adequate policies of swissuniversities and higher education institutions and governance such as establishing an Open Access Council. Cross-cutting measures will have to be taken such as national monitoring, and participation in international initiatives.

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The timetable foresees short term 2018, medium term 2018-2020 and long term 2021-2024. In addition, the Swiss Open Access Action Plan includes a cost calculation and consultation in higher education institutions from 30 August to 27 September, 2017. It also includes negotations with publishers.

BUT: HOW DO RESEARCHERS AND SCIENTISTS BENEFIT FROM OPEN ACCESS/OPEN SCIENCE?

➢ Prof. Dr. Flückiger has the answer: Open Access articles receive 18% more citations than average, thus resulting in a higher visibility of the research results. Furthermore, research results are more readily available and researchers can more easily share information with one another. The overall benefit is a new good scientific practice which is recommended in the Horizon 2020 guideline on the rules on Open Access to scientific publications and Open Access to research data.

And yes, indeed: Open Access/Open Science is a challenge. To address it, an **appropriate framework for researcher**s is required, which offers **coherent higher education policy**, **cost transparency** and a **system for evaluating and promoting research**. This system is based on the content of the San Francisco Declaration on Research Assessment (DORA) and the Leiden Manifesto for Research Metrics.

There are further Swiss iniatives to support the researchers:
- Open Access rules of the Swiss National Science Foundation
- Programmes by the universities: "measuring research output in the humanities and social sciences" and "research performances in the humanities and social sciences"
- Initiatives by the higher education institutions

The **next step towards Open Science** is the **Mandate of the Swiss State Secretariat for Education, Research and Innovation (SERI)** to include Open Research Data into its strategy.

3. Open Access at ETH Zurich: Experiences and Challenges

"The majority of our staff rates the transformation of academic publishing from the subscription-based model to Open Access very positively."

Dr. Rafael Ball, Director of the ETH Library Zurich, presents examples of good practice. His agenda is threefold: **Establish Open Access at ETH Zurich**, conduct an **Open Access Survey** in 2017, and **develop a roadmap and further steps**. So far, the ETH Zurich has signed relevant Open Access initiatives and strategies, including the **Open Access Iniatiative of swissuniversities**.

Also, the ETH Zurich has already established **many Open Access services**: An Open Access research repository called Research Collection, article processing costs covered at BioMed Central, SpringerOpen, PLOS, Copernicus, MDPI, Frontiers and Wiley; a copyright advisory, consultancy on Open Access specifications by funding bodies; webinars, workshops, and information services.

Dr. Ball gives impressive figures to further illustrate the Open

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Access process at the ETH Zurich:

All doctoral theses are deposited in the ETH Research Collection. Approximately 70% are published immediately.

As per **Open Access policy at ETH Zurich from 2008**, all publications, doctoral theses and other research results should be published in **ETH E-Collection** as soon as possible. Furthermore, all researchers are encouraged to publish in a suitable Open Access journal, with ETH Zurich covering the fees.

Some results of the **Open Access online survey** (among the entire scientific staff at ETH Zurich):

> ➤ Not surprisingly, most scientists consider the **impact factor** most relevant. This is followed by the possibility to publish additional data and **no publication fees**. **Free access to their publications by third parties** is also extremely important.

The Roadmap and Further Steps
As a new Open Access policy emerges, the ETH´s policy will be discussed and finalised in 2018 along with the survey results across departments. The challenges here include cost control and time management during the tansition period, as well as the different publishing cultures across disciplines and countries.

At the lunchbreak, delegates are able to mingle and enjoy the delicious food.

After lunch, Anette Björnsson presents her talk:

4. Implementing Charter and Code via the Human Resources Strategy for Researchers (HRS4R)

"The HRS4R is a voluntary, flexible, step-wise procedure."

Anette Björnsson is Deputy Head of Unit of the DG RTD B.2 Open Science and ERA Policy at the European Commission. At today´s conference, she introduces **Charter & Code**, **HRS4R** and the **article 32** of the **Horizon 2020 Model Grant Agreement (MGA).** She outlines the benefits, success and impact. Anette Björnsson also gives **concrete examples** about **implementing the Charter & Code principles**, **preparing a HR strategy including the Open Transparent and Meritbased Recruitment (OTM-R)**, **complying with article 32 under Horizon 2020** and dealing with potential checks, reviews and process audits.

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The **European Research Area (ERA)** policy aims at **more effective national research system**s, **transnational cooperation and competition**, and an **open labour market** for researchers including **EURAXESS** with the Charter & Code and the HRS4R. **Gender equality**, **accumulative pensions**, knowledge sharing and international cooperation are also mandatory.

Anette Björnsson explains the Charter & Code in detail: It is a framework for the rights and obligations for researchers, employers and funders.

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The **European Charter for Researchers** includes:
- Recognition of the profession
- Career development
- Value of mobility

The **Code of Conduct for the Recruitment of Researchers** includes:
- Recruitment principles
- Selection criteria
- Postdoctoral appointments

The Charter & Code

There are 40 principles which can be grouped into 4 pillars:
- **Ethical and professional aspects**, such as research freedom and non-discrimination
- **Recruitment**, including transparency, judging merit
- **Working conditions and social security**, such as gender issues, stability of employment
- **Training**, including supervision, continuing development, access to training

BUT: WHY SHOULD INSTITUTIONS IMPLEMENT THESE PRINCIPLES?
➢ They will enhance the credibility and reputation of the institutions. In addition, they are a part of Horizon 2020 projects and contracts (article 32).

Specifications on article 32:
- In **all multi-beneficiary** Grant Agreements
- **Except**: Marie Sklodowska Curie Cofund
- Small & Medium Enterprises instrument
- ERA-Net Cofund
- Joint Public Procurement / Innovative solutions Cofund
- European Joint Programme Cofund
- Concerns Horizon 2020 Grant Agreements

Recruitment and working conditions:

32.1 Obligation to take measures to implement the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers such as working conditions, a transparent recruitment process, and career development.

32.2 Consequences of non-compliance such as failure to take measures to implement Charter & Code or not making vacancies/fellowships awards publicly available

will include: financial penalties, rejected cost claims, and lower maximum grant amount.

Anette Björnsson states that Article 32 is a "best effort obligation" meaning that the research institute or university must be proactive and take specific steps to adress conflicts between their policies and the principles of the Charter & Code.

> ➢ The bottom line is that **all Horizon 2020 beneficiaries should sign and implement the Charter & Code**.

AND HOW WILL THE CHARTER & CODE BE IMPLEMENTED?
> ➢ In the first 12-month phase the **gap analysis** and the draft **Action Plan** will be designed – templates are mandatory to the complete process. In the next phase, there must be a **detailed assessment of the institution**, the **status quo of the Charter & Code**, the **actions for implementing the Charter & Code**, and examples of **how the HRS4R Action Plan and Charter & Code are further embededded**. There will be an initial external assessment.

Outcome of the first assessment
When meeting the required criteria, the institution receives the HR Excellence Award in Research. (Otherwise, the award is put on hold until the next submission 12 months later).

And now: time for action! The Action Plan should be implemented by keeping to the proposed timeline and the preparition of self-assessment/internal review for the interim assessment undertaken by external experts.

Implementation phase
The Action Plan will be modified in the light of the interim assessment results (according to evidence of HRS4R being integrated into the institutions´policies). The revised version will then be implemented.

Renewal phase
The revised and implemented Action Plan should incorporate OTM-R policy. There will be a renewal external assessment during an on-site visit.

Institutions having mastered this challenging process enter a three year monitoring and assessment cycle where progress towards quality needs to be evidenced. Go for it!

5. Tips and tricks to make your HRS4R implementation a success

"The HRS4R is great - but you should always stay involved, do what you plan to do, stop regularly and analyse your process."

Dr. Isabelle Halleux is Research Office Director and HRS4R Manager at the University of Liège. Her presentation is "sweet" – she compares the process of the implementation of HRS4R to a chocolate recipe, an analogy to the common top product which connects Switzerland and Belgium:

Four key ingredients are required:

- **Cocoa powder** – the **president board** which endordes the Charter & Code, validates the Action Plan and supports the process

- **Cocoa** butter – the steering committee which leads the process and assessment, and sets priorities
- **Sugar** – the working group which prepares the Action Plan
- **Milk** – the researchers who know about their working conditions, give their opinion and approve the whole process

Once the ingredients of the HRS4R chocolate recipe are at hand, the process starts. It is essential to **endorse the Charter & Code**, **embed it in the institutions´ strategy, involve the researchers** and **inform the communities.**

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The next step is the **bottom-up and top-down approach.** The institutions should know the relevant **tools and templates**, and **include the input from the researchers and stakeholders.**

Then, **after the gap analysis (including the OTM-R list), the Action Plan** comes into play: Selecting priorities, defining responsibilities, defining milestone, filling in the template, describing the implementation process. And, always asking researchers for feedback!

Lastly: requesting **approval from the board**, **disseminating to the communities**, **publishing the template** on the institutions´s website and **applying** for the award.

And if your HRS4R (chocolate) recipe convinces the assessors at the European Commission – you will receive the HR Excellence in Research Award. Then, you definitely deserve some chocolate!

6. Experiences from a Swiss institution: Ambitious People Meet a Friendly Workspace – HRS4R as part of PSI´s HR Strategy

"The left and the right hand should work together and thus establish cooperative structures."

The Paul Scherrer Institute (PSI) is committed to the principles of HRS4R and is one of the six research institutions which received the **HR Excellence in Research Award. In 2016** PSI also received the **"Friendly Work Space" award** issued by Health Promotion Switzerland. All activities, establishing PSI as an employer of choice, are summarised under the slogan "Ambitious People Meet a Friendly Workspace".

Karsten Bugmann is Head of HR at PSI and explains in short how the principles of HRS4R were implemented: The starting point was an overall **gap analysis**. On the one hand, there are excellent conditions for researchers at all career levels at the PSI. On the other hand, the institution wanted to **improve its leadership and management**, had to **foster research integrity** and further develop **equal opportunities and diversity**. The **Action Plan** based on the analysis bundles all activities and initiatives. It was thus carried out by revising, among others, the HR, by setting up an employees' council, **implementing the principles of the Charter & Code in**

parallel to the Friendly Workspace process. The result: The HR Excellence in Research Award!

There were **many lessons along way** and the following points are crucial: r**aising awareness**, **involving top management**, **listening to the next generation**, **shining light on lesser known positive initiatives**, **sharing best practices**, **selling the topic** and – **k**eeping **i**t **s**hort and **s**imple – **kiss!**

7. Concluding Remarks

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Dr. Marie-Louise Gächter-Alge is Scientific Advisor for the **Swiss State Secretariat for Education, Research and Innovation (SERI)**. She concludes this highly informative and varied conference by underlining the importance of Open Science. The **Swiss National Strategy** on **Open Access** and its **actionplan** is the **first important step towards Open Science**. The next step is reflected in the **mandate to include Open Research Data into strategic considerations.** Dr. Gächter-Alge also encourages the Swiss higher education institutions to implement the Charter & Code via the HRS4R in order to comply with the exigences of the European Commission and to **be visible as excellent research institutions.**

Thank you very much for your patience reading this report – some reward for you!

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