HUPO Education committee report 2017-2018

1-3. Education Committee and members 2017
Name of committee chair
Garry Corthals
Names of committee members; including new members and members that rotated off this year
Ruth Birner-Gruenberger (A), Charles Pineau (FR), Jeltje van Esch (NL), Monalisa Goswami (NL), Alina Astefanei (NL), David Muddiman (USA), Cathy Costello (USA), Sanjeeva Srivastava (IND)
External parties
Companies - JAM visual thinking (link)
Project GAPARS - H2020 Eu funded

4. Committee objectives
Last year we presented our ambitions to create The Story of Proteomics website (now The Story of Proteins). We have continued to work on this. Additionally, we work on the Pre-conference education day.

1. "The Story of Proteomics" Program
Prepare educational material about proteins and proteomics for our communities.
This involves reaching out to research institutes, hospitals, educational institutes & schools, governments, industry, and the general public. Establish this in many languages following the "20|20 proteome program" (20countries/20languages)

2. Pre-conference education day
Hold the Core Facilities Workshop as part of the education day at the HUPO meeting. which had a low number of attendees, however it was a great success in terms of discussions and knowledge transfer. We will hold this same course again in 2018.

5. Summary of recent accomplishments, current activities, tasks

The Story of Proteins
See Strategy and Report on Social science and education aspects of the strategy towards developing the The Story of Proteins (page 2).

2017 HUPO conference, Dublin
Last year we held a Core Facilities Workshop as part of the education day which had a low number of attendees, however it was a great success in terms of discussions and knowledge transfer. We will hold this same course again in 2018.

Organiser: Garry Corthals, Irena Dapic & Alina Astefanei (University of Amsterdam, The Netherlands), Christoph Borchers (Canada)
*Programme speakers**: Garry Corthals (The Netherlands), Gyorgy Marko-Varga (Sweden), Sanjeeva Srivastava (India), Andre LeBlanc (Canada), Felix Elortza (Spain) * *order in program*

This years' conference focused on Core Facilities and their role in servicing their communities. Topics discussed started with the importance of continued evolution of core facilities. Furthermore topics covered
- How to establish and maintain infrastructures, sustainability models, funding of a facility and the pricing of services. Setting national and regional budgets.
- Working in the facility: Personnel and their careers within facilities, PhDs within facilities, Guest researchers

- Developing and maintaining SOPs, developing protocols with collaborators, QC, LIMS and project management systems.
- Payments, contracts, agreements and Tracking core-contributed publications,
- Review of models used in various countries
- Discussions and overview of types of facilities and links with other facilities and examples were given from successful research environments in Canada, Spain, India, Finland and Sweden.

6. List of activities in progress, milestones, upcoming events

Activities in progress
- Orlando: Meeting of the education committee and other interested scientists and parties who can help with developing the EdCom program.
- Workshop Core Facilities at HUPO conference

Milestones
- 2018 - First draft *The Story of Proteomics*. Developed with JAM Visual. The objective is for this to be available for hosting and download on webservers (HUPO, regional and national societies, research groups, etc.)

7. Future goals, vision of committee
- Focus on the The Story of Proteomics.
- Continue Core Facilities workshop and develop global network of Facilities (e.g. LinkedIn group)

8. Financial impacts and/or requests (€5000)

For *The Story of Proteomics* it has been established that the budget for the website will exceed €60k. Thus we are now in pursuit of this financial goal. The first round of funding (€10k + €5k) has been raised (by Corthals) which allows us to develop phase 1 of the project with JAM visual. Phase 2 & 3 require additional funds (~€50k). In our overall strategy, it will be important to detail that this project has the backing of HUPO, thus a small financial commitment of €5k will be required from HUPO; this gives the program credit as it sends a message to funding partners that HUPO is serious about this project. Note only a relatively small amount of funds (several €1000's) will be required from any one organisation/company, as the ultimate success of this project relies on a community that can promote and support the *Story.*

9. Recommendations to the HUPO Council and Executive Committee

Strategy and Report on Social science and education aspects of the strategy towards developing the *The Story of Proteins*

Introduction

During the course of the last year we have investigated several formats and aspects of getting our story across the wider global community, and importantly taking into account issues and challenges one might endure in terms of privacy, gender, and ethics. While we have not yet finalised on the 'final product', we have gained widespread acceptance from our important international organisations, and we have a clear plan of action as to what will be done for the rest of the project. In September 2017 the HUPO council held its annual meeting where the project was presented and explained. The project was supported by all countries in the HUPO Council. In October 2017 the project was also proposed to the European Proteomics Association to be launched as a special EuPA New Initiative. Again full support was offered.

The goal of the project is to develop an online education experience that will teach about proteomics in relation to human health and disease. It is important that the project is linked to the HUPO organisation and its world-wide community and outreach. Furthermore it needs to be online and accessible, and to widen its appeal it should be extensible for gamified components (ref to the Eu funded GAPARS project).

Other goals for the project are to reach out to a global community with world-wide targets set at twenty different languages and twenty different countries. This section of the project now has a slogan termed **20|20 Proteomics**. Furthermore the information will be open (free) access, via the internet, and aimed at large-scale participation. Overall this spans an extremely wide target group.

Teaching globally: Our strategy is to visualise The Story of Proteins (/Proteomics)
The information on the website will be open to explore following personal interests, and not be structured as course material. Thus, we have chosen to develop a website interface, where knowledge transfer will be initially through a visual process – telling "The story of proteins". The visual process and results makes it easy to have a simplified and efficient communication with stakeholders.
A visual story can be used as a poster or a static image, but since there is a world-wide community there was also a need for a stand-alone online story (to accompany the image). We have chosen to work with a multi-layered online interactive presentation, where one can zoom in from the overview on the **main focus points** of the story. Per focus point we explain the story in more depth, which makes it easy to share it with our different target audiences.

Grouping information for target audiences
Engaging the community with a new and (for now) scientific topic required a special approach, as the level of information was challenging to comprehend and connect to existing information. We have opted for an approach where different levels of information can be explored.
The information on the website will be tiered at three levels.
1st Level – focus point 1. The main visual component
- General information and overview of topic and concepts; targeted at non-scientists/lay people and school children (in Eu) at about 13 yrs, and links to next level and further information

2nd Level – focus point 2. Exploring the proteome and its complexities
- Further description of all topics and links to more specific information

3rd Level – focus point 3. Long reads, info for schools, how to get involved and gaming aspects
- In depth information on key topics. Further information on how to get involved and **locally** and **internationally**. Additional links to gamification components.

The process consisting of different levels can be also be produced in various levels (in various countries); from a simple version with no extra features to a very advanced level where we can add an introduction animation to the focus points, or produce an animated sections.

Strategy for building the visual story
The strategy for building the visual story consists of four parts: 1) Analysis, 2) Visual Concept, 3) Story Design; and 4) Validation

During the scoping we laid the basis for the analysis, visual concept and story design. The process is a chain of co-creation workshops with the website builders. In these workshops we build our visual language and holistic visualizations, which we then apply during sustainable communication. This process is divided into 3 workshops.

1. *Analysis* – Based on the results and outcome of the scoping (completed) session we had, we have prepared a first workshop, where we will sketch up all the relevant information on a shared canvas. First, we harvest all the information and building blocks of the story. Invited participants

(G Corthals, R Aebersold, G Marko-Varga, P Robinson, R Birner-Gruenberger) have the space to add their input. A collective overview emerges, with shared concepts and a collective focus. After the workshop we will continue working on the first results in our studio and bring the first sketches to a next level.
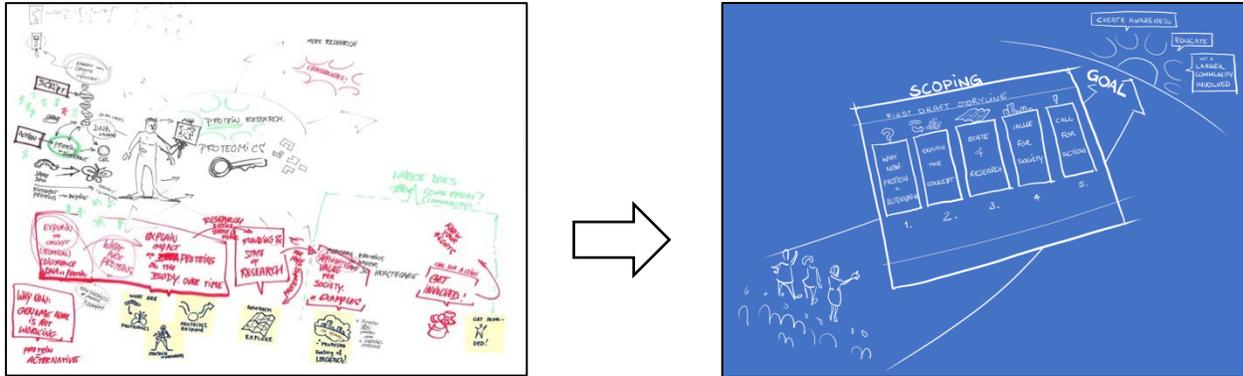
During scoping of the project details of the eventual website development and goals were set: create awareness; educate; and get a larger community involved.

2. *Visual Concept* – During this workshop proteomics information is integrated to form a coherent overview. Because we're building a visualization, a shared understanding emerges amongst the developers while building a shared visual language.

3. *Story Design* – With designers we complete a coherent visual story. Narrative, explanation and presentation are joined to meet the needs and the context of the target group to create a relatable and transferrable story. By following the process above it will be possible to plan a **validation session** to get feedback from a broader group (experts and stakeholders).

Additional steps
-   During the development of the visual website we will investigate biases (possible biases include intrinsic / cultural, access, language, etc) that may hinder participation of certain people by reaching out to our broader community through HUPO and EuPA.
-   Privacy: compliance with new EU regulation on data. Together with our colleagues at the UniGE (C. Mumenthaler)we have a description/norms on how to deal with store participant data, we will investigate what the appropriate approaches are considering the principles of the new EU law and relevance for the website.
-   Ethical: proposition: we will investigate and if possible use the website to test a response to "fake news, alternative facts": the presented facts can be traced to source(s), visualize the complexity of the sources enabling a scientific statement to be accepted by the community ("tree" of sources)