

COST Action CA16212

Action Title: Impact of Nuclear Domains On Gene Expression and Plant Traits

Management Committee Meeting

Webinar via Zoom organized by Zürich, Switzerland (C. Baroux), Zürich, Switzerland

May 26, 2020 09:00

1. Welcome to participants (Christophe Tatout)

- Christophe Tatout (Chair) welcomed everyone and opened the MC meeting.

2. Verification of the presence of two-thirds of the Participating COST Countries or, if applicable, a quorum

- **15 Attending countries** (country/number of MC and substitutes): Belgium/1, Bulgaria/1, Czech Republic/2, Denmark/1, France/2, Germany/2, Ireland/2, Israel/1, Italy/1, Netherlands/1, Norway/1, Poland/1, Portugal/1, Serbia/1, Spain/1, Sweden/1, Switzerland/2, Turkey/1, UK/2
- **Observers:** none
- **MC members from 4 countries** could not make it: Hungary, Bosnia, Cyprus, Greece

3. Adoption of agenda

The Agenda sent by email to MC members and substitutes on May 16th 2020 was approved.

4. Approval of minutes and matters arising of last meeting

The minutes of the last MC meeting (MC4) sent by email to MC members and substitutes on May 25th 2020 was approved.

5. Update from the Action Chair

a) Status of Action: start and end dates of Action, participating COST countries, participating NNC/IPC institutions and Specific Organisations.

- The Chair reminded members of the Action start and finish dates: **28/11/2017 to 27/11/2021**
- no changes concerning the INDEPTH **Grant manager**, Franziska Fischer. She is the person to contact for questions and will respond to the general email address indepth@uca.fr (mail can also be seen by Aline Probst and Christophe Tatout).
- Participating COST countries: 26 full member countries, + 4 NNC (Armenia, Russia, Tunisia, Ukraine) + 2 IPC (USA, Japan).
- Since the beginning of the Action we had 4 different administrative officers: Tania Gonzalez-Ovin (12/2017- 04/2019), Nathalie Warengien (04/2019-09/2019) and Sarah NINANE (09/2019-03/2020) and now again Tania Gonzalez-Ovin (03/2020-)
- And also 3 different science officers: Ionna Stavridou (12/2017-09/2019), Michael Pero (09/2019-11/2019) and now Dominique Vandekerchove (11/2019-).
- Some changes concerning the WG members were announced: Ana Paula Santos (Portugal) is now WG1 leader and Martina Dvorackova (Czech Republic) replaces Stefanie Rosa during her maternity leave for WG2.

b) Short Term Scientific Missions (STSM): ongoing STSMs and agenda for reports,

- 20 STSMs were funded, 7 Male / 13 Female; 14 PhD / 6 others; 8 NNC-ITC / 12 others.

6. Update from the Grant Holder: Action budget status (Chair)

Budget:

- year 1: ~ 73 000€
- year 2: ~125 000€ (118 000 spent, under spending: 7 K Euros)
- year 3: ~119 000€, ~ 26k Euros remained unspent due to the Covid19 pandemic. Some activities had been postponed or cancelled and also Clermont University was closed causing problems with processing of bills.
- year 4 (04 / 2020 - 03 / 2021) ~ ~109 000€

Expenses planned in year 4:

- Workshop with PlantED-CA18111: 10 100 €
- MC meeting 6 (Tuesday 26th of January, in Vienna (GMI)): 18 186€
- Training School in PPI 15 800€
- Imaris based 3D Image Processing 15 200€
- 9 STSMs 18 900€
- 1 ITC Conference Grant 2 500€
- Open Access Publications 5 000€
- Web site implementation and maintenance 1 500€
- INDEPTH standardized protocols 5 500€
- Video of INDEPTH activities 2 000€
- Videoconferencing system 500€
- FSAC ~ 15% 14 278 €

7. Update from the COST Association

Our new Administrative officer is again Tania Gonzalez-Ovin and new Science officer is Dominique Vandekerchove.

8. Monitoring of the Action

The Chairs asked the members to be dynamic and to propose ideas for the Action, we are all very busy, but we should be motivated to contribute! Members are particularly encouraged to think about collaborations and to set up STSMs.

Please do not apply at the last minute, e.g. in April (at the end of the grant period).

For the budget of the 3rd grant period: due to the COVID19 pandemic and the associated restrictions in traveling and the closure of the local university we underspend ~26 k Euros. The following events were cancelled due to COVID19:

- Interaction INC - COST Action (CA18127): The main meeting in Krakaw (10-11 March 2020) was canceled.
- Dimitar could not attend the Neubias conference 4-5 Mars 2020 in Bordeaux, which was canceled.
- 2 more STSMs: ~5 000€; 1 canceled due to COVID19

- The payment of open access fees with Springer for publication of protocols from INDEPTH members (~10 000€) and license for Nature Plants was canceled due to COVID19 and the fact that no more invoices could be processed by UCA by 16/03/2020.
- The MC5 meeting at GMI planned for May 26th 2020 in Vienna was cancelled and replaced by a visio-conference.
- The special session on nuclear dynamics organized by Katja Graumann and David Evans during the SEB2020 conference in Prague (Czech Republic) 7-10 July 2020 was cancelled.
- A workshop about Phenotyping: to be organized by David Evans and Christophe Tatout in the frame of SEB2020 with "Ulrich Schurr u.schurr@fz-juelich.de (contact from Dionysia Fasula); together with Klára Panzarová (contact from Martina Dvorakova), panzarova@psi.cz ; local company in Czech Republic panzarova@psi.cz PSI (Photon Systems Instruments). was canceled.
- At Workshop with industry organized by Dragana Miladinovic, at the International Sunflower conference in Novi Sad, Serbia (22-25 June 2020) was cancelled.
- The two next training schools are postponed due to COVID19 to the end of 2020.
- So far no more STSMs have been planned.

Collective efforts from different Action Chairs are ongoing to change certain COST rules with the aim to allow certain online events and to facilitate

On the positive side:

- 1 Motion picture was created that explains the role of chromatin domains in regulating gene expression in response to stress.
- 13 reviews and research publications +1 editorial commentary have been published in the special issue of the Journal of Experimental Botany (<https://academic.oup.com/jxb/issue/71/17>).

Next main meeting and MC meeting

The **next MC meeting (MC6)** will take place on Tuesday 26th of January 2020, in Vienna (GMI).

The place and time of the **next main meeting** has not been decided due to current travel uncertainties linked to the CoVID19 pandemics. Ideas to join vs separate the main meeting from upcoming conferences were discussed.

Upcoming future events:

- EWPC in Prague in **May 2021** (organizer: Iva Mozgova)
- ICAR Meeting Belfast **June 2021** (Organizer: Geraint Parry), there might be a plenary session on Chromatin domains.

- **Training school on Imaris-based 3D Image Processing and Analysis of the 3D nucleus:** organized by C. Baroux, **December 7-11** 2020, University of Zürich, Switzerland

- **Training school on PPI studies:** organized by M. Koblowska and R. Archacki, February 2021, University of Warsaw, Poland

Feedback from the Progress report 2 of the COST Action:

1. Objectives & Deliverables: ranking is “medium” with 2 major weaknesses: protocols and PPI

MoU objective 2: Generate standardized protocols in 3D imaging of the nucleus (WG1), nuclear proteomics (WG2), chromatin domains (WG2), phenotyping during development & under stress conditions (WG3);

Reviewer comment “*Though there are only 7 protocols published in the actions website. One would expect **more and quite detailed protocols such as the ones published from CSHL or Nature Methods** comparing methodologies and describing pitfalls and benefits for certain approaches. The protocols provided are not in a unified form, coming from different publications and labs and there is no sign of standardisation as described in the MoU*”.

Proposed Action plan: INDEPTH Academy (Action led by Geraint Parry, see below)

MoU objective 4: Perform analyses using the collected datasets to predict the nuclear protein interactome (PPI) (WG4);

Reviewer comment “*A point that needs immediate attention, since it raises a high risk in the implementation of the action, is the initiation of nuclear proteomics research approaches*”.

Proposed Action plan:

- Organization of a training school / work in Poland (Organizers: Marta Koblowska and Rafal Archaki) is in progress (potential dates: February 2021), Identify a Protein Protein Interaction (PPI) leader,
- Collect published PPI datasets and Integrate these into a database. Aim: Make datasets of the community available
- Promote PPI approaches within INDEPTH through targeted STSMs.

2. Achievements: ranking is *excellent*, Task for WG leaders: encourage people to do more STSMs (asked by reviewer) and to encourage people to diversify laboratories as STSM host laboratories.

3. Impact is “*excellent*”

4. Website was well appreciated by the reviewer

5. Dissemination is *excellent*

6. Facing difficulty: good choice to solve problems

7. Identification of emerging topics: well identified

9. Implementation of COST policies on:

a) Promotion of gender balance and Early Career Investigators (ECI)

The overall gender equality is very good: close to 50/50. We need to try to do our best in keeping the balance, although science should be the important part. For instance, it is not easy when deciding on the STSMs.

b) Inclusiveness and Excellence (see below list of Inclusiveness Target Countries)

1 new country will join the Action: Moldova (ITC). The electronic vote was used to gain the agreement from each country member: **25/25 agreed that Moldova should join the Action.**

Summary of member countries

- At the starting point of INDEPTH (Dec 2017): **19 countries** including **4 ITC**, 2 NNC and 2IPC
- To date (December 2019): **32 countries** including **11 ITC**, 4 NNC and 2IPC

WG1 and WG2 leaders are ECIs from ITC (see below)

c) Early Career Investigators (ECIs)

We encourage ECIs through STSMs, TS and meetings, we also tried to provide leading position to young researchers (i.e. WG leadership).

- Ana Paula Santos (ITC, Portugal) was leading WG1 during the maternity leave of Katja Graumann (United Kingdom). We still need to have Ana Paula becoming a MC substitute in order to make the official change at the eCOST web site. Spanish CNC has been contacted and all administrative requests have been performed by Ana Paula.
- Martina Dvorackova (ITC, Czech Republic) leads WG2 during the maternity leave of Stefanie Rosa (Sweden).

10. Follow-up of MoU objectives: progress report of working groups (Chair & WG leaders)

Specific points: *Indepth Academy* (<https://www.brookes.ac.uk/indepth/indepth-academy/>) will be led by Geraint Parry. Work is ongoing with the planning of the INDEPTH Academy, which will promote the science and scientific techniques that are used by INDEPTH members.

INDEPTH Academy pursues 2 major aims:

a) Establish a Repository of protocols relevant for INDEPTH members.

It is an opportunity for you to publish scientific protocols with an official DOI provided by the RADAR repository at Oxford Brookes University. As INDEPTH member, please consider the protocols that you would like to promote through the INDEPTH Academy.

b) Develop audio-visual resources for Research and Teaching.

We expect to establish videos of key INDEPTH concepts; record Webinars on practical advice for use of key technologies and potentially record short talks e.g. at Nuclear Dynamics Session, SEB Antwerp 2021. The INDEPTH Academy YouTube channel currently includes the videos that INDEPTH members have generated. Please check them out here:

<https://www.youtube.com/channel/UCAo7A0AC9wbLeh3JObafL6w?>

11. Scientific planning (Chair, Vice-Chair & Core Group members)

a) Scientific strategy (MoU objectives, GP Goals, WG tasks and deliverables)

The goals of the third Grant Period were partially achieved and have significantly improved to reach the INDEPTH objectives. We had 5 goals (GAPG).

GAPG 1: Publish a guideline for dataset submission to INDEPTH repository (define the minimal set of parameters to be used) as well as a list of tools to be used by the applicants of the Action (to provide standardized datasets).

- **Partially achieved:** WG1 with OMERO team has been organized in Lisbon (Sept 2019), a repository is available at FSU (USA) and connected with two other facilities at UCA (France) and Cyl (Cyprus). First datasets are available. A guideline has been written by H. Bass (FSU) but should be disseminated by WG1 leaders. A you tube video of H. Bass introducing the INDEPTH OMERO Image Repository is also available on the Indepth Academy Youtube channel (<https://www.youtube.com/watch?v=t0JvvbRmHcs>). Needs to define the minimal set of parameters to be provided by image providers (i.e; a set of tag, a set of key pair-values...etc)..

GAPG 2: Collect datasets from WG1, 2 and 3 and make them available through Open source repositories and/or INDEPTH Website.

- **Partially achieved:** Achieved for WG1 (3D images of Nucleus) not for WG2 and WG3 because datasets are already in some databases such as GEO.

GAPG 3: Define a future reference standard in the field of “Plant Nuclear Organization” i.e. define a consensual concept of nuclear domains and methods.

- **Achieved:** a WG2 review has been published in the *Journal of Experimental Botany (JExpBot)*

GAPG 4: Define a future reference standard in the field of “chromatin dynamics during plant response to stress” i.e. define a conceptual framework about definitions, analyses and challenges; planned deliverables.

- **Achieved:** a WG2 review has been published in the *Journal of Experimental Botany (JExpBot)*

GAPG 5: Create a discussion platform between INDEPTH members and industrial representatives to promote collaborative opportunities and foster strategies for translational research on crop species;

- **Achieved** a WG3 workshop with industry has been organized by Dragana Miladinovic, Serena Varotton and Monica Pradillo during the main meeting at El-Escorial. Industrial partners: KWS SAAT SE & Co. KGaA (Germany), Sequentia Biotech (Spain) and BIOVEGEN (Spain). A review article on

c) Long-term planning (including anticipated locations and dates of future activities)

The following events were discussed but the uncertainties due to the CoVID19 pandemics did not allow to set place and dates

- 1 main meeting (Portugal, Cyprus?) or 1 MC meeting in Brussels
- 2-4 workshops: PPI, interaction with industry, ERASMUS+, 3D bioimaging
- Training schools: Omics analysis (Organiser: ?), Hi-C analysis (organizer: Hans Nützmänn, UK) ?

- 2 Dissemination meetings: INC COST-Action, EUCARPIA or Plant and Animal Genome

d) Dissemination planning (Publications and outreach activities)

- ITC conference Grants should be more promoted (no request so far)
- 10 STSM Dissemination
- open Access fees

12. Requests to join the Action from:

a) COST countries

none

b) Institutions in Near Neighbouring Countries, International Partner Countries, and/or Specific Organisations: EU agencies, European RTD Organisation, International Organisations

none

13. Any Other Business

WG leaders have the possibility to turnover the leadership and promote new leaders from ITC and ECIs. For instance, new WG leader for WG1 from an ITC.

14. Location and date of next meeting

The next MC meeting (MC6) will take place on Tuesday 26th of January, in Vienna (GMI), or online if travel restrictions are restored.

15. Summary of MC decisions (to do list)

- Enable the realization of image processing and PPI training school online or onsite
- Promote STSM as soon as travel restrictions are alleviated
- Promote dissemination of methods and concept through INDEPTH Academy
- Promote the population of the INDEPTH image repository
- Organize the next main meeting and MC meeting
- Define a strategy to spend the budget in case of travel restrictions preventing STSM, training schools and conferences

16. Closing

The Chair thanks all the MC members for their attendance and active participation.