

**COST Action CA16212**  
**Action Title: Impact of Nuclear Domains On Gene Expression and Plant Traits**

**Management Committee Meeting**  
**Prague, Czech Republic**  
**Monday 25th February 2019**

To be completed by the meeting secretary and circulated to the MC and the COST Association (Science and Administrative Officer)

**1. Welcome to participants (Célia Baroux, Aline Probst & Christophe Tatout)**

Christophe Tatout (Chair) welcomed everyone and opened the MC giving some general details about INDEPTH, highlighting that is not a research project, but to promote networking.

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

Everyone introduced themselves to the others (name, country, research topic).

- **18 countries** were present of 24 total countries; Switzerland, Norway and Bulgaria were expected but finally did not attend the MC3.
- **Attending countries/number of MC and substitutes:** Belgium/1, Bosnia Herzegovnia/2, Cyprus/1; Czech Republic/2, France/4, Germany/1, Greece/2, Ireland/2, Israel/1, Italy/1, Netherlands/1, Poland/2, Portugal/2, Serbia/3, Spain/2, Sweden/2, Turkey/1, UK/2
- **Observers:** USA/1, Russia/1 and Tunisia/1,

**3. Adoption of agenda**

The Agenda sent by email to everyone on 12th Feb was approved

**4. Approval of minutes and matters arising of last meeting**

The minutes of the last meeting were approved (also sent on 12th Feb)

**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**
- INDEPTH has a **new Grant manager** from Feb 1<sup>st</sup> 2019, Franziska Fischer. She is the person to contact for questions and will respond to the general email address [indepth@uca.fr](mailto:indepth@uca.fr) (mail can also be seeing by Aline Probst and Christophe Tatout).
- 3 more countries have joined during the second grant period (3 Inclusiveness Target Countries -ITCs- Bulgaria, Cyprus and Slovakia).
- So far INDEPTH also includes 3 NNC: Armenia, Russia, Tunisia and 2 IPC: Japan, USA.
- Katja Graumann is on maternity leave; Ana Paula Santos from Portugal will take the lead of WG1. MC members agreed this.

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

**14 STSM applications**, 3 are still waiting to start; interview of STSM grantees will take place on Tuesday 26<sup>th</sup> as part of the meeting. Budget for STSM around €2K/application (total: 32k€), most applications were from females (9/11), mostly PhD students (7/11); a few were from PIs (4/11). There were 3 applications from ITCs and 2 from NNCs.

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

Period 1 budget was: 72,910€.

Period 2: 125,232.65€ including €5K extra from the COST-Association for more STSM.

**Meetings** 73K€,

**Prague main meeting**, the current one, was the largest to date as many members of our Action are coming. The Chair welcomed feedback and suggestions from the members. He commented on the expenses of this meeting (trips to Prague were cheap, hotel was cheap, but we are paying a bit more for conference space compared to last meeting in Clermont).

INDEPTH had organized **2 workshops**:

- WG1 in Florence (actions on a repository of images was agreed at that meeting).
- WG4 in Zurich (Hi-C analysis, students were trained to use Galaxy at Zurich University).

**Training schools** The Action had spent 11,510€, on the Training School held in Clermont-Ferrand on 3D-FISH and 3D-image analysis, **13 students** from 10 countries had attended and it had been very successful. **7 trainers** (Paul Frasz, Hank Bass, Stefanie Rosa, Christophe Chamot, Sophie Desset, Lise Bertrand) were very pleased with the group of students and teachers, great opportunity for everyone confirmed by Paul Frasz and Stefanie Rosa. All experiments worked!

The budget for the meeting was: 10,610€ from COST, €8K by CAP-2025 (a local project) and 1,600€ from Clermont Auvergne university. Total budget around €20K.

**STSM** budget 15K€, STSMs can be applied for at any time, 11 applications for Grant Period 2 (GP2); 3 are expected to occur before end of April 2019.

In summary:

- Deadline for application First call (GP1): January the 26th, 2018 : 2 applications
- Deadline for application Second call (GP1): 31 March 2018: 2 applications
- Deadline for application Third call: 31 May 2018 (GP2): 8 applications
- Deadline for application Fourth call: 31 January 2019 (GP2): 3 applications

STSM has been very successful, but it was commented that perhaps they are a bit too short, that it was difficult to set up everything once back in original lab, but communication with the host lab was easy and helped to get the methods established.

Lazslo (STSM coordinator) could not join the meeting due to a research review of his institute but he had provided detailed information for the committee. It was agreed it would be good to discuss the possibility of more STSMs with him as some funds remain in period 2.

**ITC conference** grant 2,720€: none for the current period. One is requested from Rita Abranches (Portugal) for June 2019 (next grant period)

**COST dissemination**, 6,200€,

- Turku ICAR2019. Geraint Parry (UK) gave details. Attendance had been very successful; he introduced INDEPTH to around 50 people in a small session.
- Luxembourg (**NEUBIAS COST-Action CA15124**, is another COST Action specific for image analysis (as INDEPTH WG1). Discussion has been started with them by the Chair to share expertise (NEUBIAS has more expertise in this area)

**Dissemination**: 2 publications funded (Nature Communications), opportunity still for more.

- Group of Tamar Krugman and Tzion Fahima (Israël): **Cloning of the wheat Yr15 resistance gene sheds light on the plant tandem kinase-pseudokinase family**. (2018) Nat Commun. doi: 10.1038/s41467-018-06138-9
- Group of Kristen Krause (Norway): **Footprints of parasitism in the genome of the parasitic flowering plant *Cuscuta campestris*** Nat Commun. doi: 10.1038/s41467-018-04344-z

## **7. Update from the COST Association**

Tania Gonzalez (Administrative officer from the COST-Association) shared a few ideas about the budget:

- INDEPTH is underspending: we are spending less than was planned, so once the money for this Prague meeting is paid and we know the money left we should think about other activity that can be suggested to use that money.
- INDEPTH needs to spend this money before the end of March- the end of this grant period. she is suggesting to shorten the period for claiming the money back for the Prague meeting, to know the amount left more quickly.
- INDEPTH webpage should be more dynamic and possible activities should be more clearly shown there. From her opinion, the website is not very clear, there is not clear calls for ITC attendance at conferences.
- Albania and Moldavia are new countries added to COST.

Comment about underspending were welcomed by the Chair: one possibility is to organise workshop meetings, suggestions are welcome.

Rita Abranches commented that dissemination activities with children were an option for rapid expenditure (The Fascination of Plants Day being the 18<sup>th</sup> of May was suggested by this is in the next grant period).

## **8. Monitoring of the Action**

The Chair asked to the members to be dynamic and to propose ideas for the Action, we are all very busy, but we should be motivated to contribute!

**WG leaders should do:** New collaborations coming from INDEPTH should be shared and collect as measurement of the Action, collection of protocols, review submissions from WG2 and WG3, expectations/ideas of what can be done, future actions for each WG.

Return of investment- WG leaders can expect: creation of a public repository, new publications, specific workshop for each WG, training for students (perhaps STSMS in specific areas), connection with other projects (e.g. NEUBIAS COST Action inter-COST discussion).

### **Goals of the current period:**

The Chair reminded the membership of definitions (objective, goals, tools, deliverables). Objectives & deliverables are listed in the MoU. The so-called Grant Agreement Period Goals (GAPG) are fixed in the Working Plan and Budget (WBP).

**Period 2:** The Chair listed the 9 GAPG and comments about their achievement;

<b>GAPG1</b>	Publish a guideline for dataset submission to <b>INDEPTH repository</b> (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 standardised datasets). <b>Collect datasets</b> from <b>WG1</b> , 2 and 3 and make them available through INDEPTH website.	Included into the <b>WG1 review</b> . <b>Should be made available through the Web Site</b> <b>More datasets should be available;</b> <b>Link to NEUBIAS</b>
<b>GAPG2</b>	For WG1, 2, 3 and 4, create an inventory organized as a <b>searchable resource on the INDEPTH Web site</b> describing: Methods (Hi-C, RE-ChIP, RNA-Seq...), Devices (Cytometers, Confocal...), Plant species (Arabidopsis, maize, wheat...).	<b>YES through the WebSite</b> <b>Enough?</b>
<b>GAPG3</b>	For WG1, 2, 3 and 4, create an inventory organized as a <b>searchable resource on the INDEPTH Web site</b> describing: Stresses conditions (heat, cold, osmotic...), Organs and Developmental stages (roots, seeds, meiosis...), Phenotyping tools (NIRS, LemnaTec platform...).	<b>YES through the WebSite</b> <b>Enough?</b>
<b>GAPG4</b>	Disseminate INDEPTH principles, impact and applications to the wider scientific community through <b>publications in target journals and contribution to international conferences</b>	<b>YES: see INDEPTH publication list</b>
<b>GAPG5</b>	Dissemination of knowledge and expertise in "plant microscopy" by publishing a <b>review publication about the next challenge in Plant microscopy</b>	<b>YES; Submitted to Nucleus (animal &amp; Plants)</b>
<b>GAPG6</b>	Dissemination of knowledge and expertise in " <b>Plant Nuclear Organization</b> " by publishing a <b>review publication</b>	<b>WG2 review not ready yet &gt; GAPG of WBP3</b>
<b>GAPG7</b>	Dissemination of knowledge and expertise in " <b>chromatin dynamics during plant response to stress</b> " by publishing a <b>review publication</b>	<b>WG3 review not ready yet &gt; GAPG of WBP3</b>
<b>GAPG8</b>	Sharing of technical knowhow, methods and tools in 3D-imaging (related to <b>TS in 3D-FISH and some of the STSM</b> )	<b>YES; success of the 3D-FISH training school &amp; image analysis (to be reproduced?); STSM in 3D-Imaging</b>
<b>GAPG9</b>	<b>Exchange of knowledge</b> about state of the art in 3D imaging, omics chromatin analyses, plant traits and integrative analysis (related to all WG meetings, dissemination meetings and some of the STSM)	<b>YES; STSM and Workshop on omics technologies</b>

## QUESTIONS from MC members:

### About STSM

- **Q:** how many STSM were not funded? Answer: 3, all of them were asked to resubmit. Some of them didn't have clear objectives following the MoU. MC members suggest to make STSM a bit longer. Currently: 5-90 days. Possibility for extension but only for students and ITC country (up to 180 days).
- **Q:** possibility for doing more than one STSM? Answer; second applications are allowed, but first ones will be favored.
- Problem commented: students have to pay by themselves and later claim back the money, difficulty for them to do it that way. Possibility: ERASMUS programme or local funding from the host/visiting institution. Very short time for new STSM applications until the end of March!
- **Q:** can participation to conference/meeting be counted as STSMs, to help students and also to help to solve the underspending issue? Answer from Tania: in principle yes. Later on David Evans commented that an STSM should be more than 5 days and that STSM should include at least few days in a partner laboratory. However, the "stay" requirement could make the realization of the idea difficult.

### About Publications

- **Q:** is there the possibility to fund publications? Answer: yes, but the final decision has to be discussed by core group members if it fits.
- **Q:** how did writing a review (like "next challenge in Plant microscopy" for WG1) work for each WG? Answer: it is a difficult task to achieve, but if you want to contribute discuss with the WG leaders how to do that.
- **Q:** Paul Fransz has published a review, could it be considered as the one for WG2? Answer: Stefanie Rosa discussed producing a broader review, but that Paul's review could be considered that covers part of our idea for our review.
- **Q:** can WG3 give feedback about how the review was finally organised? Answer: sorry that not everyone could be included in this first review, but Ales is considering a second review, but he is asking for someone else to lead that one. First one was very complicated to organise, many people wanted to contribute.
- **The Chair** comments about the possibility to contribute to other publications from INDEPTH (Special issues: Frontiers in Plant Science, Nucleus, JExpBot...). Christophe also suggests to define well the topic, most difficult part, and try not to overlap too much between publications.

## 9. Implementation of COST policies on:

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

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 the STSMs.

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

3 new ones: Bulgaria, Cyprus, Slovakia  
New WG1 leader from ITC

### c) Early Career Investigators (ECIs)

Through STSMs, TS, meeting (38% ECIs-PhD in the Prague meeting)

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

Below a table of the current Deliverables (D01 to D07), milestones, description and achievements

WG	DELIVERABLE N°	MONTH	MoU N°	Year/Month	expected dates	DESCRIPTION	REMARKS
WG5	D01	6	D5.1	y1m6	june 2018	Publication of an article describing the INDEPTH COST-Action	YES
WG5	D02	6	D5.2	y1m6	june 2018	Functional and Implemented Website with project description, protocols, news letter ...etc.	YES
WG1	D03	12	D1.1	y1m12	decembre 2018	A review publication about "next challenges in plant microscopy"	YES
WG2	D04	18	D2.1	y2m6	june 2019	A review publication about the state-of-the-art to study "plant nuclear organization"	ongoing
WG3	D05	18	D3.1	y2m6	june 2019	A review publication about "chromatin dynamics during plant response to stress"	ongoing
WG2	D06	24	D2.2	y2m12	décember 2019	Standardized protocols in "plant proteomics" available to the public and education programs	to be discussed
WG4	D07	24	D4.1	y2m12	décember 2019	Repository including INDEPTH 3D images and -omics data made publicly available	OMERO at FSU? Omics?

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

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

WG5 deliverables have been achieved, the same for WG1, WG2 and 3 deliverable (reviews) ongoing, WG2 D06 (protocols in plant proteomics) to be discussed by the end of 2019, WG4 D07 (repository of 3D images) to be discussed soon because deadline is at the end of 2019.

### b) Action Budget Planning: proposed WBP n°3

Budget of €120K starting this 1<sup>st</sup> May 2019 and ending 30<sup>th</sup> April 2020.

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

#### Meeting:

- **Main meeting** in Madrid, co-hosted by SEB, for early Dec 2019. Geraint Parry (Science communication manager) and Monica Pradillo (local organizer) give general information about this exciting meeting, the budget for the meeting is €30-40K, the MC will take place on this meeting (it will be better to have only one person representing each country to reduce costs).
- **2 proposed workshops:**
  - one for WG1 in discussion with NEUBIAS COST (before Nov 2019),
  - one for WG3-WG4 (WG2?) in proteomic datasets and repository (before Nov 2019).

**Q:** possibility to have a workshop with industry partners? Possibility for adding more industry partners. INDEPTH private partners are Limagrain group, Oxford Expression Technology, Bitplane, Zeiss and Nikon. Look for a new partner interested in disease resistance, in epigenetics...

**A:** not clear idea, but good suggestion. Still we need to find which of our objectives fit to industry's interests: breeding, gene expression, microscopy, software,... for instance, industry partners such as Bitplane could provide license for the use of particular software such as Imaris to participants in a workshop. Serena Varotto is happy to provide some input to discuss how to integrate epigenetics with breeding companies.

**Q:** from E. Richards: budget for services or to improve infrastructure? A from Tania: it needs to be discussed with COST as it is not the typical thing to fund. However, there is a possibility if it is presented as a public service. We need to have strong arguments to convince that this is adding value to the community. Some members, as Zikrija Avdagic, wait for this depository to use images for his analysis.

**2 training schools (TS)** to be organised (€34K):

- one on flow cytometry and proteomics (basic proteomics and preparation of samples for mass spectrometry) in July 2019; Organizer: Marek Sebel, Olomouc Czech Republic
- one in image analysis using ImageJ in Oct 2019;; Organizers: Dimeter Prodanov and Winnok De Vos, Belgium

**STSMs:** €22K for 11-12 STSMs (€2K/person), they will be targeted to specific topics to achieve deliverables. Christophe would like to fund STSMs to cover the proteomic part

#### **d) Dissemination planning (Publications and outreach activities)**

Budget: €4K (2 publications and updating website)

Funding for speakers from ITCs to conference (€3K)

### **12. Requests to join the Action from:**

#### **a) COST countries**

Recent request from a scientist in **Ukraine** to join INDEPTH (contact during the NEUBIAS meeting). Information will be given to the MC members in the coming weeks.

One new request from a Full member country (**Denmark**) from Sebastian Marquardt. An e-Vote will be organised in the coming days to approve this new country.

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

none so far

### **13. Any Other Business**

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

The MC members agreed that Ana Paula Santos will be our new WG1 leader during Katja Graumann Maternity leave.

New ITC/NNC transversal WG will be discussed later during the meeting, the idea is to enroll new ITC/NNC countries and STSM and TS applications. Information will be provided by Ahmet Tek from Turkey. Again, trying to keep gender balance.

### **14. Location and date of next meeting**

Madrid Dec 2019, organised by Geraint Parry and Monica Pradillo

### **15. Summary of MC decisions**

- New Workgroup 1 leader: Ana Paula Santos
- Add workshop with industry into the budget
- Try to fund the open source INDEPTH repository by COST?
- Keep working on the Gender balance
- Only 1 person per country for the Management committee at the Meeting in Madrid
- Put in the files for reimbursement by Fridays the 8th of March

#### **16. Closing**

Franziska reminds people about the claims and encourage people to contact her for questions/issues

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