EUROPEAN COOPERATION IN SCIENCE AND TECHNOLOGY

Minutes WG2 Meeting 2 (Action BM1204)

14 February 2014
9:30 am – 12.00 am

Participants: see appendix 1(*)

Agenda:

Agenda

9:30-9:45	Welcome and general introduction (all)
9:45-10:15	Summary of tasks and deliverables of WG2 - Progress report WG2 (Kristel) - Ongoing activities (all) - Remaining deliverables (work plan year 1/year 2)
10:15-11:15	Discussion (all) - Survey (in collaboration with WG 1)
11:15-11:45	Discussion (all) - Research "topics" (in collaboration with WG 3) - Algorithm optimization (Anwar)
11:45-12:00	Action points – closure (Kristel, Jörg, Nuria)
12:00-13:00	Lunch break

Note:

- Given the overlap with WG1 and WG3, representatives of WG1 and 3 were invited to the WG2 meeting. For WG1, Malte Buchholz was present. Kristel had received feedback from Stephan Hahn (leader WG3) via e-mail correspondence.
- Claude Chelala was contacted via Skype during the meeting, to help resolve WG2 questions regarding data platforms to build upon, in the context of the scheduled WG2 activities.

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Below follows a reflection of the major discussion points and outcomes of the meeting. The major agenda points were to give an update of the activities since the WG2 meeting in Madrid (Nov 2013), to brainstorm about (omics) data availability and acquisition, and to finalize the work plan for year 2. The slides that supported these agenda points are provided in Appendix 2.

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1. Summary of tasks and deliverables of WG2: past, current and future

Update since Madrid meetings:

- Measures to increase the interest in WG2 that were discussed during the Madrid meetings and follow-up telecons have been successful. Over 40 people have now expressed their interest to WG2. The minority though have registered through e-COST, which is an issue to follow-up.
- LinkedIN interest group has been created (Isabel Cuesta – Integromics). Once the content has been approved by the Coordinating Office in Madrid, the link can be openly distributed.
- Integromics/Liege applied to the second call for a post-doctoral STSM. This was successful. Francesco Gadaleta from the Montefiore Institute / GIGA-R at the University of Liege will spend one month at Integromics (Madrid, Spain), starting February 17. In total 2 such STSMs for the entire Action were approved.
- Contacts with industry and non-profit organizations:
    - With the industry: ongoing. A meeting with a selection of pharmaceutical companies is scheduled on February 19 (Pfizer, Merck) and February 21 (Johnson & Johnson)
    - With EORTC: during a first exploratory meeting at the Head Quarters in Brussels, a brainstorming about options took place and possibilities for collaboration were listed. This list (which may involve data sharing, sharing contacts, bringing about awareness on pancreatic cancer related issues, patient quality of life) will be further explored during February- May 2014 by Kristel
- No problems are reported regarding earlier outlined goals and aims / deliverables for year 1. WG2 is well on track.

Next steps:

- Follow-up meetings will include a face-to-face meeting (WG2 meeting 3) in November 2014 (in conjunction with the Annual Meeting) and another meeting (WG2 meeting 4) in May 2015. In between, two (-three) monthly telecons will be held.
- Consolidate the contacts with industry and non-profit organizations

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Next steps (continued):

- As suggested by Ivo Gut: Kristel will get in touch with / give an update of our activities to:
    - SeqaHead – Eric
    - ICGH – Tom Hudson
    - Andrew Biankin (setting up a big pancreatic cancer center in the UK)

2. Survey (data availability and acquisition)

- Via Jörg Hoheisel a large collection of clinically annotated patients may become accessible to COST WG2 researchers. Smaller collections are available at selected sites of WG2 participants, paving the way to answer quite unique research questions (cfr., data collection of Elin Kure). No information is available regarding generally available pancreatic cancer related data within the COST Action BM1204.
- The first circulated list of questions to inquire about data availability and characteristics is too large and needs to be reduced in order to maximize the response rate.
- Given differences in time lines for WGs 1, 2, 3 (who all need information about available "data" and who would all benefit from such a questionnaire), it was decided to primarily focus on collecting information about "omics" data availability. Other information will be considered to be part of WG1 and/or WG3 activities. It is anticipated that all three work groups stay in close contact regarding data information collection though.
- Jörg Hoheisel will use the primary list of questions and will reduce it to a manageable list (due: 2-3 weeks). After discussion with the management, the small survey will be sent around to all COST Action members. The idea is to be able to write a summary report about available data before the end of year 1 (hence: before June 1, 2014).
- Claude Chelala was very open to accommodate needs of WG2 to use the PED platform for data storage and exchange. The platform has interesting links to other data sources and allows rapid analysis via links to Galaxy, R, pathway software tools, etc. She is willing to accommodate data source types that are currently not yet accessible through the platform. Issues regarding non-public data can potentially be resolved by a second version of the PED platform, with protected data access for members of WG2 (or others, to be decided upon) only. It would be nice though to create a DAC in this case. Can the coordinating office in Madrid coordinate the data access applications from within the COST Action BM1204? Especially, since WG3 is also involved in data analysis… This needs to be resolved as soon as possible.
- Based on the discussions regarding establishing a new COST Action BM1204 data access/sharing platform or building upon exiting infrastructures, it was decided not to build a new platform, but to use the existing PED platform for WG2 purposes.

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3. Research topics

- A list of questions was presented to initiate the discussions. This list was based on questions that emerged from the Pancreatic Forum meeting in Madrid (Nov, 2013)
- Several of these questions can be cancelled out – due to various reasons
- Research questions will depend on the available data and the identification of rather "unique" data panels in the COST Action.
- Combining data for analysis will involve implementing meta-analytic approaches. Even for one data type, such as sequencing data, this may be very complicated (cfr. discussion led by Ivo Gut – variant calling example and existing protocols regarding the technologies involved). Hence, follow-up analysis such as Sanger testing and PCR need to be included in the final analysis plans.
- To keep in mind though:
    - Quality of life (in view of the potential active participation of the EORTC GI and QoL group)
    - Characterization of the 2% cancer patient survivors
    - Understanding the switch to metastatis

4. Work plan year 2 – summarized

- **Deliverable 1: WG2 meetings**
    - During annual meeting (Nov 2014) and in May 2015
    - GO2Meetings in between: two/three -monthly telecons

- **Standardization of omics deposit and methods of omics analysis**
    - Continue looking for proposals and opportunities for omics deposit within the COST Action (continuation of year 1 activity – cfr. survey)
    - Standards already exist – there is no need to reinvent the wheel
    - Ivo Gut will help in identifying links to existing material to us
    - At the end of year 2: have references available to "standardization of omics deposit" and "standardization on available omics analysis methods" on the COST Action (WG2) website

- **Identification and documenting available algorithms and methods of analysis**
    - At least one dissemination paper in line with book chapter efforts during year 1.
    - In particular, contact Genetic Epidemiology to publish a special issue on omics integration in general. The guest editors will come from the Coordinating Office in Madrid and WG2. If Genetic Epidemiology does not agree, other options will be explored.

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- **Optimization of methods for omics analysis**
    - Start on application of newly developed analysis methods for omics integration (integrating several data resources at a time) → focus on integrated viewpoints.
    - Data may either be private (from within the COST Action) or public.
    - Work towards an analysis plan of within the COST Action available "rare" data. Making sense of these data requires joining forces (merging different such unique data sets within the Action to achieve sufficient power), and will offer a unique opportunity to answer particular questions → focus on research questions that can only be answered by the COST Action and not by singular centers from within the Action.

- **Deliverable 3: co-funding**
    - Identify opportunities to enroll in Horizon2020 or similar actions to obtain research money and obtain support for the research aspects related to WG2

- **Deliverable 4: contacts**
    - As the research component related to WG2 becomes more explicit, seek contact with FP6 (BIOBRIDGE) and FP7 (STRATEGA, EXPOSOMICS, MIMOMICS) participants
    - Further establish links with Pharma

- **Deliverable 5: STSM**
    - Apply for at least one STSM from within WG2

- **Deliverable 6: reporting**
    - Make official progress report and contribute to the annual report

- **Deliverable 7: common guidelines** → year 3

- **Deliverable 8: Dissemination**
    - See "Identification and documenting available algorithms and methods of analysis**"**
    - Other options include "Ecole Polytechnique fédérale de Lausanne" (followed-up by Integromics)
    - Workshop 2 (in conjunction with CSCDA2014 and Annual Meeting – fall 2014)

5. Immediate action points

- Complete manuscript on "Perspectives on Data Integration in Human Complex Disease Analysis"
- Complete reduced questionnaire (beginning of March) and send around to COST Action BM1204 members for completion (report before end of year 1)

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Appendix 1: list of participants

(*) this list contains the complete list of individuals who have expressed their interest into WG2. Not all of them have already registered to COST via the e-COST portal.

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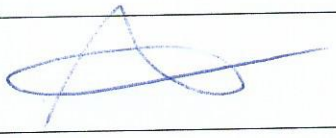
Nuria Lopez-Bigas	nuria.lopez@upf.edu		ES
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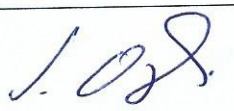
Stephan Ossowski	Stephan.Ossowski@crg.eu		ES
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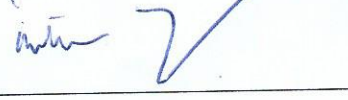
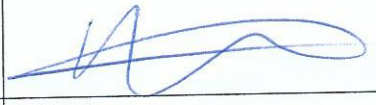
Hilmar Berger	hilmar.berger@integromics.com		ES
Abel Gonzalez-Perez	abel.gonzalez@upf.edu		ES
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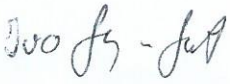

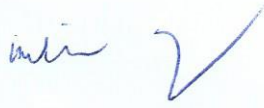

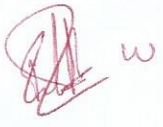

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w Anwar Rayan

Azmi Adawi

w Elin H. Kure

w Vandana...

Madrid Meetings; interested but NA for Madrid meetings; encounters during Madrid meetings – interested in joining; *invited for Heidelberg and interested but NA*; new participants in Heidelberg

Malte Zu Knolz

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Workshop

→ 702

YVES MOREAU UNIVERSITY OF LEUVEN

Appendix 2: Guiding slides during the meeting

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WG2 MEETING (2)

COST Action BM1204

14 February 2014 – DKFZ, Heidelberg (Germany)

WG2 leader: **Kristel Van Steen** (Liège, Belgium).

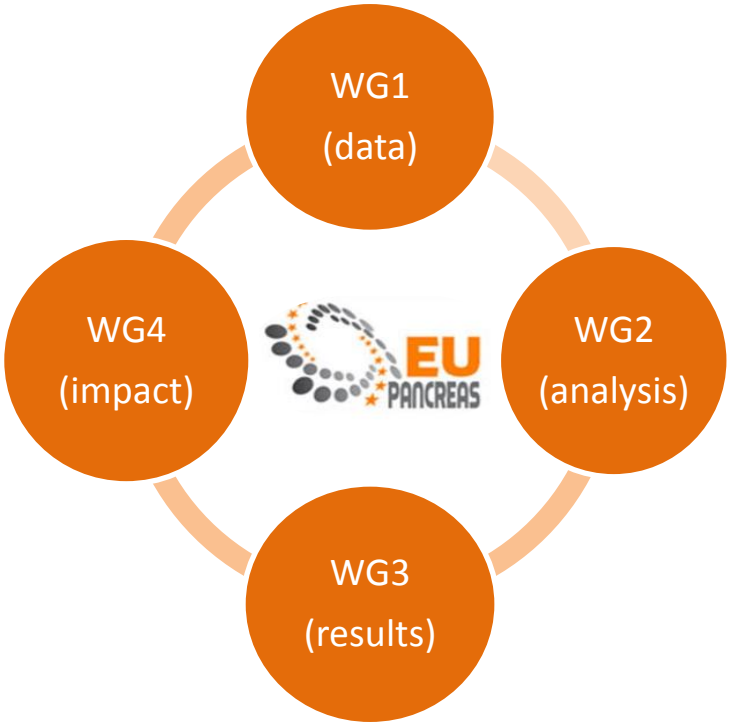
Co-leaders: **Joerg Hoheisel** (Heidelberg, Germany) and **Nuria Lopez-Bigas** (Barcelona, Spain)

Presentation of WG2

Co-leaders: Jörg Hoheisel and Nuria Lopez-Bigas

Part of a whole

- WG1 Research tool harmonization
- WG2 Integration of omics data
- WG3 Translational research
- WG4 PDAC patient management



WG2-specific objectives

1. **Optimization and standardization of methods for omics analysis** of pancreas tumoral and normal tissue samples
2. Establishment of **standardized approaches for omics data deposit**
3. **Identifying and documenting** available **algorithms for omics data integration**

   Issues to be considered include: the data high dimensionality - small sample size problem, the inherently noisy nature of the data, the stability and reproducibility of the models, the incorporation of domain knowledge.

How to best achieve progress on ALL objectives?

Human resources: Interdisciplinarity to achieve the goals

Inviteds

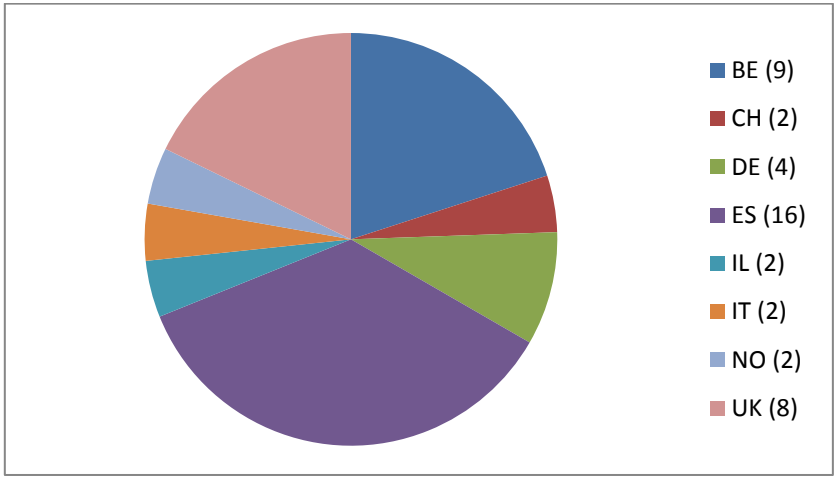
Biostatistics, bioinformatics, machine learning, functional genomics, biomedicine, informatics, oncology, pathology, transcriptomics, epigenomics, computational cancer, molecular oncology, data management, genomics, guidelines development, statistics, epidemiology, statistical genetics, computational biology, visualization, digestive oncology, computer science, integrative biology

Missing in practice, yet identified to be crucial

oncologists, surgeons, WG1 leaders, WG3 leaders, (WG4 leaders)

WG2 members (status)

- WG2 is particularly research oriented / Cost by default does not finance research
- Publicity worked …. 12 → 45 (→ ~ 50 incl workshop attendees)



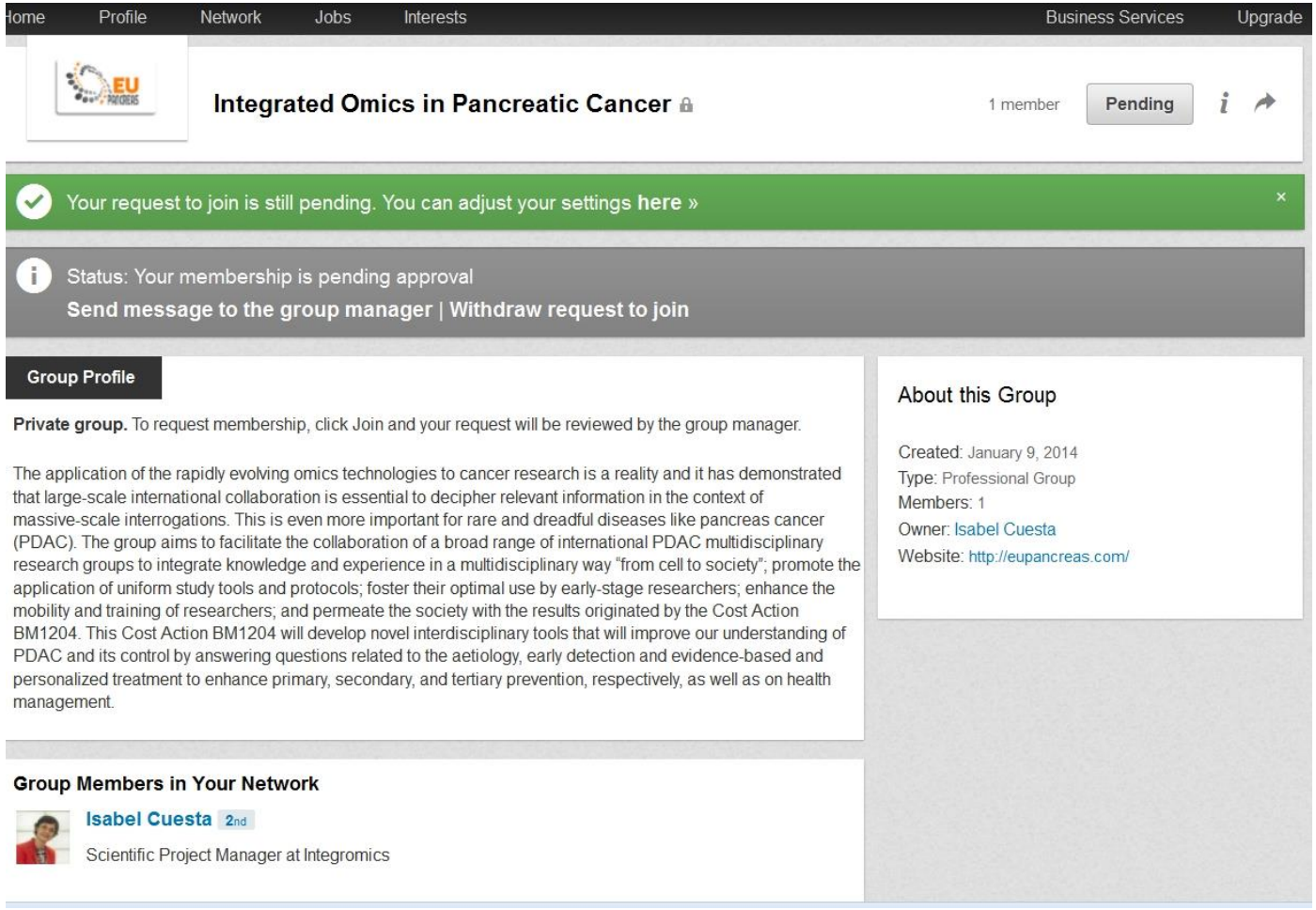
Building WG2 as an interdisciplinary mix of key players and young investigators: √

Strategy to attract new members (included in work plan for year 1)**:**

- Transparency regarding what COST means and what it can offer
  - It is essential to update the Action's website and to provide information about COST in general
  - Member list needs to be updated online:
    - Facilitates establishing collaborations
    - Facilitates identifying opportunities for STSMs
  - LinkedIn interest group created

Communicating with Central Office – Website updates √
Until website fully operational: create dropbox? √

Strategy to attract new members (included in work plan for year 1)**:**



Strategy to attract new members → draw attention to COST Action

- Getting funding: **members are encouraged; let us know!**
- Getting data:
  - Data cataloguing (WG1 + WG3 + survey on available data within the partnership + Publicly available data) → **discussion 10:15-11:15**
  - Data repository (Who? Existing infrastructure (EGA; Pancreatic Expression Data Base)? → **Claude Chelala (also: workshop)**
  - Policies (data storage versus data mining/accessing; highly depends on whether a new infrastructure is created or one tags on existing infrastructures) → **put in work plan for year 2? (collab with WG4?)**

WG2 Specific deliverables

1. WG2 Meetings (~~April 2013~~ and November 2013 + February 2014)
2. Work plan for 2014 **(June 2014 – May 2014)**
3. Identify / prioritize opportunities of research and for funding
4. Establish contact with other consortia (i.e., ICGC, ---) and SMEs and explore opportunities for collaboration
5. Short-Term Scientific Missions (STSM)
6. Biannual internal progress report and annual report
7. Common guidelines to apply technologies and to integrate omics data in PDAC research
8. (e)Publication / CD / WEB

[___ : active/relevant for year 1 “reporting”]

WG2 Activities

Deliverable 1: WG2 Meetings (work plan year 2)

- **Third WG2 meeting or Fourth WG2 meeting**
  - Satellite of Annual Meeting in Nov/Dec 2014
  - May 2014?
  - Combine with short course (CSCDA 2014)

- Two-monthly telecons in between the meetings
  - GO2Meeting (Isabel Cuesta)
    - Automatic listing via web
    - Identify yourself when calling in by phone (~ minutes need to list the participants; check out the current versions of the minutes!)

WG2 Activities

Deliverable 2: Work plan 1 June 2014 – 31 May 2015 (to be confirmed)

- **Maintain interest of WG2 members** and its organization (see before)
- Objective: Standardization of omics deposit
  - In particular, answers to the following questions should be obtained during year 1:
    - **Who curates** the data? Uploads the data?
    - What makes the Pancreas platform “special” / “attractive”?
  - **List other proposals and/or opportunities** for omics deposit during the course of year 1.
  - **Propose a plan of action** to be included in the work plan for year 2 for this objective

- Objective: Available algorithms and methods of analysis
  - Contribution to book chapter for "Big Data Analytics in Bioinformatics and Healthcare" or related publication (postponed due date) in year 1
  - Continues in year 2

- The research component of the WG's objectives requires identification of pancreas-specific issues related to omics (integrated) analysis
  - To identify topics for which "optimized" analysis methods can be proposed // To identify opportunities for pancreas-targeted papers when reviewing / listing of available methods (rather than having to stay too general / non-pancreas specific)
  - **Summarize results of survey in May 2014**; **Consolidate "topics" and present during Annual Meeting (2014) – year 2**

- Objective: Optimization and standardization of omics analysis
  - Start listing – and **make links to existing material** available via the website, during year 2

Deliverable 3: **Identify / prioritize opportunities of research and for funding**

- Identifying interesting calls and taking actions accordingly is included as part of the work plans for year 1, 2 and 3

Deliverable 4: Opportunities for collaboration (nourish contacts in year 2)

- ELIXIR + COST Actions → FP7 list identified
  - FP7: STRATEGA; EXPOSOMICS; MIMOMICS; BIOBRIDGE
- Pharma → Pfizer, GSK will be approached on Febr 19
- EORTC → participation to be expected during Annual Meeting (2014)
  - London Pancreas Meeting on May 2, 2014 (organizer: H Kocher) / satellite meeting of WG3 and …(?)
- BC Platforms (a Finnish research-intensive SME) [have delivered collaborative genetic research database systems for many EU Framework Programme (FP) funded projects and currently are an SME partner in five FP7 EU HEALTH projects: http://www.bcplatforms.com/Solutions/EU-FP-Projects.html]

Deliverable 5: Short Term Scientific Missions

- Stay tuned for new calls: **1 STSM in year 2?**

Deliverable 8: Dissemination plan (year 2)

- Special issues related to objectives of WG2:
  - Via École polytechnique fédérale de Lausanne
  - Via editor of genetic epidemiology **(contacted during year 1; deliverable during year 2)**
- White paper/ position paper: Focal points to be identified (~ identification of “topics”)

Survey

(see handout)

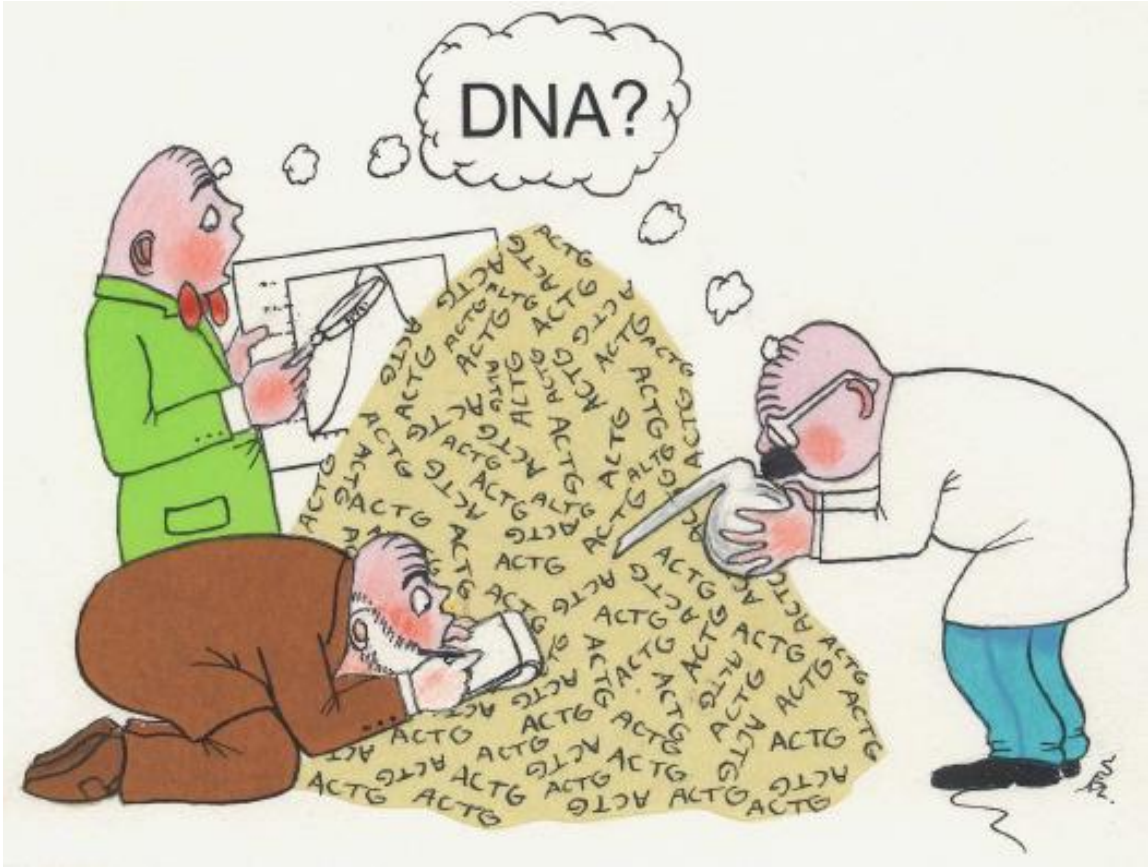
List of Topics

- Provide list (~ translated COST objectives) to be discussed + prioritized during 2nd WG2 meeting
- During previous meetings …
  - Global:
    - Integromics for prevention (risk prediction; inclusion of epidemiology) [WG2]
    - Integromics to enhance biomarker robustness [WG3]
    - Integrative approaches to detect patient heterogeneity
    - Identification of pathways using integromics [WG2,3]
  - Focused:
    - Not necessarily depends on data available in the partnership (publicly available data as well)

Move towards some clear targets - involving the clinicians

Topics

- Improved response prediction via integromics
- Biomarkers for disease progression (and hence therapy changes?)
- Familial versus non-familial cancer signatures?
- Time to metastasis determinants via integrated views
- Which clinical factors are effect modifiers? Important to account for? [in terms of biology, Pancreas Cancer is fairly homogeneous]
- Role of gender?
- Who should be operated on?
- Identification of molecular subsets of disease with therapeutic significance?
- Subgroup identification via omics signatures → increased survival? Screening? What characterizes the 2% survivors?
- Quality of Life?
- Role of the immune system?


DNA?
ACTG