



**IPAD-MD Kick-Off Meeting, 21-22 July 2015
Munich, Germany**

MEETING MINUTES

1. Agenda

21 July 2015

Session 1: Project Introduction and Cross Topic Work Packages

Chair: Yann Hérault

13:00 - 13:10 Welcome and Project Introduction – Martin Hrabě de Angelis

13:10 - 13:30 Mouse functional genomics: an outlook - Martin Hrabě de Angelis

13:30 - 14:00 WP3 Engagement with Funders and Policy – Radislav Sedlacek

14:00 - 14:30 WP4 Engagement with Users & Industry – Terry Meehan

14:30 - 15:00 WP5 Engagement with Patient Organisations – Fátima Bosch

Session 2: Technical Work Packages

Chair: Radislav Sedlacek

15:15 – 15:45 WP6 Implementation of Standards & Technology – Steve Brown & Yann Hérault

15:45 - 16:15 WP7 Access to Data & Resources – Helen Parkinson

16:15 - 16:45 WP8 Animal Welfare – Lluís Montoliu

16:45 - 17:00 WP1 & WP2 Management & Coordination & workshop organization - Ana de Castro

17:00 - 17:15 Communication & Dissemination Activities – Michael Raess

17:30 - 18:00 Parallel Session: Planning Expert Group meeting Standards & Technology (WP6)

17:30 - 18:00 Parallel Session: Planning Expert Group meeting Data & Resources (WP7)

22 July 2015

Session 3: Engagement with International Stakeholders

Chair: Martin Hrabě de Angelis

09:00 - 09:30 International Human Epigenome Consortium (IHEC) - Eric Marcotte

09:30 - 10:00 Pre-clinical evaluation service, Buckingham Institute for Translational
Medicine - Mike Cawthorne

10:00 - 10:30 International Mouse Phenotyping Consortium (IMPC) - Mark Moore

10:30 - 11:00 International Centre for Genetic Engineering and Biotechnology (ICGEB) –
African Users, Infrastructures and Research Highlights - Frank Brombacher

Session 4: Industry & Innovation Session

Chair: Helen Parkinson

11:20 -11:50 NEWMEDS IMI: Touch-screen computerized testing in genetic mouse models
of schizophrenia and Alzheimer's disease – Tim Bussey

11:50 -12:15 Industry & Innovation Workshop Preparation – Michael Hagn

12:15 – 12:30 EuroMouse Academy – Jesús Ruberte

12:30 - 12:35 Wrap-up parallel session: Expert Group on Standards & Technology - Yann
Hérault

12:30 - 12:40 Wrap-up parallel session: Expert Group on Data & Resources - Sabine Fessele

12:35 - 12:45 Meeting Conclusions – Martin Hrabě de Angelis

2. List of Participants

Aguilar	Antonio	Helmholtz Zentrum München	Germany
Amarie	Oana	Helmholtz Zentrum München	Germany
Becker	Lore	Helmholtz Zentrum München	Germany
Bosch	Fátima	Universitat Autònoma de Barcelona	Spain
Brombacher	Frank	International Centre for Genetic Engineering and Biotechnology	South Africa
Brommage	Robert	Helmholtz Zentrum München	Germany
Brown	Steve	MRC Harwell	UK
Bussey	Tim	University of Cambridge	UK
Chinnasamy	Manoj	INFRAFRONTIER GmbH	Germany
Cho	SooYoung	Seoul National University	Korea
de Castro	Ana	Helmholtz Zentrum München	Germany
Fessele	Sabine	INFRAFRONTIER GmbH	Germany
Fletcher	Colin	National Institutes of Health	USA
Fray	Martin	MRC Harwell	UK
Fuchs	Helmut	Helmholtz Zentrum München	Germany
Gailus-Durner	Valerie	Helmholtz Zentrum München	Germany
Hagn	Michael	Helmholtz Zentrum München	Germany
Hérault	Yann	Mouse Clinical Institute	France
Hölter	Sabine	Helmholtz Zentrum München	Germany
Hough	Tertious	MRC Harwell	UK
Hrabě de Angelis	Martin	Helmholtz Zentrum München	Germany
Iraqi	Fuad	Tel-Aviv University	Israel
Maier	Holger	Helmholtz Zentrum München	Germany
Mallon	Ann-Marie	MRC Harwell	UK
Mammano	Fabio	CNR-IBCN Monterotondo	Italy
Marcotte	Eric	International Human Epigenomics Consortium	Canada
Marschall	Susan	Helmholtz Zentrum München	Germany
Matteoni	Raffaele	CNR-IBCN Monterotondo	Italy
Mckerlie	Colin	Toronto Centre for Phenogenomics	Canada
Meehan	Terry	EMBL-EBI	UK
Montoliu	Lluís	CNB-CSIC	Spain
Moore	Mark	International Mouse Phenotyping Consortium	USA
Parkinson	Helen	EMBL-EBI	UK
Pertuy	Fabien	Mouse Clinical Institute	France
Prochazka	Jan	Institute of Molecular Genetics	Czech

			Republic
Raess	Michael	INFRAFRONTIER GmbH	Germany
Ramirez-Solis	Ramiro	Wellcome Trust Sanger Institute	UK
Raspa	Marcello	CNR-IBCN Monterotondo	Italy
Rathkolb	Brigitte	Helmholtz Zentrum München	Germany
Rozman	Jan	Helmholtz Zentrum München	Germany
Ruberte	Jesús	Universitat Autònoma de Barcelona	Spain
Sedlacek	Radislav	Institute of Molecular Genetics	Czech Republic
Selloum	Mohammed	Mouse Clinical Institute	France
Seong	Je Kyung	Seoul National University	Korea
Smith	Cynthia	The Jackson Laboratory	USA
Soininen	Raija	University of Oulu	Finland
Sorg	Tania	Mouse Clinical Institute	France
Svenson	Karen	The Jackson Laboratory	USA
Treise	Irina	Helmholtz Zentrum München	Germany
Vasseur	Laurent	Mouse Clinical Institute	France
Wurst	Wolfgang	Helmholtz Zentrum München	Germany
Yoon	ChaeRin	Seoul National University	Korea

3. Minutes

3.1 Minute taker

Ana de Castro (HMGU); Yann Hérault (ICS, WP6-Parallel Session); Sabine Fessele (INFRAFRONTIER GmbH, WP7-Parallel Session)

3.2 Aims of the Kick-Off meeting

- Introduction and discussion of the IPAD-MD Work Program
- Establishment of the Communications and Dissemination Group and definition of its work program
- Establishment of the Standards & Technology Expert Group and preparation Expert Group meeting (Autumn 2015)
- Establishment of the Data & Resources Expert Group & preparation of Expert Group meeting (Autumn 2015)
- Preparation of the Industry and Innovation workshop (Spring 2016)

3.3 Presentations

Presentations are available for download at the INFRAFRONTIER internal website.

<https://www.infrafrontier.eu/internal/ipad-md-project>

3.4 General meeting

Project Internal Issues

Welcome, Project Introduction

- Martin Hrabě de Angelis gave a general introduction to the project and presented the specific aims of the IPAD-MD Kick-Off meeting. An outlook on the mouse functional genomics field was provided, in which the societal challenges (e.g. animal rights activities and public opinion, current funding constraints), the scientific challenges (e.g. bottlenecks in animal research and the external visibility of mouse resources) and technological challenges (e.g. potential disruptive technologies, as CRISPR/Cas9 and its impact on mouse repositories) were presented and the role of IPAD-MD project in

tackling these challenges was discussed. Moreover, examples of the complementarity between mouse and humans studies and the translation from genes to diseases were brought forward.

Management (WP1)

- Ana de Castro gave an overview on the management aspects of the IPAD-MD project (objectives and tasks; schedule, milestones and deliverables; reporting and budget).

Coordination and Workshop Organization (WP2)

- Ana de Castro outlined the planned thematic workshops (WP2) during the course of the IPAD-MD project (2015-2019). A snapshot of the list of deliverables and tasks scheduled for the first six months (December 2015) was presented.
- Michael Raess gave an overview on the aims and activities of the Communication and Dissemination Group.
- Michael Hagn presented the preliminary work carried out for the first IPAD-MD thematic workshop - Industry & Innovation (2016), focussing on the discussion and definition of its aims and targeted audience, session format and profile of the speakers. Logistical aspects such as location, budget and duration of the workshop were also covered. It has been suggested that the IPAD-MD workshop on 'Industry & Innovation' will be held in Munich, May 2016.

To-Do

Communication & Dissemination Group: Finalise core member list	Michael Raess	September 2015
Industry & Innovation workshop: Definition of workshop date and venue	Michael Hagn & Ana de Castro	September 2015
Industry & Innovation workshop: Speakers invitations and agenda conclusion	Michael Hagn & Ana de Castro	October 2015
Industry & Innovation workshop: Information & registration of participants	Michael Hagn & Ana de Castro	November 2015

Engagement with Funders and Policy (WP3)

- Radislav Sedlacek gave an overview on the objectives, tasks and deliverables scheduled for the WP3, specifically the preliminary work already conducted for D3.1–Report on European and International Research Agendas (due December 2015). A list of initiatives/programms in which the participation of INFRAFRONTIER/IMPC would have great impact was discussed. Given the constraints in the current funding context at the European level, the relevance of the Engagement with Funders and Policy workpackage was discussed.

Engagement with Users and Industry (WP4)

- Terry Meehan provided an overview on the aims, tasks, objectives and deliverables scheduled for WP4, emphasizing the needs and requirements of the INFRAFRONTIER/IMPC user groups, as well as what can be provided by INFRAFRONTIER/IMPC and its inherent challenges. In addition a description of the current situation regarding complementary infrastructures, users and existent programms in the field of mouse functional genomics in Africa was provided (e.g., CAAST-NET⁺; PAERIP).

Engagement with Patient Organizations (WP5)

- Fátima Bosh introduced the WP5 by enumerating its aims, tasks, objectives and deliverables. The role of mouse in the development of new therapies and what can be offered from INFRAFRONTIER/IMPC in that process was pointed out. Given that the expectations of the patient organisations focus on disease treatment, the role of the patient organisations was discussed. They could form a bridge between consortia like INFRAFRONTIER/IMPC and single investigators and funding agencies/governments/general public. It was further suggested that synergies should be sought with both high prevalence diseases and with rare diseases federated patient organisations.

Implementation of Standard & Technology (WP6)

- Yann Héroult presented the aims, tasks, objectives and deliverables scheduled for WP6 and the topics for discussion during the parallel session: I) mouse production, II) mouse phenotyping and III) archiving, as preparation for the Expert Group meetings in Autumn 2015 and 2016.

Access to Data and Resources (WP7)

- Helen Parkinson outlined the aims, tasks, objectives and deliverables scheduled for WP7 focussing its discussion on: I) strategies for data access by user communities II) data sharing III) linking mouse-model organisms and human data and IV) training. In addition it was highlighted the complementarity between the WP7 and WP4 – Engagement with Users and Industry.

Animal Welfare (WP8)

Lluís Montoliu introduced the WP8 (aims, objectives, tasks and deliverables) by pointing out the specific measures already adopted by the INFRAFRONTIER/IMPC regarding the endorsement of the ARRIVE Guidelines and the 3R's policy. Furthermore, several challenges that international consortia in the field of mouse functional genomics are facing and strategies to tackle them were presented and discussed (e.g., the use of mouse repositories in view of novel technologies like CRIPR-Cas9 and the animal welfare point of view; the adequate animal sampling number and the pressure to reduced the animal numbers in research; the responsibility that international consortia have towards the general public, other research communities and funders when dealing with animal rights groups and initiatives (e.g. 'ECI Stop Vivisection')

3.5 Parallel Sessions

3.5.1 Planning Expert Group Meeting on Standards & Technology (WP6)

a. List of participants

Antonio Aguilar	Helmholtz Zentrum München
Oana Amarie	Helmholtz Zentrum München
Lore Becker	Helmholtz Zentrum München
Frank Brombacher	International Centre for Genetic Engineering and Biotechnology
Ana de Castro	Helmholtz Zentrum München
Martin Fray	MRC Harwell
Helmut Fuchs	Helmholtz Zentrum München
Michael Hagn	Helmholtz Zentrum München
Yann Héroult	Mouse Clinical Institute
Tertius Hough	MRC Harwell
Susan Marschall	Helmholtz Zentrum München
Rafaele Matteoni	CNR-IBCN Monterotondo
Colin Mckerlie	Toronto Centre for Phenogenomics
Lluís Montoliu	CNB-CSIC
Fabien Pertuy	Mouse Clinical Institute
Jan Prochazka	Institute of Molecular Genetics
Ramiro Ramirez-Solis	Wellcome Trust Sanger Institute
Marcello Raspa	CNR-IBCN Monterotondo
Jan Rozman	Helmholtz Zentrum München
Jesús Ruberte	Universitat Autònoma de Barcelona
Mohammed Selloum	Mouse Clinical Institute
Raija Soininen	University of Oulu
Tania Sorg	Mouse Clinical Institute
Karen Svenson	The Jackson Laboratory
Irina Treise	Helmholtz Zentrum München

b. Aims of the Parallel Session on WP6

- Define the priority topics for the upcoming Expert Group meetings in 2015 and 2106
- Define the composition of the Core Group on Standards & Technology
- Elaborate a list of external experts on specific topics that can contribute to the planned Expert Group meetings (2015-2019)
- Define date and place of the 1st Expert Group meeting on Standards & Technology 2015

c. Topics discussed

Mouse Archiving

- Exchange and shipment of gametes
- Superovulation – improvements e.g. Inhibin AS and eCG
- **Oocyte freezing (MRC)***
- **TSET (MRC)***
- Microbiota

Mouse Production

- CRISPR/Cas9 (multiple allele)
- IVF with ultra super ovulation (2016)
- Breeding strategies
- Monitoring environmental conditions
- Microbiota

Mouse Phenotyping

- **Metabolomics (Harwell+BCM+Metabolom initiative+GMC)***
- Imaging: capture and analysis
- **Home cage monitoring (MRC)***
- Social behavior
- **Learning and memory testing – fear conditioning***
- **Gait (GMC, ICS)***
- ERG, OCT
- Immune profiling: spleen, blood not added value to BM (JAX)
- **Ageing pipeline (Harwell, JAX)***
- Other challenges: diet, ova., lps, in vitro (GMC)
- Microbiota
- **Subviable pipeline (ICS-TCP, JAX-BCM)***

* Topics in bold were prioritized as those to be targeted during the Expert Group meeting on Standards & Technology, Autumn 2015.

d. Decisions

- Due to conflicting schedule of the several members of the Expert Group on Standards & Technology, it was decided that the 1st Expert Group meeting (2015) will be split in:
 1. Expert Group meeting Standards & Technology – Archiving: Monterotondo, Italy, November, 18 (or 19), 2015

2. Expert Group meeting Standards & Technology – Phenotyping: Seoul, Korea, September, 15, 2015

- Aims of the 1st Expert Group meeting defined (*s. 3.Topics discussed*)
- Core Expert Group on Data & Resources (*s. 6.Lists*)

e. To-Do

List of External Experts	Yann Hérault & Steve Brown	August 2015
Final Agenda for the 1 st Expert Group on Standards & Technology - Archiving	Marcello Raspa & Ana de Castro	August 2015
Final Agenda for the 1 st Expert Group on Standards & Technology - Phenotyping	Yann Hérault & Steve Brown	August 2015

f. Lists

Core Expert Group on Standards & Technology

Ann Flenniken	Toronto Centre for Phenogenomics
Fabien Pertuy	Mouse Clinical Institute
Heather Cater	MRC Harwell
Jan Rozman	Helmholtz Zentrum München
Karen Svenson	The Jackson Laboratory
Lauryl Nutter	Toronto Centre for Phenogenomics
Lluís Montoliu	CNB-CSIC, Cross Topic-Animal Welfare
Lydia Teboul	MRC Harwell
Marcello Raspa	CNR-IBCN Monterotondo
Martin Fray	MRC Harwell
Mohammed Selloum	Mouse Clinical Institute
Philippe Andre	Mouse Clinical Institute
Susan Marschall	Helmholtz Zentrum München
Yann Hérault*	Mouse Clinical Institute*

*WP6 co-leaders

3.5.2 Planning Expert Group Meeting on Data & Resources (WP7)

a. List of participants

Robert Brommage	Helmholtz Zentrum München
SooYoung Cho	Seoul National University
Sabine Fessele	INFRAFRONTIER GmbH
Martin Hrabě de Angelis	Helmholtz Zentrum München
Fuad Iraqi	Tel-Aviv University
Holger Maier	Helmholtz Zentrum München
Ann-Marie Mallon	MRC Harwell
Raffaele Matteoni	CNR-IBCN Monterotondo
Terry Meehan	EMBL-EBI
Mark Moore	International Mouse Phenotyping Consortium
Helen Parkinson	EMBL-EBI
Michael Raess	INFRAFRONTIER GmbH
Radislav Sedlacek	Institute of Molecular Genetics
Cynthia Smith	The Jackson Laboratory
Laurent Vasseur	Mouse Clinical Institute

b. Aims of the Parallel Session on WP7

- Define the priority topics for the upcoming Expert Group meetings in 2015 and 2106
- Define the composition of the Core Group on Data & Resources
- Elaborate a list of external experts on specific topics that can contribute to the planned Expert Group meetings (2015-2019)
- Define date and place of the Expert Group meeting on 1st Data & Resources 2015

c. Topics discussed

1st Expert Group meeting (2015) – Agenda definition

- Mode of access to IMPC and INFRAFRONTIER websites
- Aim to better integrate data and resources
- Usability evaluation with UX facilitators (set of workshop questions)
- Collect input from partners beforehand (user feedback)
- Hand-off between websites → towards a one-stop shop concept

2nd Expert Group meeting (2016) – Agenda definition

- User evaluation from rare disease community (based on the results from 1st Expert Group meeting 2015)
- Target the rare diseases community and their user requirements as topic for the meeting
- CRISPR/Cas9, humanized mutations → new requirements for data

d. Decisions

- 1st Expert Group meeting will take place in Hinxton, October 2015
- Aims of the 1st Expert Group meeting defined (*s. 3. Topics discussed*)
- Core Expert Group on Data & Resources and list of external experts defined (*s. 6. Lists*)

e. To-Do

Set up a communication and documentation of the Expert Group activities	Helen Parkinson	August 2015
Enquire availability of external experts to participate in the IPAD-MD thematic workshops	Helen Parkinson, Terry Meehan & Sabine Fessele	August 2015
Logistic organisation of the 1 st Expert Group meeting on Data & Resources	Helen Parkinson & Terry Meehan	September 2015
Checking possibilities to publish the meeting reports as conference papers in addition to the INFRAFRONTIER webpages	Helen Parkinson & Terry Meehan	After 1 st Expert Group Meeting on Data & Resources

f. Lists

Core Expert Group on Data & Resources

Sabine Fessele	INFRAFRONTIER GmbH*
Ann-Marie Mallon	MRC Harwell
Raffaele Matteoni	CNR-IBCN Monterotondo
Terry Meehan	EMBL-EBI
Lluis Montoliu	CNB-CSIC, Cross Topic - Animal Welfare
Helen Parkinson	EMBL-EBI*
Cynthia Smith	The Jackson Laboratory
Laurent Vasseur	Mouse Clinical Institute

*WP7 co-leaders

List of external experts on Data & Resources

Robert Williams	BXDPhenotypeDB
Molly Bogue Elissa Chesler	MPD, secondary screen data users
Josh Denny	PheWAS
Melissa Haendel Nicole Washington Peter Robinson	Monarch, GA4GH
Kent Lloyd,	UC Davis
Shawn Burgess	Other Models Organisms Representative
Hans Häring Stefan Bornstein Arne Schäfer Steffen Schröder Patricia Munroe Maryann Martone /Jeff Grethe	Clinicians
Peter Taschne	Leiden Open Variation Database
Augusto Rendon	100K genomes
Joanne Kamens	Addgene

Engagement with External Stakeholders*

International Human Epigenomics Consortium (IHEC)

- Eric Marcotte described the mission, goals, structure and composition of the International Human Epigenomics Consortium (IHEC) and the challenges and opportunities faced. The IHEC data portal was presented, with emphasis on both human and animal model systems data. Concerning the opportunities for cooperation and alignment with INFRAFRONTIER/IMPC, importance was set to data-related issues (e.g. data access, data release).

International Mouse Phenotyping Consortium (IMPC)

- Mark Moore gave an overview on the IMPC/KOMP2 activities, goals, progress and current status regarding the mouse lines phenotyped and database access. The challenges and opportunities faced by the IMPC Phase II (e.g. CRISPR/Cas9, ageing phenotyping pipeline) were presented. Information on KOMP3 programme was provided.

African Users, Infrastructures and Research Highlights (ICGEB)

- Frank Brombacher described the mission, strategic goals, composition and funding instruments of the International Centre for Genetic Engineering and Biotechnology (ICGEB), as well as the current research infrastructures available in Africa, its users and their needs. Scientifically, ICGEB and African users focus on immunology and infectious diseases (e.g. Tuberculosis) and drug and vaccination target discovery. In terms of opportunities to cooperate with INFRAFRONTIER, emphasis was set to the archiving and distribution of mouse models by means of training in cryopreservation technologies.

Touchscreen computerized testing in genetic mouse models of schizophrenia and Alzheimer's disease (NEWMEDS IMI)

- Tim Bussey introduced the NEWMEDS IMI consortium and provided a detailed explanation on the design and applications of the touchscreen computerized testing system for cognitive testing in human and mice.

Euromouse Academy

- Jesús Ruberte gave an overview on the objectives, outcomes, potential partners and next steps of Euromouse Academy proposal (ERASMUS+).

***Buckingham Institute for Translation Medicine**

Mike Cawthorne was invited to give a keynote lecture on the work developed by the Buckingham Institute of Translation Medicine in the field of metabolism, obesity and diabetes. During the course of the meeting, the organizers were informed that Prof. Cawthorne passed away. The organizers offered their sincere condolences to Prof. Cawthorne family, colleagues and the Buckingham Institute of Translational Research, on behalf of the IPAD-MD meeting participants and INFRAFRONTIER/IMPC partners