

**Program: An Emerging Technological and Societal Transition:
*How do we Prepare Ourselves for the Post-Industrial World?***

5 Oct – 9 Oct 2015

Lorentz Workshop Program

In three ways, this meeting is not a traditional scientific conference: (i) In the Lorentz Center workshop tradition the most important part of the workshop is not the individual presentations, but rather the scientific synthesis that will hopefully emerge from discussions based on these presentations. (ii) This workshop does not have a well-understood or narrow focus, but rather seeks to uncover large-scale patterns in our technological and societal development from an interdisciplinary, complex systems perspective. (iii) The workshop has a specific goal: to produce two roadmaps or whitepapers; one for the scientific community and one for the public, policymakers and media.

We therefore propose that participants prepare for the meeting in the following way (a) – (g):

(a) Before the workshop, please participate in our online conversation about how best to organize our conversation when we meet face-to-face October 5-9, 2015. This online conversation should focus on a number of documented observations concerning the current technological development together with a straw-man interpretation (postulates) about the societal implications of this development. We invite you to scrutinize, correct and improve our interpretation. You will receive a link to the wiki environment for this online conversation in the very near future.

(b) Since the background of the participants ranges from natural science and engineering over economics, psychology, history, other humanities, and to the arts, we also ask you to present your ideas / observations / results in a manner so that an intelligent audience outside of your field can follow you.

(c) The workshop is structured around a number of one and a half hour input sessions with six short (10 minutes) presentations followed by half an hour joint Q&A session. In this manner, all invited participants present their knowledge and perspectives to everybody and provide critical input to a, hopefully, scientific synthesis. We will ask a number of participants to be session leaders and note-takers.

(d) Days 1, 2, 3, and 4, the discussions in smaller groups will be concluded with wrap-up sessions in plenum. The group discussions are where we seek to develop scientific consensus as well as clarify possible conflicting perspectives around the workshop themes. We will ask a number of participants to be group moderators and -editors.

(e) To generate higher societal impact from our workshop, 25 students of science journalism from Leiden University will join us at the workshop. The students will be working with the workshop content as well as your input throughout the semester and produce texts, videos and other presentations aimed at the informed public and policymakers. Please note that no information involving you will be published without your permission.

(f) At the end of each day there will be a short wrap-up session for the organizers, group moderators, editors and other participants responsible for part of the roadmap / whitepaper

development along with the science journalism students to make sure that everybody is on the same page.

(g) At the end of Day 4 we will have a public event with a few TED talk style presentations, a panel as well as a public discussion of some the workshop issues. Day 5 will continue with a focus on the development of the roadmaps/whitepapers and have a few key note presentations summing up the workshop issues and findings. Again, the scientific roadmap should summarize the main scientific challenges while the public whitepaper should summarize the main societal challenges and open up for an ongoing dialogue with the interested public, policymakers and the press.

We do realize that all participants may not be able to stay for all events thought out these five days due to other commitments, but we encourage participation throughout the week.

* = Participation not confirmed yet

Monday 5 October 2015

09:00 - 10:00	Arrival, office assignment, coffee and tea
10:00 - 10:15	Welcome by the Lorentz Center staff
10:15 - 11:00	Welcome by the workshop organizers – This opening session will contain: <ul style="list-style-type: none">• An individual speed-introduction of all 40 experts (one minute each).• Short introduction of science journalism students and their role• Highlighting interdisciplinary and terminology ambiguities that will eventually turn up as scientists from very different backgrounds begin to collaborate
11:00 - 11:15	Steen Rasmussen <i>A technologically driven societal transition?</i>
11:15 - 11:30	Lene Andersen <i>The Matrix: Can we fill in the blanks in the BINC-Age column?</i>
11:30 - 12:30	Session 1: <i>Natural science / technology: Six presenters + Q&A</i> Session chair: Norman Packard Note-taker (key issues and questions from presentations): Christopher Coenen (4 x 10 mins + 20 mins questions and discussion in panel) <ul style="list-style-type: none">• John McCaskill• Susan Stepney• Bert de Vries• Stephan Engberg
12:30 – 14:30	Lunch
14:30 - 16:00	Session 2: <i>Social sciences, economy & policy + cultural studies, humanities & arts:</i> 6 presenters + Q&A Session chair: Dirk Stemerding Note-taker: Martin Jacobi <ul style="list-style-type: none">• Christopher Coenen• Doyne Farmer

- **Timotheus Vermeulen & Robin van den Akker**
- **Claudia Alsdorf**
- **Bo Andersson**
- **Katarina Juselius**

16:00 – 16:30

Coffee and tea break

16:30 – 18:00

Introduction to moderated, open and exploring discussions in 5 groups, each addressing one of the 5 challenges. Moderators and editors are expected to act for the duration of the workshop, while group members are expected to switch between groups over the five days:

- *An increasing digital economy & citizens in cyber-space*
 - Moderator: **Doyne Farmer**
 - Editor: **Kees de vey Mestdagh**
- *An eroding middle-class & democracy*
 - Moderator: **Per Ödling**
 - Editor: **Claudia Alsdorf**
- *One world – local & global cooperation*
 - Moderator: **Katarina Juselius**
 - Editor: **Luis Bettencourt**
- *Living & intelligent technologies*
 - Moderator: **John McCaskill**
 - Editor: **Rinie van Est**
- *New narratives*
 - Moderator: **Ra Page**
 - Editor: **Svend Åge Christensen**

18:00 -

Wine and Cheese welcoming party

Tuesday 6 October 2015

09:00 – 10:30

Session 3: *Natural science / technology*: 6 presenters + Q&A

Session chair: **Susan Stepney**

Note-taker: **Virgil Rerimassie**

- **Cees Dekker**
- **Per Ödling E**
- **Wolter Pieters**
- **Martin Jacobi**
- **Paulien Hogeweg**
- **Luis Bettencourt**

10:30 – 11:00

Coffee and tea break

11:00 – 12:30

Session 4: *Social sciences, economy & policy + cultural studies, humanities & arts*: 6 presenters + Q&A

Session chair: **Robin Van den akker**

Note-taker: **Cees Dekker**

- **Svend Aage Christensen**
- **Kees de Vey Mestdagh**

- **Ra Page**
- **Dirk Stemerding**
- **Rinie van Est**
- **Ulf Dahlsten**

12:30 - 14:30	Lunch
14:30 – 16:00	Discussions in the 5 groups, with same groups focus, moderators and editors as previous day. Participants, please engage with a group different from yesterday.
16:00 - 17:00	Continued work in group, defining the main tasks for each group: <i>What should the group deliver by end of Day 3 and for the public evening event Day 4?</i>
17:00 - 18:00	Plenary discussion: Short summaries from the groups with input and discussion from plenum, wrap-up and conclusions of the day

Wednesday 7 October 2015

09:00-10:15	Updates from the five groups: 5 x 15 minutes
10:15-10:30	Coffee break
10:30-12:00	plenum discussion: <ul style="list-style-type: none"> • Is this this 5-way division/factoring of organizing the problem appropriate? Better alternatives? • What are the main/leading indicators for each of the areas, how do we best document our observations? • Which are the main scientific challenges - already known and new? • Scientific investigations/projects/papers the participants would like to do - think about identification of potential co-authors for papers? • Where are we heading? Scenarios for utopia and dystopia - critical “tipping” points? • Which are the key issues that policymakers should be aware of?
12.00 - 13.00	Poster session
13:00 - 18:00	Lunch, self-organized collaborations and socializing, e.g. local sightseeing (bikes may be rented at Lorentz; 5 Euro per day), museum visit - or continued group work. Organizers and group moderators meet with students at 17:00
18:00 - 19:00	Drinks and sharing the insights of the day
19:00 -	Workshop dinner Café Olivier Leiden

Thursday 8 October 2015

09:00 - 10:30	Session 5: <i>Natural science / technology</i> : 6 presenters + Q&A
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Session chair: **John McCaskill**

Note taker: **Tomas Bjorkman**

- **Norman Packard**
- **David Ackley**
- **Kliment Yanev**
- **Isabelle Meynier-Grimaldi**
- **Virgil Rerimassie**
- **Jos van den Broek**

10:30 - 11:00

Coffee and tea break

11:00 - 12:30

Session 6: *Social sciences, economy & policy + cultural studies, humanities & arts*: 6 presenters + Q&A

Session chair: **Dirk Stemerding**

Note-taker: **Martin Jacobi**

- **Tomas Björkman**
- **Pernille Grønkjær + Kristina Korsholm**
- **Peter Hesseldal**
- **Jaap van den Herik**
- **Penny Mealy**
- **Zarqa Narwas**

12:30 - 14:30

Lunch

14:30-16:00

3 to 5 groups work on the following:

- Prepare the public event this evening: Assemble the main preliminary conclusions from our meeting; main policy issues, main societal impact and issues of general stakeholder interest
- Start integration of the scientific whitepaper with input from presentations, working groups and the plenary discussions.
- Start co-authoring papers? Drafting a Perspective for Science or Nature about the underpinning science for the workshop theme?
- How do we e.g. engage funding agencies with the workshop issues? Start a bottom up stakeholder process that might result in an EC funding program crosscutting the workshop theme?
- What should be our main message to the public, media and policy makers?

16:00 - 16:30

Wrap-up with group moderators and students

Public Event

17:00 - 17:30

Arrival of workshop participants at Boerhaave Museum Leiden

17:30 – 18.30

Guided tour in the museum

18:30 – 20.00

Dinner

20:00 – 22.00

Public event at Boerhaave Museum

3-4 'BINC Talks' of 10 minutes each – at least 1 MSc student speaker (± 45 min in total)

Moderated panel discussion between the speakers plus others: in total ±8 persons (±30 min)
Discussion between panel and public (± 45 min)

Friday 9 October 2015

- 09:00-11:30 Work in groups:
- Continue integrating and drafting the whitepaper
 - Consider further research projects, papers and collaboration
 - Consider contributions to the new BINC narrative
 - Introduce the process to the public, media and policy makers (for public website):
 - a brief statement about what is about to evolve
 - a description about how science can and cannot approach this new and strange agenda; scientific limits and possibilities
 - a call for public engagement
- 11:00-12:00 One or two short plenary sessions for feedback, consensus building and conflict clarification. Possibly a panel discussion to expose and clarify conflicting perspectives.
- 12:00-14:00 Lunch
- 14:00-16:00 Invited overview presentations and following panel and concluding plenary discussion
Kristina Persson – Minister of Future Strategy, Sweden
Margrethe Vestager * – Commissioner for Competition, EU
- 16:00-17:00 Summary of workshop and final remarks: What did we learn, what was missing and suggested next steps