

Interdisciplinary Winter School
**Integration and Translation
in Systems Medicine**
Hamburg, February 1-5, 2016



BIOGUM
Forschungsschwerpunkt
Biotechnik, Gesellschaft
und Umwelt



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Organizational Matters

The Winter School will take place at the Research Centre for Biotechnology, Society and the Environment (FSP BIOGUM), University of Hamburg, Lottestrasse 55, 22529 Hamburg, www.biogum.uni-hamburg.de

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(please use only in case of emergency)

Program

Sunday, January 31st

19.00h

Get-Together with drinks & snacks
Bar/Restaurant Abaton-Bistro

Monday, February 1st

Introduction & Perspectives on Systems Medicine

09.15h – 10.15h

Welcome & Introduction
Regine Kollek, Imme Petersen

10.15h – 10.30h

Coffee break

10.30h – 12.15h

Workshop A
Systems medicine from the philosophy of science's perspective
Ulrich Krohs

12.15h – 13.15h

Lunchtime

13.15h – 14.00h

Presentation 01
Correlations in cognitive neuroscience and the roots of scientific medicine: stuck in old Biology?
Paola Hernández Chávez

14.00h – 14.45h

Presentation 02
Biological complexity and the human microbiome: integration and therapeutic translation in medicine
Nicolae Morar

15.30h – 17.00h

Sightseeing (guided city tour)
Top-Tour HH

18.00h

Dinner
Schönes Leben

Tuesday, February 2nd	Epistemic challenges
9.15h – 10.00h	Presentation 03 Systems virology for emergence: a philosophical analysis of complexity & hierarchy <i>Teresa Branch-Smith</i>
10.00h – 10.45h	Presentation 04 Understanding the holism of systems medicine in terms of medicalization <i>Henrik Vogt</i>
10.45h – 11.15h	Coffee break
11.15h – 13.00h	Workshop B-1 Integration from the philosophy of science's perspective <i>Ingo Brigandt</i>
13.00h – 14.00h	Lunchtime
14.00h – 15.45h	Workshop B-2 Modeling from the philosophy of science's perspective <i>Gabriele Gramelsberger</i>
15.45h – 16.15h	Coffee break
16.15h – 17.00h	Presentation 05 Systems medicine and the diabolic character of disease <i>Mathias Wirth</i>
18:00	Sightseeing (guided walking tour) <i>St. Pauli Kiez Tour</i>
20:00	Dinner <i>Fischerhaus</i>

Wednesday, February 3rd	Methodological & organizational challenges
9.15h – 10.00h	Presentation 06 Orphan blockbusters: of pharmaceutical business models and the promise of personalized medicine <i>Anna Geltzer</i>
10.00h – 10.45h	Presentation 07 Facilitators and barriers for the implementation of systems medicine in the German health care system <i>Clarissa Lemmen</i>
10.45h – 11.15h	Coffee break
11.15h – 13.00h	Workshop C Standardization & data management <i>Nadine Umbach</i>
13.00h – 13.30h	Lunchtime (take-away)
14:30h – 16.00h	Sightseeing (harbour tour) <i>Alternative Hafenrundfahrt</i>

Thursday, February 4th	Future perspectives
9.15h – 11.00h	Workshop D Concepts of translation <i>Sara M.E. Green</i>
11.00h – 11.15h	Coffee break
11.15h – 12.00h	Presentation 08 Automated reasoning, clinical practice and biopathological pathways in ge- nomic-driven clinical cancer research <i>Etienne Vignola-Gagné</i>
12.00h – 12.45h	Presentation 09 The clinician scientist in the field of translational research: political hope, economic worth and practical problems <i>Barbara Hendriks</i>
12.45h – 13.45h	Lunchtime
13.45h – 15.30h	Workshop E Systems medicine in clinical practice <i>Angelika Eggert</i>
15.30h – 16.00h	Coffee break
16.00h – 18.00h	Workshop F Networking, funding & interdisciplinari- ty: Future cooperation of systems medi- cine, social sciences, and philosophy <i>Angelika Eggert, Sara M.E. Green, Jeanette Erdmann</i>
19.00h	Dinner <i>Bullerei</i>

Friday, February 5th	Outlook
9.15h – 10.00h	Presentation 10 Systems Medicine – A challenge to health literacy? <i>Pauline Mantell</i>
10.00 – 10.45h	Presentation 11 Social impact of genomic high-throughput data: moral perspectives and self-expression in the era of next generation sequencing <i>Alexander Urban</i>
10.45h – 11.15h	Coffee break
11.15 – 12.00h	Presentation 12 Juridical impact of systems medicine on doctor-patient-relationship <i>Anna Maria Ernst</i>
12.00 – 12.30h	Conclusion & Outlook <i>Regine Kollek, Imme Petersen</i>
12.30 – 13.00h	Lunchtime (take-away)

Directions

1. How to get to Mercure Hotel Hamburg Mitte

1. From Train Station “Dammthor”
2. From Airport
3. From Main Station „Hauptbahnhof”

2. How to get to the Research Centre for Biotechnology, Society and the Environment (FSP BIOGUM), Lottestr. 55

1. From Mercure Hotel
2. From Airport
3. From Main Station „Hauptbahnhof”

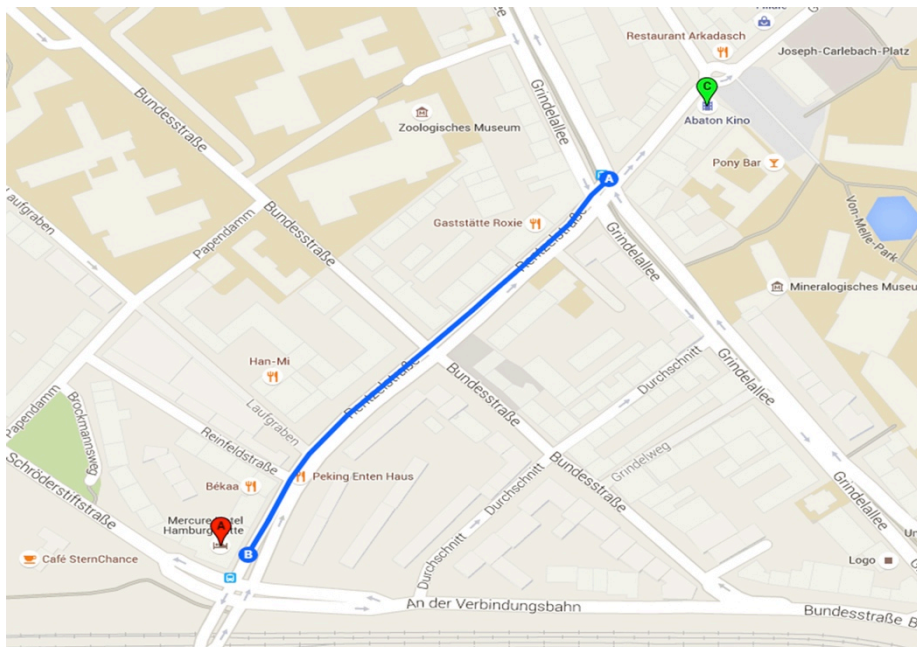
3. How to get from Mercure Hotel to “Abaton-Bistro”

1. How to get to Mercure Hotel Hamburg Mitte

1.1. From Train Station "Dammtor"

Walk out of the train station and cross the street to reach the bus stop. Take either bus **4** bound for *Eidelstedter Platz* or *Wildacker* or **5** bound for *Burgwedel* or *Nedderfeld* to **Grindelhof** (this is the second stop after you entered the bus at Dammtor). From the bus stop turn left and cross the street *Grindelallee*. Enter *Rentzelstraße* and walk 400 meter to the intersection where you can see the Heinrich-Hertz-Tower. The hotel is on the right (Schröderstiftstrasse 3).

start: Dammtor (Messe/CCH)		
stop	route 1 → Track	route 2 → Track
dep Bf. Dammtor	15:06	15:09
line	4	5
direction	Wildacker	Nedderfeld
arr Grindelhof	15:08	15:11
dest.: Grindelhof		
journey time (stop - stop)	00:02	00:02
journey time(start - destination)	00:02	00:02
of which walking time (changes included)	00:00	00:00
direct way (1,1 km)	00:17	



Heinrich-Hertz-Tower



1.2. From Hamburg Airport

Take train **S1** bound for *Ohlsdorf* and transfer at **Ohlsdorf** to train **U1** bound for *Großhansdorf, Farmsen* or *Ohlstedt*. Transfer at **Stephansplatz** to either bus **4** bound for *Eidelstedter Platz* or *Wildacker* or bus **5** bound for *Burgwedel* or *Nedderfeld* to **Grindelhof**. From the bus stop turn left and cross the street *Grindelallee*. Enter *Rentzelstraße* and walk 400 meter to the intersection where you can see the Heinrich-Hertz-Tower. The hotel is on the right (Schröderstiftstrasse 3).

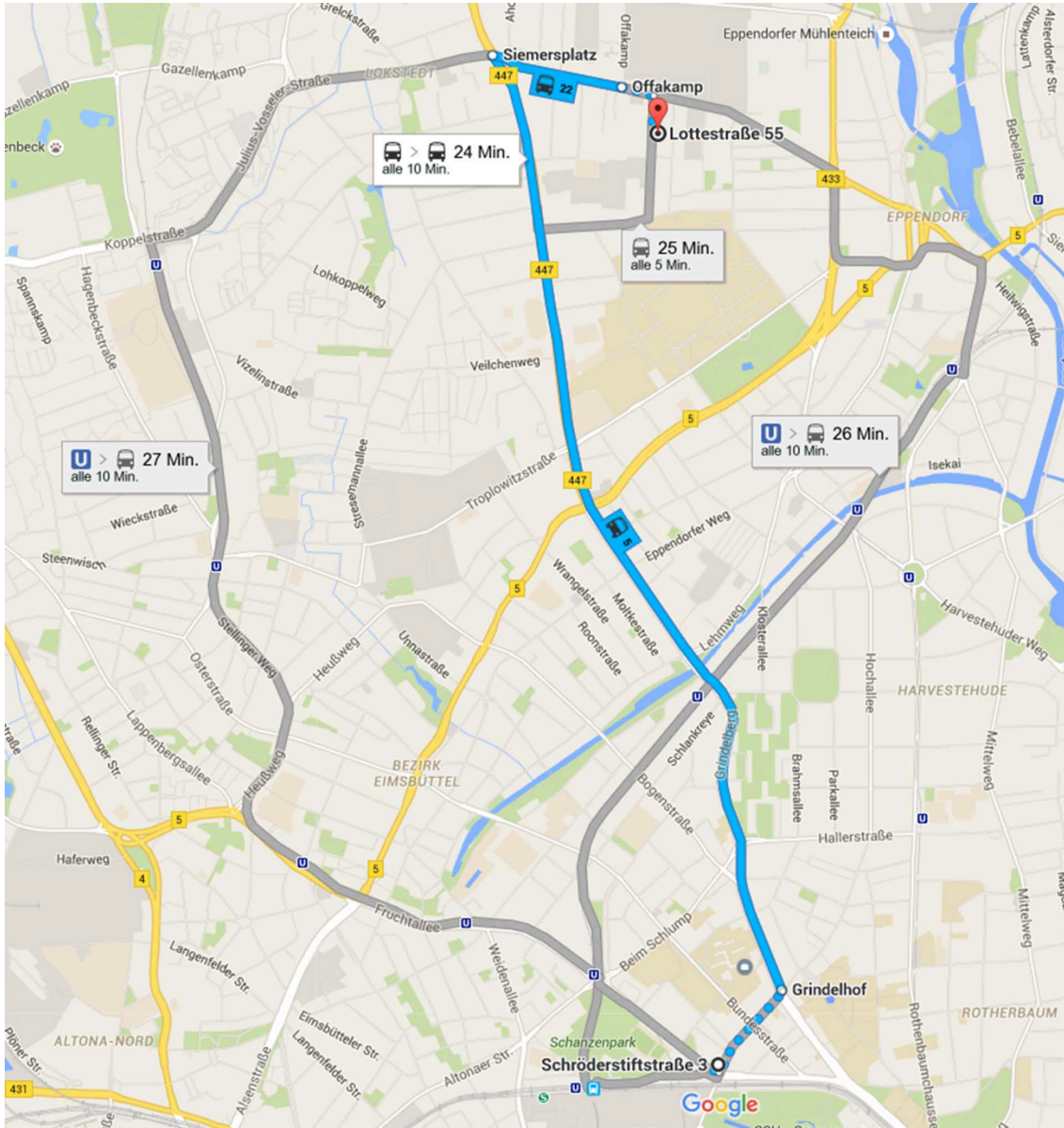
start: Hamburg Airport (Flughafen)		
stop	route 1 → Track	
dep Hamburg Airport (Flughafen)	14:34 (+0)	
line	S1	
direction	Ohlsdorf	
arr Ohlsdorf	14:37 (+0)	
dep Ohlsdorf	14:41 (+0)	
line	U1	
direction	Farmsen	
arr Stephansplatz (Oper/CCH)	14:56 (+0)	
dep U Stephansplatz	14:59	
line	4	
direction	Eidelstedter Platz	
arr Grindelhof	15:03	
dest.: Grindelhof		
journey time (stop - stop)	00:29	
journey time(start - destination)	00:29	
of which walking time (changes included)	00:04	

start: Hauptbahnhof		
stop	route 1 → Track	route 2 → Track
dep HBF/Mönckebergstraße	14:34	14:36
line	5	4
direction	Burgwedel	Wildacker
arr Grindelhof	14:46	14:48
dest.: Grindelhof		
journey time (stop - stop)	00:12	00:12
journey time(start - destination)	00:12	00:12
of which walking time (changes included)	00:00	00:00

1.3. From Main Station “Hauptbahnhof”

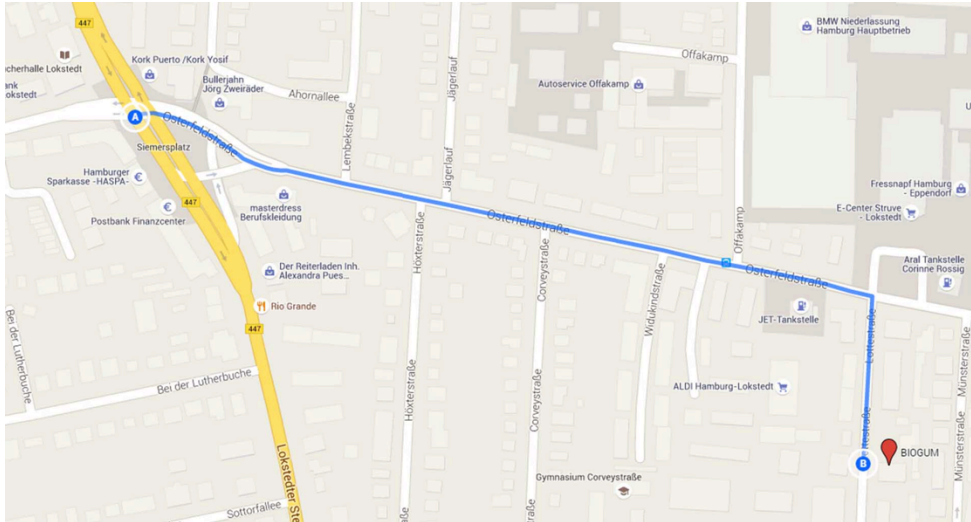
Take either bus **4** bound for *Eidelstedter Platz* or *Wildacker* or bus **5** bound for *Burgwedel* or *Nedderfeld* to **Grindelhof**. From the bus stop turn left and cross the street *Grindelallee*. Enter *Rentzelstraße* and walk 400 meter to the intersection where you can see the Heinrich-Hertz-Tower. The hotel is on the right (Schröderstiftstrasse 3).

How to get to the Research Centre for Biotechnology, Society and the Environment (FSP Biogum), Lottestrasse 55



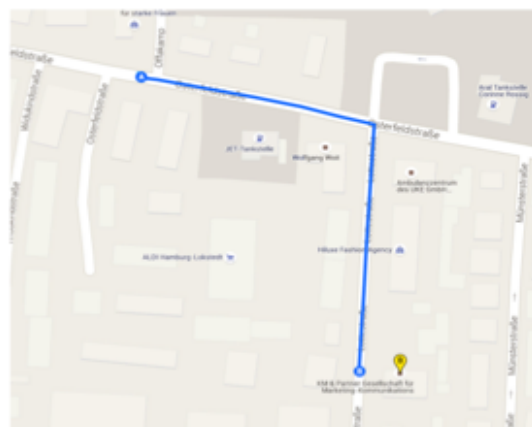
From Mercure Hotel

Walk down the street *Rentzelstraße*, away from the Heinrich-Hertz-Tower, to the bus stop **Grindelhof** in the middle of the street. Take bus **5** in the direction of *Burgwedel* to **Siemers Platz**. Walk back towards Siemersplatz, at the intersection turn left and enter **Osterfeldstrasse**. Follow the street for about 650 metre and turn right into **Lottestraße**. The building of the Research Centre (Lottestraße 55) is on the left after 150 metre. The research centre is on the second floor.



You can also transfer at **Siemersplatz** to bus **22** in the direction of *Kellinghusenstraße*. Leave the bus at the bus stop **Offakamp** (only one stop). Follow the street **Osterfeldstrasse** about 30 metres and turn right into **Lottestraße**. The building of the Research Center (Lottestraße 55) is on the left after 150 metre. The research centre is on the second floor.

start: Grindelhof	
stop	route 1 → Track
dep Grindelhof	15:11
line	5
direction	Nedderfeld
arr Siemersplatz	15:22
dep Siemersplatz	15:25
line	22
direction	Kellinghusenstraße
arr Offakamp	15:26
dest.: Offakamp	
journey time (stop - stop)	
	00:15
journey time(start - destination)	
	00:15
of which walking time (changes included)	
	00:00






From Hamburg Main Station (“Hauptbahnhof”)

At the Main Station you take the train **U1** in the Direction of *Norderstedt Mitte* and transfer at **Kellinghusenstraße** to bus **22** in the direction of *Blankenese*. Leave the bus at the bus stop **Offakamp**. Go about 30 metres back on **Osterfeldstrasse**, cross the street and enter into **Lottestraße**. The building of the Research Centre (Lottestraße 55) is on the left after 150 metre. The research centre is on the second floor.

Start: Hauptbahnhof 	
Haltestelle	Fahrt 1 → Verlauf 
ab Hauptbahnhof Süd 	15:25 (+0)
Linie	U1 
Richtung	Norderstedt Mitte
an Kellinghusenstraße 	15:37 (+0)
ab U Kellinghusenstraße  	15:39
Linie	22 
Richtung	Blankenese
an Offakamp	15:47
Ziel: Offakamp  (über Kellinghusenstraße)	
Fahrzeit (Haltestelle - Haltestelle)	
00:22	
Reisezeit (Start - Ziel)	
00:22	
davon Fußwege incl. Umsteigen	
00:02	

From Train Station “Dammtor”

Walk out of the train station and cross the street to reach the bus stop. Take bus **5** bound for *Burgwedel* or *Nedderfeld* to **Siemersplatz** (this takes about 15 minutes after you entered the bus at Dammtor). Go about 30 metres back towards Siemersplatz, at the intersection turn left and enter **Osterfeldstrasse**. After 650 metres turn right into the street Lottestraße. Follow the street for about 650 metre and turn right into **Lottestraße**. The building of the Research Center (Lottestr. 55) is on the left after 150 metre. The research centre is on the second floor.

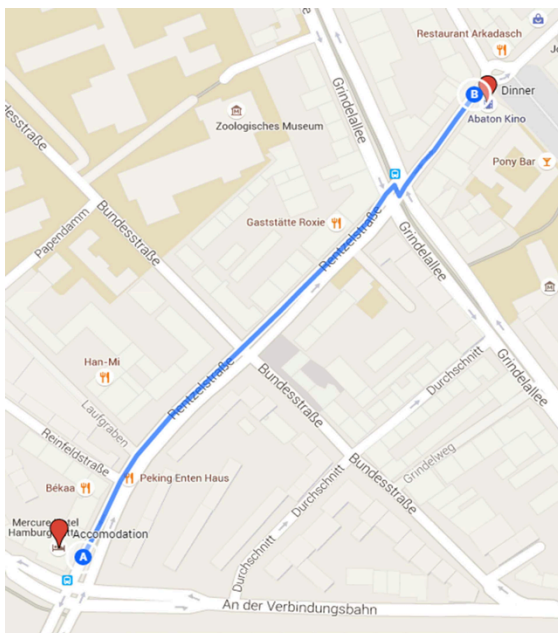
Start: Dammtor (Messe/CCH) 	
Haltestelle	Fahrt 1 → Verlauf 
ab Bf. Dammtor	15:39
Linie	5 
Richtung	Nedderfeld
an Siemersplatz 	15:52
ab Siemersplatz 	15:52
Linie	22 
Richtung	Kellinghusenstraße
an Offakamp	15:53
Ziel: Offakamp 	
Fahrzeit (Haltestelle - Haltestelle)	
00:14	
Reisezeit (Start - Ziel)	
00:14	
davon Fußwege incl. Umsteigen	
00:00	

From Hamburg Airport

At the airport go to the lower level for the bus stops. Take the bus **39** in the direction of *Teufelsbrück (Fähre)* and transfer at **Eppendorfer Marktplatz** to **22** in the direction of *Blankenese*. Leave the bus at the bus stop **Offakamp**. Go about 30 metres back on **Osterfeldstrasse**, cross the street and enter into **Lottestrasse**. The building of the Research Center (Lottestrasse 55) is on the left after 150 metre. The research centre is on the second floor.

Start: Hamburg Airport (Flughafen) 	
Haltestelle	Fahrt 1 → Verlauf 
ab S Hamburg Airport	15:23 
Linie	39  
Richtung	Teufelsbrück (Fähre)
an Eppendorfer Marktplatz	15:41
ab Eppendorfer Marktplatz	15:41
Linie	22  
Richtung	Blankenese
an Offakamp	15:47
Ziel: Offakamp 	
Fahrzeit (Haltestelle - Haltestelle)	00:24
Reisezeit (Start - Ziel)	00:24
davon Fußwege incl. Umsteigen	00:00

How to get from Mercure Hotel to the bar/restaurant “Abaton”



Local Public Transport, Accommodation & Dinner

Local Public Transport

On Sunday 31st, you will receive 5 daysaver tickets for using local public transport (HVV) at the hotel reception.

Accommodation

Rooms are already booked for you at

Mercure Hotel Hamburg Mitte

Schroederstiftstr. 3

20146 HAMBURG - GERMANY

Tel : (+49)40/450690 - Fax : (+49)40/450691000

Mail : h5394@accor.com

<http://www.mercure.com/gb/hotel-5394-mercure-hotel-hamburg-mitte/index.shtml>.

Dinner

Sunday, January 31, 7pm

Abaton-Bistro (*district: Grindel*)

Bar/Restaurant/Cinema (walking distance from the hotel)

Grindelhof 14A, 20146 Hamburg

phone: (+49) (0)40 41 32 03 20

<http://www.abaton.de/>

Monday, February 1, 6pm

Schönes Leben (*district: Speicherstadt*)

Alter Wandrahm 15, 20457 Hamburg

phone: (+49) (0)40 18 04 82 680

<http://speicherstadt.schoenes-leben.com/>

Tuesday, February 2, 8pm

Fischerhaus (*district: St. Pauli- Landungsbrücken*)

St. Pauli Fischmarkt 14, 20359 Hamburg

phone: +49 (40) (0) 31 40 53

<http://www.restaurant-fischerhaus.de/index.php>

Thursday, February 4, 7pm

Bullerei (*district: Schanze*)

Lagerstr. 34b

20357 Hamburg

phone: +49 (40) (0) 40 33 44 21 10

<http://www.bullerei.com/>

Sightseeing

Monday, February 1, 3pm30

guided city tour

Top-Tour Hamburg

meeting point: Main Station/exit Kirchenallee

22179 Hamburg

phone: (+49) (0)40 64 13 731

<http://www.top-tour-hamburg.de/touren/>

Tuesday, February 2, 6pm

guided walking tour St. Pauli

St. Pauli Tourist Office

meeting point: Imperial Theater, Reeperbahn 5, 20359 Hamburg

phone: (+49) (0)40 98 23 44 83

www.pauli-tourist.de

www.facebook.com/St-Pauli-Tourist-Office/185055851523755

Wednesday, February 3, 2pm30

harbour tour

Alternative Hafenrundfahrt

meeting point: St.Pauli-Landungsbrücken, jetty „Vorsetzen“ at the red lightship

phone: (+49) (0)40 39 30 01

<http://www.rettet-die-elbe.de/hafenrundfahrt/Hafenrundfahrt.php>

For an interactive map of the points of interest follow the link

<https://goo.gl/G6ma8y> or scan the QR-Code with your device:



Presentation Abstracts in order of presentation number

Presentation 01

Monday, February 1, 13.15-14.00h

Correlations in cognitive neuroscience and the roots of scientific medicine: stuck in old Biology?

Paola Hernández Chávez

The aim of this work is to contribute to the identification of the sources of difficulties arising from neuroscientific correlations, which are common to scientific medicine. From the cognitive neuroscience stance, it is important to determine if the difficulties we currently face in our understanding of what the brain does arise from poor experimental design, a technology limitation, or an interfering background idea that is biasing our interpretation of the research design. The main focus is analyzing the background idea biasing the research design in scientific medicine and cognitive neurosciences, both coming from twenty-century closed causality assumptions, i.e., from an agent-centered logic. Here are some examples: it has been possible to identify that the Human Genome Project, the Human Brain Project, The Human Connectome Project and also Cognitive Neuroscience; share old Biology's line of thought, characterized by the avoidance of discontinuities, missing links or non-causal phenomenon.

I will be showing that Illness and dysfunctions are key concepts in both fields, which emerge from the basic notion of causality coming from old Biology. Prototype accepted correlations are that the bacterium *Vibrio cholera* causes cholera; *Treponema pallidum* causes Syphilis; H1N1 causes Swine Flu. All of those come from old linear causality assumptions in Biology. In Scientific Medicine the same atomistic logic pattern prevails: a single agent X causes infection X.

As some authors have noticed, the 'organism' disappeared as a fundamental explanatory concept in Biology (Webster & Goodwin 1982; Laubichler 2000; Gutmann et al. 2000; Huneman and Wolfe 2010; Cornish-Bowden 2006; Nicholson 2014). Fortunately, thanks to the works of such guys, the fact that genes live within the organism and the imminent need to put systems biology back to the center, are becoming sounder. Two ideas are being strengthened: there is no privileged scale at which biological functions are determined (Noble 2012), and we should focus on the organizing principles underlying living systems (Mesarovic, Sreenath, Keene, 2004).

There is additional evidence showing that few genetic variants could account for a lot of disease risks; diseases like diabetes, heart disease, and most cancers have no clear genetic story that can be traced. These facts have demonstrated that genetic information is not enough to explain common conditions in families/ populations, which allows to conclude that old Biology's reductionistic paradigm is not being

successful in determining the function of all genes: to study complex genetic networks we need new theoretical approaches, new mapping relations.

Henceforth, my proposal consists in showing that putting back organism to the center of Biology would be a way out of old linearly causal and reductionistic logic, which has much prevailed and biased scientific medicine and cognitive neuroscience. Doing so includes taking into consideration the following facts: organisms, not genes, are the agents of evolution; phenotypic plasticity (when genotype generates different phenotypes depending on the environmental circumstance); that adaptation includes phenotypic innovations that can be genetically inherited; organisms' heterogeneity and dynamics and variability of Living Organisms (they are in constant change); niche construction (organisms do not just adapt, they also help to construct their environment in a constant feedback).

An interesting case incorporating organism-based biology is Noble's modeling of the heart cells (Noble 2012, 58). As he notices, there is not a program for cardiac rhythm in the genome. The same applies to circadian rhythm and to all functions that require cellular structural inheritance as well as genome inheritance. From there he concludes, "we cannot yet characterize all the relevant concentrations of transcription factors and epigenetic influences. It is ignorance of all those forms of downward causation that is impeding progress". (Noble 2012: 60)

I will conclude by quoting Cornish-Bowden, since he summarizes a recommendation I want to extend to scientific medicine and cognitive neuroscience: "As long as an organism is treated as no more than a collection of components, one cannot ask the right questions, and certainly cannot answer them" (Cornish Bowden 2006: 475).

Presentation 02

Monday, February 1, 14.00-14.45h

Biological complexity and the human microbiome: integration and therapeutic translation in medicine

Nicolae Morar

Recent findings emerging in microbial biology highlight numerous microbial interactions that affect human organisms and thus, offer us new ways for understanding our organismal complexity. Are the functions of our organism the unique outcome of our own genetics? Are our physiological capacities the single product of our evolution? Are our psychological states and emotions, in a word our personality, nothing else than the expression of our organic properties? Ultimately, are we truly individuals? Today, microbial biology calls into question the most traditional understandings of human organisms.

Pause for a second and think about yourself or one of your closest friends. Imagine you provide us with a description of your friend Mary. You might say things like: she is 45 years old, and although her allergies might bother her from time to time - she is fairly healthy. Her immune system is reactive since the recent flu pandemic did not have any significant impact on her. Moreover, you know her well enough to think that her deep feelings and brain states often explains her behavior. If, let's say, her stress response is high and she is moody, you might explain this psychological state by appealing to her personality. You certainly do not fail to attribute those characteristics to Mary, since in spite of her complex organization, you understand that all those features are genuinely constitutive of who she is as an individual organism. This common process of thinking about organisms is underlined by our deeply rooted organism-centered view of biological and cultural individuality. We have been (and continue to be) committed to the idea that knowing the organic composition of an organism casts light not only onto the structure and nature of this organism, and but it ultimately provides us with an explanation and (hopefully) a prediction of its behavior.

However, recent studies in microbial biology have produced a radically new understanding of human organisms. If until recently, we thought of ourselves as being the kind of entities which possess fairly strict spatial boundaries and whose internal functioning was generated and regulated by one's respective cellular materials (Clarke 2011), we have learned to our own surprise, that on our skin and inside our bodies (especially in our gut), microbial cells outnumber human cells by a factor of 2.5/3 to 1 (Ravel et. al. 2014; Bianconi & al. 2013). As amazing as the number of microbes who made home of our bodies is, the microbial genetic diversity that symbionts bring to us is even more impressive. While the human body consists of approximately 22,000 genes (Perteau & Salzberg 2010) – quite similar to a fruitfly genome, our human microbiome (our metagenome) consist of 2 million microbial genes (Xu & Gordon 2003; Turnbaugh & al. 2007). The biological complexity of a human body, made of different sets of microbial species (OTUs) and human DNA, poses a serious challenge to any scientist who is striving to unravel something about the fundamental nature of human organisms. To the question

“What are we?”, Tom Insel replies “We are, at least from the standpoint of DNA, more microbial than humans” (Smith 2015; see also, Nature 2008; Sleator 2010; Relman 2012; Ray 2012; Brody 2014).

In addition, we have learned that everyone’s microbiome makes possible physiological capacities that are not the product of our own evolution (Ley & al. 2006; Turnbaugh & al. 2006). So, in many ways, the claims that “Mary is healthy” or “Her immune system was responsive to a flu pandemic” have to be understood as being both the expression of her genetic composition, as well as the manifestation of an immune system largely composed and sustained by our microbial fellows. Our complex organic composition is fully captured only if one highlights the heterogeneity of interactions between human and non-human cellular material (Hehemann & al, 2010); hence, the urgent needs to find novel ways to integrate and translate such microbial findings into a system view of medical practice.

So far, one might reply that whoever Mary is, she is more than just the sum of physical parts she is composed of. When it comes to her own identity as an organism, her psychological states, her moods, feelings and decisions, in a word her agency, are truly the defining aspects of who she is. Her personality and the way she behaves in stress situations are fully an expression of her organic and cultural properties. However, recent research on the microbiome-gut-brain axis shows that the composition of our microbial community in our gut has an impact on our stress-responses and on our central neurochemistry, thus it plays an active role in modulating our behavior (Neufeld & al 2010). Those studies support the hypothesis that the “gut’s second brain influences our mood and well-being” (Hadhazany 2010), and ultimately is in part responsible for our own psychology (Yadav & al. 2010).

The presentation that I would like to propose for Winter School “Integration and Translation into Systems Medicine” is an exploration of the conceptual landscape surrounding the human microbiome and the ways in which theoretical models shape possibilities for future therapeutic procedures. I will present – one by one - a list of such explanatory models: from the organ view, to the immunity view, the superorganism view, the holobiont view, and, last the ecosystem view. Along with John Maynard Smith, I believe that “our choice of models, and to some extent our choice of words to describe them, is important because it affects how we think about the world” (Smith 1987, 120). The metaphors and the models we endorse about the human microbiome provide us with particular views of what a medical therapy is and what it can do for us (e.g. if microbes function like an organ for us, transplant seems to be an appropriate form of therapy – hence, the recent development of fecal transplants).

This winter school represents a tremendous opportunity for a junior faculty like myself to pursue my research interests around questions of health and disease and microbial biology. Not only could this winter school be an amazing laboratory for assessing my current project, but the exposure to some leading scholars in the life sciences would also be particularly fruitful for my professional development.

Presentation 03

Tuesday, February 2, 9.15 – 10.00h

Systems virology for emergence: a philosophical analysis of complexity & hierarchy

Teresa Branch-Smith

Systems medicine has an intentionally and necessarily cross-disciplinary approach to investigating complexity by using integrative micro/macro-level hypotheses. The philosophy of science has a rich history of discussing multiple levels of explanation making it particularly primed to engage discussions in systems medicine and, more specifically, systems virology. Research into the spread of viral infections is exceptionally interesting from a philosophical lens because not only do viruses occupy a unique non-living category within biology, but their ability to cause high-level macro changes from the micro-level is a helpful example when considering multi-level interactions in complex systems. Hence, I argue that systems virology as a subdiscipline of systems medicine can be used to investigate classic problems in the philosophy of science and in particular, theories of emergence.

Research in systems virology has developed rapidly from early mechanistic models to gene expression profiling to developing signatures for disease outcomes (Law et al, 2013). For example, the characterization of viral replication (attachment, insertion, replication, and release) has proven helpful in developing some antiviral drugs to target enzymatic activity; however, it has been insufficient to produce desired higher-level macro changes (ex: positive host response). Phenomena that occur at the macro-level are emergent and cannot be understood from the features of the micro-level alone. The relationship between macro-level phenomena and microlevel changes is actively discussed in the philosophy of science when defining emergence. According to Wimsatt (2000), emergent phenomena are a property of the system as a whole, yet dependent on the system's organization. A philosophical analysis of systems virology can help us better understand emergence in systems by studying the roles of reduction and prediction between the cellular interactions of the system and the higher-level macro changes of the host. These inter-level relationships contribute to the construction of models used to represent the infection and replication processes, thus furthering our knowledge about emergent phenomena and the reliability of our models.

Computer models of viral infections have prompted researchers to explore other alternatives to the virus-centric approach. Now, researchers look to multiple micro and macrolevel features of the interaction between virus and host to model the use of viral mutagens and the targeted inhibition of host genes or pathways (ex: viral spread models in NetLogo). Since explanation and prediction are theorized to influence each other in different ways (ex: covering model, unification model, causal mechanical model, and the mechanistic model (Salmon, 1989), should our models explain or predict infection? Microbiology relies heavily on mechanistic models of explanation and virology is no exception, but philosophers have noted limitations with the reliability of this approach (Van Fraassen, 1990). As a result, systems vi-

rology can be an example for philosophy of science to explore the limitations of modelling and prediction in emergent phenomena with real world applications.

Therefore with systems virology as an example, philosophers can go beyond theory to explore our ideas about emergent phenomena. In practice, this can have implications at the level of public health systems and contagious disease containment measures, adding a valuable contribution to the development of socially relevant philosophy of science.

References

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Presentation 04

Tuesday, February 2, 10.00 – 10.45h

Understanding the holism of systems medicine in terms of medicalization

Henrik Vogt

Systems medicine has been claimed to take biomedicine from reductionism towards *holism* or *integrationism*. This may initially seem attractive to the physician embracing what has traditionally been called a holistic conception of health, that is a humanistic focus not only on parts-associated disease, but the agency, subjective experience and values of *whole persons*. However, analysing the methods and beginning practice of systems medicine and its corresponding definition of health and disease, it seems more accurate to describe its holism in terms of *medicalization* rather than a humanistic-holistic turn in medicine. Medicalization refers to *the process by which aspects of human life are defined in medical terms and underlain medical control*.

The holism of systems medicine is motivated both by theoretical, empirical and technological circumstances. Theoretically and empirically, it springs out of an increasing appreciation of biocomplexity in biology and a need to study living organisms as complex, integrated systems or *wholes*. However, rather than emphasising the unpredictability or uncontrollability of complex systems, mainstream systems medicine – as exemplified by systems biologist Leroy Hood and the 100 K Wellness Project – seems motivated primarily by new technological developments and hopes that this complexity may yet be tackled scientifically. In this situation, '*holism*' firstly refers to an attempt to measure each person as comprehensively as possible at all levels of biological organization, and continually or repeatedly through time. Secondly, '*holism*' or "*integrationism*" refers to the attempt to use computational tools, bioinformatics and mathematical modelling to integrate and translate the resulting dynamic 'big data' into predictive and actionable information. Importantly, the longitudinal nature of this effort is thought to enable a primary focus on healthy people, disease prevention and optimization of wellness (health), rather than a reactive focus on disease. Thirdly, the holism of systems medicine is defined by systems and network theory, which is employed to guide the mathematical modelling of data. Drawing on such theory, which is often derived from engineering, network states tend to be defined as predictable and actionable, notably through a focus on molecular mechanisms. Network states representing health or wellness, which has previously often been regarded as a normative concept that is as complex as 'the good life itself', is defined as equally quantifiable, predictable and actionable as states of disease.

In sum, rather than a holistic-humanistic emphasis on the capacities and experience of human agents, it is the process of medicalization that most obviously turns "holistic" in systems medicine. This 'holistic medicalization' involves a) the conceptual definition of not only disease, but health or wellness, as complex and multi-level, but nonetheless quantifiable, predictable and controllable through biomedical action, b) corresponding attempts in research and practice at achieving such

actionability and control by c) quantifying and bringing as many factors of human functioning as possible – from the genetic to the social – into predictive, actionable models, a practice which d) is beginning to label every well person studied with multiple "actionable possibilities". The more 'holistic' or 'integrationist' systems medicine will get in this sense, the more medicalizing. Potential harms, which have largely been ignored in the systems medicine literature, are discussed.

Presentation 05

Tuesday, February 2, 16.15 – 17.00h

Systems medicine and the diabolic character of disease

Mathias Wirth

While the “individualized” in individualized medicine has positive connotations as it refers to person-centered, custom-tailored therapy that seems to hail a new generation of medicine, the “system” in systems medicine belongs to a semantic field of ambivalent meaning. Although individualized medicine and systems medicine are closely related, with the latter appearing to be a specific form of individualized medicine, the scope of systematizing diseases raises more fundamental questions. There is no doubt that medicine, apart from the quest of its realization, must be individualized since patients only exist as individuals. In fact, one early form of medicine, dietetics, only makes sense with an individualized approach to personal life conditions (Wirth 2015). There is also no doubt that medicine, apart from the concrete probability, must focus on the systematic patterns of individual diseases. The prognosis of a given sickness is vital for treatment and a therapy regime.

Although there are doubts whether individualized medicine will have the future that its advocates predict, the fundamental question of whether individualized treatment will be possible at all has not been addressed. It cannot be denied that an individualized approach to diseases would be highly desirable, even if difficult to realize. That could be different with systems medicine, because its basic assumption that diseases follow systematic patterns and can be predicted in detail is often contradicted through the singularity of diseases. It is a major clinical experience that medical prognosis can be very imprecise.

One reason for that lies of course in the individuality of persons and their somatic constitution, but another reason of a more philosophical sort fundamentally challenges systems medicine and its potential. Because of Leibniz’s distinction between three kinds of evil (*malum morale*, *malum physicum* and *malum metaphysicum*), there is a precise term for classifying diseases as a natural evil. Thus, philosophy’s definition of evil applies to diseases. One major and consensual philosophical belief about evil is that it appears as *mysterium iniquitatis* and remains a conundrum. Only good shows patterns and systems that lead to the beneficial atmosphere of trust and prediction. But the character of evil is a disturbing one. The general warning not to allude to a “contract with evil” is a popular saying but stresses that evil is not to be trusted. Due to its unpredictability, evil was named diabolic which literally means “mixing up”.

The proposed scrutiny of systems medicine aims to discuss the possibility of systematizing diseases and seeks to launch a discussion between a philosophy of evil and medicine. Finally it could be found that both domains learn from each other, as uncompromising declarations of the possibility or impossibility of systematizing diseases and evil are falsified by clinical expertise.

Presentation 06

Wednesday, February 3, 9.15 – 10.00h

Orphan blockbusters: of pharmaceutical business models and the promise of personalized medicine

Anna Geltzer

For several decades, the dominant driver of pharmaceutical industry profitability has been the blockbuster drug. Defined today as a drug that brings in at least \$1 billion in annual sales for its manufacturer (up from \$500 million just ten years ago), drugs in this category have historically targeted chronic, widespread conditions such as high cholesterol or arthritis, and have been emblematic of the ontological conception of disease within biomedical science. For almost as long, industry analysts have been tolling the death knell of this business model, pointing to declining innovation in the industry, the soaring costs of developing new blockbuster products and the difficulty of shepherding them through the regulatory process.

Since the late 1990s, as the Human Genome Project was nearing completion, new scientific approaches to disease etiology and therapeutics have emerged that seek to trace disease processes and tailor therapeutic response to the genetic code of the individual. Advocates of these approaches promise a future in which medical treatments will be predictive, preventative, personalized and participatory—characteristics that would seem to put them at odds with the blockbuster business model.

This paper analyzes what happens when a new scientific epistemology collides with an established political economy of science by looking at the emerging category of orphan blockbusters. Orphan drugs are, by definition, pharmaceuticals that remain commercially undeveloped due to their limited potential for profitability, usually because the conditions they are designed to treat are too rare to constitute a viable market. As a result, they are treated differently by regulatory agencies that seek to encourage their development both through economic incentives and by means of a different set of scientific standards. They are, in other words, on the opposite side of the scientific and regulatory spectrum of the blockbuster drug. Yet these two seemingly incompatible categories have begun to merge, with eighteen blockbuster drugs currently on the market having been approved as orphan medications. What are the implications of this trend for the pharmaceutical business model, and what does this reconfiguration of market logics mean for the emerging biomedical approaches that seek to revolutionize existing approaches to treatment? The paper engages these questions through the application of grounded theory methodology and contributes to ongoing interdisciplinary discussions on the relationship between political economy and biomedical epistemology.

Presentation 07

Wednesday, February 3, 10.00 – 10.45h

Facilitators and barriers for the implementation of systems medicine in the German health care system

Clarissa Lemmen

Subproject of the interdisciplinary consortium project: Systems medicine and health literacy (SysKomp) – Theoretical, normative and empirical studies concerning mental disorders

Background

Systems medicine links biological, biomarker-based approaches with clinical-medical data, as well as environmental- and lifestyle factors. Based on a holistic view of the human body it takes an interdisciplinary approach to process, analyze and interpret a large amount and variety of biological, neuropsychological, clinical and social demographic data. Systems medicine has the potential to advance understanding of etiology, detection, prevention and treatment of diseases. However to date, policy makers are still faced with the challenge to create appropriate conditions for implementation of systems medicine in the health care system.

Objective

The aim of this research project is to identify action areas for implementation of systems medicine in the German healthcare system, as well as facilitators and barriers to implementation. Initially, different views towards this topic will be explored from the perspective of different relevant stakeholders. Based on these views, the most important aspects for implementation of systems medicine within the specific context of the German healthcare system will be identified and health policy recommendations developed.

Method

Qualitative and quantitative methods will be combined in an explorative sequential mixed- methods design, consisting of 4 steps: 1) a systematic literature review to describe the status quo 2.) focus group interviews to explore views, expectations and attitudes from a selected patient group and the general population 3) semi-structured expert-interviews to detect additional relevant aspects 4) a policy delphi survey to reach consensus on the topics identified during step 1-3 and select the most important ones consider by health policy makers in Germany.

Results/Dissemination

This study will contribute to the identification of potential action areas for implementation and understanding of facilitators and barriers to implementation of systems medicine in Germany. The results will be discussed with respect to their significance for different stakeholders in the health care system. Different health policy options will be identified, which can support policy makers in creating conditions for large-scale implementation of systems medicine in the German health care system.

Presentation 08

Thursday, February 4, 11.15 – 12.00h

Automated reasoning, clinical practice and biopathological pathways in genomic-driven clinical cancer research

Etienne Vignola-Gagné

It is increasingly common practice to select anticancer therapy on the basis of the specific pathway alterations found in cancer patients' tumors. A related development has been the deployment of bioinformatics tools and models within cancer clinical trials. Algorithms linked to databases of gene alterations and drug catalogues narrow down therapeutic choices and produce a shortlist of agents to be targeted to a given tumor's mutational landscape. Oncologists are therefore fully engaged with basic forms of modeling and prediction of cancer systems to aid in therapy – even as bioinformaticians warn that their models of cancer pathways are rudimentary at this point. Modeling in matching drug and tumor targets also entail new institutional practices of evidence assessment such as “molecular tumor boards” that combine multiple experts from several fields to analyse and appraise drug-target matches proposed by algorithms, or to make their own.

Organizational readjustments spurred on by pathway modeling go further. This can be seen in clinical trials such as NCI-PACT and SHIVA. GeneMed and KDI, the algorithms employed in these trials, are both composed of multiple modules that simultaneously model disease processes and administer clinical workflows. Cancer trial algorithms interpret tumor sequencing results, establish pairings between molecular alterations and therapeutic agents, but also coordinate and steer clinical record-keeping or biopsy planning (Servant et al 2014; Zhao et al 2015).

Against such an empirical background, we can formulate a number of questions of interest to the social studies of systems medicine: How should we characterize this “less-than-systemic”, emergent bioinformatic modeling of patients' tumor pathways within abroad typology of data-driven experimental strategies (Leonelli 2014)? How do clinician's judgement and bioinformatic modelling interact in matching anticancer drugs with tumor biopathology? What are some of the organizational changes to clinical trial practices required by modelisation? How are the mechanistic findings produced in this clinical context fed back into more abstract models of cancer produced by theorists?

This project follows Leonelli (2014) and Cambrosio et al's (2014) proposal to study data-driven research in a category-agnostic manner, without the filter of simple oppositions such as in silico vs wet experiments. It builds on findings from our research group that explores cancer clinical research as a fully-fledge experimental system (Nelson et al; Rheinberger 2015). It also draws on an extensive dataset composed of i) over 80 interviews with trialists and their associates ; ii) a database of pivotal programmatic papers from cancer journals; iii) field notes; and iv) conference reports.

References

Cambrosio A, Bourret P, Rabeharisoa V and Callon M. 2014. Big Data and the Collective Turn in Biomedicine: How Should We Analyze Post-^o©-genomic Practices? *Tecnoscienza*. 5(1): 11-42.

Leonelli S. 2014. Data Interpretation in the Digital Age. *Perspectives on Science*. 22(3): 397-417.

Nelson N, Keating P, Cambrosio A et al. 2014. Testing devices or experimental systems? Cancer clinical trials take the genomic turn. *Social Science & Medicine*. 111: 74 - 83.

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Presentation 09

Thursday, February 4, 12.00 – 12.45h

The clinician scientist in the field of translational research: political hope, economic worth and practical problems

Barbara Hendriks

The Clinician Scientist (also named as Clinical Scientist, Translational Scientist or Physician Scientist) has become one of the central actors in the field of Translational Research (TR) as he/she bridges the gap between clinical research and medical practice. This gap between research and clinic has been identified as the central barrier for innovation and implementation processes in the field of (bio)medical research. But the process of translating knowledge from one field (research) to another (clinic) means also to overcome the contradiction between two spheres of action. Therefore the Clinician Scientist has to face different logics in his daily communication processes in the laboratory and the clinic, which evolve from different reference systems and roles – Science versus Medicine. In terms of role theory this contradiction can be described as a typical ‘role clash’ as there exist different expectations from different reference groups, which couldn’t be all fulfilled satisfactorily at the same time. This role clash is enrolled in a “critical moment”¹, which makes, according to the theory of Boltanski & Thévenot, reference to the critical activity of the person. In such moments disagreements or dispute appears as evidence for the acceptance of specific rules or norms.

In order to shed light on the question what actually constitutes this ‘role clash’ and which factors cause it, my study focuses on justification patterns emerging in critical moments. My hypothesis is that these critical moments can be seen as an indication for the ‘space’ where scientific or medical norms reach their actual limits as the scientific/medical action itself is called into question. In such critical moments individuals have to ground their stances on legitimate justification patterns or a legitimate worth. For my empirical analysis I studied different Internet forums, which were published by Clinician Scientists, featuring critical-reflexive discussions on one’s own role as a Clinician Scientist and its daily challenges. In my study I found that the ‘role clash’ is constituted by different problem dimensions (financial dimension, time dimension, career dimension and identity dimension), which are mainly caused by orientation towards an economic worth in the field of research. That means that economical practices which are scripted in scientific communication processes could matter in daily ‘science-medicine-practices’ as well.

Hence, my talk will show how an analysis of justification patterns can be a helpful instrument in studying the mechanisms of role clashes in the field of TR and therefore in studying the practical problems which the Clinician Scientist has to face in his/her daily practices.

Presentation 10

Friday, February 5, 9.15 – 10.00h

Systems medicine – A challenge to health literacy?

Pauline Mantell

Background

Systems medicine is based on the merging of a diverse amount of biological, clinical, behavioural, socio-demographic and other data. The aim is to come up with predictive and prognostic risk profiles in order to develop more effective prevention and treatment strategies. Thereby, systems medicine arouses hope to bring forward the long desired paradigm shift towards prevention in the health care system. On the individual level, healthy people, people at risk and patients who are already suffering from a disease are faced with new medical opportunities. Hence the implementation of the systems medicine approach into practice comes along with increased demands on the individuals. Health literacy is considered a key concept to positively address challenges of navigating the health care system and make autonomous decisions concerning health.

Methods

The theoretical analysis of challenges for health literacy in the context of systems medicine is based on the health literacy model by Sørensen et al. (2012). Central to this model is the process of accessing, understanding, appraising and applying health relevant information.

A closer look is needed on which challenges are caused by systems medicine and how they might affect the health literacy of those involved. Furthermore, ethical problems which can be associated with it in terms of autonomy and well-being are taken into account.

Results

In order to benefit from the new options of systems medicine and to make self-determined use of them, three additional challenges are imposed on the health literacy of individuals.

Thinking of risk profiling, it is first of all required to competently deal with probabilities. Due to relative and absolute risks in the context of risk profiling, individual decision making concerning health is very demanding and requires a high amount of numerical understanding (health numeracy) for a successful interpretation of the test results. At the same time, misinterpretation and misconceptions of individual prediction and prognosis may limit quality of life and may massively hinder further life planning.

Secondly, the holistic approach of systems medicine about the interrelationship between health and disease leads to a high complexity: Taking into account a wide variety of influences on health (genetic, proteomic, behavioural, social, etc.) calls for a transfer of this knowledge on one's own current and future health status. The responsibility for health increases, while at the same time the threat of individual

over-demandingness rises.

Thirdly, the process of merging this broad variety of personal data is established by a complex approach of algorithms which are opaque for the individual. This lack of transparency calls for a high level of trust in systems medicine of everybody who is confronted with predictive and prognostic results generated in a “black box”.

Discussion

Systems medicine challenges the health literacy of the user due to the complexity of the highly technology-driven approach. It might take the processing of health relevant information to another level; in terms of accessing helpful sources, understanding probabilities and appraising and applying information from opaque processes.

Predictive and prognostic results might go along with feelings of insecurity, powerlessness and helplessness. Furthermore, quality of life can be effected by the confrontation with one’s own vulnerability. Misunderstandings and misinterpretations may even have adverse effects on lifestyles

and behaviour. On the other hand, systems medicine can promote a more holistic view on health, which has long been called for from an ethical point of view.

Presentation 11

Friday, February 5, 10.00 – 10.45h

Social impact of genomic high-throughput data: moral perspectives and self-expression in the era of next generation sequencing

Alexander Urban

Technologies of next generation sequencing will enter the clinical practice in the near future by generating information from the whole genome. Because of decreasing costs, better technical conditions and increasing efficiency, they are very interesting for the fields for personalized and systems medicine. Despite the euphoria, there are many ethical concerns in dealing with such technologies e.g. for the informed consent procedure, dealing with incidental findings and data security. Beyond these well represented aspects in ethical academic debate, there should be also a focus on the perspectives on dealing with high-throughput data from affected people like patients and experts.

Main Question: What influence will the upcoming implementation of next generation sequencing technologies, named high-throughput sequencing, into clinical practice have on patient's self-expression and identity construction? How are categories of genomic information used in everyday life? In how far does dealing with genomic information become relevant for patient interaction and doctor-patient-relationship? What moral attitudes are involved in the perspectives of experts, affected people and lay persons?

Theoretical Background: The imminent implementation of Next Generation Sequencing in clinical practice poses new challenges for established ethical concepts of informed consent procedures, ways of dealing with genetic risk information, or data storage and security guidelines. The current medical and ethical expert debates highlight important aspects of these challenges. However, there is still lack of research on subjective perspectives of those personally affected and their ways of dealing with the results of this new medical technology in everyday life. We need to understand in more depth in how far these affected people integrate this type of new technology in their acting and everyday understanding of their health and illness. The current literature employs concepts like "patient in waiting" (Kolleg and Lemke 2008) or "transparent patient" (Schleiden and Marckmann 2013) to stress the newly emerging role of healthy persons being confronted with probabilistic results for future diseases and losing clear boundaries of health and illness. These categories of a new type of patient stem from social research on traditional predictive genetic testing and hence need to be confronted with new aspects of whole genome sequencing and big data technologies.

Method: My ongoing research is built on the ventral premises of symbolic interactionism (Blumer 1969) that (1) people act upon things which have meanings for them and that (2) these meanings are negotiated in an interaction process and will be modified through an interpretative process. On this basis, I employ methods of qualitative social research in order to explore the meanings affected people and professional experts assign to genomic high throughput data in the context of their

everyday life. By means of semi-structured interviews with experts and patients in psychiatric- and cancer treatment, personal perspectives, moral standpoints and questions regarding the clinical implementation of new genome sequencing technologies are collected. The material is analyzed with qualitative content analysis (Mayring 1995) to identify central moral attitudes and delineate significant differences in the variety of perspectives. The initial findings present a heterogeneous picture about ways of dealing with genomic data and its understanding from different perspectives.

Literature

Blumer, Herbert, 1969: Symbolic Interactionism. Perspective and Method. Berkeley, Los Angeles, London: University of California Press.

Kollek, Regine und *Thomas Lemke*, 2008: Der medizinische Blick in die Zukunft. Gesellschaftliche Implikationen prädiktiver Gentests. Frankfurt am Main: Campus.

Schleiden, Sebastian und *Georg Marckmann*, 2013: Alter Wein in neuen Schläuchen? Ethische Implikationen der Individualisierten Medizin. In: *Ethik in der Medizin*, 25: 223-231.

Mayring, Philipp, 1995: Qualitative Inhaltsanalyse. Grundlagen und Techniken. Weinheim: Beltz.

Presentation 12

Friday, February 5, 11.15 – 12.00h

Juridical impact of systems medicine on doctor-patient-relationship

Anna Maria Ernst

The integration of Systems Medicine approaches in our health care system raises a lot of legal questions. Systems Medicine arouses hope to bring forward the possibilities of disease detection, treatment and prevention. At the same time these improvements could profoundly modify the special trust relationship between physician and patient. The doctor-patient-relationship is far more than a juridical contractual relationship. Ideally it's characterized by care, confidence and comprehension. But a change in character can also be observed: the relationship developed from a paternalistic to a cooperative one. Juridical challenges of Systems Medicine approaches and its impact on the doctor-patient-relationship should be especially analysed with regard to the increased demands on medical information, patients' consent and medical obligation of documentation.

Systems Medicine pursues the target of a treatment which is better tailored on individual biological organic dispositions and on particular courses of disease. But this tempting target also faces the risk of a fixation on systems medical measurable causes of disease. This could lead on the one hand to a containment of indications, on the other hand to an expansion of the concept of illness to "mere" dispositions of illness. General treatment guidelines, which are developed for bigger patients' collectives, will be replaced by a multitude of more specialised, on smaller patients' groups tailored rules. As a consequence, a "decomposition" of the medical standard is imaginable. This would lead to a loss of rules of conduct in the doctor-patient-relationship and of legal certainty. At the same time, it would lead to increased demands on the responsibility to provide medical information. Medical information has decreasingly the function as a measures related information of intervention, but the function of a more abstract medical-scientific also social implication consultation. Furthermore Systems Medicine approaches will promote new options of automation and electronisation (e.g. app-medicine, Chip-diagnoses, direct-to-consumer-models) which might further lead to depersonalization of medical consultation and diagnosis. Consequently the personal character of the doctor-patient-relationship is threatened to fade into the background.

Moreover the instrument of consent has to be examined in detail. The consent of the patient plays in light of the tremendous importance of systems biological and especially genetic tests a major role. Precondition for a valid consent is a comprehensive medical information and the cognitive faculty of the patient. This results from the right of self-determination of the patient, which is a manifestation of the human dignity, Art. 1 para. 1 GG and the right of physical integrity, Art. 2 para. 2 s. 1 GG. The patient has to agree to the data collection, evaluation and application. So there is a need to analyse how all these technical information can be integrated in the medical information in the context of medical treatment without overstraining the seeking help patient.

Also the requirements on documentation, especially in the context of data relevant tests, have to be redefined. The documentation obligation is codified in § 630f BGB, since the enactment of the patients' right law in the year 2013. It serves the purpose of argumentation in the physician liability process. Furthermore this obligation constitutes a basis for comprehensive information of the patient and other attending physicians. According to § 630f para. 2 BGB the treating party is obliged to record all measures in the medical records which are relevant in medical terms for the current and future treatment and its results, in particular the establishment of the medical history, diagnoses, examinations, results of examinations, findings, therapies and their effects, procedures and their impact, consent and information. The extent of the documentation obligation is generally depending on therapeutical circumstances. With the integration of Systems Medicine this obligation could be complemented by information about possible dispositions of diseases and their prevention. Also an extension by more technical information, like what data is collected and evaluated, is imaginable.

Workshop Abstracts in order of workshop date

Monday, February 1st, 10.30 – 12.15h

Workshop A

Systems medicine from the philosophy of science's perspective

Prof. Dr. Ulrich Krohs, Professor of Philosophy, Department of Philosophy, Westfälische Wilhelms-Universität, Münster, Germany

This workshop gives an introduction into philosophical reflections on the development of systems biology and systems medicine.

Tuesday, February 2nd, 11.15 – 13.00h

Workshop B-1

Integration from the philosophy of science's perspective

Ingo Brigandt, Associate Professor and Canada Research Chair in Philosophy of Biology, Department of Philosophy, University of Alberta, Edmonton, Canada

This workshop presents general epistemic, methodological, and practical characteristics of integration and discusses challenges for integration in systems medicine and systems biology.

Background reading:

MacLeod M, Nersessian NJ. 2014. Strategies for coordinating experimentation and modeling in integrative systems biology. *J. Exp. Zool. (Mol. Dev. Evol.)* 322B:230–239.

Tuesday, February 2nd, 14.00 – 15.45h

Workshop B-2

Modeling from the philosophy of science's perspective

PD Dr. Gabriele Gramelsberger, Senior Researcher, Leuphana University Lüneburg, Lüneburg, Germany

This workshop discusses concepts and practices of modeling by comparing systems approaches in biology/medicine and climate science. Gabriele Gramelsberger will moderate the normative analysis of case examples together with conference participants.

Background reading:

Gramelsberger, G. 2013. Simulation and System Understanding, in: H Andersen, D Dieks, WJ Gonzalez, T Uebel, G Wheeler (eds.): *New Challenges to Philosophy of Science*, The Philosophy of Science in a European Perspective, vol. 4, Springer: Dordrecht, 151-161.

Wednesday, February 3rd, 11.15 – 13.00h

Workshop C

Data quality and data management in systems medicine

Dr. Nadine Umbach, Senior Researcher, Institute for Medical Informatics, University Medical Centre, Göttingen, Germany

This workshop introduces the basic concepts and obstacles of data quality and data management in systems medicine and discusses the development and operation of IT infrastructures.

Thursday, February 4th, 9.15 – 11.00h

Workshop D

Concepts of translation

Dr. Sara Marie Ehrenreich Green, Postdoc, Department of Science Education, University of Copenhagen, Copenhagen, Denmark

The purpose of this workshop is to discuss central issues concerning concepts of translation at the intersection of biomedical research, industry, the clinic, and public health policies. Green will introduce the topic by identifying important concerns with new systems approaches from the perspective of philosophy of science and public health. The second part of the workshop consists of a participant discussion of possible solutions to the identified challenges. Taking advantage of the diversity of the background of participants, the workshop will explore how and if it is possible to bridge different expectations and conceptual differences among the stakeholder groups involved.

Background reading:

Khoury, MJ, Gwinn, M, Yoon PW, Dowling N, Moore CA, Bradley L. 2007. The continuum of translation research in genomic medicine: how can we accelerate the appropriate integration of human genome discoveries into health care and disease prevention? *Genet Med* 2007 Oct;9(10):665-74.

Thursday, February 4th, 13.45 – 15.30h

Workshop E

Systems medicine in clinical practice

Prof. Dr. Angelika Eggert, professor and director of the department of paediatrics, division of oncology and haematology, Charité - University Medical Centre, Berlin, Germany

This workshop presents current research from the field of kidney cancer in children (neuroblastoma) and discusses current challenges in research and future challenges in clinical practice by translating systems approaches to the clinic.

Background reading:

Eggert, Angelika (2015): Systems Medicine Approaches in Cancer Research: Example Neuroblastoma, Berlin: unpublished work.

Thursday, February 4th, 16.00 – 18.00h

Workshop F

Networking, funding, and interdisciplinarity: Future cooperation of systems medicine, social sciences, and philosophy

Prof. Dr. Angelika Eggert, professor and director of the department of paediatrics, division of oncology and haematology, Charité - University Medical Centre, Berlin, Germany (roundtable moderated by Regine Kollek)

Dr. Sara M.E. Green, Postdoc, Department of Science Education, University of Copenhagen, Copenhagen, Denmark

Prof. Dr. Jeanette Erdmann, professor and director of the Institute for Integrative and Experimental Genomics, University of Lübeck, Lübeck, Germany

This workshop discusses challenges and opportunities for future cooperation of social scientists and philosophers with systems medicine. The workshop moderators come from different disciplinary backgrounds and have experience in working in international, interdisciplinary networks, and in grant application for such networks. Together with experiences from the conference participants, this will facilitate a fruitful discussion on the next steps (1) in the analysis of systems biology and medicine, (2) in cooperating with systems researchers, and (3) in how to foster one's own research career.

Curriculum Vitae of Participants in alphabetic order

Teresa (Ty) Branch-Smith

Education

University of Waterloo

(2014 - present) Ph.D. Student

(2013 - 2014) M.A. Philosophy

Laurentian University

(2013 - 2012) Graduate Diploma. Science Communication

University of Toronto

(2010 - 2012) M.A. History and Philosophy of Science and Technology

University of Ottawa

(2005 - 2010) B.Sc. Biochemistry, Hons. Specialization.

Researching Experience

Research Assistant – Prof. Heather Douglas (Fall 2014 - Summer 2015)

Research Fellowship – Science-Policy Interface Workshop (Winter 2013 - Summer 2014)

Research Assistant – University of Waterloo Computer Museum (Summer 2014)

Teaching Experience

Teaching Assistant – PHIL 226 Bioethics (Fall 2015)

Teaching Assistant – PHIL 125 Critical Thinking (Winter 2014)

Teaching Assistant – PHIL 226 Bioethics (Fall 2013)

Grants, Fellowships and Awards

Ardeth Wood Memorial Graduate Bursary in Philosophy (University of Waterloo, 2015)	\$2,000
President's International Experience Award (University of Waterloo, 2015)	\$2,500
President's Graduate Scholarship (University of Waterloo, 2014-2015)	\$10,000
Ontario Graduate Scholarship (University of Waterloo, 2014-2015)	\$15,000
Provost Doctoral Entrance Award for Women (University of Waterloo, declined)	\$5,000
Arts Graduate Experience Award	\$2,129

(University of Waterloo, 2013 - 2014)	
Science Communication Graduate Fellowships (Laurentian University, 2012 - 2013)	\$3,000
Science Communication Graduate Scholarship (Laurentian University, 2012 - 2013)	\$2,500

Refereed Conference Presentations

- Branch-Smith, Teresa. (Oct 15th, 2015). "Ethics in Educational Institutions: Building a Moral Museum". The 2015 CSLEE Values and Leadership Conference. Pennsylvania State University. Role: Presenter
- Branch-Smith, Teresa. (Oct 1st, 2015). "Formally Trained Science Communicators: A Solution to the Unreasonable Expectations Placed on Lay People and Professional Scientists". The Seventh International Conference on Science in Society. University Center Chicago. Role: Presenter
- Branch-Smith, Teresa. (June 23rd, 2015). "Value Conscious Exhibits for Science Communication." Conference at the biannual meeting of the Society of the Philosophy of Science in Practice. University of Århus, Denmark. Role: Conference Poster creator and presenter
- Branch-Smith, Teresa (June 1st, 2015). "Capitalizing on research: from Idea to Impact". Congress. Ottawa, Ontario. Role: Pannelist
- Branch-Smith, Teresa (March 27th, 2015). "Accountability in Science Communication." SRPoiSE Second Annual Conference. Michigan State University. Role: Presenter
- Branch-Smith, Teresa (December 12th, 2014). "Agent-Based Modeling for Weak-Emergence." *Agent-Based Modeling in Philosophy*. Munich Centre for Mathematical Philosophy CAS^{LMU} Center for Advanced Studies. Role: Presenter
- Branch-Smith, Teresa. (November 6th, 2014). "Connecting Philosophy, Science and Sociology through Example: Weak Emergence and Computation." *The Workshop on Research Agendas in the Societal Aspects of Synthetic Biology*. Arizona State University. Role: Discussant
- Branch-Smith, Teresa. (September 27th, 2014). "Weak Emergence and Systems Biology: The Reductive Potential" *Calgary Summit of Philosophers of Science*. University of Calgary. Role: Conference poster creator and presenter
- Branch-Smith, Teresa. (August 11th, 2014). "Choose Your Character: Video-Games & Gender". *Science, Technology & Gender: Challenges & Opportunities*. University of Waterloo. Role: Primary Investigator & Presenter

Anna Maria Ernst

Personal Dates

Date of Birth: 11.03.1988

Place of Birth: Lich, Germany

Education

Since 11/2014	PhD Student Institute for Medical Law of the University of Cologne
10/2008 – 10/2014	University of Cologne , Germany Studies of Law Degree: First State Examination
09/2010 – 06/2012	Université Paris I, Panthéon-Sorbonne , France Studies of Law Degree: Magister Legum
09/2007 – 08/2008	Voluntary social year in a social education Day-care group in Raunheim, Germany

Professional Experience

Since 02/2015	Institute for Medical Law, University of Cologne Research associate
10/2012 – 01/2015	Institute for Medical Law, University of Cologne Scientific assistant
08/2012	Lawyer's office Hogan Lovells , Düsseldorf Trainee
08 – 09/2011	Agentur für Arbeit , Bonn Trainee
08 – 09/2009	Lawyer's office Oppenhoff und Partner , Cologne Trainee

Anna Geltzer

Education:

PhD, Cornell University 2012

Science & Technology Studies

Dissertation: "Surrogate Epistemology: Transition from Soviet to Russian Biomedicine"

Advised by Michael Lynch, Stephen Hilgartner and Judith Reppy of Cornell University and Michael Gordin of Princeton University

MA, Cornell University 2007

Science & Technology Studies

Examined fields:

Cold War Science and Technology in the US and USSR (with Ronald Kline)

Sociological Theory (with Michael Lynch)

Social Studies of Medicine (with Stephen Hilgartner)

MA, New York University 2004

Draper Interdisciplinary Masters Program, Concentration in Science & Technology Studies

BS, Brooklyn College 1999

Biology, minor in history

APPOINTMENTS:

Wesleyan University, Visiting Assistant Professor, Science in Society Program
2012-present

PUBLICATIONS:

Geltzer, Anna. "Stagnant Science: Planning and Coordination of Biomedical Research in the Brezhnev Era." Artemy Kalinovsky and Dina Fineberg, eds. *Reconsidering Stagnation*. Under review at Brill (Netherlands).

Geltzer, Anna. 2012. "In a Distorted Mirror: The Cold War and U.S.-Soviet Biomedical Cooperation and (Mis)understanding, 1956-1977." *Journal of Cold War Studies*, 14 (3): 39-63.

Geltzer, Anna. 2009. "When the Standards aren't Standard: Evidence-Based Medicine in the Russian Context." *Social Science and Medicine*, 68(3): 526-532

Geltzer, Anna. 2009. "Review: The Dilemmas of Drug Testing." *Social Studies of Science*, 39: 481-484.

Nicole Nelson, Anna Geltzer and Stephen Hilgartner. 2008. "The Anticipatory State: Making Policy Relevant Knowledge about the Future." *Science and Public Policy*, 35(8): 546-550.

GRANTS AND AWARDS:

Dissertation Writing Fellowship, 2009-2010

Philadelphia Area Center for the History of Science

Doctoral Dissertation Improvement Grant, 2008

National Science Foundation

Luigi Einaudi Graduate Fellowship, 2007-2008

Cornell University

Contentious Knowledge Theme Project Seed Grant, 2007

Cornell University

Emerging Technologies Grant, 2007

Cornell University

Einaudi Center for European Studies Research Travel Grant, 2006

Cornell University

Program for the Study of Contentious Politics Research Travel Grant, 2005

Cornell University

Sage Doctoral Fellowship

Cornell University

INVITED TALKS:

"Competing Rationalities: Soviet-American cooperation in cancer drug development," symposium on *Reworking the History of Chemistry: Practice, Revolution, Visualization and Exchange*, ICHSTM, Manchester, UK, July 21-28, 2013.

"Surrogate Epistemology and the erosion of Soviet Biomedicine," *Translating Health: Cultures of Prevention and (Bio)Medicine in Europe After 1945*, Institut fuer Geschichte Theorie und Ethik der Medizin, Universitaetsmedizin, Mainz, Germany, May 23-25, 2013.

Barbara Hendriks

Publications

together with C. Blümel, S. Gauch, A. Krüger and M. Reinhart (in press): "In Search of Translational Research: Report on the Development and Current Understanding of a New Terminology in Medical Research and Practice", iFQ- BIH- Working Paper, Berlin.

Presentations

06/2015 together with A. Krüger: „How to justify the need for translation”? A talk as part of the “Workshops on Medicines, Histories and Translation” at Centre for History of Science, Technology and Medicine at Manchester University

Dissertation

Since 09/2013

Economic trends in Science: Truth or Myth? Analysis of Justification patterns in the field of Translational Research.

Scientific activities

Since 09/2013

Research assistant at the Department for Social Sciences at the Humboldt University of Berlin, working area Sciences Studies.

Since 09/2014

Research assistant at the research project „Kerninhalte, Organisationsstrukturen und Bewertungsverfahren translationaler medizinischer Forschung“ at Institute for Research Information and Quality Assurance (iFQ), Berlin.

Studies

09/2009 – 03/2013
10/2006 – 09/2009

M.A. Social Sciences at Humboldt University of Berlin
Studies of Social Sciences and Philosophy at University of Oldenburg

Degree: B.A. Social Sciences/Philosophy

Further activities

Since 08/2015

Assistant at the Committee of Research Misconduct at Humboldt University of Berlin

PAOLA HERNÁNDEZ CHÁVEZ

- Ph.D. Philosophy of Science: Cognitive Sciences. Instituto de Investigaciones Filosóficas – UNAM. Thesis: *Cognitive Modularity and Brain Specialization*. December 2013. Awarded with special mention.
- Researcher. Centro Lombardo - México. Fields of specialty: Cognitive Sciences, correlations in cognitive neuroscience, , evolution and cognition.
- Posdoc Researcher in Philosophy of Biology. Universidad Autónoma Metropolitana Cuajimalpa. Since May 2014.
- Member of the National Council of Sciences and Technology, SNI – Conacyt. Since September 2014.
- Visiting Fellowship at the Konrad Lorenz Institute for Evolution and Cognition Research. Vienna, Austria, April-October 2007.

RESEARCH LINES:

Cognitive Sciences, Neurosciences, Interdisciplinary researches in Medicine and Philosophy, Evolution, Theories of Mind, and Philosophy of Biology (categorization).

PUBLICATIONS:

- "Some challenges for a concept of rationality in science", CD 2001. Mexican Philosophical Association.
- "The normative demand in evolutionary epistemology". *Ludus Vitalis* Vol. XI, Num. 20, 2003: Konrad Lorenz, Franz M. Wuketits, editor. Pp. 107-115. ISSN: 1133-5165.
- Book chapter: "Cómo naturalizar la epistemología sin olvidar la razón", *En busca de lo Humano: ciencia y Filosofía*, Jorge Martínez & Violeta Aréchiga (editores) año de publicación 2007, varios autores, CEFPSVLT. ISBN: 9789685721523.
- "Epistemología Naturalizada: Una visión panorámica" (2010), Werner Callebaut & Paola Hernández Chávez, *Identidad y Diferencia: la filosofía y la ciencia*, Jaime Labastida & Violeta Aréchiga (editores), Siglo XXI Editores-AFM, Vol. 3: Filosofía y Ciencia. ISBN: 9786070302312. Pp. 138-155.
- "Darwinian selection in a modular mind", *Darwin's Evolving Legacy*, Jorge Martínez Contreras & Aura Ponce de León (coordinadores), Siglo XXI Editores, 2011. ISBN: 9786070303463.
- "Evaluando algunos supuestos evolucionistas en teorías modulares de la mente" (2012), *Las ciencias cognitivas: una constelación en expansión*, Jonatan García, Juan González, Paola Hernández (editores). CEFPSVLT. ISBN: 978-607-466-051-7.
- Introduction to the book *Ciencias Cognitivas: una constelación en expansión* (2012), Jonatan García, Juan González, Paola Hernández (editores). CEFPSVLT. ISBN: 978-607-466-051-7.
- "¿Selección Darwiniana en una mente modular?, en *Darwin y el evolucionismo contemporáneo*, Jorge Martínez Contreras & Aura Ponce de León (coor-

dinadores), varios autores, Siglo XXI Editores, 2012, México. Pp. 197-407. ISBN: 978-607-03-0431-6.

- Book Edition: Jonatan García, Juan González, Paola Hernández (2012) (editores), *Las ciencias cognitivas: una constelación en expansión*. CEFPSVLT. ISBN: 978-607-466-051-7.
- Book Chapter: "Modularidad cognitivo-neuronal y los pretendidos módulos de razonamiento social", *Neurociencia social en Iberoamérica*, Roberto E. Mercadillo & Carlos Contreras (editores). UAM-I. In press.

HONORS / AFFILIATIONS

- Member of the National Council of Sciences and Technology, SNI – Conacyt. Since September 2014.
- Member of the International Society for the History, Philosophy and Social Studies of Biology. Since January 2003.
- Member: Asociación Filosófica de México. Since 2001.

LANGUAGES

- Spanish (native)
- English 90%
- German 50%

Clarissa Lemmen

PERSONAL DETAILS

Date of birth: 18 December 1971
Place of birth: Mönchengladbach, Germany
Nationality: German

WORK EXPERIENCE

11/2014 to present	Institute for Health Economics and Clinical Epidemiology, the University Hospital of Cologne, 50935 Cologne <i>Scientific staff</i>
03/2012 to 10/2014	Europa Apotheek Service Venlo B.V., 5928 LV Venlo <i>Head of health care management and health economics</i>
12/2011 to 02/2012	Self-employed <i>Health economic evaluation</i>
03/2011 to 09/2011	Hochschule Niederrhein, University of Applied Sciences, 47805 Krefeld <i>Scientific staff</i>
03/2009 to 02/2011	SHL Telemedizin GmbH, 40213 Düsseldorf <i>Health economists and project management</i>
05/1997 to 02/2005 03/2000 to 02/2005 05/1997 to 02/2000	Resmed GmbH & Co. KG, 41068 Mönchengladbach <i>Health insurance management and project management</i> <i>Management assistant technical services and order management</i>
08/1995 to 10/1995	Spedition Both, 41569 Rommerskirchen <i>Management assistant in freight forwarding</i>

ACADEMIC EDUCATION

04/2015 to present	University of Cologne, 50923 Cologne Interdisciplinary Program Health Sciences (IPHS) Degree: <i>PHD in Health Sciences</i> Thesis: Facilitators and barriers for the implementation of systems medicine in the German health care system
---------------------------	--

- 09/2009 to 01/2012** **Hochschule Niederrhein, University of Applied Sciences, 47805 Krefeld Degree: *Health Care Management Master of Science***
Thesis: Morbidity risk-adjustment in health administrative data base. Comparison of Elixhauser- and Charlson index with Propensity Score by example of using Zertiva® with a health insurance
- 09/2006 to 10/2009** **Hochschule Niederrhein, University of Applied Sciences, 47805 Krefeld Degree: *Health Care Management Bachelor of Science***
Thesis: Concept, market analysis and implementation of telemedicine services for COPD patients

VOCATIONAL TRAINING

- 06/1996 to 05/1997** **Deutsche Angestellten Akademie e.V., 41061 Mönchengladbach**
EDP in Sales and Marketing SAP/KHK
 Advanced vocational qualification
Chamber of Handicrafts (HWK) graduation
- 08/1992 to 01/1995** **Dachser GmbH & Co. KG, 40549 Düsseldorf**
Management assistant in freight forwarding
 Occupation requiring formal training
Chamber of Industry and Commerce (IHK) graduation

PUBLIKATIONEN - POSTER

1. Lemmen C., Tuennermann M. (2013): Impact of pharmacy adherence programme for patients with multiple sclerosis: an opportunity to improve medication compliance and persistence in Germany. ECTRIMS - 29. Jahrestagung 2013. In: Multiple Sclerosis, Vol. 19 (S11): S. 574-597.
2. Zucca F., Novakovic* C., Neukirch B. (2012): Telemedizin im Focus: Status quo der Telekardiologie,- diabetologie und -pneumologie in Deutschland. In: Mühlbauer B.H., Kellerhoff F., Matusiewicz D. (Hrsg.), Gesundheitsökonomie: Politik und Management. Zukunftsperspektiven der Gesundheitswirtschaft. Berlin: LIT Verlag: S. 440-453.
3. Zucca F., Novakovic* C., Diehl M., Rauchhaus M. (2011): Die telemedizinische Betreuung von Herzkranken - Wo stehen wir heute? In: Amelung, V.E.; Eble, S.; Hildebrandt H. (Hrsg.), Innovatives Versorgungsmanagement. Neue Versorgungsformen auf dem Prüfstand. Berlin: Medizinisch wissenschaftlicher Verlag: S. 421-430.

4. Novakovic* C., Zucca F., Rauchhaus M. (2011): In response to: insufficient evidence of benefit: a systematic review of home telemonitoring for COPD. In: Journal of evaluation in clinical practice; Vol. 17 (2): S. 326–327.
5. Zucca F., Novakovic* C., Haver Y., Ricken W., Palisch H., Pethig K., Rauchhaus M. (2011): Guideline adjusted telemonitoring improves mortality and morbidity of patients with chronic heart disease: a specific approach for underserved regions. In: European Journal of Heart Failure Supplements; Vol. 10 (S1): S. 162.
6. Zucca F., Novakovic* C., Haver Y., Ricken W., Urbaszek W., Neukirch B., Rauchhaus M. (2011): Guideline based remote monitoring and 24/7 telephone support for people with heart failure: an opportunity to improve outcomes in Germany. DGK - 77. Jahrestagung 2011. In: Clinical Research in Cardiology Supplements; 100 (S1).
7. Zucca F., Novakovic* C., Palisch H., Neukirch B., Rauchhaus M. (2011): Benefits of intensified telemedical care for patients with heart failure - Outcomes of a naturalistic study in certain regions of Germany. Mannheim: DGK - 77. Jahrestagung 2011. In: Clinical Research in Cardiology Supplements; 100 (S1).

**Change of name: From Novakovic to Lemmen*

Pauline Mantell

Personal Dates

Date of Birth: 30.09.1985
Place of Birth: Cologne, Germany

Education

since 03/2014 **PhD Student**
 „Interdisciplinary Program Health Sciences“
 Faculty of Medicine of the University of Cologne

10/2006 – 06/2012 **University of Cologne, Germany**
 Studies of **Health Economics**
 Degree: **Diploma** (M.Sc. equivalent)
 Diploma Thesis: „The profession of palliative care specialists in the context of ambulant treatment“,
 Minor subject: Corporate Development

08/2010 – 02/2011 **San Diego State University, San Diego, California, USA**
 Studies in Public Health

Professional Experience

since 05/2013 **Research Unit Ethics,**
 Institute for the History of Medicine and Medical
 Ethics, University of Cologne
 Research associate

01/ 2012 – 06/2012 **Kassenärztliche Vereinigung Nordrhein, Düsseldorf**
 Project on palliative care in the department of key questions in healthcare policy

10/2011 – 02/2014 **ZENO executive conferences /Zeminare, Heidelberg**
 Assistance for executive conferences in health care (in Cologne, Düsseldorf and Neuss)

05/2011 – 12/2011 **Kassenärztliche Vereinigung Nordrhein, Düsseldorf**
 Student assistant in the department of guarantee and demand planning of ambulant health care

Publications

- 2012 Tamayo M.; Mantell P.; Huptasch B.: Ärzte, aber keine Heiler: Untersuchung zum professionellen Selbstverständnis. In: Deutsches Ärzteblatt 2012; 109 (45), p. 2244 f.
- 2013 Tamayo M.; Mantell P.: Palliativmediziner – Eine andere Art von Ärzten? In: Journal LebensWert 2013; 12 (01), p. 11.
- 2015 (in progress) Mantell P.; Hüllbrock L.; Woopen C.: The application of Health Literacy of persons with mental health problems - A Systematic Review

Presentation

- 2013 Palliativmedizin und Hospizarbeit an den Ev. Kliniken Bonn , 19.06.2013 "Palliativärzte - eine besondere Spezies Arzt?"
- 2015 (upcoming) DGPPN Kongress, Berlin, 25.-28.11.2015
„Bedeutung der Gesundheitskompetenz für Menschen mit psychischen Erkrankungen. Eine kritische Analyse des Forschungsstands.“

Poster Presentation

- 2014 Internationales Symposium: »Health Literacy: Stärkung der Nutzerkompetenz und des Selbstmanagements bei chronischer Krankheit«, 30.10.2014, Zif, Bielefeld,
„Systemmedizin im Spannungsfeld der Risikoprofilbildung“
- 2015 3rd European Health Literacy Conference, 17.-19.11.2015, Brussels
“Is there something Special about the Concept of Health Literacy in the Scope of Mental Health Problems? Findings from a Systematic Review”

References

Prof. Dr. Christiane Woopen
Institute of History and Ethics in Medicine,
University of Cologne,
Chairperson of the German Ethics Council,
christiane.woopen@uni-koeln.de

Jun.-Prof. Dr. Nicole Ernstmann
Institute for Medical Sociology, Health Services
Research, and Rehabilitation Science (IMVR),
University of Cologne,
nicole.ernstmann@uk-koeln.de

Nicolae Morar

Education

Purdue University, West Lafayette, Indiana, USA

Ph.D., Department of Philosophy, 2011

- *Biotechnologies and Human Nature: Ethical and Political Challenges*
- Mark Bernstein (chair), Eric Meslin, Daniel W. Smith, Daniel Kelly

Université Lyon 3 Jean Moulin, Lyon, France

M.A., (Magna Cum Laude), Department of Philosophy, 2005

- *The Stakes of Reproductive Medicine in the US: Between Ethics and Politics*

B.A., Department of Philosophy, 2004

- *Michel Foucault's Biopower: Origins and Critiques*

Areas of Specialization

Bioethics (especially biomedical, genethics, environmental, & research ethics), Philosophy of Biology, 20th Century Continental Philosophy

Areas of Competence

Ethical Theory, Social and Political Philosophy

Academic Appointments

Assistant Professor of Philosophy & Environmental Studies

2015 - present

Philosophy & Environmental Studies, University of Oregon

Associate Member

2014 - present

Institute of Ecology and Evolution, University of Oregon

Visiting Assistant Professor in Philosophy & Biology

2014 - 2015

Departments of Philosophy & Biology, University of Oregon

Post-Doctoral Scholar

2013 - 2014

The Rock Ethics Institute, The Pennsylvania State University

Peer-Reviewed Publications

Articles

- "Implicit Bias and Gifts: How does Social Psychology Help us Thinking Differently about the Medical Practice?", with Natalia Washington, *Hastings Center Report*, forthcoming
- "The Porosity of Autonomy: Social and Biological Constitution of the Patient in Biomedicine", with Jonathan Beever (target article), *American Journal of Bioethics*, forthcoming
- "Biodiversity at Twenty-Five Years: Revolution or Red Herring?", with Ted Toadvine & Brendan Bohannon, *Ethics, Policy, & Environment*, 18(2015):1, pp.16-26 (target article with comments from M. Oksanen & C. Eliot)
- "An Empirically Informed Critique of Habermas' *Argument from Human Nature*," *Journal of Science and Engineering Ethics*, 21(2015):1, pp.95-113
- "Against the Yuck Factor: On the Ideal Role of Disgust in Society," with Dan-

iel Kelly, *Utilitas*, 26(2014):2, pp.153-177.

Edited Books

- *Perspectives in Bioethics, Science, and Public Policy*, edited with Jonathan Beever, [Purdue University Press](#), May 2013
- *Biopower: Foucault and Beyond*, edited with Vernon Cisney [University of Chicago Press](#), Fall 2015
- *Between Foucault and Derrida*, edited with Vernon Cisney, Yubraj Aral, & Chris Penfield, [Edinburgh University Press](#), *forthcoming* Fall 2016
- *Between Foucault and Deleuze*, edited with Thomas Nail and Daniel W Smith [Edinburgh University Press](#), *forthcoming* Fall 2016

Journal Special Issue

- *Foucault Studies: Foucault and Deleuze*, Special Issue 17, Spring 2014, Guest Editor with Thomas Nail and Daniel W. Smith.

Book Chapters

- "Ethics, Privacy, and the Future of Genetic Information in Healthcare Information Assurance and Security," with J. Beever, J. Springer, M. Kane and J. Sprague, in *Information Assurance and Security Ethics in Complex Systems: Interdisciplinary Perspectives*, edited by Melissa Dark, (IGI Global, 2010), pp. 186-205.
- "The limits of discourse ethics concerning the responsibility toward nature, non-human animals, and future generations," in *Health Care, Autonomy, and Responsibility*, edited by B. Olaru, (Zeta Books, 2009), pp.129-159.

Other Publications

Encyclopedia

- Entries on "Monster" and "Homosexuality," *The Cambridge Foucault Lexicon*, edited by Len Lawlor and John Nale, (Cambridge University Press, 2014)

Book Reviews

- Book Review of D. Bergandi (ed), *The Structural Links between Ecology, Evolution, and Ethics*, *Environmental Ethics*, *forthcoming*
- Book Review of V. Lemm & M. Vatter (eds), *The Government of Life: Foucault, Biopolitics, and Neoliberalism*, *Notre Dame Philosophical Reviews*, Spring 2015
- Book Review of R. Rhodes, N. Gligorov, A.P. Schwab (eds), *Human Microbiome: Ethical, Legal, and Social Concerns*, *Journal of Environmental Philosophy*, Fall 2014
- Book Review of Clare Palmer's *Animal Ethics in Context*, *International Society for Environmental Ethics Newsletter*, 24(2013):1-3, pp.29-31
- "The Birth of the Concept of Biopolitics," Critical Notice of T. Lemke, *Biopolitics - An Advanced Introduction* with Colin Koopman, *Theory & Event*, 15(2012):4

Translations

- Pierre Klossowski, *The Living Currency*, with Vernon Cisney and Daniel W. Smith, Bloomsbury Publishing, *forthcoming* March 2016
- Michel Foucault, "The Gay Science," with Daniel W. Smith, *Critical Inquiry*, 37(2011):3, pp.385-403

Work in Progress

Monographs

- *Beyond Human Nature: Biology, Bioethics, & Biopolitics* (Manuscript 70% completed)
- *Ethical Dimensions of Science and Engineering: A Broader Conception*, with Jonathan Beever, Bryan Cwik, & Nancy Tuana

Articles/Bioethics

- A Critical Argument for a Principle of Minimal Biological Realism in Bioethics (Manuscript 95% completed)
- The Role of Emotions in Food Ethics with Dan Kelly (for *The Oxford Handbook of Food Ethics*)
- Shallow vs. Deep Conceptions of the Individual: Why is Autonomy a Problem? (with Jonathan Beever; manuscript under review)

Articles/Phil. of Biology & Ecology

- Prolegomena to any Future Definition of Human Nature: A Biological Argument for a Dispositional Selective Population Concept (Manuscript 90% completed)
- The Challenge of the Right Kind: A Critical Argument of the Normative Role of Bio-diversity (under review)
- What if there are no Individuals? The Impact of Microbial Biology in Environmental Ethics with [Brendan Bohannon](#) (Manuscript 30% completed)
- Be pluralists! A 2nd Manifesto for Microbial Biologists with [Brendan Bohannon](#) (Manuscript 40% completed)

Teaching Experience

University of Oregon

- PHIL 110 Human Nature, Fall 2014 (350 students, 6 TAs)
- ENVS 345 Environmental Ethics, Fall 2011 & 2012 & 2015
- PHIL 120 Ethics of Enterprise and Exchange, Winter 2011; Spring 2013 & 2015
- PHIL 335 Medical Ethics, Spring 2012; Winter 2013 & 2015; Fall 2015
- PHIL 407/507 Biopower: Michel Foucault & Beyond, Fall 2014
- PHIL 400/500 Philosophy of Biology, Winter 2016
- ENVS 400/500 Philosophy of Ecology, Spring 2016
- ENVS 622 Thesis Development, Spring 2016
- BIOL 401 Ethics in Life Sciences, Spring 2015
- BIOL 610 Ethics and Science, Winter 2015

Grants Awarded

Who are We? Humans, Microbes, and their Interactions (\$ 9,600)

- Co-PI with Brendan Bohannon & Stephen Dueppen, College of Arts & Sciences Grants, University of Oregon

American Society for Bioethics & Humanities - Early Career Travel Grant, National Meeting, Oct 2014, San Diego, CA

Biodiversity at Twenty-Five: The Problem of Ecological Proxy Values (\$ 4,800)

- Co-PI with Brendan Bohannon & Ted Toadvine, College of Arts & Sciences Grants, University of Oregon

One-Year Grant 2012 - 2013 Global Research Synergy Grants (\$25,550)

- Co-PI with Daniel W. Smith, College of Liberal Arts, Purdue University

Three Year Grant (renewable) from the Office of the Provost & GPRI (\$72,000)

- Funding to support two graduate students (0.75FTE) to organize the *Purdue Lectures in Ethics, Policy, and Science 2011-2014*

Conference Presentations

- Be pluralists! A 2nd Manifesto for Microbial Biologists with [Brendan Bohannon](#), *Socially Relevant Philosophy of/ in Science & Engineering Conference*, Michigan State University, March 2015
- Implicit Bias and Gifts: How does Social Psychology Help us Thinking Differently about the Medical Practice? at the *Annual Meeting American Society for Bioethics and Humanities*, San Diego 2014
- Biodiversity at Twenty-Five at 'Diversity in Ecological Systems: Genes, Species, and Beyond' *Lecture Series*, Penn State University, January 2014
- What if there are no individuals? The Impact of Microbial Biology in Environmental Ethics with Brendan Bohannon
 - *Eastern Conference American Philosophical Association*, ISEE Session, Dec. 2013
 - *IAEP's Annual Conference*, Eugene, October 2013
- Interactions: Science, Values, (Bio)Politics at *Socially Relevant Philosophy of/ in Science & Engineering Conference*, Michigan State University, August 2013
- A Critical Argument Against a Value Bias in Biomedicine with Jonathan Beever at *University of Texas Dallas*, May 2013
- From Science to Environmental Value: An Argument for a Critical Understanding of the Normative Role of Biodiversity (with Brendan Bohannon and Ted Toadvine) at
 - *Michigan State University*, October 2013
 - *Eastern Conference American Philosophical Association*, ISEE Session, Dec. 2012
 - *IAEP's Annual Conference*, Rochester, November 2012

Seminar & Conference Organization

- *Who Are We? Humans, Microbes, and their Interactions (2015)*, University of Oregon
 - Topics: microbial biology, multicellularity, bioethics, privacy, re-

- search ethics
 - Speakers: M. O'Malley, M. Travisano, N. Gligorov, J. Foster, M. Pedroso
 - Event sponsored by CAS, IEE, ENVS, PHIL, OHC, ANTH (budget: \$9,600)
- *Penn State Research Ethics Lecture Series (2013-2014)*
 - Lectures available at <http://rockethics.psu.edu/>
- *Biodiversity at Twenty-Five (2013-2014)*, University of Oregon
 - Topics: biodiversity, ecosystem functioning, ethics
 - Speakers: D. Maier, D. Hooper, & K. Sterelny
 - Event sponsored by CAS, IEE, ENVS, PHIL budget: \$4,800)

Professional Service

University of Oregon

- Member the Graduate Studies Committee PHIL, 2015-present
- Coordinator Ethics Minor (proposal & development), 2015-present
- Coordinator Clinical Ethics Internship (PeaceHealth Hospital), 2015-present
- Member the Graduate Studies Committee ENVS, 2015-present

Other

- Referee for *The Journal of Environmental Philosophy*, *Ethics*, *Policy & Environment*, *Foucault Studies*, *Philosophy Compass*, *Journal of General Internal Medicine*, *Journal of Bioethical Inquiry*, *Wiley-Blackwell Publishing*, *Routledge Press*, *Oxford University Press*
- Organizer SRPoiSE Session at the A.P.A. Eastern & Pacific Meetings (2014-present)
- Organizer SRPoiSE Session at the Meeting of the Philosophy of Science Association (2014-present)

Professional Affiliations

- American Philosophical Association (2011-present)
- American Society for Bioethics and Humanities (2011-present)
- International Association for Environmental Philosophy (2012-present)
- International Society for Environmental Ethics (2012-present)
- The Consortium for Socially Relevant Philosophy of/in Science and Engineering (2013 -present)
- Association for Practical and Professional Ethics (2014-present)

Alexander Urban, M.A.

Areas of interest

- sociological and ethical perspective on gene diagnostics and genetics
- patient role, identity, interaction
- medicine sociology, sociology of the body
- qualitative social science

Biography

- since August 2014: research assistant at the BMBF-funded Project „GenoPerspektiv - Managing Genomic High-Throughput Data – Perspectives of the Clinics, Ethics, Law, and Biomedical Information Technology“ at the department for medical ethics and history of medicine, University Medical Centre Göttingen
- 09/2014: Master of Arts. Thesis: „Identity construction of headache patients in the context of medical treatment“
- 09/2012-08/2014 research assistant in the DFG-Project (German Research Foundation) „Schmerzhandeln und Identitätsmanagement von Kopfschmerzpatienten in der medizinischen Versorgung und in Partnerschaften“. Coordinator: Prof. Dr. Gerd Göckenjan, Department of Social Work and Social Welfare, special field: health care policy, University of Kassel, Germany.
- 09/2011-08/2012 student assistant in the DFG-Project (German Research Foundation) „Schmerzfreiheit als paradoxes Handlungsziel. Neue Wege in der Schmerzversorgung“. Coordinator: Prof. Dr. Gerd Göckenjan, Department of Social Work and Social Welfare, special field: health care policy, University of Kassel, Germany.
- 10/2011-09/2014 Master's degree study of sociology at the University of Kassel
- 10/2008-09/2011 Bachelor's degree study of Sociology and the minor subject psychology at the University of Kassel.

Presentations

- 11/2015: "Next Generation Sequencing – Next Generation Ethics? Trends in the ethical debate on genomic high throughput data". EMBL Conference "Cancer Genomics" 1-4 November 2015, Heidelberg, Germany.

- 09/2015: "Identity and self-expression: Influence of genomic risk information". Second International Workshop of the "Mind the Risk Project": An Interdisciplinary Approach to Medical Decision Making and Risk. Baveno, Italy 28.-29. September, 2015.
- 03/2015: "Genomische Hochdurchsatzdaten – Ethisch- und sozioempirische Untersuchungen zur Implementierung neuer genomsequenzierender Methoden in der klinischen Praxis. Die Perspektiven von Betroffenen, Laien und Experten". 17. Treffen der Arbeitsgruppe Ethik und Empirie der Akademie für Ethik in der Medizin.

Publications

- Urban, Alexander, 2015: Tagungsbericht. Internationaler Workshop: „Genetic Risk Information: Addressing New Challenges“ Kassel, 16.–17. Februar 2015. Zeitschrift für Ethik in der Medizin. [online first].

Etienne Vignola-Gagné

Personal Information

Born in Montréal, April 19, 1982.

Current Affiliation

Since May 2014

Postdoctoral Fellow

Social Studies of Medicine, McGill University Montréal, Canada

Training Supervisor: Prof. Dr. Alberto Cambrosio

Education

September 2009 – June 2014

Dr. Phil. Social sciences (specialization in political science)

Department of Political Science, University of Vienna Vienna, Austria

Thesis Supervisor: Prof. Dr. Herbert Gottweis.

September 2005 – December 2008

M.Sc. Urban studies.

Institut national de la recherche scientifique – Urbanisation, culture et société (INRS-UCS). Montréal, Canada.

Thesis Supervisor : Prof. Dr. Michel Trépanier

September 2002 – April 2005

B.A. Science, Technology and Society (STS).

Université du Québec à Montréal (UQAM). Montréal, Canada.

Project Funding and Awards

May 2014 – April 2016

Postdoctoral Fellowship (70,000 \$)

Fonds québécois de la recherche sur la société et la culture (FQRSC)

February 2009 – January 2013

Research grant for the Tri-Gen project (Translational research in genomic medicine: Institutional and social aspects)

Consortium of five institutions financed for a total of 440,000 € by the German Federal Ministry of Education and Research, the Austrian Ministry of Science and Research and the Academy of Finland (see <http://trigen.isi-projekte.de> and www.elsagen.at/)

I played a central role in conceiving the project, setting up the consortium, writ-

ing the grant proposal, conducting the research strategy and disseminating results.
Project coordinator was Bärbel Hüsing (Fraunhofer ISI).

June 2010 – May 2013

Canada Graduate Scholarships Program: Doctoral Award (60,000 \$)

Social Sciences and Humanities Research Council of Canada (SSHRC)

September 2006- August 2007

Research Master's Scholarship (*Bourse de maîtrise en recherche*) **(15,000 \$)**

Fonds québécois de la recherche sur la société et la culture (FQRSC)

September 2005 – August 2006

Canada Graduate Scholarships Program: Master's Award (17,500 \$)

Social Sciences and Humanities Research Council of Canada (SSHRC)

Other Relevant Experiences

February 2008 – February 2013

Doctoral researcher

Competence Centre New Technology

Fraunhofer Institute Systems and Innovation Research (Fraunhofer ISI) Karlsruhe,
Germany

September 2007 – December 2007

Research Assistant

Canada Research Chair in the History and Sociology of Science

September 2006 – September 2007

**President, Federation of the INRS students President, Student association of
the INRS-UCS**

November 2005 – November 2006

Member of the organization comity – First congress of the INRS students

January 2004 – December 2005

Research Assistant

Science-Metrix Inc. (www.science-metrix.com/)

Languages

French: native

English: fluent, whether spoken or written

German: basic working proficiency

Scientific contributions - articles in peer-reviewed journals

George Weisz and **Vignola-Gagné E.** 2015. The World Health Organization and the Globalization of Chronic Noncommunicable Disease. *Development and Population Review*. Accepted and forthcoming.

Vignola-Gagné E. 2014. Argumentative practices in science, technology and innovation policy: the case of clinician-scientists and translational research. *Science and Public Policy*. 41(1): 94-106.

Vignola-Gagné E., Rantanen E, Lehner D and Hüsing B. 2013. Translational research policies: disruptions and continuities in biomedical innovation systems in Austria, Finland and Germany. *Journal of Community Genetics*. 4(2): 189-201.

Larivière V, **Vignola-Gagné E.**, Villeneuve C, Gélinas P and Gingras Y. 2011. Sex differences in research funding, productivity and impact: an analysis of Québec university professors. *Scientometrics*. 87: 483-498.

Gaisser S, **Vignola-Gagné E.**, Hüsing B, Enzing C and Van der Valk T. 2009. EU policies in personalized-medicine-related technologies. *Journal of Personalized Medicine*. 6(1): 93-102.

Archambault É, Côté G, Gingras Y, Larivière V and **Vignola-Gagné E.** 2006. Benchmarking Scientific Output in the Social Sciences and Humanities: The Limits of Existing Databases. *Scientometrics*. 68(3): 329-342.

Archambault É, Gingras Y, Larivière V and **Vignola-Gagné E.** 2006. The Place of Serials in Referencing Practices: Comparing Natural Sciences and Engineering With Social Sciences and Humanities. *Journal of the American society for information science and technology*. 57(8): 997-1004.

Scientific contributions – book chapters and monographies

Vignola-Gagné E., Daniel Lehner and Peter Biegelbauer. 2014. Translational research: entrepreneurship, advocacy and programmatic work in the governance of biomedical innovation. In *The Governance of Socio-Technical Systems. Explaining Change*. Edited by Susana Borrás and Jakob Edler. Cheltenham : Edward Elgar. Pages 132-158.

Vignola-Gagné E. 2014. *Gaps, Pitfalls and the Valley of Death: Translational research and the reform of biomedical innovation*. Dr. Phil. Dissertation. Vienna : University of Vienna.

Vignola-Gagné E. and Biegelbauer P. 2013. Translational Research. In *Springer Encyclopedia of Creativity, Invention, Innovation, and Entrepreneurship*. E.G. edited by Carayannis. Heidelberg : Springer.

Scientific contributions - other publications

Reiss T and **Vignola-Gagné E.** 2013. Thematische Schwerpunktbildung in den Life Sciences durch system-immanente Prozesse [Intellectual trajectories in

the Life Sciences as « system- immanent » processes]. Karlsruhe: Fraunhofer Institute for Systems and Innovation Research ISI. Report commissioned by the German Federal Ministry of Education and Research, Berlin, Germany.

Reiss T, **Vignola-Gagné E**, Kukk P, Glänzel W and Thijs B. 2013. ERACEP – Emerging Research Areas and their Coverage by ERC-supported Projects. Karlsruhe: Fraunhofer Institute for Systems and Innovation Research ISI and Leuven : Katholieke Universiteit Leuven. Report commissioned by the European Research Council, Brussels, Belgium.

Hogarth S, Hopkins M, Rodriguez V, Enzing C, Gaisser S and **Vignola-Gagné E**. 2009. The role of patents in the development and clinical use of genetic tests. Case studies on the role of IP in the development and clinical use of genetic tests for Factor V Leiden, TPMT and HPV in the USA and EU. Report commissioned by the European Commission Joint Research Centre Institute for Prospective Technological Studies, Seville, Spain.

Enzing C, Van der Valk T, Gaisser S, **Vignola-Gagné E**, Paci D and Ibarreta D. 2009. Genomics knowledge for future health services. Report commissioned by the European Commission Joint Research Centre Institute for Prospective Technological Studies, Seville, Spain.

Vignola-Gagné E. 2009. Québec policies on biotechnologies from 1982 until today: innovation and spatial dynamics (Les politiques québécoises en matière de biotechnologies de 1982 à aujourd’hui : innovation et dynamiques spatiales). Montréal : Institut national de la recherche scientifique – Urbanisation, culture et société. Master’s thesis.

Archambault É, **Vignola-Gagné E** and Bouffard D. 2005. Towards a Canadian Biotechnology Innovation Scoreboard. Montréal : Science-Metrix Inc. Commissioned by Industry Canada, Life Sciences Branch, Ottawa, Canada.

Archambault É and **Vignola-Gagné E**. 2004. The Use of Bibliometrics in the Social Sciences and Humanities. Montréal : Science-Metrix Inc. Commissioned by the Social Sciences and Humanities Research Council, Ottawa, Canada.

Scientific contributions - conference talks

Vignola-Gagné E, Cambrosio A and Keating P. 2015. *From informed to informing materials: Drugs as tools for exploring cancer mechanisms and pathways*. Presentation at the International Society for the History Philosophy and Social Studies of Biology 2015 meeting, July 5 – 10, Montréal, Canada.

Vignola-Gagné E. 2013. *Expertise differentials within research communities: the conflict over translational medicine and biomedical policy*. Presentation at the 8th International Interpretive Policy Analysis Conference, 3 – 5 July 2013, Vienna, Austria.

Vignola-Gagné E. 2012. *Translational research: history, dominant practices and current provisions for patient involvement*. Invited presentation for the workshop Values in translational research: Exploring the role of patient involvement as a way to enhance ethical reflection. University of Twente, Netherlands, November 22-23, 2012.

Vignola-Gagné E. 2012. *Smoke screens and sacred fires: Translational research and grand challenges in European biomedicine*. Presentation at the Eu-SPRI

Conference Towards Transformative Governance? Responses to mission-oriented innovation policy paradigms. Karlsruhe, Germany, June 12-13, 2012

Vignola-Gagné E. and Biegelbauer P. 2012. *Translational research: A new form of governance for genomic medicine?* Presentation at the ESRC Genomics Network Conference 2012 - Genomics in Society: Facts, Fictions and Cultures, London, 23 & 24 April 2012.

Lehner D., Rantanen E. and **Vignola-Gagné E.** 2011. *'Therapeutic eagerness': clinician- scientists and the politics of large-scale translational research.* Presentation at the Annual Meeting of the Society for Social Studies of Science (4S), Session Collaborations across health research and care, November 2-5 2011, Cleveland, USA.

Henrik Vogt

born 1977-05-17

- 2003: Cand.mag (equivalent of bachelor degree plus one year) in History, specializing in the History of "knowledge as power" among experts and professions in the rise of the welfare state.
- 2008: Degree of Cand. med. (medical doctor) from the Medical faculty at the University of Oslo.
- 2012-present: PhD candidate at the General Practice Research Unit, Norwegian University of Science and technology. PhD Project entitled "Systems medicine as a theoretical framework for primary health care – a critical investigation".

Relevant publications:

Vogt, H., E. Ulvestad, T. E. Eriksen and L. Getz. 2014. Getting personal: Can systems medicine integrate scientific and humanistic conceptions of the patient? *J Eval Clin Pract.*

Matthias Wirth

Personal Data

Name	Dr. des. Mathias Wirth
Academic position	Lecturer/Research Associate Department of History and Ethics of Medicine, University of Hamburg (Germany)
Date of Birth	08/17/1984
Citizenship	German

Education

1995 – 2004	High Schools in Cologne (Germany), Rockdale, TX and Killeen, TX (USA)
2004 – 2009	University of Bonn (Germany) and Papal Gregorian University Rome (Italy): Philosophy and Theology
2010 – 2014	Doctoral Studies (finished in June 2014, <i>summa cum laude</i>), Faculty of Philosophy, Leibniz University Hannover (Germany) Thesis: <i>Distance and Obedience. Theory, Ethics, and Critics of a Virtue</i> Supervisor: Prof. Marco Hofheinz, Department of Theology and Religious Studies

Honors and Awards

2004 – 2009	Undergraduate and graduate scholarship of the Konrad-Adenauer-Foundation (Bonn, Germany)
2010 – 2012	Scholarship for doctoral studies by the Fazit-Foundation (Frankfurt, Germany)
2010	Award from the University of Salzburg (Austria) for a presentation on their annual conference in theology and philosophy
2014	Science Award Hannover 2014
2015	Post-Doc-Project, founded by the Fritz Thyssen Foundation (Germany)

Teaching and Research Interests

- Anthropology and Ethics of Medicine
- Otherness and Diversity
- Intersexuality and Transsexuality
- Hebrew Philosophy and Theology

Publications, peer-reviewed

Wirth, M. (2015), "Living in a Shell of Something I'm Not": Transsexuality, Medical Ethics, and the Judeo-Christian Culture. In *Journal of Religion and Health* 54, pp. 1548-1597.

Wirth, M. (2015), Corporeality and the Authority of Emotions. The New Phenomenology and its Relevance to a Personalized Kind of Medicine. In Vollmann,

J. et al (Ed.), *The Ethics of Personalised Medicine. Critical Perspectives*. Ashgate: Farnham, pp. 65-75.

Wirth, M. (2015), *Der Worumwille von Arbeit als Therapie. Zur Anthropologie und Ethik der Arbeitstherapie der Weimarer Zeit* (Engl. *The Meaning of Work as Therapy. Anthropology and Ethic of Occupational Therapy within Weimar Psychiatry*). In: Ankele, M. & Brinkschulte, E. (Ed.), *Arbeitsrhythmus und Anstaltsalltag. Arbeit in der Psychiatrie vom frühen 19. Jahrhundert bis in die NS-Zeit*. Steiner-Verlag: Stuttgart, pp. 135-156.

Wirth, M. (2014), Absurdität, Solidarität und Sinn. Albert Camus und die Freiheitsanalyse Thomas Pröppers, in: *Theologie und Philosophie* 89, 335-350 (Engl. *Absurdity, Solidarity and Meaning. Albert Camus and the Analysis of Freedom within Thomas Pröpper*).

Wirth, M. (2014), Eigensinn gefährdet die Güte Gottes nicht. Der Prophet Jona und eine alttestamentliche Kritik des Gehorsams, in: *Kerygma und Dogma* 60, 169-189 (Engl. *Self-Will is no threat to God's mercy. The Prophet Jonah and critique of obedience based on the Old Testament*).

Wirth, M. (2013), Psychiatrie und Freiheit. Geschichte und Ethik einer Menschheitsfrage, in: *Kirche und Gesellschaft* 398, 3-16 (Engl. *Psychiatry and freedom. History and ethics of a question of humanity*)

Wirth, M. (2013), Regula tactus. Zur Aktualität einer kirchlichen Norm als Prävention und Plädoyer gegen sexualisierte Gewalt, in: *Wege zum Menschen* 65, 185-195 (Engl. *Regula tactus. The actuality of ecclesiastical norm preventative of and a plea against sexual violence*).

Wirth, M. & Schmiedebach, H.-P. (2013), Sexualisierte Gewalt am erkrankten Kind. In: *Interdisziplinäre Fachzeitschrift Kindesmisshandlung- und vernachlässigung* 16, 64-69 (Engl. *Sexual violence against sick children*).

Wirth, M. (2013), Die Gabe von Brot, Haut und Eingeweiden. Emmanuel Lévinas' Philosophie der Not des Anderen und eine Ethik der Organgabe. In: *Zeitschrift Evangelische Ethik* 57, 183-194 (Engl. *The donations of bread, skin and bowel. Emmanuel Lévinas's philosophy of the poverty of the other and the ethics of organ donations*).

Wirth, M. (2013), Wenn man tut, was man nicht sieht. Ein Gespräch über Haupt- und Nebeneffekte zwischen Technikphilosophie und einer Ethik der Informationstechnologie, in: *Ethica* 21, 99-122 (Engl. *When you do what you cannot see. A conversation between the philosophy of technology and the ethics of information technology*).

Wirth, M. (2012), Tötet man aus Mitleid, wenn man aus Mitleid tötet? Zur Ethik des Mitleids im Anschluss an die Alteritätskonzeption von Emmanuel Lévinas, in: *Theologie und Philosophie* 87, 237-250 (Engl. *Can one murder out of compassion? Ethics of compassion according to the Emmanuel Lévinas's concept of alteration*)

Wirth, M. (2012), Der (un)durchsichtige Mensch der life sciences. Wie valide ist Karl Rahners ängstlicher Mensch nach Gen-Sequenzierung und Neuro-Imaging? In: *Theologische Zeitschrift* 68, 335-354 (Engl. *The (in)visible human in life sciences. How accurate is Karl Rahner's enigmatic human after genome sequencing and brain imaging?*)

Wirth, M. (2011), Der torquierte Mensch. Exzessiver Leibhass im postmodernen Horror, in: *Internationale Katholische Zeitschrift Communio* 40, 78-88 (Engl. The twisted human! Excessive hatred of the body in postmodern horror)

Wirth, M. (2011), Das Dogma von der Freiheit und das Dogma von der Illusion der Freiheit, in: *Salzburger Theologische Zeitschrift* 15, 280-300 (Engl. The dogma of freedom and the dogma of the illusion of freedom)

Wirth, M. (2010), Das Eigene am eigenen Tod. Der Tod als endgültige Freiheitstat und wie Karl Rahner einen Kinderarzt verstehen hilft, in: *Renovatio* 66, 26-37 (Engl. The own of one's own death. Death as the final expression of freedom and how Karl Rahner describes a pediatric doctor).

Works submitted and works in progress

Wirth, M. (2015), Distanz des Gehorsams. Theorie, Ethik und Kritik einer Tugend (= Religion in Philosophy and Theology). Mohr Siebeck: Tübingen 2015 (will be published in September 2015) (Engl. Distance in Obedience. Theory, Ethics and Critics of a Virtue).

Wirth, M. (2015), "Living in a shell of something I'm not". Transsexuality and Bioethics viewed from a Judeo-Christian perspective. In: *Journal of Religion and Health* (*accepted*).

Wirth, M. (2015), Brompton-Cocktail gegen Sinnschmerz? Anmerkungen zur palliativen Sedierung bei existentieller Not. (Engl. Brompton-cocktail against the pain of senselessness? A comment on palliative sedation of existential crisis). In: Maio, G. et al. (Ed.), Schmerz und Leid als normative Konzepte in der Medizin (*accepted*).

Wirth, M. (2015), Es lebe die Erbsünde?! Schnittstellen zwischen Degenerationstheorie und Erbsündenlehre (Engl. Doctrine of original sin redivivus?! Similarities between the psychiatric theory of degeneration and the doctrine of original sin). In: Brinkschulte, E. & Gadebusch-Bondio (Ed.), Norm als Pflicht, Zwang oder Traum. Festschrift für Heinz-Peter Schmiedebach (*accepted*).

Wirth, M. (2015), Unbedingte Anerkennung der Andersheit des Anderen. Intersexualität und Transsexualität und eine Philosophie und Theologie der Anerkennung (Engl. Unconditional Acceptance of the otherness of the other. Intersexuality and Transsexuality, Philosophy and Theology of Acceptance). In: Steger, F. (Ed.), Culture and Ethics of Intersexuality and Transsexuality (*accepted*).

Wirth, M. (2015), „Wasch ab meine Schuld, von meinen Sünden mache mich rein“. Zur bleibenden Mythologie von Hygiene in Waschung (Engl. "Wash away my guilt and cleanse me from my sin". Maintaining the Mythology of Hygiene and Washing). In: Ingensiep, H. & Popp, H. (Ed.), Was bedeutet Aufklärung über Hygiene, Kultur und Medizin (*accepted*).

Wirth, M., Awakeness and Dying. Meaning Maintenance and Sedation of "Existential Suffering" in Palliative Care (*submitted to Medicine, Healthcare and Philosophy*).

Teaching Experience as a Lecturer at the University Medical School of Hamburg (Germany)

- Course: Philosophy and Theology of Evil (2010/2011)
- Course: Philosophy, Theology and Ethics of Compassion (2011)

- Course: Fear, Disgust, Shame. Philosophical Perspectives (2011/2012)
- Course: Philosophy and Theology of Death (2012)
- Course: Does Sickness Make any Sense? Answers in Philosophy and Theology (2012/2013)
- Course: Sexual Abuse in History and Present (2013)
- Course: Culture and Ethics of Gender (2013/2014)
- Course: Current debates in Medical Ethics (2014/2015)
- Course: Medicine and Dignity (2015)
- Courses: History, Ethics and Theory of Medicine (four courses in 2012, six in 2013, four in 2014, one in 2015 so far)

Selected Presentations

Wirth, M. (2014, April), Patients “on stage”. The Declaration of Helsinki and its importance for research and teaching in psychiatry. Presentation to an interdisciplinary Conference on Medical Ethics and Health Law (“Zones of will”) by the Volkswagen-Foundation Germany, Hannover (Germany).

Wirth, M. (2014, June), Diversity and Christianity. Intersexuality and Transsexuality and acceptance of the otherness of the other in Falk Wagner’s and Eberhard Jüngel’s Theology. Presentation to an interdisciplinary Conference of Intersexuality and Transsexuality by the University of Halle (Germany), founded by the Federal Ministry for Education and Research.

Wirth, M. (2013, June), *Sexual violence in history and presence of Catholic orders*. Presentation to the Department of Sexual Medicine and Forensic Psychiatry of the University Medical Center Hamburg (Germany).

Wirth, M. (2013, July), *The ambivalence of touching and examining. Sexual violence and the sick child*. Presentation to the College of the German Police Force in Münster (Germany).

Wirth, M. (2013, September), *Corporeality and the Authority of Emotions. New Phenomenology and its importance for a personalized kind of medicine*. Presentation to the Annual Conference of the European Association of Centers of Medical Ethics (EACME), Bochum, Germany.

Wirth, M. (2013, October), *Philosophy and Ethics of Dying*. Introductory presentation to the Conference “Death and Dying in Philosophy and Theology”, Department of History and Ethics of Medicine (Hamburg) in cooperation with the Foundation of Occupational Education (SBB), Germany.

Wirth, M. (2013, October), *Deaths of children. Some ethical reflections on “doctor’s babies”*. Presentation to the Conference “Death and Dying in Philosophy and Theology”, Department of History and Ethics of Medicine (Hamburg) in cooperation with the Foundation of Occupational Education (SBB), Germany.

Wirth, M. (2013, November), *“Living in a shell of something I am not.” Transsexuality in a Jewish-Christian perspective*. Presentation to the 9th UNESCO World Conference on Bioethics, Medical Ethics and Health Law, Naples (Italy).

Wirth, M. (2010, August), *The own of one’s own death. Death as final performance of freedom and how Karl Rahner describes a pediatric doctor*. Presentation to the Annual Conference on Philosophy and Theology, Salzburg (Austria).

Affiliation List

participant	affiliation	email
Branch-Smith, Teresa	University of Waterloo, Waterloo (Canada)	tbranches@uwaterloo.ca
Brigandt, Ingo	University of Alberta, Edmonton (Canada)	brigandt@gmail.com
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Vogt, Henrik	Norwegian University of Science and Technology, Trondheim (Norway)	vogt.henrik@gmail.com
Wirth, Matthias	University of Hamburg, Hamburg (Germany)	m.wirth@uke.de