

SPSP 2016



**Sixth Biennial Conference
Society for the Philosophy
of Science in Practice**

June 17–19, 2016



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About SPSP

Philosophy of science has traditionally focused on the relation between scientific theories and the world, at the risk of disregarding scientific practice. In social studies of science and technology, the predominant tendency has been to pay attention to scientific practice and its relation to theories, sometimes willfully disregarding the world except as a product of social construction. Both approaches have their merits, but they each offer only a limited view, neglecting some essential aspects of science. We advocate a philosophy of scientific practice, based on an analytic framework that takes into consideration theory, practice and the world simultaneously.

The direction of philosophy of science we advocate is not entirely new: naturalistic philosophy of science, in concert with philosophical history of science, has often emphasized the need to study scientific practices; doctrines such as Hacking's 'experimental realism' have viewed active intervention as the surest path to the knowledge of the world; pragmatists, operationalists, and late-Wittgensteinians have attempted to ground truth and meaning in practices. Nonetheless, the concern with practice has always been somewhat outside the mainstream of English-language philosophy of science. We aim to change this situation, through a conscious and organized program of detailed and systematic study of scientific practice that does not dispense with concerns about truth and rationality.

Practice consists of organized or regulated activities aimed at the achievement of certain goals. Therefore, the epistemology of practice must elucidate what kinds of activities are required in generating knowledge. Traditional debates in epistemology (concerning truth, fact, belief, certainty, observation, explanation, justification, evidence, etc.) may be reframed with benefit in terms of activities. In a similar vein, practice-based treatments will also shed further light on



questions about models, measurement, experimentation, and so on, which have arisen with prominence in recent decades from considerations of actual scientific work.

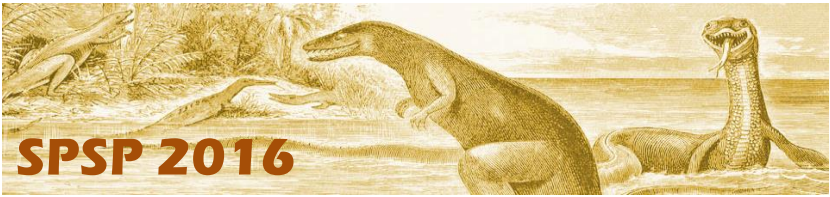
There are some salient aspects of our general approach that are worth highlighting:

(a) We are not only concerned with the acquisition and validation of knowledge, but also with its use. Our concern is both with how pre-existing knowledge gets applied to practical ends, and how knowledge itself is shaped by its intended use. We aim to build meaningful bridges between the philosophy of science and the newer fields of philosophy of technology and philosophy of medicine; we also hope to provide fresh perspectives for the latter fields.

(b) We emphasize how human artifacts, such as conceptual models and laboratory instruments, mediate between theories and the world. We seek to elucidate the role that these artifacts play in the shaping of scientific practice.

(c) Our view of scientific practice must not be distorted by lopsided attention to certain areas of science. The traditional focus on fundamental physics, as well as the more recent focus on certain areas of biology, will be supplemented by attention to other fields such as economics and other social/human sciences, the engineering sciences, and the medical sciences, as well as relatively neglected areas within biology, chemistry, and physics.

(d) In our methodology, it is crucial to have a productive interaction between philosophical reasoning and a study of actual scientific practices, past and present. This provides a strong rationale for history and philosophy of science as an integrated discipline, and also for inviting the participation of practicing scientists, engineers and policymakers.



Organizing Committees

Permanent Organizing Committee

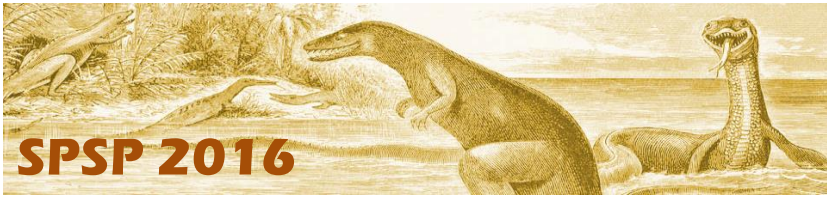
- Hanne Andersen, University of Copenhagen
- Rachel A. Ankeny, University of Adelaide
- Mieke Boon, University of Twente
- Till Grüne-Yanoff, Royal Institute of Technology (KTH) Stockholm
- Sabina Leonelli, University of Exeter
- Joseph Rouse, Wesleyan University
- Andrea Woody, University of Washington

Local Organizing Committee

- Matthew D. Lund, Rowan University
- Nathan Bauer, Rowan University
- Bruce Paternoster, Rowan University

Advisory Board

- Marcel Boumans, University of Amsterdam and Erasmus University Rotterdam
- Nancy Cartwright, Durham University
- Hasok Chang, University of Cambridge
- Henk De Regt, Free University of Amsterdam
- John Dupré, University of Exeter
- Mary Morgan, London School of Economics
- Margaret Morrison, University of Toronto
- Nancy Nersessian, Georgia Institute of Technology
- Miriam Solomon, Temple University, Philadelphia
- Alison Wylie, University of Washington



Additional Thanks

The SPSP 2016 conference is hosted by the Department of Philosophy and Religion and the College of Humanities and Social Sciences, Rowan University. We gratefully acknowledge support from Rowan Global, the Bursar's Office, and Conferences and Events. We also thank Dr. Ken Lacovara and the Rowan Fossil Quarry. The Pre-Conference Workshop is supported by 3TU.Centre for Ethics and Technology and the Danish Network for Philosophy of Science.



Conference Location

The conference will be held at Rowan University, with the plenary lectures in the Eynon Ballroom in the Student Center and the parallel sessions taking place on the 4th and 5th floors of the Enterprise Building. Information on how to get to Rowan can be found at the SPSP2016 webpage under Directions.

Conference attendees should come to the Student Center traffic circle when they reach Rowan. From there, they can go to the Welcome Desk to get their registration packet and dormitory keycard. The SPSP Welcome Desk is located on the first floor of the Student Center, with the following hours:

- June 15-16: 7:00am to midnight
- June 17-19: 7:00am to 9:00pm
- June 20: 7:00am to 4:00pm

Please call 856-256-5484 at any time in case of dormitory or facilities problems.



Parking

For those travelling by car, parking is available in Lot J or the Rowan Boulevard Garage. The spots in the Rowan Boulevard Garage will be given out on a first come, first served basis. There are ample spots in Lot J for the overflow. Those staying in the Marriott will have parking arranged through the hotel. (See the Rowan Map included in your welcome packet.)

Twitter Presence @SocPhilSciPract

The Twitter feed for this conference will be conducted under the hashtag **#spsp2016**. We look forward to lively coverage and discussions, also for the benefit of SPSP members that could not make it to this meeting!

Book Exhibit

The book exhibit can be found in the Eynon Ballroom Foyer.

Session Format and Chairing

Session format: Individual papers in concurrent sessions are scheduled for 30 minutes each in total, with 20 minutes for the talk and 10 minutes for questions immediately following each paper. This scheduling allows people to ‘session hop’ if they wish, so we also ask chairs to allow a minute for change over at the end of each paper/questions, and to stick to the order of presenters as it appears in the program. This means that some session blocks which are in a 2 hour period will run only for the first 1.5 hours (if they have 3 rather than 4 papers), and so on. Symposia are given more flexibility to run as they wish, but we recommend using a similar format if possible just in case people wish to attend for certain papers and not all.



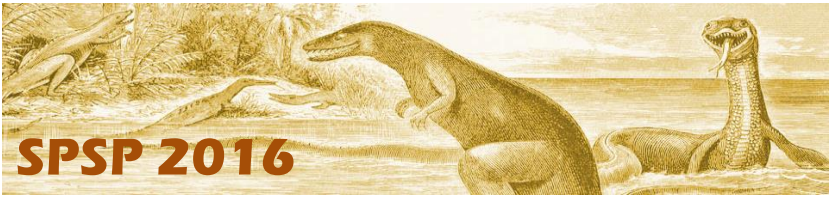
All conference rooms have projectors operated by a podium computer. While it is possible to connect laptops to the projectors, we recommend that speakers make every effort to load their presentations on the podium computer (either through a USB flash drive or through email). We encourage speakers in all sessions to put all presentations on the podium computer in advance. There will be slide advancers available in each conference room so speakers can easily advance their slides.

Chairing: In each conference room, the chairs will find a chair folder including three laminated pages that can be used as signs to the speaker during the talk. A green page showing the speaker that there are 5 minutes left, a yellow page showing that there are 2 minutes left, and a red sign showing that time is up.

We request that in concurrent sessions, chairs limit introductions to participants and their affiliations, and to keep sessions running on time. We also ask that all participants be respectful with regard to the relatively limited question and answer periods, keeping their questions short and on point. As SPSP is about dialogue and networking, we do hope conversations will flow out of the formal sessions into more informal settings during the conference (and beyond!).


Coffee Breaks and Meals

Continental breakfast, coffee, lunch, and dinner are covered by registration fees and will be served according to the schedule given in the conference program. Vegetarian and vegan meals will be provided and we will make every effort to ensure that everything is appropriately marked.



Internet

Wireless internet access is provided by Rowan's Visitor Wireless service. In your welcome packet, you will find a card like the one pictured below, which will give you a username and password allowing you wireless access throughout the conference.

Account Details		
	Username	02507661
	Password	slew15chat
	Role	[Guest]
	Account Activation	Wednesday, 08 June 2016, 11:12 AM
	Account Expiration	Thursday, 09 June 2016, 11:12 AM

To access the “**Rowan Visitor Wireless**” network, simply select this option from your list of available wireless networks. Once connected, launch a web browser and you will automatically be redirected to the Visitor Login page.

Please login to the visitor wireless using the username and password obtained from [Visitor Self Registration](#).

Network Login

* Username:

* Password:

* Terms: I accept the [terms of use](#)

Log In

* required field

If you do not have a current Visitor Wireless Account, please go to the [Visitor Wireless Registration Page](#) to create an account.

Visitor Wireless Accounts are valid for 24 hours, unless otherwise specified. You will need to repeat the registration process each day you need access to the Visitor Wireless Network.

Using the Guest Wireless Login Details provided in your packet, enter the username, password, accept the terms and Log In.



Printing

A print station is available for use by SPSP 2016 in Enterprise 507.

Emergencies

In case of emergency, call 911. One can also call Rowan's Public Safety Office at 856-256-4922. For medical care, Inspira Glassboro Urgent Care is located across the street from the Enterprise Center. Telephone number: 856-582-1500.

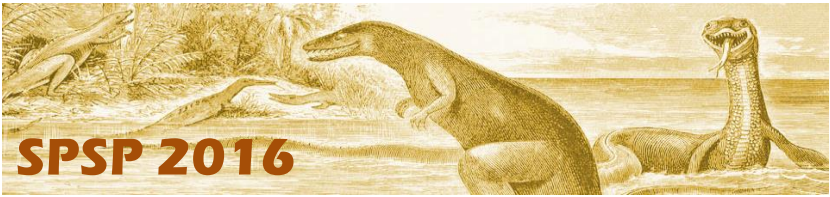
General Conference Schedule

Thursday, 16 June

9:30am – 6:30pm	Pre-Conference Workshop: Empirical Methodology for Philosophy of Science
7:00pm – 10:00pm	Informal Gathering at the Landmark

Friday, 17 June

8:30am – 9:00am	Continental Breakfast & Coffee (Eynon)
9:00am – 10:10am	Plenary Lecture 1 (Eynon)
10:10am – 10:30am	Coffee Break (Eynon)
10:30am – 12:00pm	Concurrent Sessions 1 (Enterprise)
12:00pm – 1:30pm	Lunch (Rowan Marketplace)
1:30pm – 3:00pm	Concurrent Sessions 2 (Enterprise)
3:00pm – 3:30pm	Coffee Break (Enterprise)
3:30pm – 5:30pm	Concurrent Sessions 3 (Enterprise)
6:00pm – 7:50pm	Dinner Reception (Eynon)
8:00pm – 9:30pm	Dr. Lacovara: Fossil Lecture & Exhibit (Eynon)



Saturday, 18 June

8:30am – 9:00am	Continental Breakfast & Coffee (Enterprise)
9:00am – 11:00am	Concurrent Sessions 4 (Enterprise)
11:20am – 12:30pm	Plenary Lecture 2 (Eynon)
12:30pm – 2:00pm	Catered Lunch (Eynon)
2:00pm – 3:10pm	Plenary Lecture 3 (Eynon)
3:10pm – 3:30pm	Coffee Break (Enterprise)
	SPSP Newsletter Meeting (Enterprise)
3:30pm – 5:30pm	Concurrent Sessions 5 (Enterprise)
6:00pm – 7:30pm	Dinner (Rowan Marketplace)

Sunday, 19 June

8:30am – 9:00am	Continental Breakfast & Coffee (Enterprise)
9:00am – 11:00am	Concurrent Sessions 6 (Enterprise)
11:20am – 12:30pm	Plenary Lecture 4 (Eynon)
12:30pm – 2:00pm	Lunch (Rowan Marketplace)
2:00pm – 3:30pm	Concurrent Sessions 7 (Enterprise)
3:45pm – 4:30pm	Closing Remarks, SPSP Business & Planning (Eynon)
4:30pm – 5:00pm	Coffee Break (Eynon)

Monday, 20 June

9:00am – 12:30pm	Post-Conference Fossil Dig (meeting at Student Center)
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Detailed Conference Program

Friday, 17 June

8:30am – 9:00am **Continental Breakfast** (Eynon Anteroom)

9:00am – 10:10am **Plenary Lecture 1** (Eynon Ballroom)

Session chair: Joe Rouse (Wesleyan University)

CRITIQUING THE FOUNDATIONS OF ECONOMICS, AND WHY IT MATTERS

Julie Nelson (University of Massachusetts Boston)

10:10am – 10:30am **Coffee Break** (Eynon Anteroom)

10:30am – 12:00pm **Concurrent Session 1A** (Enterprise 509)

Session chair: Hanne Andersen (University of Copenhagen)

Organized by: Sabina Leonelli (University of Exeter); Rachel Ankeny (University of Adelaide)

SYMPOSIUM - REPERTOIRES: DYNAMICS OF SCIENTIFIC COLLABORATION IN THE LIFE SCIENCES

THE FUNCTIONS OF REPERTOIRES IN SCIENTIFIC RESEARCH

Rachel Ankeny (University of Adelaide)

Sabina Leonelli (University of Exeter)

REPERTOIRES INTEGRATE PLATFORMS AND RESEARCH PROGRAMS

Elihu Gerson (Tremont Research Institute)

Alok Srivastava (Tremont Research Institute)

EMERGING MODEL ORGANISMS, PLATFORM DEVELOPMENT AND REPERTOIRE ACQUISITION

Christopher DiTeresi (George Mason University)

10:30am – 12:00pm **Concurrent Session 1B** (Enterprise 414)

Session chair: Mieke Boon (University of Twente)

CONTRIBUTED PAPERS - INSTRUMENTS AND DATA

ON THE APPLICATION OF SCIENCE TO SCIENCE ITSELF: CHEMISTRY, INSTRUMENTS, AND THE SCIENTIFIC LABOR PROCESS

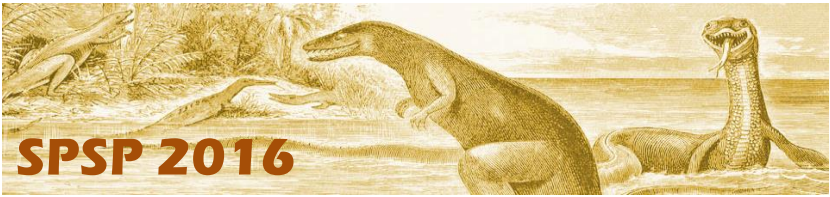
George Borg (University of Pittsburgh)

THE EVOLUTION OF INSTRUMENTS FOR EMPIRICAL INVESTIGATION: CHOOSING BETWEEN THE MATERIAL AND THE ALGORITHMIC OPTIONS

Vincent Israel-Jost (Université Catholique de Louvain)

IF YOU GO TOO FAR WESTERN, YOU CAN'T TRUST YOUR DATA ANYMORE

Stephan Guttinger (Egenis, University of Exeter)



10:30am – 12:00pm **Concurrent Session 1C** (Enterprise 409)

Session chair: Michael Stuart (University of Pittsburgh)

CONTRIBUTED PAPERS - ISSUES IN THE SOCIAL SCIENCES

ONTOLOGICAL INVESTIGATIONS AND SOCIAL SCIENTIFIC PRACTICE

Simon Lohse (Leibniz Universitaet Hannover)

BIAS AND SOCIAL SCIENCE EXPERIMENTS

Sharon Crasnow (Norco College)

USING PHILOSOPHY OF STATISTICS TO MAKE PROGRESS IN THE REPLICATION CRISIS IN PSYCHOLOGY

Deborah Mayo (Virginia Tech)

Caitlin Parker (Virginia Tech)

10:30am – 12:00pm **Concurrent Session 1D** (Enterprise 514)

Session chair: Abigail Gosselin (Regis University)

Organized by: Jami L. Anderson (Center for Cognition and Neuroethics, University of Michigan-Flint); Ruth J. Sample (University of New Hampshire); Susan V. H. Castro (Wichita State University)

SYMPOSIUM - PHILOSOPHY OF AUTISM

DOES AUTISM SPECTRUM DISORDER HAVE A GENDER?

Ruth J. Sample (University of New Hampshire)

AUTISM: A KANTIAN IMAGINATION-BASED THEORY

Susan V. H. Castro (Wichita State University)

10:30am – 12:00pm **Concurrent Session 1E** (Enterprise 517)

Session chair: Emmanuele Ratti (University of Notre Dame)

CONTRIBUTED PAPERS - DIVERSE MODELING PRACTICES

ANIMAL MODELS OF PAIN AND THE PUZZLE OF SIMILARITY

Nina Atanasova (The University of Toledo)

EXPERIMENTATION ON ANALOGUE MODELS

Susan Sterrett (Wichita State University)

THERE AND BACK AGAIN: COMPARATIVE RESITUATION OF MODELS BETWEEN ECOLOGY AND POLITICAL ECONOMY

Jason Oakes (University of California, Davis)

12:00pm – 1:30pm **Lunch** (Rowan Marketplace)



1:30pm – 3:00pm **Concurrent Session 2A** (Enterprise 509)

Session chair: Rachel Ankeny (University of Adelaide)

Organized by: William Bechtel (University of California, San Diego)

SYMPOSIUM - DIVERSE PRACTICES WITH MODEL ORGANISMS

AN ETHNOGRAPHIC APPROACH TO INTEGRATING PERSPECTIVES ON MODEL ORGANISMS

Rebecca Hardesty (University of California, San Diego)

THE EPISTEMIC ROLE OF MODEL ORGANISMS IN BIOMEDICINE

Veli-Pekka Parkkinen (University of Kent)

DEVELOPING MODEL ORGANISMS FOR MODEL ORGANISMS IN THE STUDY OF SLEEP

William Bechtel (Department of Philosophy and Center for Circadian Biology, University of California, San Diego)

1:30pm – 3:00pm **Concurrent Session 2B** (Enterprise 514)

Session chair: Deborah Mayo (Virginia Tech)

Organized by: Brian D. Earp (The Hastings Center Bioethics Research Institute); Veronica J. Vieland (The Research Institute at Nationwide Children's Hospital); Stuart Firestein (Columbia University)

SYMPOSIUM - REPLICATION AND EVIDENCE: A TENUOUS RELATIONSHIP

WHAT KIND OF CRISIS IS PSYCHOLOGY (SUPPOSEDLY) IN?

Brian D. Earp (The Hastings Center Bioethics Research Institute)

REPLICATION, EVIDENCE, AND STATISTICAL PRACTICE

Veronica J. Vieland (The Research Institute at Nationwide Children's Hospital)

REPLICATE THAT...

Stuart Firestein (Columbia University)

1:30pm – 3:00pm **Concurrent Session 2C** (Enterprise 409)

Session chair: Jessey Wright (University of Western Ontario)

CONTRIBUTED PAPERS - ORGANIZATION AND ENGINEERING IN COGNITIVE AND BIOLOGICAL SCIENCES

ORGANIZING PRINCIPLES IN NEUROANATOMICAL AND PHYSIOLOGICAL PRACTICE

Philipp Haueis (Berlin School of Mind and Brain)

FROM NEURAL ENGINEERING TO SCIENTIFIC UNDERSTANDING

Maria Serban (University of Copenhagen, Department of Media, Cognition, and Communications)



1:30pm – 3:00pm Concurrent Session 2D (Enterprise 414)
Session chair: Henk de Regt (VU University Amsterdam)

CONTRIBUTED PAPERS - CITIZEN SCIENCE AND DEMOCRATISATION

EBIRDING, CONSERVATION, AND MAPPING THE MORAL TERRAIN OF SCIENCE AT A SMALLER SCALE

Jon Rosenberg (University of Washington)

DEMOCRACY AND PLANETARY DEFENSE: INVOLVING CITIZENS IN TECHNICAL DECISIONS THROUGH PARTICIPATORY TECHNOLOGY ASSESSMENT

David Tomblin (University of Maryland, College Park)

Zachary Pirtle (National Aeronautics and Space Administration)

TRUST, OBJECTIVITY, AND THE DEMOCRATISATION OF SCIENCE

Inkeri Koskinen (University of Helsinki)

1:30pm – 3:00pm Concurrent Session 2E (Enterprise 517)
Session chair: Joe Rouse (Wesleyan University)

CONTRIBUTED PAPERS - REALISM AND TRUTH

STABILITY AND SCIENTIFIC REALISM: THE COMING OF AGE OF PERTURBATION THEORY

Massimiliano Badino (Universitat Autònoma de Barcelona; MIT)

PRAGMATIST COHERENCE AS THE SOURCE OF TRUTH AND REALITY

Hasok Chang (University of Cambridge)

RESIDUAL PHENOMENA AND THE MECHANISM OF DEEP EARTHQUAKES

Teru Miyake (Nanyang Technological University)

3:00pm – 3:30pm Coffee Break (Enterprise, 4th and 5th Floors)

3:30pm – 5:30pm Concurrent Session 3A (Enterprise 509)
Session chair: Sabina Leonelli (University of Exeter)

Organized by: Chiara Ambrosio (University College London)

SYMPOSIUM - IN PURSUIT OF HISTORY

"EACH CHIEF STEP IN SCIENCE HAS BEEN A LESSON IN LOGIC": (PRAGMATICIST) LESSONS FROM PEIRCE'S HISTORY OF SCIENCE

Chiara Ambrosio (University College London)

BETWEEN THE EMPTY AND THE BLIND: N. R. HANSON'S HISTORIOGRAPHY OF SCIENCE

Matthew Lund (Rowan University)

A NEW COMPARATIVE MODEL OF THE HISTORIOGRAPHY OF SCIENCE: FROM NEUTRAL DATA ASSESSMENTS TO COMPARISONS THROUGH EPISTEMIC VALUES

Jouni-Matti Kuukkanen (The University of Oulu)

COMMENTARY

Hasok Chang (University of Cambridge)



3:30pm – 5:30pm **Concurrent Session 3B** (Enterprise 409)

Session chair: Mieke Boon (University of Twente)

CONTRIBUTED PAPERS - UNDERSTANDING AND DISCOVERY

AN ETHNOGRAPHY OF SCIENTIFIC IMAGINATION

Michael Stuart (Center for Phil. of Science, University of Pittsburgh)

MECHANISM DISCOVERY AND DESIGN EXPLANATION: WHERE CAUSAL ROLE MEETS BIOLOGICAL ADVANTAGE FUNCTION

Dingmar van Eck (Ghent University)

Julie Mennes (Ghent University)

DISCOVERY: ABDUCTION IN EVERYDAY PRACTICE OF SCIENCE

Frederick Grinnell (UT Southwestern Medical Center)

3:30pm – 5:30pm **Concurrent Session 3C** (Enterprise 514)

Session chair: Andrea Woody (University of Washington)

CONTRIBUTED PAPERS - MOLECULAR SCIENCES

ARTICULATING ORGANIC CHEMISTRY INTO STRUCTURAL BIOCHEMISTRY

William Goodwin (University of South Florida)

BIOCHEMISTRY RESEARCH PROGRAMS THROUGH THE 20TH CENTURY USE A DUAL-COLUMN PROGRAMMATIC PRACTICE TO RESOLVE AND RECONSTITUTE THE MOLECULAR ECONOMY OF A BIOLOGICAL ACTIVITY

Alok Srivastava (Tremont Research Institute)

ON THE DISTINCTION BETWEEN 'MODELS OF' AND 'MODELS FOR' IN MOLECULAR BIOLOGY

Emanuele Ratti (University of Notre Dame, Center for Theology, Science and Human Flourishing)

MULTISCALE MODELING IN NANOSCIENCE: BEYOND NON-MERELOGICAL RELATIONS

Julia Bursten (San Francisco State University)

3:30pm – 5:30pm **Concurrent Session 3D** (Enterprise 517)

Session chair: Nina Atanasova (The University of Toledo)

CONTRIBUTED PAPERS - DISEASE AND DIAGNOSIS IN PSYCHIATRY AND MEDICINE

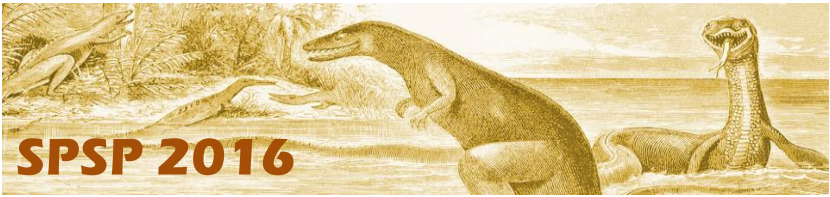
A PRAGMATIST INTERPRETATION OF SCHIZOPHRENIA

Abigail Gosselin (Regis University)

ON THE GENERAL CONCEPT OF MENTAL DISORDER AND THE SUBORDINATE CONCEPTS OF INDIVIDUAL DISORDERS IN DSM-V

Maria Cristina Amoretti (University of Genoa)

Elisabetta Lalumera (Bicocca University, Milan)



PHILOSOPHICAL AND HISTORICAL PERSPECTIVES ON THE DIAGNOSIS OF NON-ACCIDENTAL HEAD INJURY IN INFANTS

Nicholas Binney (University of Exeter)

EXPLANATORY AGNOSTICISM IN TRANSLATIONAL MEDICINE

Spencer Hey (Harvard Medical School)

James Overton (Knocean)

3:30pm – 5:30pm **Concurrent Session 3E** (Enterprise 414)

Session chair: Hanne Andersen (University of Copenhagen)

CONTRIBUTED PAPERS - ISSUES IN SOCIAL EPISTEMOLOGY

INDIVIDUAL VS. COLLECTIVE JUSTIFICATION: WHAT HAPPENS IN RESEARCH GROUPS?

Haixin Dang (University of Pittsburgh)

DEFENDING LIMITED NON-DEFERENCE TO SCIENCE EXPERTS

Lawrence Lengbeyer (United States Naval Academy)

BIG DATA AND THE EVALUATION OF EXPERTS

Darcy McCusker (University of Washington)

6:00pm – 7:50pm **Dinner Reception** (Eynon Ballroom)

8:00pm – 9:30pm **Dr. Lacovara's Fossil Lecture and Exhibit**
(Eynon Ballroom)

Saturday, 18 June

8:30am – 9:00am **Continental Breakfast & Coffee**
(Enterprise, 4th and 5th Floors)

9:00am – 11:00am **Concurrent Session 4A** (Enterprise 509)

Session chair: Henk de Regt (VU University Amsterdam)

Organized by: Torsten Wilholt (Leibniz Universität Hannover)

SYMPOSIUM - INDUCTIVE AND OTHER EPISTEMIC RISKS IN RESEARCH: CONCEPTUAL EXPLO-
RATIONS

EXPANDING EPISTEMIC RISK

Justin B. Biddle (Georgia Institute of Technology)

Rebecca Kukla (Georgetown University)

INDUCTIVE RISK, WISHFUL THINKING, AND PRACTICAL REASON

Matthew J. Brown (University of Texas at Dallas)



RISK, JUDGMENTS, AND OBJECTIVITY IN MEDICAL RESEARCH - EVALUATING THE STRENGTHS AND WEAKNESSES OF META-ANALYSIS

Saana Jukola (Bielefeld University)

OBJECTIVITY AND COGNITIVE INTERESTS

Torsten Wilholt (Leibniz Universität Hannover)

9:00am – 11:00am **Concurrent Session 4B** (Enterprise 517)

Session chair: Julia Bursten (San Francisco State University)

CONTRIBUTED PAPERS - SIMULATION AND MODELING IN THE PHYSICAL SCIENCES

THE USE OF SIMULATION MODELS IN THE ATLAS EXPERIMENT AT CERN'S LARGE HADRON COLLIDER: IMPLICATIONS FOR MODEL-BASED EXPERIMENTATION

Koray Karaca (University of Twente)

IDENTIFYING SKILLS OF MATHEMATICAL MODELLING & COMPUTATIONAL SIMULATIONS

Brandon Boesch (University of South Carolina)

PHILOSOPHICALLY UNDERSTANDING MODELS IN SCIENTIFIC PRACTICE: THE LONDON & LONDON CASE STUDY

Jan Potters (Universiteit Antwerpen)

CHAOS REGAINED: ON THE POSSIBILITY OF A NEW ERA OF ORBITAL DYNAMICS

Isaac Wilhelm (Rutgers University)

9:00am – 11:00am **Concurrent Session 4C** (Enterprise 409)

Session chair: Daniel Schwartz (Rowan University)

CONTRIBUTED PAPERS - CONCEPTS, KINDS AND CLASSIFICATION

CONCEPTS AS FORWARD-LOOKING: REFRAMING THE QUESTION OF REFERENTIAL STABILITY

Corinne Bloch-Mullins (Marquette University)

THE STRUCTURAL HETEROGENEITY OF SCIENTIFIC CONCEPTS

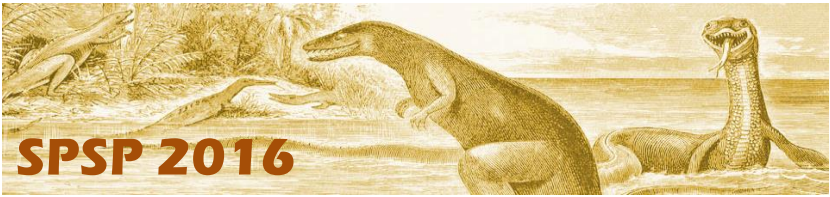
Hyundeuk Cheon (Ewha Womans University)

NATURAL KINDS IN PRACTICE

Beckett Sterner (Arizona State University)

WHEN ARE A PRIORI ASSUMPTIONS WARRANTED IN THE METAPHYSICS OF SCIENTIFIC PRACTICE?

Thomas Reydon (Leibniz Universität Hannover)



9:00am – 11:00am **Concurrent Session 4D** (Enterprise 514)

Session chair: Joe Rouse (Wesleyan University)

CONTRIBUTED PAPERS – PHILOSOPHY OF BIOLOGY: ONTOLOGICAL & EPISTEMOLOGICAL ISSUES
EVOLUTIONARY PROCESS

John Dupré (Egenis, University of Exeter)

FUZZY PRACTICE: HOMOLOGIZING LIMINALLY COMPARATIVE PARTS

Catherine Kendig (Missouri Western State University)

THE CROCODILE'S SNOUT: THE EPISTEMIC FUNCTION OF PHYLOGENETICS IN PALEO-
BIOLOGY

Adrian Currie (CSER, Cambridge)

REFUTATION IN HISTORICAL SCIENCES: CAVALIER-SMITH'S 'ARCHEZOA' HYPOTHESIS

Thomas Bonnin (University of Exeter)

9:00am – 11:00am **Concurrent Session 4E** (Enterprise 414)

Session chair: Sharon Crasnow (Norco College)

CONTRIBUTED PAPERS – STSS PERSPECTIVES

TRADING ZONES IN PERIPHERAL SCIENCE: SCIENTIFIC PRACTICE FROM A PERIPHERAL
POINT OF VIEW

Deepanwita Dasgupta (University of Texas at El Paso)

PHILOSOPHY OF SCIENCE UNDISCIPLINED: RECOVERING ETHICS AND POLITICS WITH STS

Matthew Sample (University of Washington)

"TYPICALLY, BUT NOT EXCLUSIVELY": INTERACTIONAL EXPERTISE, LANGUAGE USE AND
THE POLITICS OF NANOTECHNOLOGY TERMINOLOGIES STANDARDIZATION

Sharon Ku (Drexel University)

Frederick Klaessig (Pennsylvania NanoSys. Ltd)

TRANSCENDING THE DISTINCTION BETWEEN MAKING AND USING: THE PHENOMENOLO-
GY OF TECHNICAL ARTIFACT FUNCTIONS

Mark Thomas Young (The University of Bergen)

11:20am – 12:30pm **Plenary Lecture 2** (Eynon Ballroom)

Session chair: Sabina Leonelli (University of Exeter)

PROTOCOLS AND POTENTIALITY: FROM BIOLOGICAL PRACTICE TO SCIENTIFIC METAPHYSICS

Alan Love (University of Minnesota)

12:30pm – 2:00pm **Catered Lunch; Panel Discussion with Adviso-
ry Board members in celebration of the 10th
anniversary of SPSP** (Eynon Ballroom)



2:00pm – 3:10pm **Plenary Lecture 3** (Eynon Ballroom)

Session chair: Rachel Ankeny (University of Adelaide)

FORMAT AND FUNCTION: REPRESENTATIONAL PRACTICES IN CHEMICAL CONTEXTS

Andrea Woody (University of Washington)

3:10pm – 3:30pm **Coffee Break** (Enterprise, 4th and 5th floors)

SPSP Newsletter Meeting (Enterprise, 3rd floor conference room)

3:30pm – 5:30pm **Concurrent Session 5A** (Enterprise 509)

Session chair: Sara Green (University of Copenhagen)

Organized by: Sophie van Baalen (University of Twente)

SYMPOSIUM - IDEALS IN PRACTICE: DISCOVERY AND DECISION-MAKING IN BIOMEDICINE

PERSONALISED MEDICINE: A NEGOTIABLE IDEAL WITHOUT PRECISE DEFINITION

Giovanni De Grandis (NTNU)

Vidar Halgunset (NTNU)

FROM "PERSONALIZED" TO "PRECISION" PSYCHIATRY: WHAT'S IN A NAME?

Kathryn Tabb (Columbia University)

THE SOCIO-TECHNICAL EPISTEMOLOGY OF CLINICAL DECISION-MAKING

Sophie van Baalen (University of Twente)

Annamaria Carusi (University of Sheffield)

DISTRIBUTED COGNITION IN CRITICAL CARE MEDICINE

Thomas Cunningham (University of Arkansas for Medical Sciences)

3:30pm – 5:30pm **Concurrent Session 5B** (Enterprise 514)

Session chair: Fred Grinnell (UT Southwestern Medical Center at Dallas)

CONTRIBUTED PAPERS - VALUES, RESEARCH ETHICS AND REGULATION

THE INTERWOVENNESS OF SOCIETAL, INSTITUTIONAL AND EPISTEMIC DIMENSIONS OF RISK CONTROVERSIES

Jeroen van der Sluijs (University of Bergen, Centre for the Study of the Sciences and Humanities)

RESEARCH ETHICS, EPISTEMIC TRUST AND BAD ACTORS IN THE RETRACTION WATCH ERA

Barton Moffatt (Mississippi State University)

WHAT AFTER THE MORNING AFTER PILL? VALUES IN THE SCIENCE AND REGULATION OF CONTRACEPTION

Christopher ChoGlueck (Indiana University, Bloomington)

MAKING ECOLOGICAL VALUE MAKE SENSE

Justin Donhauser (University at Buffalo and SUNY: Buffalo State)



3:30pm – 5:30pm **Concurrent Session 5C** (Enterprise 409)

Session chair: Hasok Chang (University of Cambridge)

Organized by: Herschel Rabitz (Princeton University); Andrea Woody (University of Washington)

SYMPOSIUM - PHILOSOPHICAL IMPLICATIONS FOR OPTIMAL CONTROL IN THE SCIENCES OVER VAST LENGTH AND TIME SCALES

AN INTRODUCTION TO OPTISCI AND OPTIMIZATION OF QUANTUM (OPTIQ) PHENOMENA

Benjamin Russell (Princeton University)

Herschel Rabitz (Princeton University)

OPTIMIZATION IN THE CHEMICAL SCIENCES (OPTICHEM)

Katharine Tibbetts (Virginia Commonwealth University)

Herschel Rabitz (Princeton University)

NATURAL EVOLUTION EXPRESSED IN TERMS OF OPTIMIZATION (OPTIEVO)

Xiaojiang Feng (Princeton University)

Jinhai Chen (Princeton University)

Mohammad Seyedsayamdost (Princeton University)

Herschel Rabitz (Princeton University)

COMMENTARY

Andrea Woody (University of Washington)

3:30pm – 5:30pm **Concurrent Session 5D** (Enterprise 517)

Session chair: John Dupré (University of Exeter)

CONTRIBUTED PAPERS - MECHANISMS & EXPLANATION

MECHANISMS AS MODAL PATTERNS

Joseph Rouse (Wesleyan University)

PATTERNS, MECHANISMS AND THE ONTIC/EPISTEMIC DISTINCTION

Lena Kästner (Berlin School of Mind and Brain)

Philipp Haueis (Berlin School of Mind and Brain)

ABSTRACTION, IDEALIZATION AND THE ONTIC VIEW OF EXPLANATION

Marta Halina (University of Cambridge)

UNDERSTANDING THE EXPLANATORY POWER OF DYNAMICAL MODELS IN SYSTEMS SCIENCE

Karen Yan (Institute of Philosophy of Mind and Cognition, National Yang Ming University)



3:30pm – 5:30pm **Concurrent Session 5E** (Enterprise 414)

Session chair: Sabina Leonelli (University of Exeter)

CONTRIBUTED PAPERS - COLLABORATION AND INTERDISCIPLINARY CHALLENGES

TERMINOLOGICAL AMBIGUITY IN CROSS-DISCIPLINARY COLLABORATION

Julie Mennes (Ghent University)

EXPLANATION AND COLLABORATIVE PRACTICES

Melinda Fagan (University of Utah)

TRANSDISCIPLINARY UNDERSTANDING IN THE COURTROOM: THE CASE OF LEGAL INSANITY

Henk de Regt (VU Amsterdam University)

Gerben Meynen (Tilburg University)

DISCIPLINARY CAPTURE AND PATH DEPENDENCE: WHEN INTERDISCIPLINARITY GOES BAD

Evelyn Brister (Rochester Institute of Technology)

6:00pm – 7:30pm **Dinner** (Rowan Marketplace)

Sunday, 19 June

8:30am – 9:00am **Continental Breakfast & Coffee**
(Enterprise, 4th and 5th floors)

9:00am – 11:00am **Concurrent Session 6A** (Enterprise 509)

Session chair: John Dupré (University of Exeter)

Note: Talks to be followed by Panel and Open Discussion

SYMPOSIUM (SPONSORED BY SRPOISE) – RACE AND INCLUSION IN SCIENCE AND IN SCIENCE POLICY

MEASURING INEQUALITY: RACE AND GENDER IN SCIENCE

Robin O. Andreasen (Cognitive Science, University of Delaware)

Heather Doty (Mechanical Engineering, University of Delaware)

DISCRIMINATION AND ACCUMULATION

Ron Mallon (Washington University)

WE'RE MISMEASURING DIVERSITY IN STEM AND BIOMEDICINE: IT'S TIME TO CHOOSE MORE EQUITABLE RACE AND ETHNICITY VARIABLES

Sean M. Valles (Michigan State University)

9:00am – 11:00am **Concurrent Session 6B** (Enterprise 514)

Session chair: James Bogen (University of Pittsburgh)

Organized by: Nora Boyd (University of Pittsburgh); David Colaço (University of Pittsburgh); Aaron Novick (University of Pittsburgh); Raphael Scholl (University of Cambridge)



SYMPOSIUM - SECURING SCIENCE IN A PROTEAN WORLD

THE TREE, THE LABYRINTH AND THE MINEFIELD

Nora Boyd (University of Pittsburgh)

THE IDENTIFICATION OF SCIENTIFIC PHENOMENA: LESSONS FROM THE LIFE SCIENCES

David Colaço (University of Pittsburgh)

PRESUME IT NOT: TRUE CAUSES IN THE SEARCH FOR THE BASIS OF HEREDITY

Aaron Novick (University of Pittsburgh)

Raphael Scholl (University of Cambridge)

STABILITY WITHOUT STASIS: AMBITION AND MODESTY OF REALISM ABOUT TRUE CAUSES

Raphael Scholl (University of Cambridge)

9:00am – 11:00am **Concurrent Session 6C** (Enterprise 409)

Session chair: Chiara Ambrosio (University College London)

CONTRIBUTED PAPERS - GRAPPLING WITH HISTORY

SIMPLICITY AS INTEGRITY IN GALILEO'S DIALOGUE CONCERNING THE TWO CHIEF WORLD SYSTEMS

Daniel Schwartz (Rowan University)

HOW AND HOW NOT TO BE WHIGGISH ABOUT 'PHLOGISTON'

Jonathon Hricko (National Yang Ming University)

DEBATING DARWIN'S DEBTS TO PHILOSOPHY

Phillip Honenberger (Consortium for History of Science, Technology and Medicine)

THE SEARCH FOR KUHN-LOSS: A NEW STRATEGY FOR HPS

Jamie Shaw (Western University)

9:00am – 11:00am **Concurrent Session 6D** (Enterprise 517)

Session chair: Andrea Woody (University of Washington)

CONTRIBUTED PAPERS - ISSUES OF REPRESENTATION

WHO MAKES SCIENTIFIC GRAPHICS, AND WHAT MAKES THEM "GOOD" GRAPHICS?

Benjamin Sheredos (UC San Diego)

ON THE ELUSIVENESS OF INTENTIONAL GAPS IN MATHEMATICAL PROOFS

Line E. Andersen (Centre for Science Studies, Aarhus University)

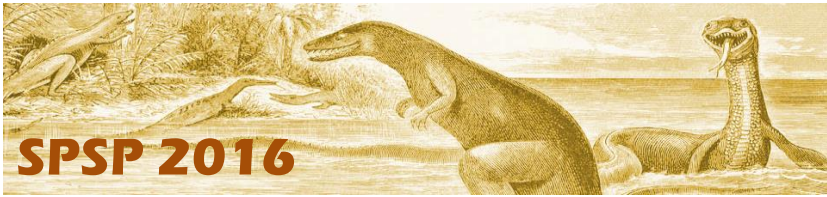
REPRESENTATION AND THE ANALOGY BETWEEN SCIENTIFIC MODELS AND MAPS:

INSIGHTS FROM CARTOGRAPHIC EPISTEMOLOGY AND PRACTICE

Gui Oliveira (University of Cincinnati)

INFERENCE IN BIOLOGICAL PRACTICE

Daniel Burnston (Tulane University)



11:20am – 12:30pm **Plenary Lecture 4** (Eynon Ballroom)

Session chair: Hanne Andersen (University of Copenhagen)

THE HISTORICAL EPISTEMOLOGY OF EVIDENCE-BASED MEDICINE

Miriam Solomon (Temple University)

12:30pm – 2:00pm **Lunch** (Rowan Marketplace)

2:00pm – 3:30pm **Concurrent Session 7A** (Enterprise 514)

Session chair: Barton Moffatt (Mississippi State University)

Organized by: Hanne Andersen (University of Copenhagen); Douglas Allchin (University of Minnesota); David Budtz Petersen (University of Copenhagen/Aalborg University); Mikkel Willum Johansen (University of Copenhagen); Frederik Voetman Christiansen (University of Copenhagen)

SYMPOSIUM - PHILOSOPHY OF SCIENTIFIC INTEGRITY: DISTINGUISHING ERROR, FRAUD AND MALPRACTICE

DISENTANGLING DISCOURSE ON MISCONDUCT

Hanne Andersen (University of Copenhagen)

Douglas Allchin (University of Minnesota)

WHEN STUDENTS GO TO THE LAB: A QUANTITATIVE STUDY OF THE SCIENTIFIC CONDUCT OF STUDENTS' RELATION TO EXPERIMENTAL DATA

Mikkel Willum Johansen (University of Copenhagen, Science Education)

Frederik Voetmann Christiansen (University of Copenhagen, Pharmacy)

2:00pm – 3:30pm **Concurrent Session 7B** (Enterprise 517)

Session chair: Susan Sterrett (Wichita State University)

CONTRIBUTED PAPERS - ENGINEERING PRACTICES

THE STRATEGY OF ENGINEERING COST ANALYSIS? INDEPENDENCE WITHIN AEROSPACE COST ANALYSIS TECHNIQUES

Zachary Pirtle (George Washington University)

Jay Odenbaugh (Lewis and Clark College)

Zoe Szajnfarber (George Washington University)

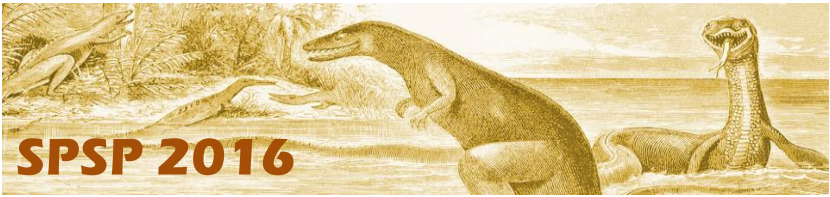
AN ENGINEERING PARADIGM FOR THE PHILOSOPHY OF SCIENCE: THE DISCOVERY OF PIEZO-ELECTRICITY AS A PARADIGM EXAMPLE OF SCIENCE

Mieke Boon (University of Twente)

Nadine de Courtenay (Université Paris Diderot, Sorbonne Paris Cité, laboratoire Sphere UMR)

INDUCTION AND EVIDENCE IN FAILURE ANALYSIS

Inge De Bal (Ghent University)



2:00pm – 3:30pm **Concurrent Session 7C** (Enterprise 414)
Session chair: Philipp Haueis (Berlin School of Mind and Brain)

CONTRIBUTED PAPERS - NEUROSCIENCE: DATA AND IMAGING

THE STRUCTURED USE OF CONCEPTS AS TOOLS IN NEUROIMAGING EXPERIMENTS

Eden Smith (University of Melbourne)

META-ANALYSES IN NEUROIMAGING: INTEGRATING DATA TO ACHIEVE CONSTRUCT STABILITY

Jessey Wright (University of Western Ontario)

ENSURING OBJECTIVE VALIDITY: FUNCTIONAL TRIANGULATION IN NEUROSCIENCE AND THE EFFECTS OF SOCIAL BIASES

Derek Oswick (University of Western Ontario)

2:00pm – 3:30pm **Concurrent Session 7D** (Enterprise 409)
Session chair: Hasok Chang (University of Cambridge)

CONTRIBUTED PAPERS - ISSUES OF EXPERIMENTATION

HYPOTHESIS-TESTING, EXPLORATORY EXPERIMENTS, AND THE SPACE IN BETWEEN

Emily C. Parke (University of Auckland)

DAVID GOODING'S PHILOSOPHY OF RECONSTRUCTION

Laura Georgescu (Ghent University)

WHAT IS WRONG WITH OUR VIEW OF PREDICTION?

Karim Bschr (ETH Zurich)

2:00pm – 3:30pm **Concurrent Session 7E** (Enterprise 509)
Session chair: Rachel Ankeny (University of Adelaide)

CONTRIBUTED PAPERS - PHILOSOPHY OF MEDICINE: DATA, EVIDENCE AND APPLICATION

INDIVIDUALIZED MEDICINE & THE EPISTEMOLOGICAL CHALLENGES OF DATA INTEGRATION

Megan Delehanty (University of Calgary)

PERSONALIZING MEDICINE IN SILICO AND IN SOCIO

Sara Green (University of Copenhagen)

UNDERSTANDING CANCER THROUGH THE PRACTICES OF MICROBIAL EXPERIMENTAL EVOLUTION

Katherine Liu (University of Minnesota)

3:45pm – 4:30pm **Closing Remarks, SPSP Business & Planning**
(Eynon Ballroom)

4:30pm – 5:00pm **Coffee Break** (Eynon Ballroom)

Monday, 20 June

9:00am – 12:30pm **Fossil Dig** (meeting at Student Center Circle)



Abstracts

In the interest of economy and the environment, the abstracts have not been printed. They can be accessed on the SPSP Rowan website: www.rowan.edu/colleges/chss/departments/philosophy/SPSPConference (select "Abstracts").

Students on Philosophy of Science at Rowan

"In medicine, we see in four dimensions; the component of time is critical. Understanding of both the mechanism and the pathological process over time is crucial to understanding a cross section of pathology at any given time. With only a finite glimpse of a longitudinal, temporal process, how can one possess a complete understanding? Without the philosophy and history of science, how can one truly appreciate the current scientific paradigm? Philosophy of Science allowed me to cultivate my capability to question thoroughly, pursue curiosity without judgment, and engage in thoughtful discussion with an open mind. The Philosophy of Science is crucial to developing a well-rounded, intellectual, and thoughtful, scientist."

Kelsey Coolahan, B.S. Biochemistry 2013 (now an MD candidate at Cooper Medical School of Rowan University)

"I think about the things we learned, and in retrospect I have a greater appreciation for its relevance. New ideas in science are constantly being put out (literally every week in journals!), and colleagues demand logical models and rigorous challenging of hypotheses... We still do need to learn about how we measure things (I haven't forgotten about observables and non-observables), and what is evidence and reasoning, and what is solid logic, and how paradigms indeed change.

Ruby O'Lexy, B.S. Biology, 2012 (now a PhD candidate in Biochemistry at University of Pennsylvania)

SPSP 2016

