SEVENTH BRITISH-NORTH AMERICAN JOINT MEETING OF THE BSHS, CSHPS, AND HSS

PHILADELPHIA, PENNSYLVANIA, USA
11-14 July 2012
Welcome to Philadelphia!

The Philadelphia Area Center for History of Science (PACHS) and its consortium partners look forward to welcoming you to the 2012 Joint Meeting of the British Society for the History of Science, the Canadian Society for the History and Philosophy of Science, and the History of Science Society. The meeting will take place at the University of Pennsylvania (UPenn) with an opening keynote lecture at the American Philosophical Society (APS) and a reception at the Chemical Heritage Foundation (CHF). In addition to attending many stimulating conference sessions, participants will have opportunities to tour several other consortium members: the Mütter Museum at the College of Physicians of Philadelphia (founded 1787), the Academy of Natural Sciences of Drexel University (founded 1812), and the Wagner Free Institute of Science (founded 1855) and to visit many other sites in a city rich in history and historical collections.

Philadelphia is home to some of the New World’s oldest scientific institutions. They, and other area institutions established later, have been collecting books, manuscripts and other historic artifacts since the eighteenth century and their collections now span most of the world and reach back to the fifteenth century. PACHS, now five years old, provides research fellowships for using area collections, hosts academic and public events, and produces online resources about the history of science, technology and medicine: http://www.pachs.net/.

The Old City neighborhood, where the APS and CHF are located, has many of the city’s best restaurants and galleries and is home to an active nightlife. Dining options of every variety, live music, and many other entertainment options are within easy walking distance. Within a few blocks you will find: Independence Hall and the Liberty Bell; Pennsylvania Hospital (North America’s oldest), with its archives and surgical amphitheater, the home of Phillip Syng Physick (known as the “father of American surgery”), Christ Church Burial Ground, Elfreth’s Alley (oldest continually inhabited street in the U.S.), historic City Tavern, the First and Second Banks of the United States, Carpenters’ Hall, Franklin Court Museum and Historic Site, the Betsy Ross House and the Athenaeum of Philadelphia. Restaurants, nightlife, historic sites, museums and libraries are sprinkled from Old City by the Delaware River across Philadelphia to UPenn in University City by the Schuylkill River. Of particular interest to conference participants would be the Library Company of Philadelphia (established in 1731), the Historical Society of Pennsylvania (1824) and the Franklin Institute (also founded in 1824) -- in addition to the libraries and museums of the APS, CHF and UPenn.

Philadelphia is once again a growing city with a vibrant cultural and intellectual life. The region is home to a large and active community of historians of science. The city has an extensive mass transit system and easy bus, rail and air connections to other cities in the US, Canada and UK. We are very pleased to be helping with the local arrangements for the Three Societies Meeting this year and look forward to welcoming you to Philadelphia, a city in which all historians can find something to enjoy.
Acknowledgments: Jay Malone, HSS Executive Director

It is with great satisfaction that I record my gratitude to the many individuals who made this conference possible. And this gratitude is buoyed by the considerable relief that the British-North American conferences have continued to flourish following the ill-attended St. Louis conference in 2000 (the first meeting that I ever organized), the so-called “Mall Meeting,” which cast a shadow on the future of these conferences. But the nimble recovery of our Canadian colleagues with the fabulous 2004 meeting in Halifax, followed by the equally impressive Oxford meeting, organized by our BSHS friends in 2008, put the British-North American Meeting back on sure footing. I hope that I have learned a thing or two about conference organization over the past 12 years, and although I cannot guarantee that Philadelphia in July will be any cooler than St. Louis in August, our expected attendance of close to 300 should make this one of the larger 3-Societies conference.

Dozens of individuals have lent their energy and time to the creation of this seventh conference. And although I cannot name all of them, I hope that everyone who had a hand in this meeting is aware of my deep thanks. Let me begin by thanking our three program chairs, Angela Creager, chair (HSS); Sabine Clark, (BSHS); and Sophie Lachapelle (CSHPS). These three handled the many, many questions, follow-ups, changes, more changes, and thousands of details with sure-handed grace. The result is a fabulous program that will be sure to generate discussion and insights for years to come. I also received enormous help from our local arrangements committee. One of the reasons for choosing Philadelphia for the 2012 conference was the exceptionally strong presence of the history of science in the area, manifested by the Philadelphia Area Center for the History of Science (PACHS). PACHS’ director, Babak Ashrafi, along with individuals from PACHS institutional members -- Susan Lindee and Ruth Schwartz Cowan (University of Pennsylvania), Ron Brashear (Chemical Heritage Foundation), and Martin Levitt (American Philosophical Society) -- met with me on numerous occasions as we mapped out the course of the conference. These are fun folks with which to work, and I am thankful for their generous donation of time and resources. The especially generous support of Penn and CHF helped make the conference much more affordable for graduate students.

The members of the HSS Executive Office, especially Greg Macklem, Society Coordinator, and Manuela Fernández Pinto, proved to be the difference between order and chaos as the conference planning heated to a boil. My deep thanks to them, and to the University of Notre Dame, which provides considerable support for the Executive Office. I would also like to thank the many student volunteers who will staff the registration tables, the exhibitors who made the trek to Philadelphia to exhibit their titles, our donors, including Neale Watson (long-time member extraordinaire) and the University of Chicago Press, and our conference manager, Melissa Parker, who helped us keep the many pieces from falling apart.

And as always, I would like to thank the HSS Executive Committee (Lynn Nyhart, President; Angela Creager, Vice President; Bernie Lightman, Editor; Marsha Richmond, Secretary; Adam Apt, Treasurer) for their generous support, through thick and thin, as I muddled my way through the oceans of detail that are part of the HSS.
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Philadelphia Area Consortium for History of Science

Ronald Brashear
Chemical Heritage Foundation

Ruth Schwartz Cowan
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Martin Levitt
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University of Pennsylvania
MEETING SPACES

All regular sessions will take place in Houston Hall and Irvine Auditorium. The two buildings are immediately adjacent. Irvine Auditorium is on the northwest corner of Spruce and 34th St., and Houston Hall is immediately to the west.

The meeting rooms in Houston Hall are on three floors: Ground, 1st, and 2nd. The handicap-accessible entrance to Houston Hall is on the north side of the building, facing Wynn Commons. Look for the double doors in the middle of the building; it is a flat entrance. There are two elevators, one toward the west end, one toward the east.

The meeting rooms in Irvine Auditorium are on the first floor. The handicap-accessible entrance is a ramped entrance on the northwest side of the building.

To reach the dorm, you can simply walk along Locust Walk. Harnwell College House is on the corner of Locust Walk and 39th Street.

To reach the Sheraton Philadelphia University City, walk north on 34th Street and turn left on Chestnut. The hotel is on the north side of the street, 3549 Chestnut St.
One advantage of having the 3-Societies’ meeting in Philadelphia is that participants will a chance to enjoy the diverse food scene that is growing and thriving in the United States’ 5th most populous city. We will focus on the locations closest to the meeting area (University City and Old City) but the walkable nature of the downtown area and the crosstown subway (a.k.a. Blue Line or Market-Frankford Line) will give you more opportunities to sample the varieties of dining available, from fine dining to ethnic cuisines to neighborhood BYOB venues to cheesesteak emporiums.

It is hard to create a comprehensive dining guide to Philadelphia due to the huge number of restaurants, cafes, and gastropubs just in the downtown area alone. But these days there are a great number of blogs, websites, and apps that will steer you the type of cuisine and dining experience you want. We don’t feel the need to replicate these here but will direct you to the sites we have used in the past.

The best sites to find reviews and details about restaurants in Philadelphia are:

- *Philadelphia* magazine restaurant guide, which includes annual “Best of Philly” listings as well as their Top 50 restaurants ([http://www.phillymag.com/restaurants/index.html](http://www.phillymag.com/restaurants/index.html))
- Urbanspoon Philadelphia is a great place for reviews ([http://www.urbanspoon.com/c/21/Philadelphia-restaurants.html](http://www.urbanspoon.com/c/21/Philadelphia-restaurants.html)). Highly-rated BYOB restaurants can be found here too ([http://www.urbanspoon.com/t/21/15/Philadelphia/BYOB-restaurants](http://www.urbanspoon.com/t/21/15/Philadelphia/BYOB-restaurants))
- Yelp ([http://www.yelp.com/philadelphia](http://www.yelp.com/philadelphia))

One important thing to consider before settling in at a restaurant is whether or not it sells alcohol. Due to the high cost of liquor licenses in the city, many neighborhood restaurants are BYOB (i.e. bring your own beverage/booze) or simply, BYO. BYO’s allow you to bring in your own bottle of wine and the restaurant will open it for no additional charge and provide glasses for you to use. It certainly helps keep dining costs down if you choose to go to a BYO. The hardest part can be finding a bottle of wine, since they are only sold in state-owned and operated Wine & Spirits shops. We’ll give you a list of where to find these later. Due to Pennsylvania’s weird alcohol regulations, we should point out that beer is neither sold in Wine & Spirits shops nor in large supermarkets. The only place to buy beer by the 6- or 12-pack is in small neighborhood groceries and take-out restaurants. If you wander into a beer distributor, you can buy beer from them but only by the case! Another thing to consider, especially for smaller neighborhood restaurants, is whether or not they accept credit cards or are cash-only. Be sure to pay attention to this in advance! Sometimes, they will accept credit cards but will charge you an extra fee to cover the costs that they have to pay to the credit card companies.
University City
The lodging and meeting rooms will be on the urban campus of the University of Pennsylvania (Penn), just west of downtown Philadelphia (“Center City”) across the Schuylkill (skoo’-kull) River. The university has invested a great deal of resources in urban renewal in the area now known as “University City” which has made the area generally safer and encouraged more local businesses to develop. The dining options for a long time have focused on the casual dining needs of the student body, so there are a large number of places to find lunch and a bustling food truck scene with a lot of great choices. Some of the newer and more interesting food trucks found no room to park at Penn so many of them have set up shop at nearby Drexel University (centered on Market and 33rd Streets) and are worth checking out. New restaurants are coming into the University City area so there are a growing number of dining options for dinner but still fewer than what might be found by crossing over the Schuylkill into Center City.

- **White Dog Cafe** (3420 Sansom St.). A Penn tradition, focused on local, seasonal ingredients. Some say it has lost some of its interesting quirkiness under new management but people keep coming back.
- **Pod** (3636 Sansom). Some people say this is what it would look like if Stanley Kubrick had opened a sushi bar. The design is worth experiencing even if the mediocre sushi is a bit on the pricey side.
- **Distrito** (3945 Chestnut St). High-end but very tasty Mexican food, part of celebrity chef Jose Garces’s growing empire. Expensive, huge, and fun.
- **Zocalo** (3600 Lancaster Avenue). Fine nuevo (“yuppie”) Mexican restaurant with a great Tequila selection, open for lunch and dinner.
- **JG Domestic** (Cira Centre, 2929 Arch St.). Chef Jose Garces’s new farm-to-table restaurant in the ground floor of the hard-to-miss glass Cira building next to 30th Street Station. Excellent ratings but not open on the weekend.
- **Bobby’s Burger Palace** (3925 Walnut Street). Signature burger chain operated by celebrity chef Bobby Flay. If you like burgers you should give this place a try. It can get very busy at lunch!
- **Marigold Kitchen** (501 S. 45th St.). BYOB. Excellent avant-garde cuisine based on Southern US food but updated via many molecular gastronomy techniques. Premium priced and open for dinner only.
- **Tria Wine Room** (3131 Walnut St.). A wine bar with light fare, nice place to just hang out. It’s not open for lunch and reservations are not accepted so be warned if you go with a large group.
- **Penne** (3611 Walnut). Decent Italian restaurant in the Hilton hotel. Many Penn departments have accounts with Penne so you might end up here if you interview for a job at Penn!
- **Lemon Grass** (3626 Lancaster Avenue). Thai cuisine arguably the best of its kind near Penn, but there are closer Thai options that don’t rate quite as high (like Thai Singha House at 3939 Chestnut) but still good if you want a shorter hike.
- **SangKee Noodle House** (3549 Chestnut in the Sheraton hotel). If you’re craving Chinese food, this is a good place to go near campus. Maybe not what you’d get in Chinatown, but decent nevertheless.
- **Nan** (4000 Chestnut St.). BYOB. Fine Thai-French fusion cuisine that is open for lunch and dinner.
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- **The Restaurant School at Walnut Hill College** (4207 Walnut St.). Not as unreliable as you might expect, the school has four different dining areas offering food at reasonable prices. Geared to the dinner crowd, one of the four locations is open for lunch.

- **City Tap House** (3925 Walnut St.). Go for the variety of beer selections, not so much the food.

- **Dock Street Brewing Company** (701 S. 50th St.). If you want to go a bit farther afield to a fine Philadelphia brewery and pub, this is worth checking out and the gourmet pizzas are yummy as well.

- **Capogiro Gelato** (3925 Walnut St.). Several locations in Philadelphia, this was just declared by National Geographic magazine to be the best place to eat ice cream in the world! Go check it out for yourself.

For more listings of restaurants in the University area, try:

- [http://universitycity.org/restaurants](http://universitycity.org/restaurants) featuring an interactive map of the area

- [http://www.cis.upenn.edu/~ungar/restaurants.html](http://www.cis.upenn.edu/~ungar/restaurants.html) “Lyle’s Guide to Philadelphia Restaurants” is one of the few to prominently feature University City listings.

- [http://www.destinationpenn.com/philly/restaurants.asp](http://www.destinationpenn.com/philly/restaurants.asp) is the University’s own guide to local cuisine.

- [http://www.uwishunu.com/2011/09/a-guide-to-university-city-food-trucks-from-the-insiders-at-penns-food-magazine-penn-appetit/](http://www.uwishunu.com/2011/09/a-guide-to-university-city-food-trucks-from-the-insiders-at-penns-food-magazine-penn-appetit/) is an excellent guide to the best food trucks that service the University campus. The Fresh Fruit truck at 37th & Spruce Streets is a remarkable concept and a great place for a smoothie. Bui’s lunch truck (38th & Spruce) is great for breakfast and their “Hangover Special.” You could dine at great trucks during the entire conference and not go to the same one twice (though you might want to).


- [http://www.notfortourists.com/hood.aspx/philadelphia/universitycity](http://www.notfortourists.com/hood.aspx/philadelphia/universitycity) If you like knowing about the places that appeal to locals and not tourists, then by all means visit this site!

Beer and Wine sales: First the bad news; the nearby Wine & Spirits store at 41st and Market has closed and the replacement won’t be open for a while. The nearest places to buy wine near the campus are over a mile away, at 2429 South Street or at 1913 Chestnut. So it might be best to stick with a restaurant that has a full bar unless you’re feeling adventurous. If you’re looking for beer by the 6-pack it’s a little easier. The best selection is likely the **Local 44 Bottle Shop** at 44th & Spruce Street. You can also find a more limited selection at small corner groceries and restaurants, like **Allegro Pizza** at 3942 Spruce Street.

Coffee Shops: Many people swear by **Avril 50** at 3406 Sansom Street for their fine coffee, but also by their amazing selection of international newspapers and magazines. They are open at 7:30AM during the week but only at 10AM on the weekends. Other standard options are Starbucks at 3421 Chestnut Street, 3401 Walnut Street, and on campus at 3800 Locust Walk (or 1920 Commons Bldg) and Dunkin Donuts at 3437 Walnut.

**Old City**
The easternmost section of Center City Philadelphia is known as Old City and will be the location of the plenary address and opening reception on Wednesday July 11. If you want to stick around for dinner after the lecture and reception, there are a large number of options for dinner that you should take advantage of before returning to the Penn Campus. The greatest concentration of eateries is on
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Chestnut Street between Front and 3rd Streets and along the side streets between Chestnut and Market.

- **Amada** (217-219 Chestnut). Excellent tapas restaurant from chef Jose Garces. A good strategy is to nibble on tapas while getting intoxicated with the house-made sangria, since the price of many small plates can add up.

- **Buddakan** (325 Chestnut). Noted restaurateur Stephen Starr’s successful (and expensive but very tasty) Asian-fusion restaurant which he has replicated in NYC and Atlantic City.

- **City Tavern** (138 S. 2nd). An 18th-century tavern which attempts to recreate the feel of those times, though you do not have to wear a powdered wig to enter. Designed for tourists but appreciated by locals.

- **The Continental Restaurant and Martini Bar** (134 Market). Another Stephen Starr restaurant that features an eclectic menu that is great for sharing. Who wouldn’t enjoy Lobster Mac and Cheese?

- **Cuba Libre** (10 S. 2nd). Decent Cuban food and drink in an open space that is designed to make you feel like you’ve stepped back in time to Batista-era Havana.

- **Eulogy Belgian Tavern** (136 Chestnut). Rated one of the best beer pubs in the US, there are great beers on draught and fine pub fare with an emphasis on Belgian specialties but you’re really there for the beer.

- **Farmicia** (15 S. 3rd). Tasty and affordable cuisine with an emphasis on local and organic food.


- **Han Dynasty** (108 Chestnut). Some of the best Taiwanese food in Philadelphia in an upscale setting.

- **Karma** (114 Chestnut). Our British visitors told us this is the best Indian food in the city and we have to agree with them!

- **Khyber Pass Pub** (56 S. 2nd). Who would have thought with such a name that you would find some of the best Cajun food here? The beer selection is also great in this unassuming gastropub.

- **National Mechanics** (22 S. 3rd). Great location in the old 1837 Mechanics National Bank. Lively atmosphere with OK pub food but lots to drink. CHF almost bought the building but we now prefer having a bar right next door!

- **Triumph Brewing Company** (117 Chestnut). This Princeton brewery opened a nicely designed gastropub in Philadelphia and is a great place to try their variety of brews on tap. The food is also better and more upscale than you would expect in a pub.

- **Zahav** (237 St. James). Upscale and delicious Israeli/Mediterranean food from Michael Solomonov. One of the best restaurants in Philadelphia if not the US. You might be able to get in if you have a small party and call in advance!

Wine sales: If you find yourself going to a BYO for dinner in Old City, the nearest Wine & Spirits shop is on 32 S. 2nd Street between Market and Chestnut. If you head further west into Center City, wine can be found at 1218 Chestnut St, 5 N. 12th St, 724 South St, 1628 John F. Kennedy Blvd, 1111 Locust St (inside Jose Garces Trading Co.), 326 S. 5th St, or 1913 Chestnut St.
A Three-Societies Grammar

English/American equivalent

Coach=Bus or Trolley
Lift=Elevator
Underground=Subway
Mind the gap=Watch your step or Mind your step
Queue=Line
Bacon=Ham
Biscuit=Cookie
Chips=french fries
Car park=parking lot
Beamer=lcd projector
Beer=Beer

A word on walking:
Drivers in many American cities will brake for you should you stumble into an intersection. It is important to remember that Philadelphia is not one of these cities. Apparently, courtesy towards pedestrians, bicyclists, dogs, cats, etc. declines proportionally with the size of the city. So please pay attention to traffic signals. And as in all big cities, Philadelphia has patches where it is best not to wander. For those staying at the dorms or at the hotel, remember that east is best, and west is less. Attendees are advised (strongly) not to wander west past 41st Street (which runs north and south).

What to expect for breakfast:
A traditional American breakfast typically includes eggs (usually scrambled, fried, or hardboiled), toast (usually wheat, white, or rye break) or biscuits (which are circular and made of soft dough and are not cookies), bacon (thin strips of pork hard fried), sausage (links or patties) orange juice, and hash browns (sliced or diced fried potatoes) and never beans and rarely tomatoes. Americans like cream in their coffee, and, even in their tea (Brits grimace at this barbarism). Pancakes and waffles are also popular breakfast foods.

In American restaurants, you are allowed, even encouraged to add a gratuity to your credit card charge. 15-20% is typical. Most restaurants accept credit cards. Smaller establishments will balk at large denominations of bills. $50 and up – be prepared to have your large bills examined with extra care. Most paper currency in wide circulation contains the pictures of past American presidents, save the $10 (Alexander Hamilton) and $100 bills (Benjamin Franklin). You will have an easier time spending smaller denominations, such as $20 dollar bills.
KEYNOTE ADDRESS

INTO ALL THE WORLD: EXPANDING THE HISTORY OF SCIENCE AND RELIGION BEYOND THE ABRAHAMIC FAITHS

RONALD L. NUMBERS
HILLDALE PROFESSOR OF THE HISTORY OF SCIENCE AND MEDICINE
UNIVERSITY OF WISCONSIN, MADISON

WEDNESDAY, 11 JULY, 5:00 – 6:00 P.M.
Benjamin Franklin Hall Auditorium
American Philosophical Society
(Lemonade, Iced Tea, and Cookies from 4:30 – 5:00 p.m.)

Reception to follow at the Chemical Heritage Foundation

Benjamin Franklin Hall is at 427 Chestnut St. Trolleys will begin running from the dorms (pick-up at 39th and Spruce) and the Sheraton to Franklin Hall at 4:00 p.m. Alternatively, the Market-Frankford Blue Line subway can be taken from the 34th & Market St. station to the 5th St. station. From the 5th St. station, walk south to Chestnut Street, turn left and walk ½ block.

The Chemical Heritage Foundation is at 315 Chestnut St., 1 block to the east of Franklin Hall. Trolleys will run between the CHF and the dorm and hotel until 8:30 pm. You can also take the Blue Line from the 5th & Market St. station west to the 34th Street station.
Program Overview

Unless otherwise noted, all sessions take place in Houston Hall and Irvine Auditorium on the campus of the University of Pennsylvania. Coffee breaks will be in the exhibit area (Reading Room, 1st Floor Houston Hall).

Please note that due to attrition, some sessions may have fewer presenters than originally planned.

Wednesday, 11 July

5:00 p.m. – 6:00 p.m.
Opening Keynote Lecture by Ronald L. Numbers, “Into all the World: Expanding the History of Science beyond the Abrahamic Faiths” (Benjamin Franklin Hall Auditorium, American Philosophical Society) – Directions can be found on page 12 or 17.

6:00 p.m. – 7:30 p.m.
Opening Reception, hosted by the Chemical Heritage Foundation (Chemical Heritage Foundation) – Directions can be found on page 12 or 17.

Thursday, 12 July

7:00 a.m. – 8:30 a.m.
Breakfast (included with full registration) – Bistro and Hall of Flags Balcony (Houston Hall, 1st Floor)

9:00 a.m.-11:45 a.m. (Coffee Break, Reading Room, 10:00-10:15 a.m.)
A Century of Viruses and Cancer (CAFÉ 58, IRVINE)
Circulating Theoretical Physics: Scientific Exchanges between Europe, the U.S., and Latin America (AMADA RECITAL HALL, IRVINE, 1ST FLOOR)
History of the Human Sciences (BENJAMIN FRANKLIN, HOUSTON, 2ND FLOOR)
Science and Technology in History (GOLKIN, HOUSTON, 2ND FLOOR)
Science in Public Culture (BODEK LOUNGE, HOUSTON, 1ST FLOOR)
Was the Modern Synthesis Actually a Synthesis, and in What Sense? (CLASS OF ’49, HOUSTON, 2ND FLOOR)

10:00 a.m. – 12:00 p.m.
Tour of Academy of Natural Science of Drexel University (ticketed event)

12:00 – 5:30 p.m.
BOOK EXHIBIT OPENS!!! (Houston Hall Reading Room, 1st Floor Lobby)

11:45 a.m. – 1:30 p.m.
Lunch on your own

1:15 p.m. – 3:15 p.m.
Tour of Wagner Free Institute of Science of Philadelphia (ticketed event)

1:30 p.m. – 3:30 p.m.
Dusty Disciplines: Blackboards as Material and Culture in Science and Mathematics (GOLKIN, HOUSTON, 2ND FLOOR)
Genetics, Race, and Anthropology (BODEK LOUNGE, HOUSTON, 1ST FLOOR)
Program Overview

Models and Materiality (Benjamin Franklin, Houston, 2nd floor)
Science and Colonialism (Class of '49, Houston, 2nd floor)
Scientific Correspondents (Hall of Flags, Houston, ground floor)
What is the Object of the History of Chemistry? (Amada Recital Hall, Irvine, 1st floor)

3:30 p.m. – 4:00 p.m.
Coffee Break (Reading Room, Houston Hall, 1st Floor)

4:00 p.m. – 6:00 p.m.
Egalitarianism and Popular Science: The American Anthropology of Ashley Montagu
(Golkin, Houston, 2nd floor)
Fighting Technologies: Military Confrontations with Telecommunications Systems, 1876-1918
(Hall of Flags, Houston, Ground Floor)
Flows of Chemical Knowledge (Bodek Lounge, Houston, 1st floor)
Genetics, Plant Breeding, and Institution Building: International Perspectives from Britain,
New Zealand and Italy (Amada Recital Hall, Irvine, 1st floor)
Historical Displays and Disciplinary Identity (Class of '49, Houston, 2nd floor)
Novelty in Medicine (Benjamin Franklin, Houston, 2nd floor)
Science, States, and Space (Café 58, Irvine, 1st floor)

6:00 p.m. – 7:00 p.m.
British Journal for the History of Science 50th Anniversary Reception (Bodek Lounge,
Houston, 1st floor)

7:30 – 9:30 p.m.
Graduate and Early Career Caucus Mixer (City Tap House – 3925 Walnut St.)

Friday, 13 July

7:00 a.m. – 8:30 a.m.
Breakfast (included with full registration) – Bistro and Hall of Flags Balcony (Houston Hall, 1st floor)

9:00 a.m. – 5:30 p.m.
Book Exhibit: (Houston Hall Reading Room, 1st Floor Lobby)

9:00 a.m. – 11:45 a.m. (Coffee Break, Reading Room, 10:00-10:15 a.m.)
Experimenting in Baconian Style (Bodek Lounge, Houston, 1st floor)
Material Culture (Café 58, Irvine, 1st floor)
Science in the Press (Golkin, Houston, 2nd floor)
Scientific Ethos and Epistemology in the Long Nineteenth Century (Class of '49, Houston,
2nd floor)
Seeing and Believing: The Importance of Mechanisms in Human and Medical Genetics
(Benjamin Franklin, Houston, 2nd floor)
Toward a Global/International/Transnational History of Spaceflight (Amada Recital Hall,
Irvine, 1st floor)

10:00 a.m. – 12:00 p.m.
Tour of the Mütter Museum of Medical History (ticketed event)
Program Overview

11:45 a.m. – 1:30 p.m.
Lunch (on your own)

1:30 p.m. – 3:30 p.m.
Ancient Science and Technology (Benjamin Franklin, Houston, 2nd floor)
In the Library (Amada Recital, Irvine, 1st floor)
Public Health from Bacteriology to Genomics (Golkin, Houston, 2nd floor)
Scientists and the British State (Bodek Lounge, Houston, 1st floor)
Technical Drawing and the Political Context of Science and Technology (Class of ’49, Houston, 2nd floor)
Tempo and Mode in Mid-Twentieth-Century Genetics (Hall of Flags, Houston, ground floor)
John Tyndall and His Correspondences (Café 58, Irvine, 1st floor)

3:30 p.m. – 4:00 p.m.
Coffee Break (Reading Room, Houston Hall, 1st Floor)

4:00 p.m. – 6:00 p.m.
Correspondence, Manuscripts, and Digitalization (Class of ’49, Houston, 2nd floor)
Enlightening the World (Café 58, Irvine, 1st floor)
Instruments and Measurement (Benjamin Franklin, Houston, 2nd floor)
Jewish Scientists in Interwar Vienna (Amada Recital Hall, Irvine, 1st floor)
Rethinking Spencer: Science and Philosophy circa 1900 (Hall of Flags, Houston, ground floor)
Transatlantic Reactions: Translating Chemistry between Continents (Bodek Lounge, Houston, 1st floor)
Transmission of Science and Medicine in East Asia (Golkin, Houston, 2nd floor)

6:30 – 8:00 p.m.
Graduate and Early Career Caucus Mixer (Artisserie Bakery – 3421 Walnut St.)

Saturday, 14 July

7:00 a.m. – 8:30 a.m.
Breakfast (included with full registration) – Bistro and Hall of Flags Balcony (Houston Hall)

9:00 a.m. – 11:45 a.m. (Coffee Break 10:00 a.m. – 10:15 a.m.)
American Religion and Science (Bodek Lounge, Houston, 1st floor)
Beyond Transmutation: The Goals of Early Modern Alchemy (Golkin, Houston, 2nd floor)
Botany and Natural History (Class of ’49, Houston)
Death Under the Microscope: Histories and Mechanisms of Apoptosis Research (Amada Recital Hall, Irvine, 1st floor)
Meet the Author: Margaret W. Rossiter’s Women Scientists in America: Forging a New World Since 1972 (Hall of Flags, Houston, ground floor)
The Sense of Things: Perception as Practice in Educational Settings (Benjamin Franklin, Houston, 2nd floor)

11:45 a.m. – 1:30 p.m.
Lunch (on your own)
1:30 p.m. – 3:30 p.m.
Defining the Instrumental: Navigation, Longitude and Science at Sea in the 18th Century
(BENJAMIN FRANKLIN, HOUSTON, 2ND FLOOR)
Experiments of the Experiential: Valuing Subjectivity in the Modern Earth, Medical, and Physical Sciences (CLASS OF '49, HOUSTON, 2ND FLOOR)
Method and Discovery: Connections between Anatomy and Philosophy in the Early Modern Period (BODEK LOUNGE, HOUSTON, 1ST FLOOR)
Science and Art in the American South (AMADA RECITAL HALL, IRVINE, 1ST FLOOR)
Science in the Public Sphere (HALL OF FLAGS, HOUSTON, GROUND FLOOR)
Tools of Science, Tools of Politics: Radioactive Contamination in Historical Perspective (GOLKIN, HOUSTON, 2ND FLOOR)
Training and Transmission in Chemistry (CAFÉ 58, IRVINE, 1ST FLOOR)

3:30 p.m. – 4:00 p.m.
Coffee Break (Reading Room, Houston Hall, 1st Floor)

4:00 p.m. – 6:00 p.m.
Human, Animal, and Machine (CAFÉ 58, IRVINE, 1ST FLOOR)
“Improving” the Climate in the Early-Modern North Atlantic World (GOLKIN, HOUSTON, 2ND FLOOR)
Mechanism, Life, and Embodiment in Early Modern Science (CLASS OF '49, HOUSTON, 2ND FLOOR)
Ownership and Invention of Medical Technologies (BENJAMIN FRANKLIN, HOUSTON, 2ND FLOOR)
Recasting 20th Century Physics (BODEK LOUNGE, HOUSTON, 1ST FLOOR)
Science and Government in the Cold War (HALL OF FLAGS, HOUSTON, GROUND FLOOR)
Textbooks (AMADA RECITAL HALL, IRVINE, 1ST FLOOR)

6:30 p.m. – 8:00 p.m.
Plenary Session: State of the Profession Roundtable (BODEK LOUNGE, HOUSTON, 1ST FLOOR)

8:00 p.m. – 10:00 p.m.
Banquet and conclusion of conference (ticketed event) – Hall of Flags (Houston Hall)
PROGRAM SCHEDULE

Wednesday, 11 July

Registration
2:00 – 6:00 p.m.
Houston Hall – 2nd Floor Lobby

Keynote Address
5:00 – 6:00 p.m.
Into All the World: Expanding the History of Science and Religion beyond the Abrahamic Faiths
Ronald L. Numbers
Hilldale Professor of the History of Science and Medicine
University of Wisconsin, Madison
Benjamin Franklin Hall Auditorium
American Philosophical Society
(Lemonade, Iced Tea, and Cookies from 4:30 – 5:00 p.m.)

Benjamin Franklin Hall is at 427 Chestnut St. Trolleys will begin running from the dorm (pick-up at 39th and Spruce) and the Sheraton to Franklin Hall at 4:00 p.m. Alternatively, the Market-Frankford Blue Line subway can be taken from the 34th & Market St. station to the 5th St. station. From the 5th St. station, walk south to Chestnut Street, turn left and walk ½ block.

Opening Reception
6:00 – 7:30
Chemical Heritage Foundation

The Chemical Heritage Foundation is at 315 Chestnut St., 1 block to the east of Franklin Hall. Trolleys will run between the CHF and the dorm and hotel until 8:30 pm. You can also take the Blue Line from the 5th & Market St. station west to the 34th Street station.
Thursday, 12 July

Breakfast
7:00 – 8:30 a.m.
Houston Hall Bistro and Hall of Flags Balcony
(Breakfast is included with your full registration)

Registration
8:00 a.m. – 5:00 p.m.
Houston Hall 1st Floor Lobby

Book Exhibit
12:00 p.m. – 5:30 p.m.
Houston Hall Reading Room, 1st Floor Lobby

Please note that due to attrition, some sessions may have fewer presenters than originally planned.

9:00 a.m. – 11:45 a.m. (Coffee Break 10:00 – 10:15 a.m.)
Coffee Break in Houston Hall Reading Room

A CENTURY OF VIRUSES AND CANCER
CAFÉ 58 (IRVINE, 1ST FLOOR)

*Neeraja Sankaran, Yonsei University, Plutarchian Parallels in Research Lives of Cancer Viruses and Bacteriophages
Robin Scheffler, Yale University, Of Mice and Children: Leukemia Viruses as Objects of Research and Policy, 1944-1964
Brendan Clarke, University College London, The Epstein-Barr Virus, Burkitt’s Lymphoma, and the Development of the Herpes Heuristic
Laura Stark, Wesleyan University, Cancer Virus and the 1964 Declaration of Helsinki: How NIH Prisoner Research Loosened International Research Ethics

Chair: Robin Scheffler, Yale University

AMADA RECITAL HALL (IRVINE, 1ST FLOOR)

Massimiliano Badino, Max-Planck-Institut für Wissenschaftsgeschichte, A Tale of Two Problems, or, How the U.S. Joined Together What Europe Had Put Asunder

Roberto Lalli, *Massachusetts Institute of Technology*, Transferring the Ether Concept in the USA: Herbert’s E. Ives’ Theory and His Opposition to Relativity

Chair: *Massimiliano Badino, Max-Planck-Institut für Wissenschaftsgeschichte*

**HISTORY OF THE HUMAN SCIENCES**

BENJAMIN FRANKLIN (HOUSTON, 2ND FLOOR)

Kevin Donnelly, *Alvernia University*, The Man With Too Many Qualities: The Afterlives of Adolphe Quetelet’s Average Man


Sebastián Gil-Riaño, *University of Toronto*, Race, Caste, and Class: Analogical Thinking in the Human Sciences During the Mid-Twentieth Century

Sarah Marks, *University College London*, “Proven Effectiveness”: Evidence-Based Medicine and the Rise of Cognitive Behaviour Therapies since 1950

Chair: Sarah Marks, *University College London*

**SCIENCE AND TECHNOLOGY IN HISTORY**

GOLKIN (HOUSTON, 2ND FLOOR)

Carla Bromberg, *Pontifical Catholic University of São Paulo*, Music and Technè: Distinctions on the Natural and the Artificial

Vera Cecilia Machline, *Pontifical Catholic University of São Paulo*, A Long-Standing Antecedent of Laurent Joubert’s *Erreurs Populaires*

Fumikazo Saito, *Pontifical Catholic University of São Paulo*, Ars et Scientia: The Role of Apparatus and Devices in Della Porta’s Natural Magic

Lais Dos Santos Pinto Trindade and *Maria Helena Roxo Beltran, Pontifical Catholic University of São Paulo*, Women’s Secrets and their Sources: Marie Meurdrac and Andréle Fournier Cosmetics

Chair: Fumikazo Saito, *Pontifical Catholic University of São Paulo*

**SCIENCE IN PUBLIC CULTURE**

BODEK LOUNGE (HOUSTON, 1ST FLOOR)

Iwan Rhys Morus, *Aberystwyth University*, Playing with the History of Science

Anna Maerker, *King’s College London*, Model Students and Ambassador Users: The Role of the Public for the Global Marketing and Distribution of Nineteenth-Century Anatomical Models

Allan Jones, *The Open University*, Joe Trenaman’s Investigation of BBC Listeners’ Understanding of Science

Simon Chaplin, *Wellcome Trust*, How Public? Medical History and Open Access

*Tim Boon, The Science Museum*, Working on Audiences: Comparing the Current and Historical Consumption of Popular Science and History

Chair: Bruce Lewenstein, *Cornell University*
WAS THE MODERN SYNTHESIS ACTUALLY A SYNTHESIS, AND IN WHAT SENSE?
CLASS OF ’49 (HOUSTON, 2ND FLOOR)

Richard M. Burian, Virginia Tech, Integration Rather Than Synthesis? On Rethinking the Unity of Evolutionary Biology

David Depew, University of Iowa, If the Synthesis Ended How Would We Know It?

Jean Gayon, Institute of History and Philosophy of Science and Technology, Paris, Life-History of the Modern Synthesis: An Enquiry over Sixty Years of Periodicals Devoted to Evolution (1947-2011)

*Philippe Huneman, Institute of History and Philosophy of Science and Technology, Paris, The Competing Definitions of Evolution According to the Modern Synthesis

Chair: Jean Gayon, Institute of History and Philosophy of Science and Technology, Paris

10:00 a.m. – 12:00 p.m.

Tour of the Academy of Natural Science of Drexel University
The tour is by pre-registration only. Some tickets may be available – inquire at the registration desk for more information.

11:45 a.m. – 1:30 p.m.

Lunch (on your own)

1:15 p.m. – 3:15 p.m.

Tour of the Wagner Free Institute of Science of Philadelphia
The tour is by pre-registration only. As of the time of this printing, all slots were filled. You may inquire at the registration desk about any last-minute openings.

1:30 p.m. – 3:30 p.m.

DUSTY DISCIPLINES: BLACKBOARDS AS MATERIAL AND CULTURE IN SCIENCE AND MATHEMATICS
GOLKIN (HOUSTON, 2ND FLOOR)

Christopher J. Phillips, Harvard University, Soldiers and Scholars: The Blackboard at West Point

Brittany Shields, University of Pennsylvania, Building Mathematics and Mathematics Buildings: The Built Environment of the Mathematical Institutes at Göttingen and NYU

*Michael J. Barany, Princeton University, Board into Their Minds: Sketching the Mathematical Blackboard in Anecdotal Memory

Commentator: Peggy Aldrich Kidwell, National Museum of American History, Smithsonian Institution

Chair: Caitlin D. Wylie, University of Cambridge
**GENETICS, RACE, AND ANTHROPOLOGY**  
BODEK LOUNGE (HOUSTON, 1ST FLOOR)


Amanda Randall, *University of Texas at Austin*, Occupying Europe: How West German Volkskundler Claimed Europäische Ethnologie

Elizabeth Neswald, *Brock University*, Mapping Human Metabolic Diversity: Racial Metabolism Studies in the 1920s-30s

Chair: Julia Rodriguez, *University of New Hampshire*

**MODELS AND MATERIALITY**  
BENJAMIN FRANKLIN (HOUSTON, 2ND FLOOR)

*Ellery Foutch, University of Wisconsin-Madison*, “Resembling as Near as Possible”: Botanical Models and Botany Instruction in the Nineteenth Century

Enrique Ramirez, *University of Texas, Austin*, Logics and Materialities of Air Resistance: Étienne-Jules Marey’s Insect Automata


Chair: Ruthann Dyer, *York University*

**SCIENCE AND COLONIALISM**  
CLASS OF ’49 (HOUSTON, 2ND FLOOR)

Hugh Glenn Cagle, *University of Utah*, A Science Out of Place: Early Modern Colonialism and the Making of Garcia de Orta’s *Colóquios*

Anouska Bhattacharyya, *Harvard University*, Colonial Madness: Creating Practical Spaces to Be Insane in Nineteenth-Century India

Jacob Steere-Williams, *University of Minnesota*, An Imperial Epidemiology: Epidemiological Practices in Britain and Abroad, 1865-1914

Quentin Pearson, *Cornell University*, From ‘Inauspicious’ to ‘Suspicious’ Death: Inquests in Turn of the Twentieth Century Bangkok

Chair: Quentin Pearson, *Cornell University*

**SCIENTIFIC CORRESPONDENTS**  
HALL OF FLAGS (HOUSTON, GROUND FLOOR)

Philippa Hardman, *University of Cambridge*, “Almost Out of a Woman’s Natural Thinking”: Considering Science and Gender through Charles Darwin’s Private Correspondence


Stewart Kreitzer, *University of Florida*, Science, Ideology, and Worldview: John C. Greene’s Long Correspondence with Theodosius Dobzhansky and Ernst Mayr
Sue Hemmens, *Marsh’s Library, Dublin*, “As Good a Laboratory as Can Be Desired”: The Chymical Correspondence of William and Thomas Molyneux
Chair: Joy Harvey, *Independent Women Scholars Society*

**WHAT IS THE OBJECT OF THE HISTORY OF CHEMISTRY?**
AMADA RECITAL HALL (IRVINE, 1ST FLOOR)

Mi Gyung Kim, *North Carolina State University*, Stabilizing Chemical Objects
Jan Golinski, *University of New Hampshire*, Historiography and Disciplinary Identity: The Case of Humphry Davy
Hasok Chang, *University of Cambridge*, History of Chemistry: Benefits for Chemical Philosophy, Science, and Education

**Commentator:** Michael Gordin, *Princeton University*
**Chair:** *Carin Berkowitz, Chemical Heritage Foundation*

**3:30 p.m. – 4:00 p.m.**

**Coffee Break** (Houston Hall Reading Room)

**4:00 p.m. – 6:00 p.m.**

**EGALITARIANISM AND POPULAR SCIENCE: THE AMERICAN ANTHROPOLOGY OF ASHLEY MONTAGU**
GOLKIN (HOUSTON, 2ND FLOOR)

*Peter Sachs Collopy, University of Pennsylvania*, Race Relationships: Professional and Personal Histories of the Race Concept

**Commentator:** Andrew Fearnley, *Edge Hill University*
**Chair:** Henrika Kuklick, *University of Pennsylvania*

**FIGHTING TECHNOLOGIES: MILITARY CONFRONTATIONS WITH TELECOMMUNICATIONS SYSTEMS, 1876-1918**
HALL OF FLAGS (HOUSTON, GROUND FLOOR)

*Elizabeth Bruton, University of Leeds*, “Britannia Rules the Wireless Waves”: The British Admiralty and Wireless, 1899-1914
Michael Kay, *University of Leeds*, Phone Lines on Front Lines: The Victorian Army and the Telephone
Elizabeth Cregan, *Monmouth University*, Monopoly Games: The US Navy and Domestic Wireless during World War One

**Chair:** Graeme Gooday, *University of Leeds*
FLOWS OF CHEMICAL KNOWLEDGE

BODEK LOUNGE (HOUSTON, 1ST FLOOR)

Victor Boantza, *University of Sydney*, Chymistry and Censorship at the Early French Academy and Royal Society

Hsiao-Yun Cheng, *National Tsing-Hua University, Taiwan*, Alchemists in the United Kingdom in the 16th-18th Centuries: Social Networks and Transmission of Knowledge

James Sumner, *University of Manchester*, “Strictly Chemical from Beginning to End”: The Credibility of Chemistry in Treatises on Brewing across the Nineteenth Century

**Chair:** Jole Shackelford, *University of Minnesota*

GENETICS, PLANT BREEDING, AND INSTITUTION BUILDING: INTERNATIONAL PERSPECTIVES FROM BRITAIN, NEW ZEALAND AND ITALY

AMADA RECITAL HALL (IRVINE, 1ST FLOOR)

Dominic Berry, *University of Leeds*, State Patronage of Science: British Agricultural Science and the Development Commission, 1889-1919


Luca Iori, *University of Bologna*, Agricultural Genetics in Italy: Nazareno Strampelli (1866-1942)

**Commentator:** Barbara Kimmelman, *Philadelphia University*

**Chair:** Berris Charnley, *University of Exeter*

HISTORICAL DISPLAYS AND DISCIPLINARY IDENTITY

CLASS OF ’49 (HOUSTON, 2ND FLOOR)

*Ruth Horry, University of Cambridge*, Studying Babylonia in Philadelphia: Assyriological Practice and the University of Pennsylvania’s Museum, c.1900


Anna Kathryn Schoefert, *University of Cambridge*, Mapping Out A Science: Joseph Needham’s “A Chart to Illustrate the History of Biochemistry and Physiology” (Cambridge, c.1924)

**Chair:** Anna Maerker, *King’s College London*

NOVELTY IN MEDICINE

Benjamin Franklin (HOUSTON, 2ND FLOOR)


Jonathan Simon, *University of Lyon*, Serotherapy in Lyon: The Local Reception of Innovation

Jaipreet Virdi, *University of Toronto*, Inquests into a Surgical Procedure: Creating Public and Professional Trust in Aural Surgery, 1830-1845

Daniele Cozzoli, *Universitat Pompeu Fabra*, Ranyard West’s Research on the Effect of Curare in the Central Nervous System Diseases

**Chair:** Nola Semczyszyn, *Franklin & Marshall College*
Thursday, 12 July

**SCIENCE, STATES, AND SPACE**

Café 58 (Irvine, 1st Floor)

**Kostas Tampakis, University of Princeton**, The View from Somewhere: 19th Century Western Scientific Practice as Seen from the Greek Space


**Roberto Cantoni, University of Manchester**, Prospecting Algeria: Oil Diplomacy and Security

**Chair**: Roberto Cantoni, University of Manchester

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**6:00 p.m. – 7:00 p.m.**

**British Journal for the History of Science 50th Anniversary Reception**

Bodek Lounge (Houston Hall, 1st Floor)

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**7:30 p.m. – 9:30 p.m.**

**Graduate and Early Career Caucus Mixer**

City Tap House

3925 Walnut St.

Philadelphia, PA 19104

(www.citytaphouse.com)
Friday, 13 July

Breakfast
7:00 – 8:30 a.m.
Houston Hall Bistro and Hall of Flags Balcony
(Breakfast is included with your full registration)

Registration
8:00 a.m. – 5:00 p.m.
Houston Hall 1st Floor Lobby

Book Exhibit
9:00 a.m. – 5:30 p.m.
Houston Hall Reading Room, 1st Floor Lobby

9:00 a.m. – 11:45 a.m. (Coffee Break 10:00 – 10:15 a.m.)
Coffee Break in Houston Hall Reading Room

EXPERIMENTING IN BACONIAN STYLE
BODEK LOUNGE (HOUSTON, 1ST FLOOR)

Peter Dear, Cornell University, Bacon’s *Sylva sylvarum* and the Practice of the Great Instauration

Dana Jalobeanu, University of Bucharest, The Hunt of Pan: The Creative and Heuristic Role of Experiments in Francis Bacon’s Natural Histories

Laura Georgescu, University of Bucharest, The Rules of *Experientia Literata*: The Case of Bacon’s Magnetic Experiments

* Cesare Pastorino, University of Sussex, The Baconian Experiment as *Probatio*

Commentator: Daniel Garber, Princeton University
Chair: Carin Berkowitz, Chemical Heritage Foundation

MATERIAL CULTURE
CAFÉ 58 (IRVINE, 1ST FLOOR)

Prakash Kumar, Colorado State University, The Biography of the Blue Dye: Science, Nature and the Limits of Improvement

Caitlin Donahue Wylie, University of Cambridge, Making – and Breaking – Scientific Specimens in 21st-Century Paleontology Laboratories

Martin Weiss, Leiden University, How the Oldest Museum in the Netherlands Became a Museum for the History of Science

Chair: Leandro Surya, Federal University of São Francisco Valley
SCIENCE IN THE PRESS

GOLKIN (HOUSTON, 2ND FLOOR)

Iain Watts, Princeton University, Information Circuits: Galvanism and the International Dissemination of Scientific News during the Napoleonic Wars

Nanna Kaalund, Aarhus University, University of Toronto, Oxford Serialised: Revisiting the Huxley-Willberforce Controversy through the Periodical Press

Michael Kliegl, University of Kent, Engineering Consent: The Scientific Rhetoric of Public Relations in Interwar USA

Judy Johns Schloegel, The Dilemmas of the Biological Philosopher: Herbert Spencer Jennings and the Personae of Public Engagement


Chair: Marilyn Gaull, Boston University

SCIENTIFIC ETHOS AND EPISTEMOLOGY IN THE LONG NINETEENTH CENTURY

CLASS OF ’49 (HOUSTON, 2ND FLOOR)

Elise Lipkowitz, University of Michigan, France’s European Empire and the Eclipse of Cosmopolitan Science

Theresa Levitt, University of Mississippi, “The Glory of the Corps of Roads and Bridges”: Augustin Fresnel and the Ethos of Civil Engineering in Restoration France

Alex Csiszar, Harvard University, Cultures of Discovery and Priorities of Publication in 1840s France and Britain

Michael Gordin, Princeton University, The Universal Language of the Slavs: German and the Identity of Russian Chemistry

Chair: *Elise Lipkowitz, University of Michigan

SEEING AND BELIEVING: THE IMPORTANCE OF MECHANISMS IN HUMAN AND MEDICAL GENETICS

BENJAMIN FRANKLIN (HOUSTON, 2ND FLOOR)

Nathaniel Comfort, Johns Hopkins University, Genetics without Sex: Going Molecular in Human Genetics


*Judith Friedman, National Institutes of Health, Science Fiction to Science Fact: The Role of a Biological Mechanism in Validating Genetic Anticipation

Jessica Mozersky, University of Pennsylvania, Collective History as a Mechanism to Explain Genetic Risk of Breast Cancer among High-Risk Ashkenazi Jewish Women

Commentator and Chair: Susan Lindee, University of Pennsylvania
**TOWARD A GLOBAL/INTERNATIONAL/TRANSNATIONAL HISTORY OF SPACEFLIGHT**

**AMADA RECITAL HALL (IRVINE, 1ST FLOOR)**

**Gregory Good, Center for History of Physics, Cold War Science at the Last Frontier:** Messing with and Measuring the Magnetosphere

**Linda Richards, Starfish, International Law, and Human Rights**

**Audra Wolfe, Independent Scholar, Private to Public: The Apollo-Soyuz Test Project and the Changing Character of American Scientific Diplomacy**

**Commentator and Chair:** *Roger D. Launius, National Air and Space Museum, Smithsonian Institution*

10:00 a.m. – 12:00 p.m.

**Tour of the Mütter Museum of Medical History**

The tour is by pre-registration only. As of the time of this printing, all slots were filled. You may inquire at the registration desk about any last-minute openings.

Meet at 10:00 at the Museum in Mitchell Hall (a 1-mile walk, accessible by the Green Subway Surface Line; see directions below) for a short film about the College and its collections. The film will be followed by a 1 hour and 15 minute tour of the Mütter’s holdings in the history of science and medicine.

Directions to Mitchell Hall: Board the inbound Green Subway Surface Trolley at 36th or 37th Street (both on the Penn Campus). Get off at 22nd and Market; the entrance to the building is on 22nd Street about 50 yards south of this stop.

11:45 a.m. – 1:30 p.m.

**Lunch (on your own)**

1:30 p.m. – 3:30 p.m.

**ANCIENT SCIENCE AND TECHNOLOGY**

**BENJAMIN FRANKLIN (HOUSTON, 2ND FLOOR)**

**Jacqueline Feke, Stanford University, Meta-mathematical Rhetoric**

**Elizabeth Hamm, Saint Mary’s College of California, Ptolemy’s Visual Theory Applied to Astronomy**

**Zena Kamash, University of Oxford, Exploring the Archaeology of Light in Roman Britain**

**Chair:** Zena Kamash, *University of Oxford*

**IN THE LIBRARY**

**AMADA RECITAL (IRVINE, 1ST FLOOR)**

**Jennifer Steenshorne, Columbia University, Catalogus Bibliothecae Historico-Naturalis Josephi Banks: Joseph Banks as Book Collector and Corpus Creator**
Jemma Lorenat, *Simon Fraser University*, Problems Posed
**Chair:** Ann E. Robinson, *University of Massachusetts, Amherst*

**PUBLIC HEALTH FROM BACTERIOLOGY TO GENOMICS**
GOLKIN (HOUSTON, 2ND FLOOR)

**Chair:** Steven Peitzman, *Drexel University College of Medicine*

**SCIENTISTS AND THE BRITISH STATE**
BODEK LOUNGE (HOUSTON, 1ST FLOOR)

Anna Carlsson-Hyslop, *Cardiff University*, The British State and Storm Surges, 1919-1959
Sally Horrocks, *University of Leicester*, “That Was Decided for Me”: Science Graduates and the British State from World War II to the early 1960s
Leucha Veneer, *University of Manchester*, Geology and Governance: Surveying the North Sea in the Cold War
Peter Reed, *Retired*, London and Los Angeles Smogs Revisited: Contrasting Origins, Actions and Controls
**Chair:** Peter Reed, *Retired*

**TECHNICAL DRAWING AND THE POLITICAL CONTEXT OF SCIENCE AND TECHNOLOGY**
CLASS OF ’49 (HOUSTON, 2ND FLOOR)

*Andrew J. Butrica, Chemical Heritage Foundation*, The Invention and Contentious Social Setting of Linear Drawing in France, 1815-1828
Frances Robertson, *Glasgow School of Art*, Delineating a Rational Profession: Engineers and Draughtsmen as Visual Technicians in Early Nineteenth Century Britain
**Chair:** Alan Rocke, *Case Western Reserve University*

**TEMPO AND MODE IN MID-TWENTIETH-CENTURY GENETICS**
HALL OF FLAGS (HOUSTON, GROUND FLOOR)

Joanna Radin, *University of Pennsylvania*, Latent Life: Intersections between Cryobiology and Human Genetics in the Mid-20th Century
*Helen Curry, Yale University*, The ‘Evolution Accelerator’: Colchicine in Cytogenetics and Plant Breeding, 1937-1950
Jenny Bangham, University of Cambridge, Skulls from the Dead, Blood from the Living: Studying Human Heredity and Race in Interwar Britain

Commentator and Chair: Susan Lindee, University of Pennsylvania

JOHN TYNDALL AND HIS CORRESPONDENCES

CAFÉ 58 (IRVINE, 1ST FLOOR)

*Efram Sera-Shriar, York University, What’s in a Letter?: A Critical Examination of Victorian Letter Writing Practices

Ursula DeYoung, Harvard University, Reconciling God with Nature: John Tyndall’s Science and the Philosophies of Carlyle, Emerson, and Goethe, as Seen through his Correspondence with Thomas Hirst

Geoffrey Belknap, University of Cambridge, John Tyndall and the Public(s) Communication of Science

Commentator and Chair: Graeme Gooday, University of Leeds

3:30 p.m. – 4:00 p.m.

Coffee Break (Houston Hall Reading Room)

4:00 p.m. – 6:00 p.m.

CORRESPONDENCE, MANUSCRIPTS, AND DIGITALIZATION

CLASS OF ’49 (HOUSTON, 2ND FLOOR)

Robert Anderson, University of Cambridge, Editing Joseph Black’s Correspondence

Roderick Home, University of Melbourne, A Scientific News Service in Late-Eighteenth-Century London

Frank James, The Role of Editing Manuscripts in Post-1945 History of Science

Stephen Weldon, University of Oklahoma, Digitizing Bibliography: On the Impact of Electronic Media on Classification in the History of Science

Chair: Stephen Weldon, University of Oklahoma

ENLIGHTENING THE WORLD

CAFÉ 58 (IRVINE, 1ST FLOOR)

Silvia De Bianchi, University of Rome ‘La Sapienza’, “The Starry Sky above Me”: The Role of Paradoxes in Kant’s Cosmology and Theoretical Philosophy

Karen Detlefsen, University of Pennsylvania, and Andrew Janiak, Duke University, Émilie Du Châtelet on Gravity and the Nature of Matter

John Gascoigne, University of New South Wales, The Enlightenment, the Pacific Laboratory and Natural History

Chair: John Gascoigne, University of New South Wales
INSTRUMENTS AND MEASUREMENT
Benjamin Franklin (Houston, 2nd Floor)
Yuto Ishibashi, Japan Society for the Promotion of Science, The Accuracy of the Timeball and the Development of Electrical Timekeeping in Liverpool, 1850-1870
Daniel Mitchell, University of Hong Kong, Controlling the Atmosphere: Discipline and Protocol in the Installation of the Kew Divided-Ring Electrometer
Kjell Ericson, Princeton University, The Universe of Light in the Kingdom of the Pearl: The Gem Test and the Spread of Machine-Mediated Appraisal, c. 1920-1935
Chair: Kjell Ericson, Princeton University

JEWISH SCIENTISTS IN INTERWAR VIENNA
Amada Recital Hall (Irvine, 1st Floor)
Sabine Brauckmann, Tallinn University, Weiss’ Resonance Inside Vienna’s Academia
*Cheryl Logan, University of North Carolina - Greensboro, Jewishness and the Inheritance of Acquired Characteristics in Interwar Vienna
Veronika Hofer, University of Vienna, Julius Bauer’s Fight with Mendelian Enthusiasts Concerning Human Genetics
Chair: Sabine Brauckmann, Tallinn University

RETHINKING SPENCER: SCIENCE AND PHILOSOPHY CIRCA 1900
Hall of Flags (Houston, Ground Floor)
Henry M. Cowles, Princeton University, “Myrmidons, Disciples and Parasites”: Spencer, Spencerians, and American Psychology
Trevor Pearce, University of Wisconsin-Madison, Evolution in the Metaphysical Club: Wright and Fiske on Darwin and Spencer
Chris Renwick, University of York, Evolution, Mind, and Society: Human Agency in L. T. Hobhouse’s Spencerian Philosophy and Sociology
Commentator: Gregory Radick, University of Leeds
Chair: *Chris Renwick, University of York

TRANSATLANTIC REACTIONS: TRANSLATING CHEMISTRY BETWEEN CONTINENTS
Bodek Lounge (Houston, 1st Floor)
Donna Bilak, Bard Graduate Center, Colonial Chymistry: The Case of John Allin, Minister-Physician in Woodbridge, New Jersey (1680-1683)
Stephen Weininger, Worcester Polytechnic Institute, Laboratory Instruction in American Land-Grant Colleges: A German Import in a New World (1870-1914)
Yoshiyuki Kikuchi, Harvard University, Anglo-American Connections in Japanese Chemistry
David Singerman, Massachusetts Institute of Technology, Chemical Control in the Atlantic Sugar Trade
Chair: Seymour Mauskopf, Duke University
TRANSMISSION OF SCIENCE AND MEDICINE IN EAST ASIA

GOLKIN (HOUSTON, 2ND FLOOR)

Eun Jeong Ma, Pohang University of Science and Technology, The Quest for the “West”: Empire(s), Western Knowledge, and Korea

Alexei Volkov, National Tsing Hua University, Hsinchu, Taiwan, Chinese Mathematics in Vietnam: Transmission and Adaptation

Haiyan Yang, Peking University, Beijing, China, Evolution and Religion in China: 1870s-1930s

Chair: Haiyan Yang, Peking University, Beijing, China

6:30 p.m. – 8:00 p.m.

Graduate and Early Career Caucus Mixer

Artisserie Bakery
3421 Walnut St.
Philadelphia, PA 19104
(artisseriebakery.com)
Saturday, 14 July

Breakfast
7:00 – 8:30 a.m.
Houston Hall Bistro and Hall of Flags Balcony
(Breakfast is included with your full registration)

Registration
8:00 a.m. – 5:00 p.m.
Houston Hall 1st Floor Lobby

Book Exhibit
9:00 a.m. – 3:00 p.m.
Houston Hall Reading Room

9:00 a.m. – 11:45 a.m. (Coffee Break 10:00 – 10:15 a.m.)
Coffee Break in Houston Hall Reading Room

AMERICAN RELIGION AND SCIENCE

BODEK LOUNGE (HOUSTON, 1ST FLOOR)

Adam Shapiro, University of Wisconsin-Madison, Shelving the Science-Religion Question: The Uses of Paley’s Natural Theology in the Early American Republic

*Edward B. Davis, Messiah College, Altruism and the Administration of the Universe: Kirtley Fletcher Mather on Science and Values

Matthew Shindell, University of California, San Diego, Calling for the ‘New Prophet’: A Skeptical Scientist Argues for the Importance of Religion in the Cold War

Michael Keas, The College at Southwestern, The Astronomy Textbook since Kepler: Myths about Science and Religion in American Education

Commentator: Ronald L. Numbers, University of Wisconsin-Madison

Chair: *Edward B. Davis, Messiah College

BEYOND TRANSMUTATION: THE GOALS OF EARLY MODERN ALCHEMY

GOLKIN (HOUSTON, 2ND FLOOR)

*Jennifer Rampling, University of Cambridge, Medicine and the Pursuits of Alchemy

Tara Nummedal, Brown University, Alchemy and Christianity in the Era of the Reformation

Glyn Parry, Victoria University of Wellington, The Apocalyptic Politics of Early Modern Alchemy

Vera Keller, University of Oregon, The Three Societies: An Alchemical Agenda in the Early Oxford, Royal, and Dublin Societies

Commentator and Chair: Margaret Garber, California State University
**Botany and Natural History**

Class of ’49 (Houston, 2nd Floor)

**Julie Davies**, University of Melbourne, Mary Somerset, First Duchess of Beaufort, and Stories of Science from Badminton House

**Rachel Koroloff**, University of Illinois, Urbana-Champaign, Seeds of Exchange: The Russian Tradition of Apothecary and Botanical Gardens in the First Half of the Eighteenth Century

**Kate Murphy**, California Polytechnic Institute, Collecting Slave Traders: James Petiver, Natural History, and Slavery in the British Atlantic

**Jenna Tonn**, Harvard University, “Have Miss Martin Do It”: Women at Work in the Boston Society of Natural History and Harvard’s Museum of Comparative Zoology, 1870-1910

Chair: Matthew White, University of Florida

**Death Under the Microscope: Histories and Mechanisms of Apoptosis Research**

Amada Recital Hall (Irvine, 1st Floor)


**Hyung Wook Park**, Ulsan National Institute of Science and Technology, Alexis Carrel’s Tissue Culture: Cell Death, Experimental Failure, and Surgical Imperatives

**Andrew Reynolds**, Cape Breton University, The Deaths of a Cell: How “Morphogenetic” Cell Death Became “Altruistic Programmed Cell Suicide”

Chair: *Andrew Reynolds, Cape Breton University

**Meet the Author: Margaret W. Rossiter’s Women Scientists in America: Forging a New World Since 1972**

Hall of Flags (Houston, Ground Floor)

**Ruth Schwartz Cowan**, University of Pennsylvania, The Impact of Margaret Rossiter’s Work on Studies of Women and Technology


**Joy Harvey**, Independent Women Scholars Society, With an Indexer’s Eye: How the Index Might Illuminate the Author’s Intent

*Pnina G. Abir-Am*, WSRC - Brandeis University, Women Scientists and the ‘Lost Generation’ of the 1970s: Margaret Rossiter as a Historical Witness

Respondent: Margaret Walsh Rossiter, Cornell University

Chair: Sally Gregory Kohlstedt, University of Minnesota

**The Sense of Things: Perception as Practice in Educational Settings**

Benjamin Franklin (Houston, 2nd Floor)

*Matthew D. Eddy*, Durham University, The Mind on Paper: The Shared Visual Order of Science and the Humanities during the Late Enlightenment
Saturday, 14 July

*Carin Berkowitz, Chemical Heritage Foundation, The Surgeon’s Seeing Hand: Teaching Anatomy to the Senses in Britain, 1750-1830
Melanie Keene, Cambridge University, “Things Familiar”: Object Lessons in Victorian Science and Literature
Alma Steingart, Massachusetts Institute of Technology, Drawing Mathematical Theories, Illustrating Points: The History of a Topological Atlas

Commentator and Chair: Lynn K. Nyhart, University of Wisconsin-Madison

11:45 a.m. – 1:30 p.m.
Lunch (on your own)

1:30 p.m. – 3:30 p.m.

DEFINING THE INSTRUMENTAL: NAVIGATION, LONGITUDE AND SCIENCE AT SEA IN THE 18TH CENTURY

BENJAMIN FRANKLIN (HOUSTON, 2ND FLOOR)

Katy Barrett, University of Cambridge, Longitude Inscrib’d: Early Pamphlet Solutions to the Longitude Problem
*Alexi Baker, University of Cambridge, “Precision”, “Perfection” and the Reality of Eighteenth-Century Instruments at Sea

Commentator and Chair: Robert D. Hicks, Mütter Museum, Philadelphia

EXPERIMENTS OF THE EXPERIENTIAL: VALUING SUBJECTIVITY IN THE MODERN EARTH, MEDICAL, AND PHYSICAL SCIENCES

CLASS OF ‘49 (HOUSTON, 2ND FLOOR)

Robin Vandome, University of Nottingham, Science, Literature, and the ‘Mirror of Nature’: Metaphors of Knowing in the United States at the Turn of the Twentieth Century
Daniela Helbig, Harvard University, From Subjective Experience to Experimental Subjects: Test Pilots in the Weimar Republic
Andrew M. Fearnley, Edge Hill University, “Checking Out Forms”: Research Subjects and Psychiatrists’ Use of the Subjective

Commentator: Henrika Kuklick, University of Pennsylvania
Chair: *Andrew M. Fearnley, Edge Hill University

METHOD AND DISCOVERY: CONNECTIONS BETWEEN ANATOMY AND PHILOSOPHY IN THE EARLY MODERN PERIOD

BODEK LOUNGE (HOUSTON, 1ST FLOOR)

Peter Distelzweig, University of Pittsburgh, Philosophical Anatomy: Teleology in Harvey’s De Motu Cordis
*Allen Shotwell, Indiana University, Illustrations, Mechanical Explanations and Experiment in the Study of the Kidney in the Early Sixteenth Century
Tawrin Baker, Indiana University, Cosmology and the Crystalline Humor: Color Theory in Natural Philosophy and Anatomy in Late Sixteenth-Century Padua
Evan Ragland, University of Alabama, A Mutual Divide: Experimental Anatomists vs. Speculative Cartesians in Seventeenth-Century Dutch Medicine
Chair: Charles T. Wolfe, University of Ghent

SCIENCE AND ART IN THE AMERICAN SOUTH
AMADA RECITAL HALL (IRVINE, 1ST FLOOR)
Joel Fry, Bartram’s Gardens, Philadelphia, “To See the Moveing Pensil; Display a Sort of Paper Creation, Which May Endure for Ages”: William Bartram as a Natural History Artist
Gary Mullen, Auburn University (emeritus), Philip Henry Gosse: English Naturalist-Artist in Alabama, 1838
*Debra Lindsay, University of New Brunswick, Contextualizing Creativity: Maria Martin, Natural History Illustrator
Commentator: Ann Shteir, York University
Chair: Nancy Hoffmann, Independent Scholar

SCIENCE IN THE PUBLIC SPHERE
HALL OF FLAGS (HOUSTON, GROUND FLOOR)
Josh Nall, University of Cambridge, Channels of Communication: Martian Canals and the Meaning of Popular Science
David Hecht, Bowdoin College, Selling – and Selling Short – Silent Spring: Environmentalism, Economics, and the Public Sphere
Commentator and Chair: Jeffrey Hughes, University of Manchester

TOOLS OF SCIENCE, TOOLS OF POLITICS: RADIOACTIVE CONTAMINATION IN HISTORICAL PERSPECTIVE
GOLKIN (HOUSTON, 2ND FLOOR)
*Toshihiro Higuchi, Stanford University, Same Data, Different Conclusions: Radioactive Fallout, the U.S. and British Scientific Committees, and the Diverging Role of Expertise in Public Affairs
Jonathan R. Hunt, University of Texas-Austin, Ecological Externalities: The USAEC’s Technical Analysis Branch, RAND, and the Biological Economy of Nuclear War Studies, 1962-1967
Commentator and Chair: Audra Wolfe, Independent Scholar

TRAINING AND TRANSMISSION IN CHEMISTRY
CAFÉ 58 (IRVINE, 1ST FLOOR)
Christine Nawa, Universität Regensburg, Chemical Heritage Foundation, Transmission & Reception: The Case of Bunsen’s American Students
Peter Ramberg, Truman State University, Between University and Polytechnic: Chemistry in Zürich, 1860-1872
Chiara Ambrosio, University College London, “In One’s Way of Seeing Lies One’s Way of Action”: Science and Art in Alfred Stieglitz’s Photographic Experimentation
Chair: Chiara Ambrosio, University College London

3:30 p.m. – 4:00 p.m.

Coffee Break (Houston Hall Reading Room)

4:00 p.m. – 6:00 p.m.

HUMAN, ANIMAL, AND MACHINE
CAFÉ 58 (IRVINE, 1ST FLOOR)

Teófilo Espada-Brignoni, University of Puerto Rico, The Human and the Animal: Looking at The Descent of Man through Foucault’s Archeology
Francis Neary, University of Cambridge, Reassessing the Human Automatism Debate in the Late Nineteenth Century
Robert Poole, University of Cumbria, Apeman, Spaceman: 2001: A Space Odyssey and the Dawn of Man
Chair: Greg Macklem, History of Science Society

“IMPROVING” THE CLIMATE IN THE EARLY-MODERN NORTH ATLANTIC WORLD
GOLKIN (HOUSTON, 2ND FLOOR)

Keith Pluymers, University of Southern California, Writing the Wilderness in the Early-Modern English Atlantic
Victoria C. Slonosky, Independent Scholar, Climate Improvement and Cultivation in Colonial Canada, 1742-1867
*Brant Vogel, Independent Scholar, “The Pisspot of Europe”: Rains, Mists, and Bogs in the Anglo-Irish Imagination
Chair: Jennifer Steenshorne, Columbia University

MECHANISM, LIFE, AND EMBODIMENT IN EARLY MODERN SCIENCE
CLASS OF ’49 (HOUSTON, 2ND FLOOR)

Barnaby Hutchins, University of Ghent, The Fire without Light: The Non-Mechanical Foundation of Descartes’ Mechanical Physiology
Lucian Petrescu, University of Ghent, Descartes on the Heartbeat: The Leuven Controversy
Dagmar Provijn, University of Ghent, Bloody Analogical Reasoning. The Role of Analogical Reasoning in William Harvey’s Discoveries
*Charles T. Wolfe, University of Ghent, Teleomechanism Redux? The Conceptual Hybridity of Living Machines in Early Modern Natural Philosophy
Commentator: Peter Distelzweig, *University of Pittsburgh*
Chair: *Charles T. Wolfe, University of Ghent*

**OWNERSHIP AND INVENTION OF MEDICAL TECHNOLOGIES**

BENJAMIN FRANKLIN (HOUSTON, 2ND FLOOR)


Graeme Gooday, *University of Leeds*, Hearing Aids at the Historical Nexus of Patenting, Prosthetics, Physics and Physiology

*James F. Stark*, *University of Leeds*, Overbeck’s “Rejuvenator”: Marketing Electrotherapy Devices beyond the Medical Profession in the Early Twentieth Century

Commentator and Chair: Iwan Rhys Morus, *Aberystwyth University*

**RECASTING 20TH CENTURY PHYSICS**

BODEK LOUNGE (HOUSTON, 1ST FLOOR)


Alexei Kojevnikov, *University of British Columbia*, Untangling Entanglement: Probability, Stalinism, and the Paradoxes of Quantum Mysticism

Brigitte Van Tiggelen, *Université Catholique de Louvain*, Ida Noddack and the Fission Proposal: The Actor’s Perspective

Barbara Becker, *University of California, Irvine*, “…A Cleanly Cut Piece of Solid Light”: Remembering the Long-Forgotten Spectroscopic Study of Radium Glow by William and Margaret Huggins

Chair: Barbara Becker, *University of California, Irvine*

**SCIENCE AND GOVERNMENT IN THE COLD WAR**

HALL OF FLAGS (HOUSTON, GROUND FLOOR)

Catherine Carstairs, *University of Guelph*, The Scientific Debate over Water Fluoridation: Optimism, Risk and Public Health

Thomas Lean, *The British Library*, “They Do It in a Different Way”: Personal Experiences of Transatlantic Cooperation in Science and Engineering in the Cold War


Marc Rothenberg, *National Science Foundation*, The National Science Foundation Confronts Segregation: Discrimination at the Teachers’ Institutes

Chair: Emily K. Brock, *University of South Carolina*

**TEXTBOOKS**

AMADA RECITAL HALL (IRVINE, 1ST FLOOR)

Vivien Hamilton, *Harvey Mudd College*, Textbook Physics: An Examination of Early 20th Century Medical Pedagogy

Karen Wellner, *Arizona State University*, From Fertilization to Birth: Representing Twentieth Century Development in High School Biology Textbooks
Timo Engels, *Flensburg University*, Hare’s Apparatus  
**Chair:** Adam Shapiro, *University of Wisconsin-Madison*

**6:30 p.m. – 8:00 p.m.**  
**Plenary Session: State of the Profession Roundtable**  
**BODEK LOUNGE (HOUSTON, 1ST FLOOR)**

This session will reflect on the current state of the profession and discipline of the history of science, in transatlantic perspective. One of the joys of the Three Societies meetings is the opportunity to step outside our usual national communities. This session will create a forum for a reflexive look at ourselves as a community of academics. Recent research on academic disciplines, institutions and professional communities has used approaches that will be familiar to any sociologically-inclined historian of science who has investigated the membership, behavioral norms, reward schemes, career structures and reputation of past communities of scientists. Why not apply the same techniques to ourselves? Tony Becher described academics as belonging to ‘tribes’ and having ‘territories’: what sort of a tribe are historians of science, what is our territory, and what struggles do we face to maintain our authority over that territory? Each of the three speakers will give a short talk engaging with these issues from their own personal, disciplinary and national contexts. The floor will then be open for what ought to be a vigorous audience discussion.

**Participants:**

*Aileen Fyfe, University of St. Andrews*  
*Peter Dear, Cornell University*  
*Gordon McOuat, University of King’s College, Halifax*  
**Chair:** Bernard Lightman, *York University*

**8:00 p.m. – 10:00 p.m.**  
**Closing Banquet**  
**Hall of Flags, Houston Hall**  
*(Ticketed Event)*
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