Traveling with the Atom: London and Paris
June 2 - 23, 2002

        Seven students signed up for the "Traveling with the Atom: London and Paris ACCEL (Allegheny College Center for Experiential Learning) study tour.  We started with five days at Allegheny in which we reviewed the early history of the atomic concept (from the Greeks through Niels Bohr) using lectures, demonstrations, videos, and web pages.  The "textbook" for this portion of the course was [*Uncle Tungsten: Memories of a Chemical Boyhood*](http://www.amazon.com/exec/obidos/tg/stores/detail/-/books/0375404481/reader/1/104-4663714-9887119), by Oliver Sacks.  In the afternoon, we constructed web pages on atomic scientists. The seven students (all science majors) were John Krempecki, Julie Langsdale, Colby Mangini, Andrea Price, Colleen Riley, Charlie Ruggiero, and Jennifer Sexton.

 On June 8 we flew from Pittsburgh International Airport to London Gatwick (arriving early in the morning of June 9) where Horseman Coaches took us to the London Youth Hostel (YHA) near St. Paul's Cathedral.  We took the Metro to Leicester Square where Colby spoke about Isaac Newton in front of his bust in the square.  We also visited the [National Portrait Gallery](http://www.npg.org.uk/live/index.asp) where we looked for portraits of atomic scientists.  On June 10, after a presentation about Humphry Davy in the lounge of the YHA by Andrea Price, we metroed to Leicester Square, walked through the Piccadilly Circus area, and were hosted at [The Royal Institution](http://www.rigb.org) by Dr. Frank James.  Dr. James took us (1) to the famous Lecture Theatre; (2) through the ambulatory where there are many displays on atomic scientists including William Crookes, Count Rumford, Humphry Davy, and Michael Faraday; (3) through the main library and the Conversation Room; and (4) down to the Faraday Museum.  At the end of the tour, we took a group picture in the lobby stairway with the statue of Michael Faraday. Afterwards we hosted Dr. James at the nearby Europa Restaurant.  After visiting Buckingham Palace and walking through St. James Park, we visited Westminster Abbey, paying particular attention to the altar area where J. J. Thomson, Ernest Rutherford, Lord Kelvin, P.M.C. Dirac, and Isaac Newton are buried and there are memorials to Faraday and James Clerk Maxwell.  As we gathered around the grave of William Herschel (outside the roped off altar area), Julie gave a short talk about Lord Kelvin.  The rest of the day was free time.
        On June 11, we visited [The Science Museum](http://www.sciencemuseum.org.uk/).  Although our contact at the museum, Dr. Peter Morris, had to be away on business, we toured the newly reconstructed chemistry area (seeing Dalton's pictographs, fancy Bunsen burners, a brass spectroscope, among other artifacts) and then the nuclear physics section where Charlie spoke about Ernest Rutherford.  There were also panels on Thomson, Becquerel, the Curies, Aston, and Chadwick.  Various of us spent time in the Optics section, the bookstore, and the nearby Science & Society Picture Library. The afternoon was free time after which we all attended a concert of the London Symphony Orchestra at the Barbican Centre.
        On June 12, we visited the [Royal Observatory](http://www.rmg.co.uk/royal-observatory) in Greenwich.  We posed for a group photograph with each of us with one foot on either side of the prime meridian (the dividing line between the western and eastern hemispheres), toured the National Maritime Museum, and watched as the aluminum ball came down to mark twelve noon Greenwich Mean Time (GMT).  The afternoon was free and then we all met at the Wagamama Japanese Restaurant (near the British Museum) for dinner.  June 13 was a free day.  Dr. and Mrs. Rodgers spent the day at the [Down House](http://www.williamcalvin.com/bookshelf/down_hse.htm), home of Charles Darwin in Downe, about 16 miles southeast of London.
        On June 14 we traveled by Horseman Coach to Cambridge.  On the way, Charlie reported on James Clerk Maxwell, Colleen reported on J. J. Thomson, and John reported on James Chadwick.  Our first stop was the present Cavendish Laboratory of Physics where we had lunch in the cafeteria (joined by Dr. Carl Olson, Professor of Religious Studies, on leave at Cambridge University) and then had a short lecture and a tour of the [Museum at the Cavendish Laboratory](http://www-outreach.phy.cam.ac.uk/camphy/museum/tour.htm).  Our gracious and informative host was Dr. Gordon G. L. Squires.  Highlights included Thomson's *e/m* tube, Wilson's cloud chamber, Rutherford's disintegration chamber, Aston's mass spectrograph, Chadwick's neutron chamber, and an early, large model of DNA.  We explored Cambridge for a while and then were hosted for dinner at Clare Hall by Dr. Olson.  On June 15, we assembled at the crocodile engraved (in honor of Ernest Rutherford) on an inner wall of the Old Cavendish Laboratory where we met Katie Eagleton, a graduate student in the history of science.  She took us on a well-prepared tour of science sites in Cambridge.  Highlights included plaques concerning the discovery of the electron and the structure of DNA, the former Addenbrooks Hospital, Peterhouse College, the backs (magnificent view of King's Chapel), a helix above the door to the apartment where Francis Crick and his wife lived while he and Watson worked on the structure of DNA, and the site of Newton's alchemistry laboratory near Trinity Chapel.  We ended our walk at the Eagle Pub where we treated Katie and Dr. Olson to lunch and then had a presentation from Jen about Watson and Crick beside the sign commemorating their discovery.  The rest of the day was free time (many tried their hands at punting on the River Cam).  On Sunday, June 16, we had the opportunity to attend services at King's Chapel and then boarded the Horseman Coach to travel to Oxford.  After checking into the Oxford YHA, we had dinner together at the Caffe Uno in downtown Oxford.
        Monday, June 17, we visited the [History of Science Museum](http://www.mhs.ox.ac.uk/about/index.htm?history) (located in "the old Ashmolean" building) at Oxford.  We were enthusiastically hosted by Dr. Stephen Johnston who opened the museum to us even though it was officially closed on Mondays.  The museum is scheduled to re-open in September 2002 so, although the exhibits were pretty much in place, some placards were only temporary.  Whereas many exhibits are not directly related to the atomic concept, the astrolabes, solar system models, cameras, etc. were truly fascinating and very effectively displayed.  During the recent renovations of the museum some intriguing artifacts were unearthed including discarded crucibles found to contain calcium and strontium sulphate perhaps used as part of an investigation of fireworks.  The collection of cathode ray tubes, the Moseley x-ray materials and exhibits related to the discovery of penicillin were among the highlights.  We had our group picture taken in front of "Einstein's blackboard" on which Einstein wrote equations related to the age of the universe.  In the afternoon, we took a significant portion of the ["Oxford Science Walk"](http://www.mhs.ox.ac.uk/features/walk/intro.htm) during which students read from the descriptive pamphlet at each stop (including the site of Robert Boyle's laboratory -- his assistant was Robert Hooke) and Andrea reported on Steven Hawkings who studied at University College.  Dr. Rodgers went on that afternoon during free time to visit the [Oxford University Museum of Natural History](http://www.oum.ox.ac.uk/), a truly noteworthy museum of natural science.  Of particular note were the dinosaur skeletons and the marble statues of Darwin, Davy, and Faraday.
        Tuesday, June 18, was a day of travel.  We first motored to the [Bowood House](http://www.bowood-house.co.uk/) where Priestley discovered oxygen gas ("dephlogisticated air") in 1774.  Next, we visited the [Great Circle of Avebury](http://www.sacredsites.com/europe/england/avebury.html) where our host was Dr. Rosamund Cleal, curator of the museum there.  We treated her to an Oxford YH box lunch and then went out into two of the quadrants of the circle.  From there we went to Stonehenge for a brief visit and finally to Salisbury where we stayed at the YH.  In the evening, many of us went down to the great Salisbury Cathedral and viewed one of the remaining four original copies of the magna carte.  The next day was also a day of travel:  first by coach to London (Waterloo Station) and then by Eurostar through the "chunnel" to Paris.  After checking into the Hotel de l'Empereur, we were joined by Dr. Kathryn Wolfe who accompanied us to the Rue Cler market district and the Eiffel Tower.  It was a wonderful night for our first evening in Paris.  Dr. Phillip Wolfe (Allegheny Department of Foreign Languages), Kathryn, and their son Alec gave Dr. and Mrs. Rodgers an orientation walk (near the Pont du Alexandre III) later that evening.
        June 20, our first full day in Paris, started with brief showers.  We met Lionel Beluze, a chemistry graduate student, at the Museum of Natural History and spent the morning on the "Pioneers of Radioactivity" walking tour.  We visited sites related to Antoine Becquerel's discovery of radioactivity, the original hall where Pierre Curie lectured, the site of the shed (now demolished) where Pierre and Marie worked four years to isolate polonium and radium, the Curie Institute, and Louis Pasteur's original office (where Colleen gave a talk about Pasteur).  For part of this tour we were joined by Dr. Ginette Gablot of the [Parcours des Sciences](http://parcoursdessciences.fr/) (and curator of the [Curie Museum](http://musee.curie.fr/)) under whose auspices these walking tours are arranged.  We treated Lionel to lunch at Koo a Sarl Chinese restaurant and then went on to the [Pantheon](http://www.paris-pantheon.fr/en/) where we were particularly interested in the room containing the tombs of Pierre and Marie Curie.  At the end of this long day, we went to the Pasteur Institute and toured the [Musée Pasteur](https://www.pasteur.fr/en/scientific-and-artistic-collections-letters-and-manuscripts) there.  Of particular interest was the crypt where the Pasteurs are buried.  Dr. Phillip Wolfe also took Dr. and Mrs. Rodgers for a brief visit to the Eglise du Dome where Napoleon is buried.  Phillip also took three students on an evening walking tour of Paris.
        June 21 started with a walk from the hotel to and under the Eiffel Tower, over the Seine River up to Place du Trocadero (and the Musée de l'Homme) to the statue of Benjamin Franklin.  Here John filled us in on Franklin's life and contribution to the atomic concept.  From here we took the metro to the [Musée du Arts et Metiers](http://www.arts-et-metiers.net/) where our host was Dr. Thierry Lalande.  Of particular interest here was the Laboratory of Antoine Lavoisier and a voltaic pile.  After lunch, we visited the [Musée Curie](http://musee.curie.fr/) and then heard Colby talk on the life Alessandro Volta. The next day was a free day in Paris.  In the evening, we all gathered at the hotel and walked to the Eiffel Tower area once again where we took the Bateaux Parisienne dinner tour of Paris.  What a magnificent end to our time in Paris and our ACCEL study tour, "Traveling with the Atom: London and Paris".  The next day, June 23, we flew back to Pittsburgh.