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Director's Matters

By *H. Frederick Dylla, Executive Director & CEO*



Shelter Island Conference

History has never been a dull or irrelevant subject for me. Particularly for science, I find that learning about how a scientific concept, discovery, or invention actually transpired is a far more engaging way of seeing how science really works. The script that ends up in science textbooks of hypothesis, analysis, and confirmation rarely plays out in real life, nor is it as interesting as the real-life version with its pitfalls, wrong turns, and those rare eureka moments of the world's best scientists and engineers.

I find that there is often a teaching moment connected to examination of what may have happened at a particular time and place. A trip to Long Island last weekend presented such an opportunity. One of the most famous conferences in physics occurred 65 years ago on June 2–4, 1947, in a small resort hotel, the Ram's Head Inn on Shelter Island off the far eastern tip of Long Island. The "Shelter Island Conference"

has obtained almost iconic status in the history of physics for several reasons: its timing, who attended, and what was accomplished in such a short period of time. By 1947 the United States was just recovering from the end of World War II. The physics community in the US had been transformed by its essential service to the Allied war effort, and by the infusion of world-renowned physicists who found safe harbor in the US from the Nazi persecution. The conference was born from the efforts of three scientists: Duncan MacInnes, an electrochemist from the Rockefeller Institute, Frank Jewett, a former head of Bell Laboratories and then president of the National Academy of Science, and Karl Darrow, a Bell Labs physicist who also served as the secretary of the APS. These gentlemen wanted a small conference in a secluded location, because even by the 1940s, typical scientific venue meetings were getting too large and were stifling interaction. They wanted to model the conference on the famous Solvay Congresses held in Europe between the World Wars, where the foundations of the "new physics," both quantum mechanics and relativity, were debated.

The timing could not have been better. This turned out to be one of the first physics conferences held after the war. There was pent-



From the left: Lamb, Pais, Wheeler, Feynman, Feshbach, and Schwinger talking at the Shelter Island Conference, June 1947. Courtesy of AIP Emilio Segrè Visual Archives.

up demand to discuss the subatomic world without the cloak of necessary censorship on sensitive topics related to defense work. The chosen topic, "The Foundations of Quantum Mechanics," became a bridge in time and space, linking the foundational work in quantum mechanics in the 1920s and 30s largely done in Europe and impending contributions that would stem from the revitalized, multinational US physics community as science was just beginning its postwar boom.

Only 24 American scientists attended the conference, including those with already well-established careers and accomplishments (Robert Oppenheimer, Hans Bethe, and Isidor Rabi), as well as the young prodigies who would go on to transform quantum mechanics (Richard Feynman and Julian Schwinger). The attendees heard about recent discoveries—later recognized by Nobel Prizes—including Willis Lamb's and Robert Retherford's discovery of a slight anomaly in spectral emissions from hydrogen that would become a key driver for the development of the theory since christened "quantum electrodynamics" or "QED." Feynman presented his first ideas on this new theory, now accepted as one of the most precise descriptions of the behavior of electrons and atoms. By 1970, Feynman remarked to one of his biographers, Jagdish Mehra, that Shelter Island was the most important conference he had attended. Oppenheimer voiced a similar opinion.

Postwar transportation figured in the success of the conference. As many of the participants headed out to Shelter Island on a bus from Manhattan, it was temporarily detoured to a small Long Island town so that the physicists could share a celebratory meal for their service to the nation during the war. On his train ride home, Hans Bethe worked out some key calculations showing that QED could match the very precise measurements of what is still known as the "Lamb shift."

The Shelter Island Conference had significant influence on both the experimental and theoretic developments of quantum physics. Solvay had moved to Shelter Island. Organizers of modern scientific conferences should note that the entire bill for the conference was \$850! Even with factoring in a half century of inflation, its return on investment would be difficult to match.

For more information, see:

Schweber, Silvan (1985). "A Short History of Shelter Island I." In R. Jackiw, N. Khuri, S. Weinberg, E. Witten. *Shelter Island II: Proceedings of the 1983 Shelter Island Conference on Quantum Field Theory and the Fundamental Problems of Physics*. MIT Press.

The American Physical Society (2000). [This Month in Physics History, June 2000](#), "June 2–4, 1947: The Shelter Island Conference."

Publishing Matters



AIP Committee on Publishing meets in Melville

A number of volunteers from AIP Member Societies and from within the STM (science-technology-medical) publishing industry gathered at the spring meeting of AIP's Committee on Publishing in Melville, NY, on June 4. Chaired by Jeffrey Giacomini of the University of Wisconsin-Madison, this important



Fred Dylla and Bill Park, CEO of DeepDyve, discuss DeepDyve's innovative service which provides rental access to scholarly journal articles.

group provides independent, expert advice to our executive publishing team. Staff updated the committee on progress in each operational area against AIP Publishing's three-year strategic plan. Committee members also reviewed and analyzed the current top-level business risks and our ongoing major projects. Presentations included an update on plans for the migration and re-invention of AIP's Scitation platform.

AIP management extends its gratitude to all committee members who give their valuable time and provide outstanding insight and guidance to help address the many challenges facing AIP in the rapidly changing STM publishing world.

Physics Resources Matters

SPS welcomes 2012 interns

Nine Society of Physics Students (SPS) national interns arrived in the Washington, DC, area last week for nine-week internships. They are working with organizations such as SPS, AIP History Center, APS, NIST, and the US House Committee on Science, Space, and Technology. Some are conducting scientific research; others are working on science policy, education, or outreach projects.



The 2012 SPS interns are pictured with Nobel Laureate Dr. John Mather, who sponsors the Mather Policy Intern program with AIP and SPS.

Please welcome:

- Ryan Barley, Massachusetts College of Liberal Arts (AIP History Center)
- Shouvik Bhattacharya, Minnesota State Univ., Moorhead (AIP Career Pathways project)
- Matthew Goszewski, Grove City College (APS PhysicsQuest)
- Melissa Hoffman, Drew Univ. (SPS Science Outreach Catalyst Kit)
- Binayak Kandel, Adelphi Univ. (NIST)
- Jonathan Morris, Univ. of Minnesota, Twin Cities (Mather Policy Intern)
- Allen Sheie, Grove City College (Mather Policy Intern: US House Committee on Science, Space, and Technology)
- Thomas Smit, Coe College (NIST)
- Meredith Woy, Bloomberg Univ. (SPS Science Outreach Catalyst Kit)

Everyone is invited to [get to know our 2012 interns by perusing their photos and introductions](#) on the SPS website, and returning often to read their weekly journals.

Off the Press

Physics resources for varied communities

In last week's issue, *AIP Matters* announced the [June, 2012 issue of *Physics Today*](#). This week we draw your attention to a feature article, free to the public, about the AIP Physics Resources Center (PRC). In the six-page article, "Physics resources for varied communities," Vice President Catherine O'Riordan provides readers with a good understanding of what AIP is about, who it serves, and how its many offerings contribute to the advancement of the physical sciences. We invite you to [read the article](#) and learn more about the PRC.



Member Society Spotlight

Competing for a spot at the 2012 Olympics

Competitors have been waiting a long time for this: the final round. Going head-to-head with the highest performers throughout the country, members of the US Physics Team assembled at the University of Maryland's College Park campus with the hopes of taking their talent international by earning one of the five slots on the travelling team and the opportunity to compete in the International Physics Olympiad. These high schoolers are now getting a crash course in college physics, challenging themselves to think outside Schrodinger's box during the 10-day training camp. The camp is their first opportunity to meet with peers who share their aptitude and appreciation for the physical sciences. They are also gaining some lab experience, meeting experts in the field and learning about exciting research that these real scientists do on a daily basis.



On Thursday, June 7, AIP's government relations staff accompanied AAPT staff, student mentors, and Members of the Physics Team to Capitol Hill so that the students could meet with their congressmen. Left: members of the delegation meet with Rep. Erik Paulsen (R-MN). Right: Rep. Rush Holt (D-NJ) and AAPT Executive Officer Beth Cunningham (both at far right) pose with team members on the Capitol steps. Image courtesy of AAPT.

The US Physics Olympiad program is managed by AAPT. The training camp runs through June 13, and the travelling team will be announced on that day. The International Physics Olympiad will take place from July 15–24 in Tallinn/Tartu, Estonia. For more information, visit the [AAPT website](#).

Coming Up

June 10–14

- AAS 220th Meeting (Anchorage, AK)

Wednesday, June 13

- Staff birthday breakfasts (Melville, NY and College Park, MD)

Tuesday, June 19

- ACP summer picnic, 12–2:30pm (College Park, MD)

June 22–24

- AIP Executive Committee Retreat (Lambertville, NJ)