

Berkeley loyalty oath tested politics, fear—not loyalty

I greatly enjoyed David Jackson's article on Pief Panofsky and the University of California (UC) loyalty oath of 1950 (PHYSICS TODAY, January 2009, page 41). It reminded me of my own brush with that oath. In June 1950, at age 24, I arrived in Los Alamos on the heels of my adviser John Wheeler for a planned stint of a year or two working at the laboratory. I soon discovered that all lab employees were required to sign the same oath as UC faculty members because the Los Alamos lab was administered by the university. The requirement created hardly a ripple in the lab. It is my recollection that only 2 of some 3000 staff members declined to sign it. One was John Manley, then a senior physicist. I was the other.

Director Norris Bradbury called me into his office and said something like, "Ken, I completely understand your misgivings, and I share them. But there's nothing I can do. If you don't sign, I have to dismiss you." I grumbled but crumpled. I signed the oath, arguing to myself that the chance to work with Wheeler and other notable physicists at the lab trumped the principle I was trying to stand up for. Manley did not sign. He left Los Alamos to become chair of the physics department at the University of Washington. And he became my hero. Much later, in the 1990s, his widow, Kathy Manley, punctured that hero balloon. When I told her how much I had admired her late husband for his principled action, she said, "Oh, he had already accepted the job in Washington. He didn't have to sign." Nevertheless, I like to think that his opposition to the

oath played some role in his decision. Ultimately, when the oath was ancient history, he returned to Los Alamos.

My own self-esteem was rescued by the Commonwealth of Massachusetts, which in 1971 generously offered me the opportunity to refuse to sign a loyalty oath and this time mean it. Massachusetts was then one of the few states with a McCarthy-era oath requirement still on the books. When I had accepted a job at the University of Massachusetts Boston, I didn't know about the requirement. I was confronted with it when I arrived. That fall three people at the institution declined to sign, and all three of us were willing to lose our jobs if it came to that. We went before a judge who seemed sympathetic and perhaps even a bit embarrassed by the law he was being asked to administer. He remanded our case to some indefinite future time. We did not lose our jobs. So far as I know, our case is still "active," residing at the back of some file drawer at the Massachusetts Superior Court.

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The bad effects of the loyalty oath storm mentioned in David Jackson's article even spread to the University of Pennsylvania, where as a graduate student I wanted to do a thesis in theoretical nuclear physics. Around 1949 Theodore Welton, an excellent theorist with whom I planned to do my PhD thesis, left for Oak Ridge. Some months later our physics department chairman Gaylord Harnwell called me in and told me not to worry, that he had hired a fine theoretician named Gian-Carlo Wick, from the University of California, Berkeley, with whom I could do my thesis.

Unfortunately, several more months later Harnwell called me in again to tell me that his appointment of Wick had been overruled by the Pennsylvania trustees because they did not want to hire anyone who had refused to sign a loyalty oath at Berkeley! Finally, with almost a year of graduate school wasted, I started and completed a thesis with C. Wilbur Ufford as my adviser.

The negative effects of loyalty oaths and cold war hysteria across the political spectrum are mirrored in Pief's trials

and are a warning against hasty actions in the 21st century.

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It is incorrect to say, as David Jackson has, that Robert Serber left Berkeley because of the loyalty oath. Serber signed the oath. It was a complicated situation, but the deciding factor was the rift between Ernest Lawrence and J. Robert Oppenheimer, as Serber recounts in his memoir, *Peace and War: Reminiscences of a Life on the Frontiers of Science* (Columbia University Press, 1998).

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Jackson replies: Kenneth Ford's letter illuminates the weapons' laboratory's draconian implementation of the loyalty oath policy, perhaps because there was no "compromise" of the type negotiated by the university's academic senate, a compromise implying that a compelling reason for not signing might prevent one's being fired. Ford's mention of a "McCarthy-era" loyalty oath in Massachusetts in the 1970s reminds us that more benign "affirmative" or "positive" oaths of allegiance are common today at public universities. Howard Greyber's letter shows how the cold war hysteria permeated even governing bodies of private institutions across the country. Happily, Gian-Carlo Wick found appointment at Carnegie Tech in 1951.

The anti-communist hysteria of the 1940s and 1950s and its political exploitation against academics were not confined to the US. In Canada the lies and slanders against Leopold Infeld by right-wing press, unscrupulous politicians, and pusillanimous university administrators drove Infeld from his professorship at the University of Toronto and deprived his Canadian-born children of their citizenship. In more recent times the Canadian government and the University of Toronto have made some amends.

Robert Crease wishes I had made a distinction in my brief mention of Robert Serber between him and the others who

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left the Berkeley physics community in 1950–51. My authority for including him with the others who left because of the loyalty oath was Raymond T. Birge's history of the Berkeley physics department (my reference 2). As Crease says, Serber's situation was more complex. It is clear from reading Serber's memoir that the loyalty oath was a significant, if not the only, factor in his decision to leave. Indeed, in Crease's own National Academy of Science biographical memoir of Serber,¹ after describing Serber's unhappiness at the forced departure of colleagues, he writes "Growing antagonism between his friends Ernest Lawrence and Oppenheimer, however, seems to have contributed to Serber's decision to leave Berkeley."

Reference

1. R. Crease, "Robert Serber, 1909–1997: A Biographical Memoir," <http://books.nap.edu/html/biomems/rserber.pdf>.

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Physics contest could honor student, school

"And we compel men to exercise their bodies not only for the games, . . . but to gain a greater good from it for the whole city, and for the men themselves."

Lucian, Anacharsis, ca AD 170

Being victorious in the Olympic games in ancient Greece was a major achievement that brought honor not only to the athlete but to his city-state as well. Personal achievement could not be imagined without the contribution and acknowledgment of the athlete's city-state. All Greek city-states could send official missions to attend the games, where famous poets and historians promoted their works and famous philosophers exchanged and debated ideas. Those national gatherings promoted cultural consciousness and strengthened Greek identity.

In an article in the December 1921 issue of *Harvard Graduates' Magazine*, William Lowell Putnam wrote about the great potential in undergraduate students:

The idealism of the undergraduate student, his eagerness to achieve something for his college, for his country or for any cause which fills him with enthusiasm is constantly referred to with admiration by those in charge of universities. . . . In none of these cases

is the undergraduate primarily interested in winning honor for himself. He is anxious . . . and very glad to play a useful . . . part in the preparation of the team by which her victory is secured.

Putnam proposed the establishment of a mathematical competition at the college and university level. His vision was finally realized in the William Lowell Putnam Mathematical Competition, established in 1927 by his widow, Elizabeth Lowell Putnam, after his death.

The mathematical community in North America is well informed about the Putnam Competition, which "has undoubtedly played no small part in raising the status, the level and standards of mathematical education."¹ The competition has promoted mathematical awareness and knowledge, strengthened cooperation among colleges and universities, and served to establish uniform mathematical standards. Personal victory is identified with the victory of the college or university.

Given the prestigious 70-year history of the Putnam Competition, it is remarkable that similar competitions have not been extended to other fields—physics in particular. In Putnam's words, "No opportunity is offered a student by diligence and high marks in examinations to win or help in winning honor for his college. All that is offered to him is the chance of personal reward. Little appeal is made to high ideals or to unselfish motives."

Although there are several local competitions along the lines of the Putnam Competition, I highlight for the physics community the failure to include such an important global activity at the collegiate level. We know from the list of Putnam winners² that physics students value the competition highly. The list includes Richard Feynman (1939), Robert Mills (1948), James Bjorken (1954), Kenneth Wilson (1954, 1956), and Stephen Adler (1959).

I was fortunate enough to have won a prize in a national mathematics competition and to have participated subsequently in the 24th International Mathematics Olympiad. However, I have always felt sorry that I never had the chance to compete in a physics olympiad.

A physics competition modeled after the Putnam Competition would have similar great benefits: promoting awareness, strengthening academic cooperation, and increasing the number of physics students in a time when such an outcome is highly desirable.

Establishing a competition syllabus

that would be fair for all colleges and universities is not an easy task. For thoughtful treatments of that issue, see references 1 and 3. Perhaps a syllabus from the Putnam Mathematical Competition could be adapted, with appropriate content adjustments, to become the guide for a possible Putnam theoretical physics competition.

Separate content, and perhaps a separate competition, could be established for experimental physics.

References

1. L. J. Mordell, *Am. Math. Monthly*, May 1963, p. 481.
2. G. Birkhoff, *Am. Math. Monthly*, May 1965, p. 469.
3. L. M. Kelly, *Am. Math. Monthly*, May 1963, p. 491.

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Recharging the batteries

I am curious about the use of terms in the article "Batteries and Electrochemical Capacitors" by Héctor Abruña, Yasuyuki Kiya, and Jay Henderson (*PHYSICS TODAY*, December 2008, page 43). When I went to college many years ago, the words "anode" and "cathode" referred to function and not polarity. Electrons always come out of the anode. When a battery switches from charge to discharge, the anode switches from positive to negative terminal (or vice versa). Are the terms no longer used that way?

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Abruña replies: From an electrochemical point of view, anodes are where oxidations take place, and cathodes are where reductions take place. But in discussing batteries, the terms "anode" and "cathode" typically relate to the discharge process of a rechargeable battery: Anode and cathode correspond to negative and positive electrodes, respectively.

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Correction

April 2009, page 88—In the first paragraph, "dense oil deposits surrounded by lighter limestone or clay" should read "lighter oil deposits surrounded by denser limestone or clay." In the third paragraph, 1 milliliter = 0.001 cm³. ■