

PAUL DOTY MEMORIAL SERVICE
MEMORIAL CHURCH
HARVARD UNIVERSITY
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REMARKS BY GRAHAM ALLISON

When one thinks of the greatness of the University, we think first of the dead. When I first heard this quotation from Archibald Macleish recited by the late Peter Gomes, I was startled. Today, when we think about the greatness of Harvard's contributions to international security, I understand that Macleish's insight captures a deep truth. Indeed, as Macleish commented further, we have the good fortune to remember "not only those distant and immortal names, those famous strangers, but men we knew and still know there among them."

Today we celebrate one of the greatest of these. I was asked by Paul's son, Gordon, to speak about Paul from my perspective as Dean of an emerging School of Government who worked intimately with Paul to make CSIA the first research Center in the new School and also as the person who for the past decade has had the honor to be Director of Paul's Center. Every day over the past forty years, Paul lived to the fullest and was engaged directly with the purposes and the people who now carry on his vision.

So much to say and so little time, since Gordon has given each speaker a strict five-minute limit. So three points. First, no Doty celebration can fail to start with a story—but which to chose. Michael Nacht tells one from the early days of CSIA. Paul's secretary came to Michael with a problem. Paul had just called from Paris and said: "I have to meet a man. He has a hyphenated name. Four questions: What is his name? Where do I meet him? When do I meet him? And why?" As Michael tells the story, he and Paul's secretary succeeded in answering all four. When Paul returned from Paris, Michael asked: Well, how did it go? Paul replied: Oh, I missed the meeting because I was too busy.

Point two focuses on Paul as what I've called a "serial institution builder." Having first built Harvard's great Department of Biochemistry, of which you will hear more today, he devoted the last four decades of his life to building an institution to advance policy-relevant knowledge about central challenges of international security and prepare a new generation of leaders in this arena.

All of us live in institutions we did not create. We simply inherit a church like this one; a University like Harvard that was here before we arrived; a nation with a democratic government and Bill of Rights; and an economy that provides us opportunities that, even if endowed by our Creator, are not enjoyed by most people in most places around the globe.

Too often, too many of us take the opportunities these institutions provide with little thought about how and why they came to be. We even presume, foolishly, that they are our just desserts.

In 1973, there was no institution at Harvard or elsewhere that would advance the purposes Paul had in mind. He could have written an article about this subject, or a book. He could have urged others to fill this gap. Instead, he made this his cause, and devoted his mindshare and energy to this cause day after day after day. He recruited an initial team of what he called “midwives:” Al Carnesale, Michael Nacht, Dorothy Zinberg, Steve Miller, John Steinberg, and Michael Mandelbaum. He maneuvered through the intense politics of a University with Bob Bowie at the Center for International Affairs, Derek Bok, the President of the University, and a young Dean of a fledgling Kennedy School. Through it all, he focused his energy relentlessly on the mission.

In the words of his original 1973 proposal to the Ford Foundation, he aspired “to create a working Center for study, analysis, and research that would greatly stimulate both scholarly and policy-related efforts to understand more deeply the relation of military forces to international order, and in particular the ways in which the control and reduction of armaments may improve international security and cooperation as well as reduce the risks of nuclear war.” To that end he proposed to recruit, inspire, and educate new generations of leadership in addressing these issues.

Two year’s ago we celebrated Paul’s 90th birthday. At the party, he talked about the great satisfaction of seeing his creation fulfill so many of his grand ambitions in what is today the Belfer Center for Science and International Affairs. He was proud that the journal *IS* rank first among all journals of international affairs. He applauded the fact that the Center ranked #1 among university-affiliated think tanks. How he loved to hear Steve Miller recite the roster of those whose formative experiences at the Center led them on to positions of leadership in government, other universities, and analogous research centers, from Gary Samore and Laura Holgate at NSC, Bob Gallucci as President of the MacArthur Foundation, Richard Haass as President of CFR, or former Assistant Director of the Center Kurt Campbell who was pictured on the front page of yesterday’s *New York Times* hand in hand with Chinese dissident Chen Guangcheng coming out of the U.S. Embassy. As Paul said at the 90th celebration, he had not even dreamed that two of his protégées, John Holdren and Ash Carter, would in one Administration be serving as Assistant to the President for Science and Technology and Deputy Secretary of Defense.

My third point will be brief, but heartfelt. For those of us who had the good fortune to be part of the Doty circle, what phrase comes to mind first when we think of him? For me, it is friend: genuine, good friend. If one had the good fortune to be his friend, one had a reliable, thoughtful, considerate, constructively critical, but affectionate relationship that was always about aspirations larger than oneself.

Paul’s 91 years covered an era: from the end of World War I to the 21st century, it spanned the entire nuclear age. His 91 years covered more than one-third of the life of this nation. But as Paul would have been the first to observe, this was a comment less on how old he was than on how young the country is.

We miss him.

REMARKS BY JAMES WATSON

Paul Doty's life from small town Pennsylvania to Harvard to the corridors of White House power and some 40 times across the Iron Curtain to avert nuclear disaster as well as his final retirement years next to fellow Harvard old-timers in their gracious apartments off Mt. Auburn Street exemplifies the ambitious yet high principled and decent 20th century American academic at his or her best. Always optimistic but never ignorant of the pitfalls ahead, Paul's warmly affectionate demeanor and never arrogantly voiced wise advice made his presence always welcome in any room or meaningful committee. No one at Harvard or elsewhere ever saw him as seeking power for power's sake. Instead they saw him working to improve the lives and futures of his family, his students and fellow faculty members, and all peoples of the world who shared his wish for a world bettered by ever-increasing knowledge and freedom from wars that lead nowhere.

At all times during my two decades at Harvard, I continually relied on his help and never once did he disappoint me. Even with half of *The Double Helix* in my pocket, without Paul's seasoned knowledge about how Harvard operates, I would not have received and very quickly accepted, in early 1955, an offer to join its Biology Faculty. Nor would I have been promoted, by the spring of 1958, so soon to tenure had not Paul got his by then close friend and Harvard's number one Dean, McGeorge Bundy, to command the Biology Department to move into the future.

Then I still saw myself needing Harvard possibly even more than it needed me. In any case, both Harvard and I won big. Its biologically oriented faculty along Divinity Avenue no longer was an embarrassment when compared to its long distinguished chemists and physicists working across from each other on Oxford Street. From my side, the super students that Harvard gave me let me most importantly demonstrate, first to myself, that I could move forward big without the reassuring close presence of Francis Crick. And Paul encouraged me to keep the Radcliffe junior, Elizabeth Lewis, always in my vision by calling her a "peach of a girl" when I brought her to our department's 1967 Christmas Party at Prince House on Divinity Avenue.

Correctly Paul saw only through many compromises would we move forward the Biology Department. So he helped orchestrate in 1960 that Matt Meselson's 1960 recruitment from Caltech be coupled to that of a well-intentioned botanist from England, whom we feared would remain forever mired in the past. Without Paul's later help, Wally Gilbert – the super bright, young theoretical physicist then working part-time in my lab – would have had to leave Harvard in 1963 if he wanted to have a future in Molecular Biology. But working through Arthur Solomon, who led the Harvard Medical School centered Biophysics efforts, Paul persuaded University Hall to cover Wally's salary as a tenured associate Professor of Biophysics. I still shudder at the thought that Wally's fabulous brain might have gone to MIT instead of remaining on the third floor of the Biological Labs.

Earlier Paul had the vision that let him with Konrad Bloch and John Edsall form the Committee for Higher Degrees in Biochemistry that provided me initially with so many of its super graduate

students. Equally important was his decade later role in starting the new Department of Biochemistry and Molecular Biology. Its creation let Paul keep along Divinity Avenue Mark Ptashne, whose term as a Junior Fellow was ending, from moving 2500 miles away to Berkeley. By becoming our new department's first and only ever "lecturer," Mark's Berkeley salary offer was more than matched by Harvard. Our Biochemistry and Molecular Biology Department was on our way to having no matching intellectual equal in the United States, if not the world.

It was Paul again who orchestrated my path to becoming an advisor to President Kennedy's Scientific Advisory Committee (PSAC). Its Limited War Committee was set up to let science help South Vietnam from falling under Communist hands. From the start, neither Paul nor I thought that neither through science nor through military might could our forces ever truly win, and we hoped that McGeorge Bundy's Yale and Harvard honed brain would lead him to the same conclusion. So we were later badly disappointed after Lyndon Johnson became President, Bundy came to Harvard to let it be known he saw no way to pull away. Much more satisfying was Paul's and my membership in the PSAC's Committee on Pesticide Use set up following the publication of Rachel Carson's highly influential *Silent Spring*. Our committee's coming into existence represented the first high official governmental occasions where the potentially bad consequence of unrestricted chlorinated hydrogen carbon pesticide use was compared to their short term benefits to farmers and the chemical industries that manufactured them. Though the Department of Agriculture was dead against our final report ever appearing, President Kennedy endorsed it, letting Paul and I temporarily feel on the angels' side.

Paul also was the moving force that let me almost simultaneously follow him in 1963 in becoming a Senior Fellow of Harvard Society of Fellows. Four of its nine members, in particular, Harry Levin and Van Quine, were too reliably conservative to ever let Paul or I welcome being seated next to or across from them. In contrast, Wassily Leontief and Charles Wyzanski, the Society's most reliably outspoken Liberals, were much fun to be nearby as we dined together with the Junior Fellows on Monday nights in the Society's Elliot House quarters. If I had not become a Senior Fellow, I would never have seen Harvard so clearly on top of the academic league.

I always will warmly look back to having Paul for so long as my closest friend and scientific companion.

REMARKS BY DEPUTY SECRETARY OF DEFENSE ASHTON CARTER

I stand here as a representative of the hundreds of disciples of Paul Doty who populate governments worldwide, dedicated to applying the principles Paul stood for.

Paul believed that because of the powerful role of science in world affairs, by the creation of the atomic bomb, we scientists had a positive obligation to contribute to the solution of human problems. More broadly, he believed that the world of ideas represented by the university and the world of affairs were not and should not be separate.

If Paul had just lived by these principles, applying them to his own advising of governments dating back to Eisenhower, that would have been enough of a legacy. But Paul was a doer and a builder. Jim Watson has described this in the field of biochemistry and molecular biology.

Paul did the same for the field of science and international affairs, which didn't exist at all before him. He thought that the same tools that worked so well in academic disciplines—interdisciplinary centers, referee'd journals, et cetera—work in this new field. And so he founded first the program on science and international affairs, which became the Center for Science and International Affairs, which I was privileged to serve as director, and finally the Belfer Center of today.

We now take this field and these kinds of centers for granted, but it would not be so without Paul Doty. He was always thinking ...perhaps that explains his legendary absentmindedness, about which more in a moment.

A new field with new institutions required new people. Indeed, they and not just the ideas, would be a major product of this new field. In the Department of Defense with me today are innumerable graduates of the center. Likewise elsewhere in the executive branch and indeed outside of the United States and governments worldwide. These, in addition to the ideas created at these centers, are the legacy of Paul Doty.

Paul personally recruited me into this new field and supported me with policy inspiration and personal advice to the end of his days. I remember well an early conversation in which Paul began discussing having me join Harvard and CSIA. We were at a hotel in downtown Boston for an annual meeting of the American Association for the Advancement of Sciences, to listen to Dorothy Zinberg deliver a paper. At the end of the talk, Paul turned to me and uttered the words we all came to dread, "Can I give you a ride?" I knew Paul well enough by then to be concerned for my safety, but I didn't dare refuse.

We proceeded to a vast parking garage associated with the hotel. It had several floors and as we approached the elevator, Paul uncertainly picked a floor. We emerged from the elevator into a vast parking floor with hundreds of vehicles. For a while, we wandered among them. Finally, I said, "Paul, do you remember where you parked?" "Yes, I parked in Sector P." My heart sank, for as I gazed around me, I looked upon literally hundreds of concrete columns, on each and every one of which was painted a circle with a letter "P" in it.

So Paul, I'd go to Sector P with you any time. I wish you peace and pride in your accomplishments. And thank you for everything.

REMARKS BY JACQUES FRESCO

I want in the next few minutes to convey to you the essence of what my more than half century relationship with Paul Doty has meant to me, if only because it is symbolic of the man. Paul and I were brought together by Rollin Hotchkiss, who thought I might be able to fulfill Paul's aim to use pneumococcal transforming activity to investigate structure-function relations in DNA.

After Paul invited me to join his laboratory, I told him I had a friend Julius Marmur, better prepared for such research, who I felt I could convince to join us, and that I had a better idea for my activities, which was to use synthetic polynucleotides as models for studying nucleic acid structure and physical chemistry. During the next 4 years, Paul provided the very best possible environment for the conduct of that research, not just from the scientific point of view, but equally important, because of the remarkable esprit de corps that he had established in his laboratory, the high quality of students and post-doctorals he attracted, and the senior scientists as well. Indeed, who else could have provided investigators like Ephraim Katchalski, Shneur Lifson, Anton Peterlin and Michael Kasha to maintain the intellectual environment of his laboratory while he was busy trying to deal with issues of world atomic disarmament. Of course, he had with great insight set the goals of the lab, which was enough for us to proceed. To me, he gave complete free reign, never directed, never complained, only complimented, encouraged and absorbed what was accomplished. But more than that, he served as a wonderful source of inspiration, showing by example how best to do science, and then only on important issues.

Over the years that followed, Paul showed his true mettle. Without my requesting it, he let me know that I should feel free to take the projects I had started with me; and we continued to keep in close touch, often with scientific discussions on the phone, and attempts to write papers together. One such effort is notable only because we met in the US office at the United Nations in New York, working at the ambassador's desk, and having to interrupt only because Paul had to finish preparing a talk to the small powers. I recall also his phone call to talk about whether or not to accept President Kennedy's request that he become the next science advisor. My comment was that he had to decide which was more important to him, the doing of science, or the politics of science. At that time at least, he opted for the doing of science. But over the years, he gradually shifted towards the politics of science, and that's why today, there are present some who owe their careers to the Belfer Center of Science and International Affairs that Paul helped to found. But in the meantime, he went on to found the Department of Biochemistry and Molecular Biology at Harvard, to which he attracted some of the major young figures in the field; and from all that I have learned, he managed to transmit the great spirit in his laboratory of earlier days to that pervading the department.

In the years that followed, and even after he was no longer pursuing active science, we continued our regular interactions, usually on the phone, with Paul's questions about my research no less insightful than they had been decades earlier. At the same time, there were occasions of small talk, and of political matters. And throughout, there were expressions of mutual concern of health and welfare which continued to the last week of his life.

What then is one to say about a great scientist, a humanitarian who saw for himself a special role in helping to prevent atomic war between the east and west when it was most critical, a mentor and a deep friend: that we are grateful to have known him, and that we will miss him.

REMARKS BY ALBERT CARNESALE

In the five months since Paul Doty passed away, there have been numerous written and oral tributes to Paul's intellectual leadership in science, in international affairs, and in the intersection between them; to his important influence on reducing the threat of nuclear war; to his creation of

outstanding and enduring institutions; to his legacy of scholars and practitioners whose success has been due largely to his mentorship; to the high standards he set, he met, and he lifted others to meet; and to the content of his character.

These tributes to Paul—including those being offered here today—have been eloquent, passionate, and loving. Even so, we can all agree that they fall short of what he truly deserves. This was an extraordinary man.

Winston Churchill famously characterized Clement Atlee as “a modest man who had much to be modest about.” But even Churchill would have recognized Paul Doty as a modest man who had little to be modest about. The list of Paul’s accomplishments is remarkable for both the significance of its entries and the staggeringly high number of them. Yet, who among us ever heard him take personal credit for anything on that list? The closest he came was in his evident pride in the success of those whom he had mentored. But he never attributed their achievements, even in part, to the role he played in those lives. Rather, he maintained that their attainments were due entirely to their talents, their perceptiveness, and their perseverance.

In the brief time remaining for my remarks today, I will touch upon only one of Paul’s insightful teachings and only one of the ways in which he changed my life.

Paul personified the well-known aphorism, “If it’s worth doing, it’s worth doing well.” He applied that philosophy to the writing of an article for a scholarly journal and, just as forcefully, to the placement of the office coffee pot so as to facilitate maximum interaction among colleagues. But his teaching went well beyond this well-known maxim. He taught also that “If it’s worth doing, it’s worth the risk of failing in the attempt.” Paul tackled really hard problems, and he encouraged us to do the same.

In 1974, Paul brought me to Harvard from North Carolina State University—a fine school, but not among Harvard’s usual farm teams. I was to be associate director of the fledgling Program for Science and International Affairs. Paul was, above all, an honest man, so to be sure that I was not being misled, he sent a clear and unambiguous message: “There’s not a snowball’s chance in hell that you’ll get tenure at Harvard. Your academic credentials, he said, are in nuclear engineering, which Harvard doesn’t do; and what you’ll be doing is closer to political science, in which you have no academic credentials.” Given the circumstances, his analysis surely was valid. But in just a few short years, the circumstances changed. Under Paul’s leadership, the Program was sufficiently successful to convince the Ford Foundation that it should become a permanent Center at Harvard, and to provide an endowment sufficient to bring that about. That funding also made possible the creation at Harvard’s Kennedy School of a professorship in science and international affairs, for which I was able to compete. Hell had been transformed into Heaven—at least for this snowball. My career at Harvard and thereafter was made possible by Paul Doty. I, like countless others, will forever be grateful to him.

REMARKS BY BRUCE ALBERTS

As printed in the program today, one of Paul Doty's former postdoctoral fellows – Walter Gratzer – wrote the following at the start of his retrospective on Paul:

“Paul Doty was a great man. He made a mighty and beneficent impact in two quite disparate spheres of human endeavor. He prevailed in all that he set his mind to by dint of intellectual dominance, clarity of vision, and sheer force of personality.”

Intellectual dominance, clarity of vision, and sheer force of personality -- a great summary!

We are here today to celebrate Paul's life, and to remind each other of the enormous need to carry on his legacy.

You have already heard the huge role that he played with respect to Harvard science, taking many leadership roles that made a major difference – including playing the key role in hiring Jim Watson, an amusing story of academic politics Paul enjoyed recalling.

As a leading biochemist, Paul Doty supervised the research of 66 undergraduate and graduate students, of whom 44 became professors. In addition, 36 of 85 post-doctoral fellows became professors. Thus, Paul produced 80 professors in all, and thereby doing way more than his part in populating the next generation of science faculty. At least 11 would be elected to membership in the US National Academy of Sciences.

I was one. I first met Paul in 1957, as an undergraduate at Harvard College. I worked in his lab from 1958 to 1965, and I became permanently stamped by Paul's strong desire to fix things. This eventually took me out of the laboratory into science policy: in 1993, I became the full-time president of the National Academy of Sciences for 12 years. Then, in 2009, I was suddenly drafted as one of Obama's first three “science envoys” --- assigned primarily to Indonesia. The whole idea for this new position was inspired by Paul – who had played a similar, but much larger role as a science envoy to the Soviet Union at the height of Cold War tensions, making over 40 trips to that nation. I am about to make my fourth trip to Indonesia, and it is clear that none of the new envoys will even approximate Paul's accomplishments.

The 35 or so young scientists in training in Paul's science laboratory in the 1960s knew that he was frequently away traveling, and that he was a member of the President's Science Advisory Committee (PSAC) for J. F. Kennedy. But it was only much later, at his major birthday celebrations, that we became suddenly aware of the enormous difference that his efforts had made in the policy sphere.

One of the hundreds of people that Paul inspired in the world of policy was William Colglazier, who was trained as a theoretical physicist. Bill spent 20 years at the National Academies, serving as the chief of staff for its 1100 employees, where he made me look good as Academy president. He is presently the Science Advisor to Secretary of State Hillary Clinton. Bill wanted to be here today, but was sent to Israel where he is now. He just emailed me the following message to read:

“By showing that a scientist working outside of government channels could do as much for reducing the risk of nuclear war as any diplomat, Paul was an inspiration for a whole generation of scientists.”

Another leader whom Paul inspired is John Holdren. John is now President Obama's Science Advisor and the head of the Office of Science and Technology Policy (OSTP). He also wanted to be here today but got called to China. John gave a passionate speech at Paul's 80th birthday celebration, which he ended as follows:

"Here is a man who has had a lifetime of accomplishment as a scientist-statesman, educator, policy-advisor, and institution builder at the intersection of science and international affairs – a career so full that it is hard to imagine how he found the time to do any science per se. His monuments, from the part of his career that it was my responsibility to cover tonight, include in my judgment:

- 1) The creation of the leading academic center of research and training on science and international affairs in the world;*
- 2) The success of Cold War channels of communication between US and Soviet scientists that almost certainly were more important in averting catastrophe than any but a few will ever fully appreciate:*
- 3) And in substantial measure the Anti-Ballistic Missile Treaty (ABM) Treaty itself, without which I really do think we would probably all by now be dead."*

After Paul's death, I received messages from scientists who had no formal connection to Paul, expressing their condolences on the death of this remarkable man. One was from Thoru Pederson, now a distinguished scientist at the Wooster Institute, recalling how Paul had mentored him as a young scientist, even though he had absolutely no obligation to do so. Thoru is here today.

This was Paul. As Jim has said, Paul Doty was incessantly trying to make a better world through science, with zero sense of ego or ulterior motive.

He was a completely honest, idealistic American from a small town in Pennsylvania – who has left us a giant legacy.