



Dean Daley called the meeting to order at 4:06pm, welcomed members and guests, and requested approval of the minutes of the Faculty of Medicine meeting of December 4, 2023, which were provided in advance of the meeting. The minutes were approved, as submitted.

Next, Dean Daley called on Dr. William V. Giannobile, Dean of Harvard School of Dental Medicine (HSDM), for an update on HSDM. Dean Giannobile gave a brief overview of HSDM, sharing the school's mission (To foster a community of diverse global leaders in education, research and clinical innovation dedicated to improving human health by integrating dentistry and medicine) and HSDM's vision (To transform access to healthcare and advance science to prevent and find cures for oral diseases and conditions). He discussed the HSDM strategic plan which consists of four priorities and the 7 core values. There have been 26 full-time faculty recruited since FY22, including new departmental leadership in Oral and Maxillofacial Surgery, Oral Health Policy and Epidemiology, and Oral Medicine, Infection and Immunity. Recruitments planned for FY25 include endodontics, periodontics, dental public health, oral and maxillofacial surgery, data science, global health. Moreover, the following administrative appointments were made: Catherine Utt appointed Chief Financial Officer, Andrew Finn appointed as Director for External Education, Dr. Amy Kim appointed as PT Clinical Program Manager – connection to Harvard Catalyst. There is an active search for next Dean for Administration and Chief Operating Officer and HSDM is planning for FY25 recruitments to build capacity in corporate relations, marketing, and financials.

Following the discussion of strategic recruitment at HSDM, Dean Giannobile focused on Faculty Affairs. OFA is dedicated to promoting the health and wellbeing of faculty members and that they are trying to attract a representative faculty. The HSDM faculty numbers around 295 with 66% lecturers. He then focused on the post-graduate plans of the Class of 2024. The largest percent of this class (22%) are focusing on oral and maxillofacial surgery.

Dean Giannobile shared news about research awards including the H-CREDENTIAL – NIH/NIDCR U Award, which focuses on research addressing the clinical challenges of effective pain management and the genomics of pain in dentistry using AI, patient stratification, and salivary diagnostics, and a Clinical Trial Planning Grant at MGH about Temporomandibular (TMD) Disorders Collaborative for Improving Patient-Centered Translational Research. The purpose of this clinical trial is to advance TMD basic and clinical research, research training, and translation to evidence-based treatments and improved clinical care via establishment of a national, interdisciplinary trans-NIH patient-centered research collaborative.

Dean Giannobile then focused on initiatives in artificial intelligence (AI). 2023 initiatives included the Global Symposium on AI in Dentistry, the AI-Credentialing pilot initiative in Harvard Dental Center, and the launch of the HSDM AI Task Force. 2024 initiatives included the HMS Dean's Innovation Award for the Feres team, which focused on simulation-based dental education (VR for preclinical skills and virtual patient systems), the HSDM AI Education Innovation Grant program, and a focus on Implementing AI/ML for Clinical Informatics.

HSDM has made clinical investments and the common space planning and facilities upgrades. HSDM is re-aligning Harvard Dental Center to address financial losses in faculty practice and they are adding new clinical graduate program leadership, while strengthening the practice management and billing team. Dean Giannobile added that the main and research & education lobbies have been renovated. They are also optimizing shared services with HMS Campus Planning and Facilities Management group.

Dean Giannobile introduced the presentation of degree candidates for HSDM and Harvard Medical School (HMS). The HSDM Class of 2024 had 33 DMD candidates and of those candidates, 3 were recommended general honors: 1 summa cum laude, 1 magna cum laude and 1 cum laude. Four candidates were requested to be approved for the D.M.D. with Honors in a Special Field and that 14 candidates were recommended to receive the Master of Medical Science degree with 6 candidates recommended for the Doctor of Medical Sciences degree. The candidates were approved and Dean Giannobile congratulated the students on behalf of HSDM.

Dr. Bernard Chang, Dean for Medical Education at HMS, presented the MD degree candidates. The HMS Class of 2024 has 182 candidates for the MD degree. Dean Chang then asked the faculty to vote to approve these degree candidates. The candidates were approved.

Dean Segal shared that the Class of 2024 was comprised of 208 students, 42 of which were previously part of the HMS community. She added that of the individuals graduating later this month, there are 54 candidates for the Master of Medical Sciences Degree; 2 candidates for the Master of Bioethics Degree; 2 candidates for the Master in Clinical Service Operations, 149 for the Master of Science and 1 for the Master of Healthcare Quality and Safety Degree. Dean Segal asked the faculty to vote to approve these degree candidates. The candidates were approved and Dean Segal called upon Dr. Raj Gandhi, Professor of Medicine at MGH, to present the individuals receiving Honors in a Special Field.

Dr. Gandhi noted that there were 47 candidates graduating with honors in a special field. Of those 47 candidates, there are 32 cum laude, 14 magna cum laude, and 1 summa cum laude. Dr. Gandhi noted that the summa cum laude distinction is a rare honor, adding that there is only a dozen or so in HMS history, including Dean Daley. Dr. Gandhi asked the faculty to vote to approve these degree candidates. The candidates were approved and Dr. Gandhi thanked the faculty for approving the candidates.

Next, Dean Daley congratulated the dental, master's degree and medical school graduates. He stated "We are so proud of you, and look forward to hearing about how you lead and shape the future of science, medicine and dentistry in your professional careers."

Dean Daley then explained that in 1973, the Faculty of Medicine voted to establish the HMS Faculty Council (FC), a democratically elected body which meets monthly during the academic year. He added that throughout the year, the FC received reports from standing and ad hoc committees and advises the dean on various policy issues and issues facing the school. After explaining that the Faculty Council votes for a chair and vice chair, annually, Dean Daley introduced this year's Faculty Council Chair, Dr. Josh Goldstein, to provide an update on this year's FC activities.

Dr. Goldstein thanked Dean Daley and explained that it has been an honor to serve at the FC chair this year. He added that it has been wonderful working alongside Dr. Lisa Henske, the current vice chair of FC, who will take on the role of FC Chair in the Fall of 2024. Next, Dr. Goldstein provided a short overview of the FC. He explained that the FC is a representative body consisting of elected members of the voting faculty who serve three-year terms. Dr. Goldstein added that the electoral structure is designed to assure proportional representation across disciplines and institutions, and that the Dean of the Faculty of Medicine attends the monthly FC meetings. The FC advises the Dean on the formulation of major changes to policy for HMS and HSDM. Members of the faculty may propose amendments to the bylaws and/or recommend changes to policies through any FC representative. The Council submits recommendations for consideration to the Dean on major policy issues. Dr. Goldstein went on to explain that the FC also receives reports from standing and

administrative committees of the Faculty of Medicine, and other ad hoc committees of the Dean. The Dean provides periodic reports concerning the financial status of the Schools and other relevant topics. Dr. Goldstein also mentioned that the FC has the authority to establish/empower and/or disband standing committees of the faculty. The FC, guided by its Subcommittee on Standing Committees, oversees standing committees of the faculty and votes to approve candidates for those committees in consultation with appropriate leadership.

Next, Dr. Goldstein gave an overview of the FC's accomplishments from this past academic year. He explained that the FC had the joy of holding their annual dinner reception at the Harvard Club. During that reception, the FC identified key topics of interest to bring to FC for discussion. One of the first topics identified was how AI can improve the faculty experience, and how it might even remove barriers and lower hurdles for faculty so that they can spend more time and mental energy on their teaching and research. Throughout the year, FC asked presenters to address AI efficiencies, when applicable, and held an AI at HMS panel during the April meeting. Dr. Goldstein added that the FC also heard from the Mass General Brigham (MGB) Chief Information Officer, Adam Landman, who discussed how AI is being used within MGB. The FC invited speakers from across Harvard University to learn about cross-university initiatives and our role at HMS, including have a discussion of the implications of the SCOTUS decision around admissions policy. Then he explained that as always, one of the highlights of the year was hearing from HMS students about their lived experiences as they develop into physicians. Next, Dr. Goldstein explained that they encourage all faculty to consider running for FC. He thanked the current members of the FC for their time and thoughtful consideration, as well as Dean Daley for taking the concerns and recommendations of the FC so seriously and being a wonderful partner in supporting the faculty.

Next, Dean Daley thanked Dr. Goldstein for his willingness to take on the leadership of the FC. He added that Dr. Goldstein has been an inspiring and dedicated chair.

Dean Daley gave the HMS Dean's Report. He explained that it has been a difficult year of strife and he addressed the challenges that HMS has faced. Dean Daley stated that he is proud of the medical students who have expressed their opinions peacefully and added that "we respect their right to speak out." The issues have been challenging, because they have presented the different sides of our community and we respect the rights of all to have their voices heard. This institution is never satisfied with the status quo. Our students, faculty, staff, postdocs, trainees, alumni, and the many supporters of our mission are constantly striving to do more — to learn and grow and contribute — to make a difference.

Dean Daley emphasized HMS's commitment to advancing medical education and clinical practice through strategic innovation. He praised Dean Chang's visionary leadership, noting the importance of inspiring students to transcend traditional milestones, embrace rigorous academic challenges, and develop a clear vision for leadership in healthcare. Daley echoed Chang's call for fostering a spirit of inquiry, discovery, and scholarship to nurture the next generation of physicians.

To remain at the forefront of medical education, Daley underscored the need to envision the physician of the future—one equipped to thrive in a technology-driven era, particularly with AI's rapid advancements. He posed critical questions: How can we train medical students to lead in harnessing AI and science for more effective, equitable care? He highlighted HMS's proactive integration of AI into education, research, and clinical practice, emphasizing ethical and effective use of these tools. In education, HMS is updating curricula to prioritize AI knowledge curation and verification, training students to employ AI in enhancing diagnosis and treatment strategies while maintaining critical oversight. In research, computational tools like AlphaFold and initiatives by the

Center for Computational Biomedicine are revolutionizing scientific discovery. HMS is also fostering AI innovation through the Department of Biomedical Informatics, including a new PhD track in AI in Medicine.

Daley spotlighted key contributions, such as Zak Kohane's leadership as editor-in-chief of New England Journal of Medicine AI and Marinka Zitnik's influential Nature paper on AI in scientific discovery. He also noted AI's growing role in care delivery, highlighting its potential to improve efficiency while preserving the human elements of critical reasoning and compassionate care. HMS is leveraging University-wide initiatives like the Kempner Institute and Dean's Innovation Awards, which funded 33 projects exploring AI applications in dermatology, drug development, patient diagnosis, and faculty support. These efforts exemplify how generative AI can advance HMS's mission to improve health globally. Daley concluded by affirming that HMS is positioned to lead in AI in medicine, with faculty and students at the forefront of this transformative journey.

Then, Dean Daley then called upon Dr. Charles Stiles, Professor of Neurobiology at HMS, for the reading of the memorial minute. Before reading the memorial minute, Dr. Stiles added a personal note stating that he was told to work for Arthur B. Pardee because of his "golden touch." He stated that he was glad that he did.

Arthur B. Pardee, PhD

On February 24, 2019, one of Harvard Medical School's most distinguished and influential faculty members, Professor Arthur Pardee, died. He was one of the true giants of molecular biology, whose many seminal discoveries laid the basis for our present understanding of the regulation of enzyme activities, gene expression, and cell division.

Art's scientific career began as an undergraduate studying chemistry at the University of California, Berkeley (1938-1942), where he did undergraduate research in the laboratory of Melvin Calvin, who later received the Nobel Prize for work on photosynthesis. As a graduate student at California Institute of Technology, Art worked on the chemical properties of antibodies in the lab of Linus Pauling, probably the greatest chemist of the past century. His graduate studies were interrupted by the 2nd World War, which he spent in military-related research on the toxic effects of gases and uranium. He then pursued postdoctoral studies at the University of Wisconsin in the laboratory of Van R. Potter, where he investigated energy metabolism in normal and cancer cells. The complexities of mammalian cells and the cancer problem convinced Art to focus on the simpler and more tractable metabolism of bacteria when he assumed a faculty position in the Department of Biochemistry at Berkeley in 1949. There he initially studied the effects of bacteriophage infection on bacterial metabolism and the linkages between amino acid and nucleic acid synthesis, but he went on to make several seminal discoveries about enzyme regulation.

The capstone of this phase of Pardee's work was the discovery of feedback inhibition of metabolic pathways made with his student John Gerhart. As Art noted "Living organisms usually produce their constituent molecules to meet their needs, no more or less". Through studies of pyrimidine synthesis in bacteria, they showed that when the level of the final product of this biosynthetic pathway has become sufficient for the cell's needs, the first step in the pathway is inhibited. In classic experiments, Gerhart and Pardee demonstrated that the final product of this pathway binds to the first enzyme and inhibits its further action. They further showed that the "regulatory site" where the end product binds is located at a different part of the enzyme from its catalytic site. This regulatory principle has since been extended to explain how many enzymes, pathways, and the levels of many metabolites are regulated. Elucidation of this type of regulation was one of the most penetrating discoveries in biochemistry in

the 20th century, and these studies are in most textbooks as the classic example of what is now commonly termed "allosteric regulation".

An often overlooked, important contribution was Art's insightful experiments in 1958 that indicated a transient intermediate between DNA and protein synthesis. This early work now is recognized by some as the initial demonstration of the discovery of messenger RNA. While Art was conducting these prescient studies, a group at the Pasteur Institute in Paris led by Jacques Monod and Francois Jacob were carrying out their classic studies showing that the bacteria adapt to growth on a new sugar, lactose, by inducing enzymes for its uptake and metabolism. In 1957-58, Art took a sabbatical at the Pasteur Institute and designed an ingenious experiment to elucidate the mechanisms for this induction, using mutant strains in which the lactose-metabolizing enzymes were either expressed continually or were silent, awaiting induction. Their elegant experiment (commonly called the PaJaMo experiment for the scientific "dream team" of Pardee, Jacob, and Monod) demonstrated that the inducible state was genetically dominant over the constitutive form, which implied that the genes for lactose metabolism are maintained in an inactive form by a repressor molecule, until it binds lactose which releases the repression. This elegant study is certainly one of the iconic experiments in molecular biology and laid the conceptual basis for many further advances in understanding gene regulation.

After 13 productive years at Berkeley, in 1961, Art with his young family moved to Princeton to head its new Department of Biochemical Sciences, to which he recruited a highly talented group of young investigators. One pioneering contribution during his Princeton years concerned mechanisms of nutrient transport and the discovery of a class of substrate-binding proteins found between the bacterial wall and cell membrane that are critical for active transport and for chemotaxis. However, Art also began to refocus his efforts to study mammalian cell growth and cancer biology. In order to better prepare themselves for research on cancer, In 1972-73, Art and the distinguished geneticist, Ruth Sager, who became Art's second wife took a fruitful sabbatical at the Imperial Cancer Research Fund in London. Sager had done fundamental work on cytoplasmic inheritance and, like Art, decided to refocus on cancer biology, culminating in her later description of tumor suppressor genes.

Art had for some time become fascinated by how cells can "step off" from a continuous growth cycle or, more relevant to cancer, leave a quiescent state and begin to divide. During this sabbatical he formulated the notion of a "restriction point" that occurs in the G1 phase of the cell cycle, just before DNA replication, and reflects a teetering between continued growth or growth-arrest. His experiments confirmed this hypothesis and, specifically, demonstrated that if cells pass this restriction point (sometimes called "the Pardee point"), they autonomously proceed into DNA replication irrespective of what exogenous factors are present.

In 1975, Art and Ruth were both recruited to the faculty of HMS and the new Sidney Farber Cancer Center later renamed the Dana-Farber Cancer Institute, to which they brought instant eminence in basic science and were critical in helping recruit and foster the work of talented younger faculty. Art was also an active member of the Department of Pharmacology at HMS. At the Farber, Art's work focused on the control of cell proliferation, gene expression in cancer and chemotherapy, building on his restriction point concept. He and his colleagues discovered a labile protein that controls passage or non-passage through this critical point, and went on to demonstrate that many tumor cells are deficient in this control process. In the last two decades of his long and active career, he and his colleagues focused on the actions of novel drugs for breast and other carcinomas.

One very important scientific contribution that he made in his Boston years was the development with his colleague P. Liang of a transformative method to deftly define the entire messenger RNA

population of a mammalian cell, which became known as "differential display". To understand cell responses, differentiation, and disease processes, it is critically important to have a way to look at the cell's population of messenger RNAs. At the time, the methods by which the many messenger RNAs in a cell could be revealed were very laborious. "Differential display" reduced the time and cost by orders of magnitude and was widely adopted. It also allowed any messenger RNA of interest to be recovered and studied further by cloning it and determining its sequence. Although such methods have evolved further in recent years, the "differential display" method was a major technological advance at the time and remained a frontline technique for years.

For his many contributions to our understanding of biochemical regulatory mechanisms and cell growth, Pardee received many honors, including election to the National Academy of Sciences, National Academy of Medicine (formerly the Institute of Medicine), the American Academy of Arts and Sciences, and the American Philosophical Society, and numerous major awards including the Paul Lewis Award of the American Chemical Society, the Krebs Medal of the Federation of European Biochemical Societies, the Rosenstiel Medal, the 3M Award of the Federation of American Societies for Experimental Biology, the Boehringer Mannheim Molecular Bioanalytics Prize, and the Distinguished Alumni Award of California Institute of Technology. As a clear indication of his esteem and the affection of colleagues, Art was elected to the presidency of both the American Society of Biochemistry and Molecular Biology and the American Association for Cancer Research.

Beyond his major scientific achievements and many honors, Art was always remarkably approachable, gracious, soft spoken, and modest in dealing with others. He also stood out in his encouragement of young investigators and in his dedication to support this work and many of his trainees have gone on to distinguished scientific careers. After Dr. Sager's death from cancer, the last 20 years of Art's life in Cambridge and Woods Hole were shared with his wife Ann B. Goodman, who also shared his endless curiosity, broad intellectual interests, and his passion for Asian art and classical music (Art was a cellist and an avid chamber musician). He is also survived by his three sons, Michael Arthur, Richard Emil, and Thomas William Pardee, three grandchildren and six great-grandchildren. Art died in his sleep at the age of 97, and until his ninth decade, maintained an active laboratory and remained devoted to research. In reflecting on his career in 2005, he quoted Confucius, "Choose a job you love, and you will never have to work a day in your life."

Respectfully submitted,

*Alfred L. Goldberg, Harvard Medical School, Chairperson
Thoru Pederson, University of Massachusetts Medical School*

Dean Daley requested that the memorial minute be inscribed on the permanent records of the Faculty of Medicine.

Dean Daley then recognized the Office of Faculty Affairs (OFA) for managing the thorough and high-quality promotions process for the HMS Community. He invited Dr. Grace Huang, Dean for Faculty Affairs, to recognize the newest members of the HMS faculty: the full professors who have been appointed since we last made introductions.

Dean Huang thanked Dean Daley and added her gratitude to the OFA for their outstanding dedication and success in managing the promotions for the HMS faculty community. She added that their efforts have materialized in an exceptional cohort of new professors at HMS.

Then, Dean Huang, introduced the 37 newly appointed Professors. Those in attendance were asked to stand so they could be honored.

Jodie L. Babitt, Professor of Medicine, Massachusetts General Hospital
Aleena Banerji, Professor of Medicine, Massachusetts General Hospital
Olaf A. Bodamer, Professor of Pediatrics, Boston Children's Hospital
L. Sterling Churchman, Professor of Genetics, Harvard Medical School
Benjamin L. Cook, Professor of Psychiatry, Cambridge Health Alliance
Daniel B. Costa, Professor of Medicine, Beth Israel Deaconess Medical Center
Stacy S. Drury, Professor of Psychiatry, Boston Children's Hospital
G. Dan Duda, Professor of Radiation Oncology, Massachusetts General Hospital
Jeanne F. Duffy, Professor of Medicine, Brigham and Women's Hospital
Marlene L. Durand, Professor of Medicine, Massachusetts General Hospital
Patricia C. Dykes, Professor of Medicine, Brigham and Women's Hospital
Fiona Fennessy, Professor of Radiology, Brigham and Women's Hospital
Magda F. Feres, Professor of Oral Medicine, Infection, and Immunity, Harvard School of Dental Medicine
Michael D. Fox, Professor of Neurology, Brigham and Women's Hospital
Matthew Frosch, Professor of Pathology, Massachusetts General Hospital
Kohei Hasegawa, Professor of Emergency Medicine, Massachusetts General Hospital
Vincent T. Ho, Professor of Medicine, Dana-Farber Cancer Institute
Brent K. Hollenbeck, Professor of Surgery, Massachusetts General Hospital
Michelle D. Holmes, Professor of Medicine, Brigham and Women's Hospital
Haytham M.A. Kaafarani, Professor of Surgery, Massachusetts General Hospital
Hakho Lee, Professor of Radiology, Massachusetts General Hospital
Sharon Levy, Professor of Pediatrics, Boston Children's Hospital
Jenifer R. Lightdale, Professor of Pediatrics, Boston Children's Hospital
Deirdre E. Logan, Professor of Psychology in the Department of Psychiatry, Boston Children's Hospital
Wendy B. London, Professor of Pediatrics, Boston Children's Hospital
Nicole Maestas, Professor of Health Care Policy, Harvard Medical School
Medha N. Munshi, Professor of Medicine, Beth Israel Deaconess Medical Center
Mark I. Neuman, Professor of Pediatrics, Boston Children's Hospital
Lise E. Nigrovic, Professor of Pediatrics, Boston Children's Hospital
Pyong Woo Park, Professor of Pediatrics, Boston Children's Hospital
Rinaa S. Punglia, Professor of Radiation Oncology, Brigham and Women's Hospital
Rachel L. Rosen, Professor of Pediatrics, Boston Children's Hospital
Amar Sahay, Professor of Psychiatry, Massachusetts General Hospital
Thomas J. Sandora, Professor of Pediatrics, Boston Children's Hospital
Peter H. Weinstock, Professor of Anesthesia, Boston Children's Hospital
Xu G. Yu, Professor of Medicine, Massachusetts General Hospital
Koichi Yuki, Professor of Anesthesia, Boston Children's Hospital

Next, Dean Daley congratulated the newest members of the HMS faculty. He stated that the excellence of our faculty is the excellence of HMS. He also thanked the faculty of medicine for attending the meeting. The meeting was adjourned around 5:01pm.