Chapter 1 : Trailblazing the path for Family Medicine Â« News

The path to medicine, history, art and culture is rarely described on a chess board. For world-renowned chess set collector George Dean '53, M.D. '56, however, the game perfectly encapsulates his career in medicine.

Their insights into the immune system and their work on what is known as immunotherapy have led to innovative new drugs for cancer, HIV and other diseases, with many already saving and extending the lives of tens of thousands of patients. It will be awarded on Wednesday, Sept. The awardees were chosen to receive the Albany Prize for their groundbreaking research in immunology, the translation of their ideas into clinically meaningful therapies for diseases, including metastatic melanoma, lung cancer and leukemia, and their leadership in moving the field of immunotherapy forward. Their impact on the development of cancer immunotherapy â€" and where it goes from here â€" is unsurpassed. Once untreatable tumors have disappeared. People given months to live are now living 10, 20, even 30 years after receiving treatment. Astonishing success stories abound: At the time, she was told that she had just months to live, but she is still alive today, cancer-free more than 30 years later. Emily Whitehead, who was diagnosed with standard risk pre-B acute lymphoblastic leukemia ALL when she was five years old, had been treated twice with chemotherapy but had relapsed both times. In , she entered a phase 1 clinical trial, becoming the first child in the world to be treated with T cell therapy based on Dr. Today she is more than five years cancer-free. Groundbreaking New Field Since the late 19th century, researchers have struggled to find a way to harness the power of the immune system to fight cancer. Then, in the s, T cells were discovered. They are now known to be the major warriors of the immune system. In the s, Dr. Rosenberg theorized that stimulating T cells could provoke immune reactions that were otherwise very weak or nonexistent. Focusing on interleukin-2 IL-2 , a protein that regulates the activities of lymphocytes white blood cells that are responsible for immunity, he demonstrated for the first time, in , that high doses of IL-2 could mediate the regression of metastatic melanoma and kidney cancer. IL-2 became the first FDA-approved immunotherapy for cancer, approved in to treat metastatic kidney cancer and in to treat metastatic melanoma. This is achieved by helping the immune system attack the cancer or other disease directly for example, checkpoint blockade and adoptive cell transfer therapies or stimulating the immune system in a more general way for example, through the use of interleukins. Considered for many years to be a novel or experimental therapy, immunotherapy is now recognized as one of the four pillars of cancer treatment, alongside surgery, chemotherapy and radiation, and new discoveries are being made at a rapid pace. Checkpoint Blockade Therapy In , Dr. Subsequently, in , Dr. Allison showed that CTLA-4 functions as an immune checkpoint, downregulating the immune system. But checkpoints such as CTLA-4 can also prevent the immune system from destroying cancer tumors. This insight led to the development of a new field, checkpoint blockade therapy, resulting in an entirely new class of anti-cancer drugs, starting with ipilimumab. Rosenberg provided the first demonstration in humans that the drug could mediate the regression of metastatic melanoma in patients. Known commercially as Yervoy, ipilimumab was approved by the FDA in to treat patients with late-stage melanoma. When the first clinical trials for ipilimumab started, the median survival of patients with metastatic melanoma after diagnosis was 11 months. After the first trial, survival rates increased by four months, which was unheard of at the time. Remarkably, year follow-up data shows that 22 percent of people treated with ipilimumab are still alive. Ipilimumab is also approved by the FDA for use in advanced kidney and some colorectal cancers in combination with another drug. Checkpoint blockade has since become a standard of care in the clinic, used to treat patients with a variety of cancers. More recently, a second class of checkpoint inhibitors have been used to target the PD-1 checkpoint, which was discovered after ipilimumab was in development. The CAR T cells are then multiplied into the hundreds of millions and infused into the patient, where they seek out and kill cancerous cells. Perhaps even more strikingly, once T cells learn to recognize cancer, they retain that memory indefinitely. Rosenberg was the first to show that CAR T cells could be used to successfully treat a patient with B-cell lymphoma, targeting the CD19 molecule. That patient is still alive today. In , he reported that multiple patients with chronic lymphocytic leukemia, for whom chemotherapy had failed, went into complete

remission after receiving the then-experimental CAR T cell therapy. One saw an estimated five-pound tumor completely destroyed by the CAR T cell treatment. June has since led groundbreaking work in engineering CAR T cells for the treatment of refractory and relapsed chronic lymphocytic leukemia, multiple myeloma, lung cancer and other solid tumors. This form of precision medicine has shown tremendous promise for the treatment of other hematologic malignancies. A second drug, Yescarta axicabtagene ciloleucel was later approved to treat adults with certain types of large B-cell lymphoma and CAR T cell therapy has become a fundamental new strategy for treating lymphomas and leukemias in both pediatric and adult patients. Rosenberg developed another highly personalized cell transfer immunotherapy that utilizes tumor infiltrating lymphocytes TIL to target unique cancer mutations. This therapy has been shown to yield long-term remissions and cures in patients with metastatic melanoma and is now being extended to the treatment of patients with common epithelial cancers â€” those that start in the linings of organs â€” which currently result in more than 90 percent of cancer deaths.

Chapter 2 : Watch P&S Firsts: Years of Trailblazing Medicine | Physicians

Space medicine has been an important component of the success of human spaceflight and will continue to play a critical role in the future ventures. To prepare for the day when astronauts will leave low Earth orbit for long-duration exploration missions, space medicine experts must develop a.

February 17, Robert E. Remembered as an intensely charismatic leader and a brilliant physician-scientist by generations of students and colleagues, Cooke was not only a prolific academician and bioethicist, but also an ardent and tough advocate for child health and a political power broker who shaped child health policy on a national scale, medical leaders at Johns Hopkins and elsewhere say. He was the catalyst behind Head Start, the federal program that provides academic and social services to millions of low-income children and their families each year. Cooke was somewhat of a medical Renaissance man. He studied metabolic disorders, nutritional deficiencies and cystic fibrosis with the same zeal that he applied to his study of the psychological effects of hospitalization on children and families. In his research, Cooke explored topics as diverse as pre-natal diagnosis of fetal disorders and the ethical and legal aspects of mental retardation. He wrote essays and commentaries that ventured into the realms of social justice and philosophy, including "Natural and Nurtural Limitations on a Free Society," "The Free Choice Principle in the Care of the Mentally Retarded," and a memorable farewell address titled "The Gorks Are Gone. In , Cooke chaired a task force to study child development whose report called on the White House to form a federal agency that would study developmental disorders. Much of what is considered standard practice in the care and treatment of premature babies, newborn screening and childhood immunizations is based on NICHD-funded research, and the creation of the agency paved the way for the study of mental retardation and developmental disabilities as a pediatric sub-specialty. In , under marching orders from President Lyndon B. Johnson and his "War on Poverty" campaign, Cooke headed a task force of sociologists, pediatricians and psychologists to develop a national program - eventually known as Head Start - to help children born in poverty overcome social and education obstacles. Today, the program provides health, nutrition and social services to more than a million children and their families each year. Cooke also had an impeccable eye for talent. He recruited a cadre of young physicians who later became luminaries in their specialties. Among them are pediatric endocrinologist and world renowned expert on disorders of sex differentiation Claude Migeon, M. He was very reluctant to dismiss a resident who was underperforming, urging us to find a way to help the individual succeed. Fost credits Cooke as a major figure in the emergence of bioethics as an area of scholarship and national discourse. He had the courage to make a movie, with the support of the Kennedy Foundation, about a controversial Hopkins case involving a child with Down syndrome, whose parents and physicians allowed him to die without the benefit of standard medical treatment, Fost says. Colleagues also recalled Cooke as a skilled and competitive athlete, earning a tryout with the Boston Red Sox after a baseball career at Yale; as a high-level tennis player; and as a tough opponent in annual faculty-house staff touch football games. His work on the physiology of salt and water metabolism led to changes in infant feeding practices worldwide and helped reduce childhood death rates. In the late s, Cooke mentored a young colleague, Lewis Gibson, M. The test allowed pediatricians to diagnose children more safely and more accurately, which resulted in more timely treatment and, ultimately, improved survival. Cooke was the father of two daughters, born in and , with a genetic disorder called cri-du-chat syndrome, characterized by intellectual disability and delayed development. Cooke was born on Nov. Cooke completed his internship and residency at New Haven Hospital, taking two years off from his medical apprenticeship to serve in the U. In , Cooke joined the pediatrics faculty at Yale. Cooke left Hopkins in to become vice chancellor for health sciences at the University of Wisconsin-Madison. He retired in Robert and Christopher, and two grandchildren. His two daughters born with cri-du-chat, Robyn Cooke and Wendy Cooke, died in and , respectively. It has recognized Centers of Excellence in dozens of pediatric subspecialties, including allergy, cardiology, cystic fibrosis, gastroenterology, nephrology, neurology, neurosurgery, oncology, pulmonary, and transplant. For more information, visit www.

Chapter 3 : Trailblazing Molecular Jungles with New Nuclear Magnetic Resonance Consortium

Trailblazing Medicine examines the future of space medicine in relation to human space exploration; describes what is necessary to keep a crew alive in space, including the use of surgical robots, surface-based telemedicine, and remote emergency care;.

Estimated delivery business days Format Paperback Condition Brand New Description Looking forward to the day when astronauts depart on extended exploration missions, this assessment of the future of space medicine analyzes what is necessary to keep a crew alive in space as well as the medical challenges faced by interplanetary astronauts. Publisher Description Space medicine has been an important component of the success of human spaceflight and will continue to play a critical role in the future ventures. To prepare for the day when astronauts will leave low Earth orbit for long-duration exploration missions, space medicine experts must develop a thorough understanding of the effects of microgravity on the human body, as well as ways of migrating these effects. To gain a complete understanding of the effects of space on the human body and to create the tools and technologies required for successful exploration, space medicine will become an increasingly collaborative discipline incorporating the skills of physicians, biomedical scientists, engineers, and mission planners. In this work, Dr. Erik Seedhouse examines the future of space medicine in relation to human space exploration. He describes what is necessary to keep a crew alive in space, how it will be accomplished in the future, and the medical challenges faced by interplanetary astronauts. The book is divided into three sections. The first looks at space medicine on board the ISS, where astronaut stays are often of long duration. The final section looks at future developments and the importance of telemedicine and how revolutionary technologies will protect interplanetary astronauts from the space environment. The book ends with a description of the kind of hibernation necessary to insure the well being of interplanetary astronauts. Author Biography Erik Seedhouse is an aerospace scientist whose ambition has always been to work as an astronaut. Later, he spent several months learning the intricacies of desert warfare on the Akamas Range in Cyprus. He made more than 30 jumps from a Hercules C aircraft, performed more than abseils from a helicopter, and fired more light anti-tank weapons than he cares to remember! Shortly after placing third in the World km Championships in and setting the North America km record, the author turned to ultradistance triathlon, winning the World Endurance Triathlon Championships in and Returning in academia once again in , Erik pursued his Ph. While conducting his Ph. Erik currently works as a manned spaceflight consultant, triatholn coach, and author. He is the Training Director for Astronauts for Hire and plans to travel into space with one of the private spaceflight companies. In addition to being a triathlete, sky-diver, pilot, and author, Erik is an avid scuba-diver and mountaineer and is currently pursuing his goal of climbing the Seven Summits.

Chapter 4 : Trailblazing Medicine: Sustaining Explorers During Interplanetary Missions - PDF Free Downlo

Trailblazing Researchers in Immunotherapy Selected to Receive America's Most Distinguished Prize in Medicine. August 15, - Albany, NY Three visionary scientists whose work has led to a revolutionary new way to treat cancer and other diseases have been announced as the recipients of the Albany Medical Center Prize in Medicine and Biomedical Research.

Bone loss and fracture Impaired fracture healing Description Failure to recover bone during mission places crewmembers at risk of fracture upon landing Bone Fractures occurring during and immediately following longduration spaceflight will require prolonged period for healing. It delivery may be impossible to treat some medical conditions, resulting in a threat to life and mission Behavioral Human Poor interpersonal dynamics and team cohesiveness may performance compromise human performance and threaten mission success Behavioral Fatigue Long-duration spaceflight missions are emotionally and physically exhausting. Circadian patterns are disrupted and mission demands and timelines result in long work hours. Human error may occur when performing critical tasks Radiation Biological effects Heavy iron particles striking the brain can impair motor ability, cognition, and memory Radiation Radiation sickness Cosmic rays may leave cells unstable, mutated, or dead. High radiation doses may result in radiation sickness and death Medicine onboard the International Space Station 5 Figure 1. With that in mind, it is worth discussing some of the research space agencies are conducting onboard the orbiting laboratory and how these studies will help astronauts venturing beyond LEO. Most medical experts and mission planners agree the biggest risks faced by interplanetary explorers are those posed by radiation exposure, bone loss, and the effect on behavioral health. Of these three, radiation exposure probably has flight surgeons the most worried. While astronauts working onboard the ISS in LEO are relatively protected, crewmembers venturing into deep space will face an onslaught of radiation. The most dangerous kind of radiation ECM astronauts will experience is from galactic cosmic rays GCR , bare atomic nuclei, some as heavy as iron atoms, accelerated to nearly the speed of light by distant supernovas. Because of their high velocity, high mass, and positive electric charge, GCR Figure 1. National Oceanic and Atmospheric Administration. Named Matroshka Figure 1. It also happens to be an intrepid space traveler, as it spent several months on the ISS helping scientists learn how they can best protect future interplanetary astronauts from the effects of radiation. Before Matroshka nicknamed the Phantom Torso, for obvious reasons , scientists were only able to estimate radiation doses using computer models, but computer models and real life are often very different. Until Matroshka Panel 1. Sometimes, these barriers will slow down or stop a radiation particle, but sometimes the collision between a radiation particle and a barrier will produce a Radiation Figure 1. It was brought inside on August 18th, , and the experimental elements were returned to Earth on October 11th, Matroshka received more experimental elements on December 21st, These "slices" measured similar data for conditions inside the ISS until active detectors were received later to continue dose readings until its return to Earth. The torso was returned to Earth in Matroshka Matroshka consisted of commercial parts, common to the field of radiotherapy. It had several slices composed of natural bones, embedded in plastics simulating different tissue densities. The torso slices were equipped with channels allowing special sensors to be accommodated. Each Matroshka slice had a center hole that allowed the assembly of the whole torso to fit over a rod that was fixed to the base structure. Detector systems were located at the sites of organs that are the most radiation-sensitive parts of the body. The radiation measurement instruments included five nuclear track detector packages NTDP , several thermo-luminescence dosimeter TLD packages, and five small silicon scintillator devices SSDs , which were mounted inside the torso. These instruments allowed scientists to measure the absorbed dose, neutron dose, and the heavy ion fluences, thereby helping scientists update computer models and develop new models that will be used on flights beyond LEO. It was made of a special plastic that closely mimics the density of the human body, sliced horizontally into 35 layers. In these layers, researchers embedded hundreds of lithium-crystal dosimeters radiation detectors , each capable of measuring the accumulated radiation dose at one point in the body. The dosimeters, which were located where vital organs such as their brain, thyroid, heart, colon, and stomach would be, kept a record of

how the radiation dose changed moment by moment. But, even with Matroshka and the ongoing radiation research being performed on the ISS, scientists acknowledge they have a long way to go before they can keep interplanetary astronauts safe. There are also plans to use polyethylene in the sleep stations. Bone loss 9 BONE LOSS After so many long-duration missions in LEO, it is now an established fact that astronauts spending months in space lose significant bone strength, making them increasingly at risk for fractures later in life. For as long as there have been astronauts, scientists have studied why the microgravity environment makes bones so fragile, but the California studies were the first to evaluate bone strength. The researchers used a special computer program to identify hip bone fracture risk in people with osteoporosis. The program, which was used to analyze the hip bone scans of one female and 12 male ISS crewmembers, measured a decrease in bone strength of between 0. For astronauts embarked upon a multi-year mission to Callisto or some other far-flung destination, such a rate of loss could mean a death sentence remember the scenario at the beginning of this chapter? Here on Earth, a hip fracture almost always requires hospitalization and major surgery. While the California study focused on the decrease in bone strength, other studies have documented the loss of bone mass in crewmembers. Such a rate of loss equates to losing as much bone mass in one month in LEO as an elderly woman loses in an entire year! The problem of bone loss is compounded by the loss of calcium that leaches out of the bones, which puts astronauts at risk of kidney stones. At least a dozen American crewmembers have developed kidney stones in the last five years, and as interplanetary missions loom on the horizon, the number is likely to grow. In fact, the pain is so intense that if an astronaut were to suffer the condition onboard the ISS, it is likely the crewmember would be returned to Earth. Conceived as a means of helping astronauts to maintain muscle and bone strength and endurance in low-gravity environments, the ARED allows astronauts to perform resistive exercises for stimulating bone regeneration and exercising the major muscle groups. The reason for scientists being so interested in exercise is because loss of muscle mass and strength continues throughout the mission, even if crewmembers stick to a strict exercise program. For example, in one study, scientists compared the power output between astronauts who exercised more than min per week with the power output of those that exercised less than min per week. While the astronauts who exercised longer performed better than those who exercised least, the extra exercise only slowed the atrophy of their muscles. Onboard the ISS, astronauts work out on all sorts of exercise equipment in an attempt to preserve their muscle strength. For example, crewmembers perform Behavioral health and fatigue 11 resistive exercise using the Advanced Resistive Exercise Device - a strength device Figure 1. In addition to using the ARED, astronauts spend much of their time pedaling a recumbent cycle, which provides general aerobic and cardiovascular conditioning as well as improved muscular endurance. Cycle ergometry is also an important aspect of physical conditioning for space walks and during the pre-breathe exercise period before a space walk. Astronauts perform the ergometry either in the manual mode, with the workload controlled manually by the astronaut, or in electronic mode, with the workload varied by an electronic controller. While this information will be useful for planning exercise schedules, scientists know that it will be of limited value when crews are embarked upon missions lasting several years, which is why interplanetary spaceships will most likely be fitted with some sort of artificial gravity capability. Behavioral health risk increases with mission duration, which is why preventive measures begin during mission training by preparing ISS crewmembers for the environment they will experience. For example, private medical and behavioral health conferences between the crewmember and specially trained ground medical staff are held regularly. Robust family support is routine and includes regular video conferences between the crewmember and the family. Additionally, e-mail and private telephone calls are available for the crewmembers to communicate with their friends and family on Earth. Well, yes they are, but as experience in the Antarctic has shown, schisms, friction, withdrawal, competitiveness, scapegoating, and other maladaptive behaviors are found even among highly competent men and women working together. Every day, Mission Control sent the three astronauts a six-foot-long sheet of instructions. Finally, and predictably, the astronauts snapped. After the astronauts spent some time relaxing and generally doing as they pleased, ground controllers finally got the message that astronauts needed time off. In addition to observing astronaut behavior onboard the ISS, scientists are also interested in monitoring behavioral health from Earth, and what tools might be developed so that flight

crewmembers can monitor their own moods and cognitive functioning. The scanner, which resembles a large remote control tethered to a Velcro headband by long, thin wires, works like a breathalyzer for the brain, and uses near-infrared optical spectroscopy to measure changes in blood flow to the brain. The system relies on an optical scanner that sends weak pulses of near-infrared light into the brain, then reads back the reflected wavelengths, which reveals how much oxygen is in the blood and, in turn, provides a measure of brain activity. Once deployed on the ISS, the scanner may look for changes in brain activity in regions that have been previously linked to depression, or it could be used to sense brain damage caused by environmental problems such as low oxygen or carbon monoxide levels in the station. However, such a sensor may not be popular with astronauts, who may not take kindly to having a little black box telling them what they can and cannot do! Another aspect of human performance scientists evaluate onboard the ISS is crew fatigue. Long-duration spaceflight missions are emotionally and physically exhausting. In fact, degradation in performance of tired crews has been considered comparable to the degrading effects of alcohol ingestion. Already, these effects have affected orbital operations, with one ISS crewmember stating that "We were falling asleep while repositioning the Soyuz". Once again, the experiences of ISS crews are proving invaluable for those tasked with defining work and rest schedules for longerduration missions. For example, flight rules and planning constraints have recently been put in place to mitigate fatigue risk and critical operations during circadian lows, and sleep shifting has been implemented to accommodate complex operations. BALANCE Assuming scientists resolve the problems of radiation exposure and bone loss and assuming astronauts can endure several months or years locked inside a vehicle staring at the same faces without going crazy, there is still the problem of balance to contend with once they finally arrive at their destination. You see, astronauts returning from long-duration missions routinely face the challenge of simply Balance 13 standing up and walking. Imagine landing on Mars and not being able to walk in a straight line! These balance disturbances cause astronauts to suffer from dizziness and mean they have difficulty standing, walking, and turning corners. The problem for longduration astronauts occurs during the transition period when the brain is trying to adapt to a new gravity environment, which could be the 1-G environment of Earth or adjusting to the one-third gravity of Mars. Some astronauts returning from six-month increments onboard the ISS have compared the discombobulating balance disturbances to those experienced after stepping off a fast-spinning merry-go-round. But, while the effects disappear after a merry-go-round ride, the effects following a spaceflight are far more persistent, with some symptoms lasting for weeks. In fact, some researchers think astronauts may have to spend some time adapting to the gravity environment before setting foot on the surface of a new planet. Research onboard the ISS focuses our attention on what we have learned to date and what must still be learned before embarking upon ECMs. Space medicine has been an integral part of success in the manned spaceflight arena and will play a critical role when crews finally leave LEO. To prepare for that day, space medicine experts will develop new and, in some cases, radical technologies to protect crews against the medical risks faced en route to destinations beyond the orbit of the ISS. Today, space agencies can ensure the health and safety of a crew in LEO. Tomorrow, they must be able to ensure the health and safety of a crew millions of kilometers away from Earth. This will require self-repairing systems, autonomous health care applications and myriad new technologies, some of which are only just being developed. Long-duration missions onboard the ISS will continue to yield space medicine data, validate concepts, test hypotheses, and develop countermeasures, many of which are outlined in this book. The isolation and great distances mean evacuation will not be an option and the crew and the flight surgeon will need to be prepared to deal with myriad medical situations ranging from motion sickness to death. Compounding the problem of responding to diverse medical situations will be the limited medical capabilities onboard, the cramped living and working quarters, and, of course, the challenges of performing medical procedures in the microgravity environment. Given the limitations of deep space health care, it will be more important than ever to implement effective medical mitigation strategies and new flight surgeon training methods. Here, in Chapter 2, ECM medical capabilities and strategies and the future role of the flight surgeon are discussed. The incident was typical of the many minor medical conditions astronauts suffer during spaceflight. To date, the spectrum of medical conditions Table 2. However, given the extreme nature of the space environment combined with the duration of an ECM,

it is inevitable that sooner or later, medical intervention will be required. Since it is not certain that every mission will have a physician-astronaut, the burden of any ECM medical contingency will fall upon the shoulders of the crew medical officer CMO. At present, the CMO is a pilot or scientist with 34 hr of medical training, whereas other crewmembers receive only 17 hr of pre-flight medical training. However, for ECMs lasting several years, crew medical training may be increased and astronauts selected for these missions will probably follow a schedule similar to that outlined in Table 2. Classification of illnesses and injuries in spaceflight.

Chapter 5 : Bonnie Ramsey awarded Alpert Prize for trailblazing cystic fibrosis discoveries | Newsroom

A trained internist, pediatrician and public health specialist, Experton has served the industry at a variety of levels, from entrepreneur to adjunct professor of medicine at UC San Diego School of Medicine.

Trailblazing the path for Family Medicine October 02, The path to medicine, history, art and culture is rarely described on a chess board. As a founding father of the Family Medicine specialty, Dr. Dean has spent his career caring for the families he serves while simultaneously moving the powers that be to recognize Family Medicine as a specialty. Dean and his colleagues. Family physicians have the opportunity to grow meaningful relationships with their patients and serve families for several generations. The practice of Family Medicine is also a cost-effective solution for the patient, and well-qualified physicians have the integrity to know when they have reached the limits of their expertise. Dean knew he wanted to become a doctor at a young age. After a life-changing tonsillectomy, he promised himself and his future patients that he would always treat them with the utmost care and respect. They put an ether mask over my face and removed my tonsils. I promised myself then that if I ever became a physician I would never treat anyone this way. Dean has spent the entirety of his career focused on patient care and advocacy while working to bring more compassionate and competent physicians into the specialty. The manner in which he practices reflects his vision and hope for the profession. By forming strong relationships with patients and their families and, throughout his career, treating parents, children, grandchildren and sometimes great-grandchildren of the same families Dr. Dean has provided holistic care for the communities he still serves today. After graduating from medical school, Dr. Once he completed his training and service, he began working in metropolitan Detroit, opening his own practice early in his career. It allowed me to spend a great deal of time with each of my patients without having to be rushed to reach a certain quota or meet the expectations of others. The comprehensive nature of Family Medicine propelled Dr. As an alumnus of both Wayne State University and the School of Medicine, he understands the integral role his alma mater plays within the Detroit community. We had such excellent exposure to all kinds of diseases and medical cases. Students see and treat all kinds of patients, and they learn to be well-rounded physicians. Dean believes that with a focus on the patient â€" a value held in highest esteem by Family Medicine physicians â€" medical students will be best prepared to care for those they serve. Early in his career, however, he observed a marked difference in the number of doctors entering into family practice. By the early s the numbers were discouraging. Working with his colleagues, he formed the American Board of Family Practice in Dean, one of the charter members, passed the board certification the first year it was offered. He established departments for Family Medicine at the Wayne State University School of Medicine, Michigan State University and the University of Michigan, lobbying with great fortitude to convince university leadership at the institutions to recognize the importance of the field. Dean took faculty appointments at both schools. He continued his fight for the specialty at state and federal levels. In the early s, he realized that Family Medicine doctors were paid half the amount that specialists received for the same procedures. As an officer of the Michigan Academy of Family Physicians at the time, he met with a friend and medical health attorney, Gilbert Frimet, who represented Dr. Dean and the Michigan Academy in suing for equity based on the 14th amendment in the U. After the family doctors prevailed, the case was appealed until it finally reached the U. Dean, provided written testimony. Bowen was a family doctor, and we were suing him for the fair treatment of Family Medicine physicians. Dean and his colleagues won â€" changed history. The federal government mandated that Medicare was required to compensate Family Medicine physicians and other specialists equally for the same procedure. Dean accomplished major feats for Family Medicine doctors and the future of the practice across America. But once he set the proverbial ball in motion, he did not stop with the United States. As an officer in the American Academy of Family Physicians, he traveled internationally to promote the specialty. Coming out of medical school, medical students are often encouraged to go into more lucrative specialties. With the great cost of medical education, finances can be a significant deterrent for those looking to go into family practice. The institution has a unique opportunity to go out into the community and provide patient care in a multi-disciplinary approach. I would like to see Wayne take the

lead in this. I was proud to see that Wayne was nationally recognized by the American Academy of Family Physicians for their activity in generating interest in Family Medicine. Dean has not shied from leading the profession into the future, whether through lobbying for the profession, or writing and publishing leading-edge articles and books about the specialty. His distinguished career has led to many Family Medicine milestones. For these accomplishments, along with his dedication to his patients, he has received a number of accolades. In addition to his membership in Alpha Omega Alpha the medical honor society for scholastic achievement , Dr. He is a recipient of the Wayne State University School of Medicine Trailblazer Award, which recognizes alumni and faculty who, through their perseverance and dedication, have forged paths through previously unexplored territory to become pioneers in their field of medicine and medical research. Growing up in Detroit, he met the love of his life when he was 15 years old. It was our song, even if she did not know it yet. To sustain the needs of his young family, Dr. Dean worked several jobs throughout his four years at the School of Medicine. He graduated a member of Alpha Omega Alpha, the medical honor society. He opened an office in Redford, Mich. She still practices with him today. I would perform surgeries at the hospital and make rounds, come to the office and see patients, and then start house calls at four in the afternoon. I expanded the practice to include additional physicians, and this way I was able to see patients and better balance my time at work with my life at home. Dean enjoys a large, successful family. His daughter, Randy Jo Dean, M. Dean was proud to attend the July 27 White Coat ceremony, where, with his daughter, he took up the honor of coating Stahl. The Dean home is filled with works of art and pieces of history, including original paintings and a beautifully painted 2,year-old sarcophagus from Egypt. While these may catch the eye of many art lovers, the overwhelmingly striking and impressive collection of chess sets Dr. Dean owns quickly takes center stage. At that time, I was a terrible flier, and as soon as we landed I went straight to bed. Vivian got the shopping bug and went down to the boutique. The small amount of money they had budgeted for gifts for friends and family was soon exhausted. Vivian came and woke me up to take me to see this chess set she fell in love with. Dean have collected a chess set from each of the countries they have visited. Dean was the founding member and president of Chess Collectors International, a group of collectors who meet every year to discuss subjects pertaining to chess and chess sets. Dean had an opportunity to speak about chess and world harmony. I have written two award-winning books about chess. If I had not gone into medicine, I would have gotten a Ph. Fortunately for Family Medicine and for art history, Dr. Dean has, in a sense, done both.

Chapter 6 : Trailblazing Medicine : Erik Seedhouse :

Representatives of the Seventh-day Adventist Church recently launched plans for a South Pacific Society of Lifestyle Medicine in Fiji and Solomon Islands.

Bonnie Ramsey is recognized for her work in reducing lung infections in those with cystic fibrosis Bonnie Ramsey, professor and vice chair for research in pediatrics at the University of Washington School of Medicine, is being recognized by the Alpert Foundation for her leadership in cystic fibrosis research. The condition results in persistent lung infections and, over time, limits the abiliity to breathe. Life expectancy has improved steadily over the past several decades. She now serves as a senior consultant to the TDN. The Warren Alpert Foundation Prize honors scientists whose pioneering work has improved the understanding, prevention, treatment or cure of human disease. Receiving the award recognizes the scientific and therapeutic revolution that has occurred over the past three decades in the field of cystic fibrosis. The award also acknowledges the importance of team science spanning from basic to clinical investigation that is required to translate our understanding of molecular biology into life-changing new therapies. I am honored to receive this award. Daley, dean of Harvard Medical School. Collins will decline the cash component of the award. However, the five award recipients made the key discoveries that propelled this quest forward. That achievement was the cumulative result of work done by the five award recipients and their teams. Two dual-drug combination treatments followed, and triple-combination therapies are currently in development as a result of these initial discoveries. The pivotal CF discoveries honored this year include: The foundational work was conducted by Lap-Chee Tsui and Francis Collins and their teams, whose research led to the discovery of the cystic fibrosis gene, elucidated its molecular structure and function and pinpointed its location. In doing so, they provided an entry point to understanding the basic defect that fuels a complex disease affecting multiple organs and organ systems. Michael Welsh led the team that made key discoveries toward elucidating the role of the product of this gene, the CFTR protein, as the chemical transporter that allows chloride to move in and out of cells, showing how mutations in the gene and its product cause cells to malfunction and fuel disease development. These insights provided the rationale for the subsequent quest toward targeted therapies to repair the function of the aberrant protein. Building on these key discoveries, a team of scientists at Vertex, led by Paul Negulescu, initiated research in to identify compounds that modulate the function of the CFTR protein. These medicines have ushered in a new era of CF treatment, which continues to advance with more compounds in development. Pediatric pulmonologist Bonnie Ramsey was the architect of the clinical trial network and seminal studies that led to the approval of the first, and subsequent, small-molecule treatments in current use and played a critical role in ensuring the translation of these therapies from lab to clinic. The foundation played a decidedly transformative role and propelled forward the work we honor today, according to members of the Warren Alpert committee. In the s, Michael Welsh made the initial observations that cells lining the organs of patients with CF profoundly lack the ability to transport chloride. In , Welsh and colleagues demonstrated that correcting the CFTR protein could restore defective chloride transport in cellsâ€”a proof-of-principle demonstration that linked the mutation of the CFTR gene to actual protein malfunction and then to the hallmark failure in cell physiology that fuels the disease and its symptoms. These pivotal findings set the stage for subsequent drug development. The treatment of CF improved steadily over the past several decades, but well into the s it remained focused on managing the symptoms and consequences of the disease. Such supportive care included preventing malnutrition stemming from digestive malabsorption, treatment and prevention of lung infections, administering insulin for CF-related diabetes and lung transplantation as an option of last resort to treat the most severe complication of the disease. Despite prolonging survival and improving quality of life, these approaches fell short of the ultimate goalâ€”to remedy the underlying defect of the disease. Even though CF is a genetic disease, these treatments are not genetic therapies. Instead, the drugs deliver small molecules inside cells to restore protein function and correct the cellular dysfunction fueled by the genetic defect and thus ensure that cells are capable of transporting chloride properly. Paul Negulescu spearheaded a nearly year CF research project at Vertex Pharmaceuticals that has

resulted in the approval of three treatments that address the defect responsible for CF, including ivacaftorâ€”the compound that eventually became the first CFTR modulator and gained FDA approval in In clinical trials, ivacaftor not only restored CFTR function butâ€”contrary to expectationsâ€”also markedly improved lung function even among people with already compromised pulmonary capacity. Although the medication redefined disease treatment, it was initially approved only for people with a rare CF mutation that accounts for fewer than 5 percent of all patients with the disease. In , the FDA expanded approval of ivacaftor for the treatment of additional mutations. The move was unprecedented because the decision was based not on clinical trialsâ€”impractical given the small number of patients with these rare mutationsâ€”but on lab studies that demonstrated improved chloride function in cell lines engineered to carry such mutations. The compound is currently approved in the United States for the treatment of 38 types of CF mutations in patients 2 years and older. This FDA decision, experts say, may transform testing and approval protocols for other rare genetic diseases, for which clinical trials are not feasible. She, alongside scientists at Vertex, oversaw the conceptualization, design and oversight of the clinical trials that enabled their development and approval. The CF Foundation was also a critical funder of the early-stage research into the compounds that would eventually become of the first defect-correcting treatments. Ramsey was the principal investigator overseeing the definitive last step of the trial that led to the development and approval of ivacaftor, the first drug to repair the underlying defect in CF. This genetic mutation was particularly challenging to treat because it required therapies that restored the protein-folding and chloride-trafficking defects it caused. They were approved in and in early , respectively. To address this, Negulescu and colleagues identified and are currently developing next-generation triple- combination treatments for this group of patients. Although these next-gen therapies require further testing and remain experimental, they carry the promise to expand therapeutic benefits to 90 percent of all CF patients. Pllease see the news release from the Alpert Foundation.

Chapter 7 : trailblazing a path in natural medicine | Faculty of Pharmacy and Pharmaceutical Sciences

Trailblazing a path in natural medicine Last fall, Shirley Heschuk was presented with the Faculty's Outstanding Alumni Award as a recognition of her outstanding contributions to the pharmacy profession.

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Chapter 9 : Ideas about Medicine

Campus and Community Science and Technology Health and Medicine Earth and Environment Trailblazing Molecular Jungles with New Nuclear Magnetic Resonance Consortium Emory University, Georgia State University and Georgia Tech team up to optimize use of NMR spectrometry.