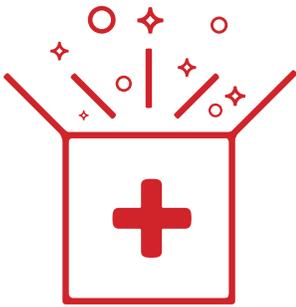




## Health and Medicine Industry



As the popularity of health apps, eVisits and wearable fitness trackers increase, we look forward to what the future of medicine will hold. In just a few short years, the medical industry has been revolutionized by the number of health and fitness iOS apps, growing to nearly 7,000 to support consumers' proactive and preventative mindsets and interest in monitoring their own health. The most exciting innovations and technological achievements have advanced health and medicine. As change continues, past medical pioneers need to be elevated and recognized for their innovations that have blazed paths in the industry.

The National Inventors Hall of Fame recognizes monumental individuals whose innovations have made an impact in lives across the country. This year, three pioneers in the health and medicine industry will be inducted and recognized for their achievements in advancing the category.



### Charles Drew

Charles Drew was an African-American physician and researcher renowned for his groundbreaking work in blood plasma preservation. Drew's research into the storage, processing and shipment of blood plasma not only saved the lives of hundreds of Britons needing critical blood transfusions during World War II, it continues to save lives

today. Hemophiliacs, whose blood lacks clotting factors, receive plasma replacement therapy in which donated plasma provides proteins that help coagulate blood. Cancer and trauma patients require plasma transfusions, and plasma is vital for the treatment of transplant and severe burn patients. Its most abundant protein, albumin, restores the necessary amount of fluid to the bloodstream. In 1941, Drew became the first director of the American Red Cross Blood Bank in N.Y. His innovations included mobile blood donation units, or "bloodmobiles" – trucks equipped with refrigerators. The repercussions of 2015 Inductee Charles Drew's work are, literally, incalculable.



*John Burke*

would resist infection and protect against dehydration, developing the skin from readily available resources, creating a skin that would not face the inherent issue of rejection by the patient's immune system, while ensuring a product that looked like regular skin.

After announcing their artificial skin in 1981, Yannas and Burke's work would go on to save the lives of thousands of burn victims around the world. An early success story was a patient whose body had been burned by more than 50 percent. When the new artificial skin was applied, she showed new skin growth in just a few weeks, growth that looked similar in appearance to her own skin.

### John Burke & Ioannis Yannas

Surgeon John Burke and chemistry and engineering professor Ioannis Yannas together developed the first commercially successful artificial skin that encouraged and facilitated new skin growth. By combining their expertise in the areas of biology and polymers, the duo overcame the many existing obstacles for a successful artificial skin, including making sure the product



*Ioannis Yannas*

Working full time at MIT since 1966, Yannas has also spent time at Massachusetts General Hospital and Shriners Hospital for Crippled Children during his years of collaboration with Burke. His extensive consulting includes work with companies such as Becton-Dickinson, Integra LifeSciences and L'Oreal. His many professional affiliations include Member, Institute of Medicine, charter member of the Biomedical Engineering Society,

Founding Fellow of the American Institute of Medical and Biological Engineering, and Fellow of the Society for Biomaterials.

At both Harvard Medical School and MGH, Burke's influence as an innovative surgeon-scientist was seen with the creation of the John F. Burke Professorships in Surgery. Throughout his 60+ year career, he had more than 400 publications, 100 chapters, and 11 books published and served as the head of many important professional groups, including the American Burn Association, the American College of Surgeons and the New England Surgical Society.