

**THE UNIVERSITY OF MICHIGAN
REGENTS COMMUNICATION**

Item for Information

Subject: Henry Russel Lecturer for 2020

I am pleased to inform you that the Henry Russel Awards Faculty Advisory Committee, chaired by Dean Michael J. Solomon, met recently and selected Stephen R. Forrest, the Peter A. Franken Distinguished University Professor of Engineering, Paul G. Goebel Professor of Engineering, Professor of Electrical Engineering and Computer Science, Professor of Material Science and Engineering, and Professor of Physics, as the Henry Russel Lecturer for 2020. Professor Forrest will deliver the Russel Lecture in the Winter Term of 2020.

The Henry Russel Lectureship is the highest honor that the University bestows upon a senior member of its faculty. A description of the contributions of this extraordinary faculty member is attached.

Respectfully submitted:



Mark S. Schlissel
President

June 2019

Attachment

Stephen R. Forrest

Stephen R. Forrest, the Peter A. Franken Distinguished University Professor of Engineering, Paul G. Goebel Professor of Engineering, Professor of Electrical Engineering and Computer Science, Professor of Material Science and Engineering, and Professor of Physics, is a world-leading scientist who has made breakthrough advances in understanding how the behavior of light and electrons may be controlled. Through his research with organic and inorganic semiconductors, he has made foundational scientific contributions in three areas that are revolutionizing the way the world communicates, shares information, and produces energy. As a research engineer at Bell Labs, Professor Forrest worked with photonic components and electronic circuits to demonstrate the first avalanche photodiode, a highly sensitive semiconductor device that converts light to electricity, and invented the first reliable planar photodetector. These breakthroughs enabled the high-performance switches that are central components in today's long-distance fiber optic telecommunication systems. His second major contribution was in developing organic thin film semiconductor nanostructures comprising high performance light emitting diodes (OLEDs). His efforts have produced a revolutionary technology that allows maximally efficient light generation and extraction across the entire visible spectrum, enabling heads-up and flat panel displays that are becoming ubiquitous in smart phones, televisions, cameras, flat displays, and countless other applications. His research is now extending OLED technology to general lighting, with the promise of achieving energy efficiencies and light quality far in advance of current LEDs. Professor Forrest's third area of major research accomplishment is in the use of thin-film materials to produce a new generation of ultra-low-cost solar cells with a high energy conversion efficiency. His research has appeared in more than 550 papers in world-leading journals, and he is among the most highly cited scientists in his field and, indeed, across many fields. He holds more than 320 U.S. patents, most of which are licensed, and has helped found five companies that are moving his breakthroughs to the marketplace. Professor Forrest has won many honors and awards, including election to the American Academy of Arts and Sciences, the National Academy of Sciences, the National Academy of Engineering, and the National Academy of Inventors, as well as the 2015 Distinguished University Innovator Award from the University of Michigan. He has served as editor and on editorial boards of major scientific journals. Professor Forrest's contributions as a teacher and mentor are equally exceptional. He has chaired or co-chaired the dissertation committees for 60 Ph.D. students, and has mentored 34 postdoctoral fellows, many of whom are themselves international leaders as faculty, corporate executives, and entrepreneurs. He is now finalizing a textbook of organic electronics that will undoubtedly become the standard for many years.

Professor Forrest earned his B.A. (1972) degree in physics from the University of California, Berkeley, and his M.S. (1974) and Ph.D. (1979) degrees in physics at the University of Michigan. He joined Bell Labs in 1979, and in 1985 became an associate professor of electrical engineering/electrophysics and material science at the University of Southern California. In 1992, he was appointed the James S. McDonnell Distinguished University Professor of Electrical Engineering at Princeton University. In 2006, he joined the University of Michigan as the William Gould Dow Collegiate Professor in Electrical Engineering, Materials Science and Engineering, and Physics. He was also appointed as vice president for research, where he promoted the rapid translation of promising research by Michigan's scientists and engineers to the commercial realm.

As a world-renowned engineer and inventor, and as an inspirational mentor of students, Professor Forrest's many contributions have brought distinction to the University of Michigan, the College of Engineering, and the College of Literature, Science, and the Arts, and he is an exceptionally worthy selection as the 2020 Henry Russel Lecturer.