

Intellectual Trajectories

International Connections with C. Sidney Burrus

ARRUF member C. Sidney Burrus, the Maxfield and Oshman Professor Emeritus of Electrical and Computer Engineering (ECE) and Dean Emeritus of the George R. Brown School of Engineering will speak at Lahore University of Management Sciences (LUMS) in 2018. His trip is part of Rice's emphasis on leadership in international research and education.

"We must aggressively foster collaborative relationships with other institutions to leverage our resources," President David Leebron declared in the Vision for the Second Century and the Call to Conversation. "We have perhaps too

often been content to be a 'hidden gem' rather than a shining beacon."

Burrus has served on founding boards of several universities across the globe, including Jacobs University (previously International University Bremen, IUB), an international, private residential university in Vegesack in Bremen-Nord in Germany and briefly on one for a university in VietNam.

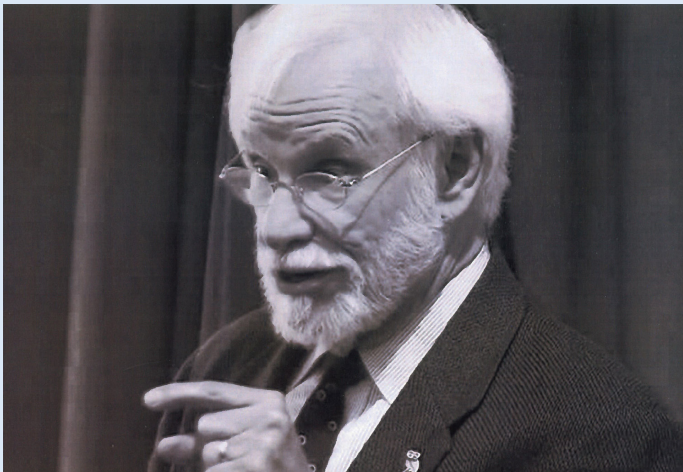
"These universities look at Rice as a prototype for small, private education," Burrus says. "I recently retired from the LUMS board," he explains, "but they are having a celebration in January

and I am looking forward to seeing the new developments. This year, we accepted a graduate student who did his undergraduate work at LUMS. It's good for Rice; it's good for the student."

He also traveled to London in August 2017 to speak on the history of filter design at Imperial College. "It amuses me," says Burrus. "Years ago, they'd ask me to talk about some new finding. Today they invite me to speak on the history of a subject."

Earlier, in 1975-76 and again in 1979-80, he was a Guest Professor at the University

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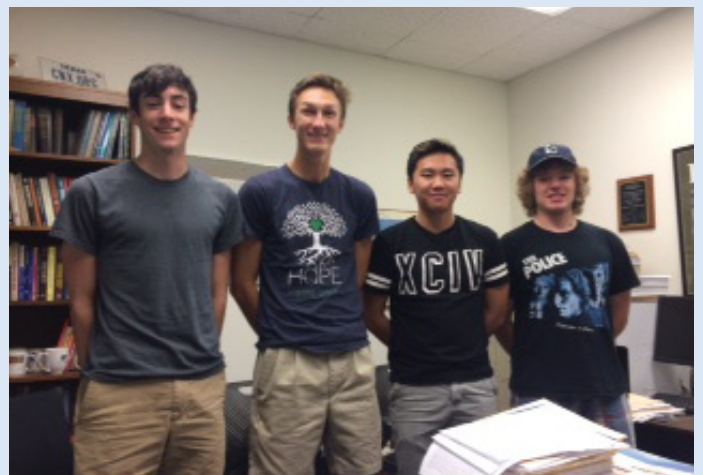
Burrus gives invited lecture at Indian Institute of Technology-Madras, India.



Sidney Burrus 1975.



Burrus (center) with a group of Rice Digital Signal Processing (DSP) alumni and faculty.



Rice students in ENGI 120 where Burrus is a mentor for Oshman Engineering Design Kitchen (OEDK) projects.

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of Erlangen in Germany. During the summer of 1984 he was a visiting fellow at Trinity College, Cambridge University, England.

The circuits and algorithms he researches are critical to an international field, and he loves involving students in this broad community. "I'm up to what I've always been up to, but less of it now," laughs Burrus. "I have been teaching signal processing in Duncan Hall to seniors and first-year graduate students, but this coming spring, ELEC-544, Advanced Digital Signal Processing, will have all grad students. I used to teach what the department needed me to teach, but now I'm teaching courses that interest me."

Burrus will also teach a new Computer Modeling MLS course in the Glasscock School of Continuing Studies next spring. "In the class, the students will build a computer model of social systems of the world," he says. As an avenue into computer modeling for these liberal arts graduate students, Burrus is considering readings such as "How Fermi Would Have Fixed It" and "Can We Know the Universe?" from "Science and Its Ways of Knowing" by John Hatton and Paul Plouffe.

Burrus continues to play squash several times a month with Bart Sinclair in the Rice University Recreation Center. "We have the same level of expertise and we make good partners," Burrus says.

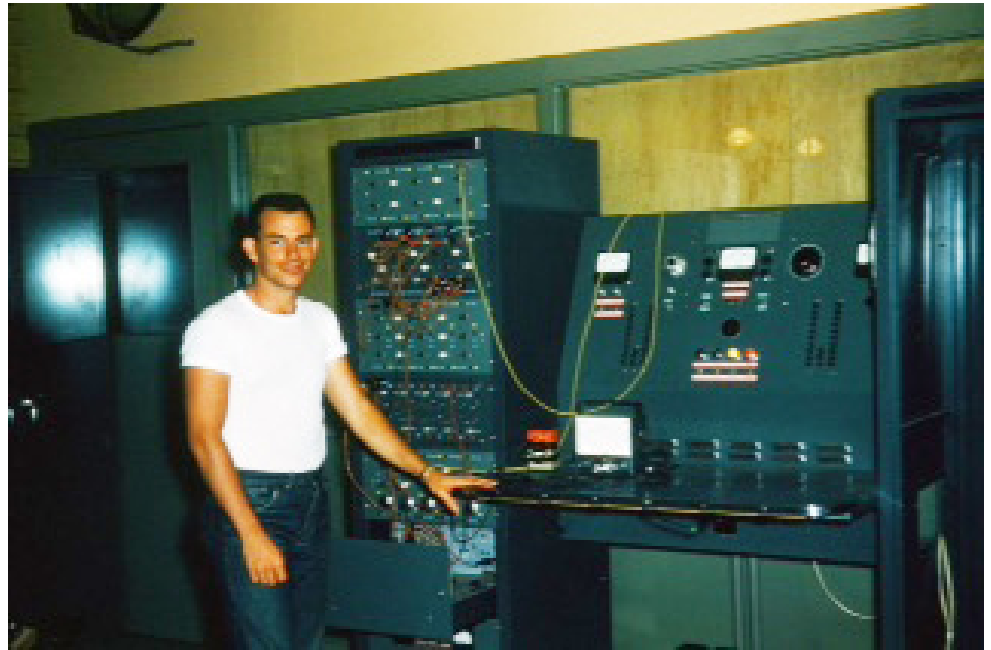
Before joining the faculty at Rice, Burrus received the PhD degree from Stanford



Burrus lecturing on World Model in 1974.

University in 1965. Here he has been part of several innovations, including the Computer and Information Technology Institute (CITI), where he served as director

from 1992-1998. Now he is the Senior Strategist of OpenStax, formerly called Connexions, a revolutionary repository for free teaching materials for learners around the world. Textbooks suitable for the most commonly taught university courses are free on-line in Open Stax, initiated by



Burrus as a student in 1957 with Rice-built Analog Computer.

Professor Rich Baraniuk of Electrical and Computer Engineering.

The venture has high potential global impact. "OpenStax has changed publishing in that we have open copyright and printing on demand," says Burrus. "Now, instead of printing 5,000 copies, an instructor can print whatever number is needed, say five books. Furthermore, anytime an error is discovered, it can instantly be changed. No one is stuck with 1,000 copies. It's made publishing much less expensive."

He continues his work in Abercrombie Laboratory, one of Rice's older buildings. situated in what was Rice's first computer room in the '50s. His office is part of what once housed a giant computer called R1. An image of the first integrated circuit, designed by TI's Jack Kilby, inventor of the first microchip, and a framed digital iteration of Pi decorate his

walls. A handwoven rug from Saltillo adds a Southwestern touch to mementos of a long career at Rice.

From 1972 to 1978 he was master of Lovett College, where his wife Mary Lee served as co-master and was a significant contributor to Rice, supporting activities

when he was department chair and school dean. She worked directly for Rice as a writer and event planner until she retired.

His contributions to Rice's leadership in research and education are recognized both on campus and professionally. Burrus received teaching awards at Rice in 1969, 74, 75, 76, 80, and 1989, an IEEE S-ASSP Senior Award in 1974, and a Senior Alexander von Humboldt Award in 1975. He was awarded a Senior Fulbright Fellowship in 1979, was elected Fellow of the IEEE in 1981, was given the IEEE S-ASSP Technical Achievement Award in 1986, and was a Distinguished Lecturer for the Signal Processing Society and for the Circuits and Systems Society from 1989 through 1992. He was awarded the IEEE S-SP Society Award in 1994, the Millineum Medal in 2000, and the SPIE Wavelet Pioneer Award in 2006. He served on the IEEE Signal Processing Society ADCOM and has coauthored five books and over 200 papers on digital signal processing.