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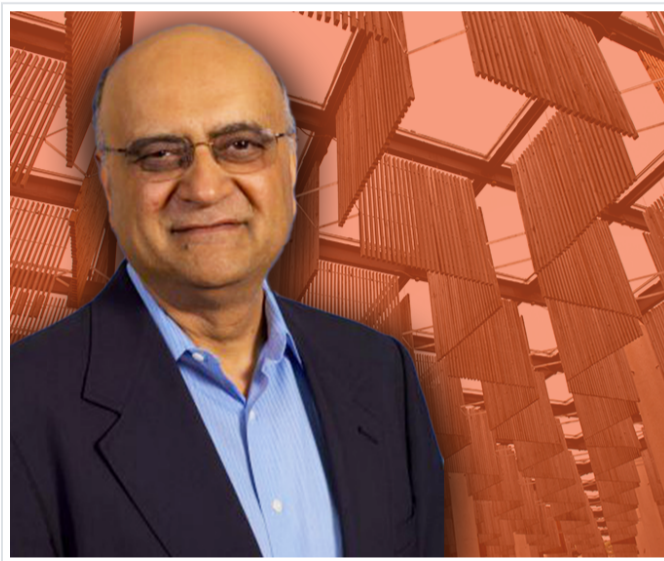
Sandhu named a fellow of the National Academy of Inventors

DECEMBER 10, 2020 — **Ravi Sandhu,** Lutcher Brown Endowed Chair and professor of Computer Science, is the latest UTSA faculty member elected as a fellow to the National Academy of Inventors.

The NAI Fellows Program highlights academic inventors who have demonstrated a spirit of innovation in creating or facilitating outstanding inventions that have made a tangible impact on quality of life, economic development and the welfare of society. Election as an NAI fellow is the highest professional distinction accorded solely to academic inventors.

At UTSA, Sandhu serves as executive director of the Institute for Cyber Security and the lead project investigator of the National Science Foundation Center for Security and Privacy Enhanced Cloud Computing. His seminal papers on role-based access control established it as the dominant form of access control in computer permissions and is the best standard, according to the National Institute of Standards and Technology.

With RBAC, IT departments define computer access based on whether the user is an administrator, a specialist user, or an end user, and grant enough access as needed for employees to do their jobs, which creates greater cybersecurity. This form of access has become instrumental in work-from-home applications.

"Dr. Sandhu's upcoming induction speaks to the innovative work he has done in the field of cybersecurity."

His numerous other models and mechanisms have also had considerable real-world impact. Sandhu is an inventor on 31 security technology patents and has accumulated over 42,000 Google Scholar citations for his papers. More than 30 Ph.D. graduates have been trained under Sandhu's guidance.

At UTSA, his team seeks to pursue world-leading research in both the scientific foundations of cybersecurity and their applications in diverse 21st century cyber technology domains, including cloud computing, Internet of Things, autonomous vehicles, big data and blockchain. Particular focus is on foundations and technology of attribute-based access control as a successor to RBAC in these contexts.

With nearly 60 patents filed last year and research expenditures surpassing 100 million this year alone, UTSA's research portfolio has grown.

"Recognition by the National Academy of Inventors is a key indicator of commercialization success. Dr. Sandhu's upcoming induction speaks to the innovative work he has done in the field of cybersecurity over the past 20 years, positioning UTSA as a global leader in this field," said **Bernard Arulanandam,** vice president for research, economic development, and knowledge enterprise. "Membership in this academy is the pinnacle of public acknowledgment of our faculty's innovation."

For more than a decade Sandhu served as chief scientist and co-founder at TriCipher, which was acquired by VMWare. He has also served as private sector consultant to numerous organizations including: McAfee, Verizon, Northrop Grumman, and Integris Health.

Additionally, he has served as editor in chief of *IEEE Transactions on Dependable and Secure Computing* journal and previously as founding editor in chief of *Association for Computer Machinery Transactions on Information and System Security.*

He was chairman of ACM Special Interest Group on Security, Audit and Control and founded the ACM Conference on Computer and Communications Security, the ACM Symposium on Access Control Models and Technologies and the ACM Conference on Data and Application Security and Privacy.

He has served as general chair, steering committee chair, program chair and committee member for numerous security conferences.

He is a fellow of IEEE, ACM and the American Association for the Advancement of Science, and he has received numerous awards from the IEEE, ACM, National Security Agency, National Institute for Standards and Technology and the International Federation for Information Processing, including the 2018 IEEE Innovation in Societal Infrastructure award for seminal work on role-based access control.

A prolific and highly cited author, he has produced research that's been funded by the NSF, NSA, NIST, Defense Advanced Research Projects Agency, Office of Naval Research, Air Force Research Laboratory, Army Research Office and private industry.

Previously he served on the faculty at George Mason University (1989–2007) and Ohio State University (1982–1989). He holds B.Tech. and M.Tech. degrees from IIT Bombay and Delhi, and M.S. and Ph.D. degrees from Rutgers University.

By his election to the NAI, Sandhu joins four other UTSA faculty members inducted into the academy. President **Taylor Eighmy** was selected in 2013; electrical and computer engineering professor **David Akopian** in 2016, **Bernard Arulanandam** in 2018, and professor of biomedical engineering **Rena Bizios** in 2019.

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⇒ The *[Institute for Cyber Security](#)* at UTSA
⇒ The *[Center for Security and Privacy Enhanced Cloud Computing](#)*

This great honor places those five among an elite group of researchers that includes presidents and senior leaders of research universities, Nobel laureates, National Inventors Hall of Fame inductees and National Academies members.

The NAI 2020 fellows class represents 115 research universities and governmental and nonprofit research institutions worldwide. They collectively hold over 4,700 issued U.S. patents. Among the 2020 fellows are 24 recipients of the National Academies of Sciences, Engineering, and Medicine; six recipients of the American Academy of Arts & Sciences; and two Nobel Laureates. Their collective body of research covers a range of scientific disciplines, including biomedical engineering, computer engineering, materials science and physics.

To date, NAI fellows hold more than 42,700 issued U.S. patents, which have generated over 13,000 licensed technologies and companies, and created more than 36 million jobs. In addition, over $2.2 trillion in revenue has been generated based on NAI fellows discoveries.

The class of Fellows will be inducted at the 2021 Fellows Induction Ceremony at the [Tenth Annual Meeting of the National Academy of Inventors](#) in June in Tampa, Florida.

— [Milady Nazir](#)

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