

# ASIAN AMERICAN, NATIVE HAWAIIAN, AND PACIFIC ISLANDER SCIENTIST SHOWCASE



## Paromita Mitra

1991-

Human Interface Engineer



If you were asked to picture an aerospace engineer, would you think of a pageant queen? If your answer was no, Paromita Mitra is here to change that. Born in Dhaka, Bangladesh, Mitra spent her first few years living between Bangladesh and the USA before her family permanently relocated to Mississippi. Her experiences as an immigrant shaped her childhood and she recalls pretending to be able to speak English as a young child.

Mitra's interest in astronomy started young, fed by her older brother's interest in the subject as well as family camping trips to stargaze. This interest took off in high school, encouraged by her physics teacher who was a staunch supporter of women in STEM. In 2009, she won the title of Miss Mississippi Teen USA, graduated high school, and began studying aerospace engineering at Mississippi State University. In 2013, she became Miss Mississippi USA. She graduated a year later with her bachelor's degree before returning to MSU from 2015-2017 to complete her master's degree in engineering.

Her NASA journey began in 2015, working as a volunteer intern. While in graduate school, she received a NASA Space Grant Graduate Research Fellowship, supporting important research around heads-up displays, transparent projections of information in spacesuits. Her research led to the creation of the S.U.I.T.S. (Spacesuit User Interface Technologies for Students) Design Challenge that pushes college students to develop interface solutions for future spaceflights. She is currently an avionics system manager at the Johnson Space Center in Houston, TX, and works on human interface systems for spacesuits and the Artemis lunar rovers.



Scan above to learn more  
about Paromita Mitra

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## Connie Mariano

1955-

Former Physician to the President



Eleanor Concepcion “Connie” Mariano was born in the Philippines to a military family; her mother was a dentist, and her father a steward in the U.S. Navy. Although most Filipino enlistees were limited to steward roles (cooking, cleaning, etc.), especially after the Philippines gained independence from the U.S. in 1946, the job prospects were still far better than many other options in the post-war Philippines. Her family moved to the United States when she was two. Her interest in medicine began in junior high, prompted by a school presentation from an OB/GYN, and she graduated from Mar Vista High School in Los Angeles, CA, as the 1973 valedictorian. After high school, she attended the University of California, San Diego, earning her bachelor's degree in biology in 1977.

Financial difficulties made military medical school far more attainable than traditional medical school, so Dr. Mariano joined the Navy soon after her graduation. She continued her education, graduating from the Uniformed Services University of Medicine in 1981 with her medical degree. Ten years and several promotions later, she was nominated to serve as the White House Medical Unit's Navy physician during the presidency of George H.W. Bush. Just before she was to be reassigned, she was personally selected by incoming President Bill Clinton as his White House physician. With this, she became the second female White House physician (and first with a military background), and the first female director of the White House Medical Unit. She is also the first Filipino American to earn the rank of rear admiral in the U.S. Navy.



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## Peter Tsai

1952-

Materials Engineer  
(N95 Inventor)



Peter Tsai was born in the Qingshui District of Taiwan and grew up on his family's farm as one of ten children. After completing high school and serving his requisite two-year military service, he enrolled at the Provincial Taipei Institute of Technology to study textile engineering, graduating in 1975. As Taiwan's industrial economy began to expand in the early '80s, buying foreign machines and outsourcing production, Dr. Tsai recognized the need to follow the industry by moving to China, Southeast Asia, or the U.S. In 1981, he left his position at the Taiwan Textile Research Institute and moved to the United States, working and studying at Kansas State University. He gained over 500 credits in mathematics, chemistry, and physics, before following his research supervisor to the University of Tennessee where he completed his PhD in materials science and worked as a professor until his retirement.

In 1992, his research on electrostatic filtration technology led to the creation of the N95 (non-oil resistant, 95% efficiency) respirator. The design was patented in 1995 (his first of 12 U.S. patents) and was initially used in industrial settings before its medical applications were realized. In 2018, Dr. Tsai developed a technique that doubled the filtration capacity of the masks. He retired a year later in 2019, only to rejoin the work force in 2020 in response to the onset of the COVID-19 pandemic. During the pandemic, his research focused on finding the most effective ways for medical workers to sanitize N95 masks for reuse, due to supply shortages.



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about Peter Tsai

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**SASE**  
**APAMSA**  
**NHSEMP**



Native Hawaiian  
Science & Engineering  
Mentorship Program

The Society of Asian Scientists & Engineers (SASE) was formed in 2007 in recognition of the need for an organization that represented and supported Asian-American students in science and engineering. It was modeled on several similar organizations: the National Society of Black Engineers (est. 1975), the Society of Hispanic Professional Engineers (est. 1974), and the Society of Women Engineers (est. 1950). Initial funding was provided by Proctor & Gamble, and the first collegiate chapter was established at Carnegie Mellon University in 2008.

SASE has grown quickly since its creation, founding its first professional chapter in 2012 and surpassing 100 collegiate chapters in 2020. Currently, there are 106 collegiate chapters spread across 31 states, with thousands of members attending the national convention every year. SASE also offers scholarships, in-person and virtual workshops, and professional development and networking opportunities.

## More Notable AANHPI STEM Programs

**Asian Pacific American Medical Student Association (APAMSA)**—This association of medical and pre-med students focuses on identifying and addressing the unique needs and health issues faced by Asian American, Native Hawaiian, and Pacific Islander communities.

**Native Hawaiian Science & Engineering Mentorship Program (NHSEMP)**—This program, run by the University of Hawai'i at Mānoa, focuses on connecting Native Hawaiian science & engineering students with mentorship, research opportunities, and support (both academic and financial) as they navigate the transition to college and beyond to their professional careers.



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about the Society of Asian  
Scientists & Engineers

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