



PROFILE

Manager, R&D Science and Engineering
Sandia National Laboratories

CITATION

Emerging national leader driving
transformative results and shaping the future
of science.



SAKUN DUWAL

AAEOY Most Promising Engineer of the Year Award

Dr. Sakun Duwal is a visionary leader and trailblazer in dynamic material properties and high-energy density physics, whose work advances national security and inspires future generations of scientists. Originally from Nepal—where educational opportunities for women have historically been limited—Sakun is the first in her family to earn both a bachelor's degree and a Ph.D., embodying perseverance and dedication. This unique perspective fuels her commitment to excellence and mentorship.

Currently, Sakun manages the Dynamic Material Properties Department at Sandia National Laboratories, leading a diverse team of 21 scientists and graduate students while overseeing a \$17 million annual budget for a National Nuclear Security Administration sub-program. Under her leadership, the department has achieved unprecedented success in high-pressure experiments, generating critical data that informs weapon science and material behavior under extreme conditions.

Sakun's scientific contributions include pioneering shock experiments on complex materials using Sandia's Z-machine and hypervelocity gas guns, resulting in over 30 peer-reviewed publications and two patents. Her work has significantly advanced understanding of materials vital to national security and stockpile stewardship. In recognition, she received the 2024 Presidential Early Career Award for Scientists and Engineers (PECASE).

Beyond research, Sakun is a dedicated mentor to postdoctoral researchers and graduate students, fostering their growth through workshops and personalized guidance that strengthen the scientific community. She actively promotes the creation of opportunities for everyone and a supportive workplace environment across the scientific enterprise, serving in leadership roles within professional societies such as the American Physical Society's Topical Group on Compression of Condensed Matter Science.

Sakun's strategic vision extends nationally, where she leads cross-laboratory initiatives and working groups that drive innovation in detector technologies and high-energy density research. Her leadership has earned praise from Sandia's director, external partners, and her peers, positioning her as a rising star in the scientific community and a role model for aspiring scientists worldwide.