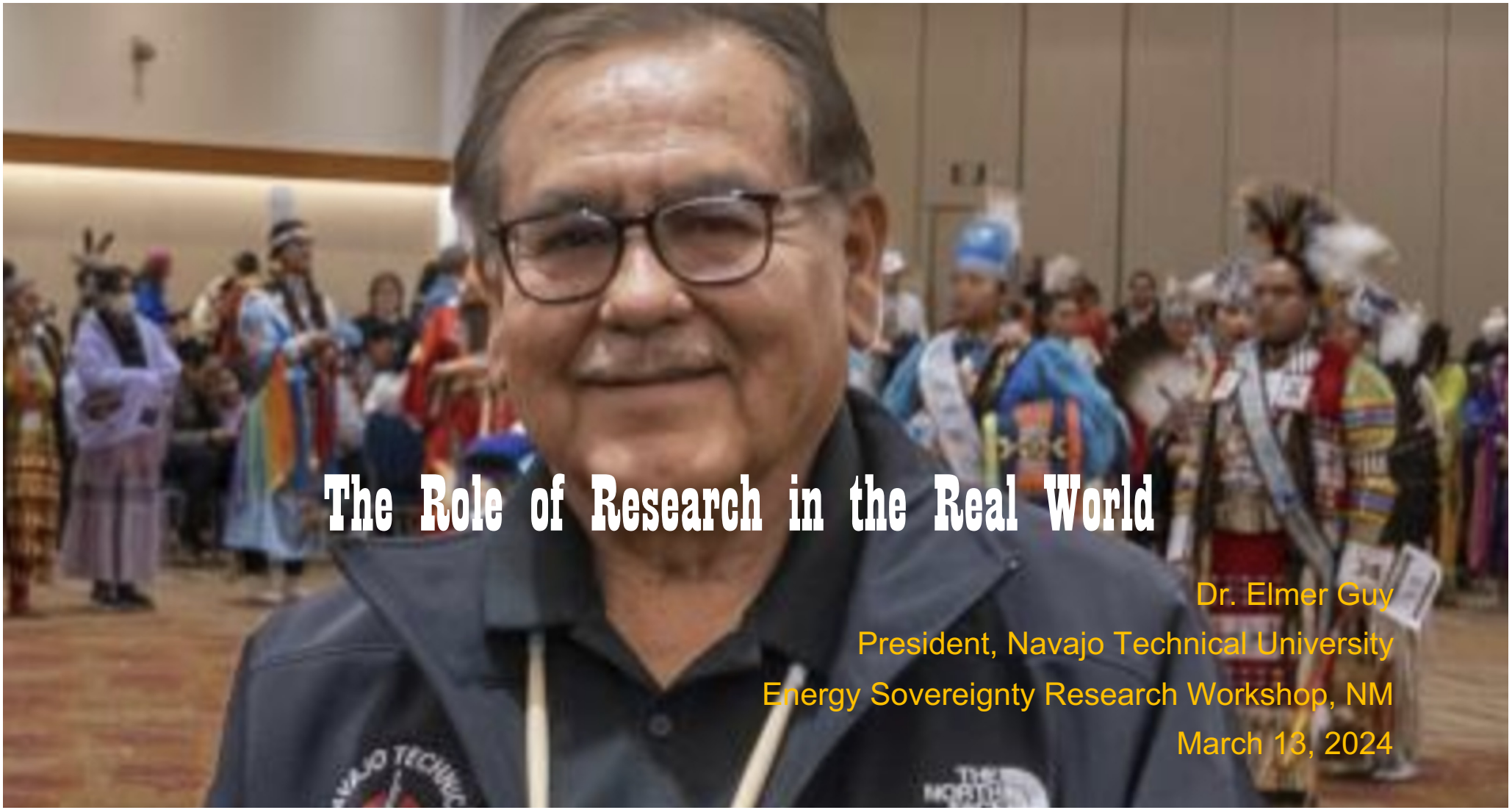

The Role of Research in the Real World

Dr. Elmer Guy
President, Navajo Technical University

Energy Sovereignty Research Workshop, NM

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Introduction

- Thank you for joining me today at the Clean Energy Research of Sovereign and Prosperous Tribal Nations.
- It is truly an honor to stand before you as the President of Navajo Technical University (NTU) and share insights into the groundbreaking research initiatives at NTU.
- I'll shed light on the contributions of our professors and delve into how the innovative NTU research is doing, is having an impact on the Navajo Nation and beyond.

Dr. Irene A. Anyangwe's Pioneering Biology

- In the heart of the Navajo Nation, Dr. Irene A. Anyangwe, Professor of Biology at NTU, has spent years making extraordinary contributions to biology and microbiology.
- Her journey at NTU is marked by groundbreaking research, transformative community initiatives, and an unwavering commitment to students and the Navajo community.
- Dr. Irene played a pivotal role during the COVID-19 pandemic by developing and distributing COVID tests to the Navajo Nation when tests were scarce.

Forging the Future: Scott Halliday's Leadership in Advanced Manufacturing

- In the field of advanced manufacturing, Scott Halliday, Director of NTU's Center for Advanced Manufacturing, is a leader in integrating technology, research, and education.
- Under his guidance, the Center has excelled in metal additive manufacturing (AM) and real-time monitoring.
- Halliday highlights the transformative impact of metal AM, providing precise control over material properties.
- The Center serves as a hub, fostering a comprehensive ecosystem for AM, from initial stages to completion. Halliday prioritizes hands-on experience, ensuring students actively participate in all research aspects, creating an innovative environment.

Transformative Collaboration: NTU-Harvard Partnership in Research

- Dr. Soundappan's integration of traditional Navajo knowledge enriches collaboration
- In a transformative partnership between NTU and Harvard University Materials Research Science and Engineering Center, the PREM program, led by NTU's Dr. Soundappan, significantly impacts research and education.
- PREM facilitates Navajo students pursuing advanced degrees in science and engineering through groundbreaking research at both NTU and Harvard, addressing critical Navajo Nation issues in health, agriculture, and environmental monitoring.
- The NTU electrochemistry research team (NEST Lab), developed paper-based electrochemical sensors for rapid heavy metal detection, crucial for monitoring contaminants and economic development.

Healing Hands and Hooves: Dr. Germaine Daye's Impact at the Helm of NTU's Veterinary Teaching Hospital

- At the heart of the Navajo Nation, Dr. Germaine Daye, a dedicated veterinarian and educator, leads the Veterinary Teaching Hospital at NTU as a beacon of hope for the local community.
- Established in 2009 and accredited in 2017, the hospital, under Dr. Daye's 14-year tenure, serves a critical role in the Navajo Nation's veterinary care landscape.
- Offering comprehensive services, the hospital bridges academic programs and community health, providing care for diverse animals with state-of-the-art technology.
- Dr. Daye's outreach projects, like the annual care of over 1,700 sheep and goats, address critical needs in veterinary care while strengthening community bonds.

The Community-Centric Water Purification Project

- In addressing the critical water crisis on the Navajo reservation, Dr. Abhishek RoyChowdhury, Professor of Environmental Science at NTU, leads a groundbreaking initiative.
- This community-centric model, navigating permissions and involving local regulatory agencies, not only addresses the water crisis but also creates educational and employment opportunities for Navajo students, fostering a local workforce and increasing representation in STEM fields.
- Dr. RoyChowdhury's work inspiring a new generation of Native American scientists, with future plans including establishing the NN Water Institute, expanding water filtration units, and continuing to support students through stipends and experiential learning.

Pioneering Excellence: NTU's Master of Science in Electrical Engineering and the Vision for Future Generations

- In the vast expanse of the Navajo Nation, spanning over 25,000 square miles, NTU is playing a critical role in energy sovereignty.
- Dr. Peter Romine, Head of Electrical Engineering, envisions a groundbreaking engineering graduate program that will serve as a catalyst for inspiring the next generation.
- The recently accredited Master of Science in Electrical Engineering, the first of its kind at any Tribal College or University, marks a significant milestone and plans for a Ph.D. program underway.

Darrick Lee: Leading the Energy Systems

- Darrick Lee's program emphasizes techniques for harnessing renewable energy sources.
- Covers energy applications, design, installation, and renewable energy technologies.
- Addresses the demand for eco-friendly renewable energy systems development.
- Equips students to design and construct photovoltaic and wind energy systems.
- Prepares students to meet energy needs within communities and the Navajo Nation.

Empowering Futures: NTU's Decolonized Education Mission and Indigenous Role Models

- NTU, driven by the Diné philosophy of education, seeks to decolonize the learning experience, incorporating cultural values and language into its teachings.
- The lack of Navajo faculty, particularly in engineering, underscores the need for a graduate.
- This endeavor aligns with NTU's broader mission to address challenges faced by the Navajo Nation, promote economic development, and transition to clean energy, ultimately placing the future in the hands of the Navajo people.

Empowering Communities: NTU Research Real World Impact

- NTU's research transcends laboratories, profoundly impacting indigenous communities.
- NTU demonstrates a commitment to addressing real-world challenges as evidenced by the remarkable contributions of faculty members.
- These contributions underscore how research, guided by community needs and cultural understanding, becomes a potent force for positive change, fostering a stronger, healthier, and more connected Navajo Nation.
- Thank you.