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ACADEMY
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KAPPE

LECTURE

Series

2020

Sharing the
knowledge
of today's
practitioners
with tomorrow's
engineers and
scientists.

The 2020 Kappe Lecturer

Daniel B. Oerther, PhD, PE, BCEE, BCES Vice President, AAEES



Professor Daniel B. Oerther (pronounced O' thur) is renowned for interprofessional education and community based participatory research improving access to clean water and nutritious food worldwide. Dan joined the Missouri University of Science and Technology in 2010 as the John A. and Susan Mathes Endowed Chair of Civil Engineering after ten years on the faculty of the University of Cincinnati. He is an adjunct professor at the Institute of Science and Technology for Advanced Studies and Research (India), Manipal Academy of Higher Education (India), University of Western Para (Brazil), Future University (Egypt), and King's College London (United Kingdom).

In the U.K., Dr. Oerther is a Chartered Engineer, a Chartered Environmentalist, and a Fellow of four learned societies. In the U.S., he was the first individual to be Board Certified by AAEES both as an Engineer (BCEE) as well as a Scientist (BCES), and he is a Diplomat of the American Academy of Sanitarians. For his advancement of nursing and global healthcare, Professor Oerther was elected a Lifetime Honorary Member of Sigma Theta Tau the International Honor Society of Nursing, a Lifetime Honorary Fellow of the American Academy of Nursing, and a Lifetime Honorary Fellow of the Academy of Nursing Education. Dan is the first engineer to be recognized by all three of these learned societies of nursing.

Professor Oerther's service to the profession includes: membership on the boards of directors of AEESP, AAEES and CIEH; editorial duties for *Perspectives in Public Health RSPH*, *Water Environment Research* and *the Journal of Environmental Engineering ASCE*; and serving as the Senior Agricultural Policy Advisor for the U.S. Secretary of State.

EDUCATION

- BA, BS, Northwestern University, 1995
- MS, PhD, University of Illinois Urbana-Champaign, 1998, 2002

FELLOW OF

- American Academy of Nursing
- Academy of Nursing Education of the National League for Nursing
- Chartered Institute of Environmental Health
- Royal Society for Public Health
- Society of Environmental Engineers
- Society of Operations Engineers

RECENT REPRESENTATIVE NAMED AWARDS

- 2012, Fulbright Distinguished Chair to Brazil, United States Department of State

- 2014, Jefferson Science Fellowship, U.S. National Academies
- 2015, Steven K. Dentel Award for Global Outreach, Association of Environmental Engineering and Science Professors
- 2017, Frederick George Pohland Medal, Environmental Engineering Science Foundation
- 2018, Dr. John L. Leal Award, American Water Works Association
- 2019, Robert G. Quinn Award, American Society for Engineering Education
- 2019, Lillian Wald Humanitarian Award, National League for Nursing
- 2019, C. Brice Ratchford Fellowship, University of Missouri System
- 2020, Albert Nelson Marquis Lifetime Achievement Award

Abstracts of Lectures Offered

Transprofessional Environmental Wellness: GRoWES – Global Research on WaSH (water, sanitation and hygiene) to Eliminate childhood Stunting

UNICEF estimates that one quarter of all children less than five years of age are stunted, globally. Linear growth retardation and stunting – defined as height that is more than two standard deviations below the WHO child growth standards median – correlate to short-, medium- and long-term outcomes including a poverty trap where short-of-stature adults with diminished cognitive and physical development are unable to provide for improved economic conditions for their children. Stunting is closely linked to inadequate nutrition during the first 1,000-days of a child's life, which is defined as the time from when a mother learns she is pregnant until the second birthday of her child.

Solutions to stunting include antenatal nutrition, perinatal healthcare, maternal hydration supporting exclusive breastfeeding for at least six months after birth and access to clean water and safe food through age five years old. GRoWES – Global Research on WaSH (water, sanitation and hygiene) to Eliminate childhood Stunting – aims to achieve four goals, namely:

1. improving our basic understanding of the relationship between stunting and WaSH;
2. eliminating stunting at pilot sites through targeted interventions;
3. replicating and scaling-up sustainable solutions to stunting; and
4. influencing global policy on nutrition (i.e., through the United Nations Decade of Action on Nutrition 2016-2025).

As a case study of research, education, practice and policy in the emerging field of transprofessional environmental wellness, the audience will learn how the ambitious goals of GRoWES are accomplished through convergence – where deep integration across disciplines – including nursing, engineering, and public policy – is used to solve a pressing societal need – in this case, childhood stunting.

Science Diplomacy: COAST – Caribbean Ocean and Aquaculture Sustainability facilityTy

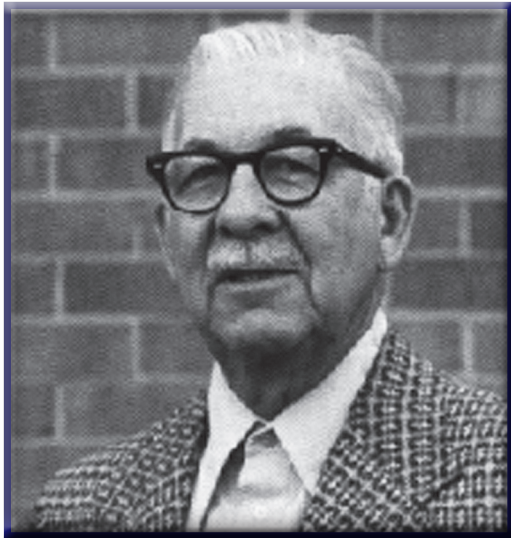
UNDP estimates that over the past two decades disasters have killed more than a million people, affected more than 4 billion people, and cost the global economy more than US\$ 2 trillion. Disasters – including earthquakes and hurricanes as well as the impacts of climate change and displacement due to armed conflict – threaten development gains – including the eradication of poverty – by slowing or even reversing economic growth.

Disasters have a disproportionately disruptive impact on the poor who often face the double burden of insufficient *ex ante* preparation and insufficient *ex post* resources for recovery. Solutions to mitigate disruptions from disasters – the process of disaster risk management – include implementation of best practices for disaster risk reduction before an event as well as comprehensive disaster recovery finance after an event.

COAST – the Caribbean Ocean and Aquaculture Sustainability facilityTy – aims to achieve four goals, namely:

1. protecting food security in the fisheries sector immediately after severe bad weather;
2. supporting a rapid transition from disaster relief to sustainable development for artisanal fishers, small and medium fishing enterprise, fishing communities and the government ministry responsible for fisheries;
3. operationalizing the best practices for sustainable fisheries management outlined in the Caribbean Community Common Fisheries Policy (CCCFP); and
4. influencing global policy in the fisheries sector (i.e., through the United Nations Decade of Family Farming 2019-2028).

As a case study of science diplomacy and nudge economics, the audience will learn how the ambitious goals of COAST are accomplished through convergence – where deep integration across disciplines – including sustainable development, engineering, and foreign policy – is used to solve a pressing societal need – in this case, food security and sustainable fisheries.



**“A man’s debt
to his profession
is to help
those that follow.”**

STANLEY E. KAPPE, P.E., DEE, a successful environmental engineer, believed he owed a debt to the profession that rewarded him so well. During his life, he gave of himself to his university and to his profession through countless hours of volunteer activity. And through this Lecture Series, he continues to share his good fortune with tomorrow's environmental engineers and scientists.

He graduated from Pennsylvania State University in 1930 with a bachelor's degree in sanitary engineering. He served with the Pennsylvania State Health Department and the U.S. Army Corps of Engineers before joining the Chicago Pump Company as its Eastern Regional Manager in 1935. In 1945, he founded Kappe Associates, Inc., a water supply and wastewater equipment company headquartered in Rockville, Maryland, and continued as its Chief Executive Officer until his death in 1986.

His peers recognized his contributions to the profession by numerous awards, including the AWWA Fuller Award, the WEF Arthur Sidney Bedell Award, the WPCAP Ted Moses and Ted Haseltine Awards, and the AAEEES Gordon Maskew Fair Award. In 1985, Pennsylvania State University named him Outstanding Engineer Alumnus.

Stanley E. Kappe was an activist member and leader in several national and Chesapeake region professional societies. He served as the Executive Director of the American Academy of Environmental Engineers (now the American Academy of Environmental Engineers and Scientists) from 1971 to 1981.



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