

# IOWA STATE UNIVERSITY

Agricultural and Biosystems Engineering

## Thomas J. Brumm

### Professor

**Charles E. and Mary B. Sukup Global Professor in Food Security**

**Associate Director, ISU Center for Sustainable Rural Livelihoods**

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### Education

Ph.D. Agricultural Engineering, 1990

Chemical Engineering minor

Iowa State University

M.S. Agricultural Engineering, 1980

Purdue University

B.S. Agricultural Engineering, 1979

Iowa State University

### Honors and Awards

Team Award, Uganda School Garden Program, College of Agriculture and Life Sciences, Iowa State University (2020)

Outstanding Achievement in Teaching, College of Agriculture and Life Sciences, Iowa State University, 2020.

Online Teacher of the Year, College of Agriculture and Life Sciences, Iowa State University (2017)

Mary and Charles Sukup Global Professor in Food Security, Iowa State University (2015)

Best Session Award, 2014 Conference on Industry and Education Collaboration, American Society for Engineering Education, Continuing Professional Development Division (2014)

Thomas B. Thielen Award for outstanding service to the student body, Division of Student Affairs, Iowa State University (2012)

Iowa FFA Distinguished Service Award (2011)

### Selected Recent Publications

Sserunjogi, M., T.J. Brumm, C.J. Bern and D.E. Maier, 2021. Periodic disturbance time interval for suppression of maize weevils in stored maize. *Journal of Stored Products Research* 94.

Mayanja, I.K., J. Kigozi, J.B. Kawangolo and T.J. Brumm, 2018. Design, fabrication and testing of a pedal operated maize grain cleaner. *Journal of Advances in Food Science and Technology* 5(3) 105-111.

Suleiman, R, C.J. Bern, T.J. Brumm, and K.A. Rosentrater, 2018. Impact of moisture content and maize weevils on maize quality during hermetic and non-hermetic storage. *Journal of Stored Products Research* 78:1-10.

Bbosa, D., T. J. Brumm, C. J. Bern, K. A. Rosentrater, and D. R. Raman. 2017. Evaluation of Hermetic Maize Storage in 208-L (55-gal) Steel Barrels for Smallholder Farmers. *Transactions of the ASABE* Vol. 60(3): 981-987. ISSN 2151-0032  
<https://doi.org/10.13031/trans.12044>

## Teaching

Dr. Brumm's teaching goals include:

1. Developing and implementing systems and methodologies that enhance student success, such as learning communities, active learning, and learner-centered classes;
2. Assessing and publishing ABE successes in teaching and learning, focusing on outcome-based assessment to guide and redirect teaching efforts; and
3. Teaching (a) upper-level courses in grain quality, grain processing, post-harvest technology and biorenewables; and (b) fundamentals courses for engineers and technologists.



## Research

Dr. Brumm's research goals include:

1. Understanding and implementing improvements in post-harvest systems in low-income countries to help ensure food security, especially by reducing post-harvest losses.
2. Examining biorefinery systems, identifying and eliminating inefficiencies, especially for biomass storage.
3. Understanding and assessing how teaching pedagogies affect student learning.

## Other Professional Interests

Dr. Brumm is Associate Director of the Center for Sustainable Rural Livelihoods (CSRL) at Iowa State. CSRL programs have improved the livelihoods of thousands of rural Ugandans through direct intervention or through education and training, addressing the issues of malnutrition, health and poverty. He is one of the faculty leaders of the College of Agriculture & Life Sciences Uganda service learning program, where ISU and Makerere University students contribute to development projects at primary schools in the Kamuli district of Uganda through teaching, school garden work, and team projects.

Dr. Brumm is a Program Evaluator for ABET, a global organization that accredits degree programs in engineering, science and technology. He helps lead the accreditation committee of the American Society of Agricultural and Biological Engineers which oversees ABET accreditations in the field.

Dr. Brumm serves as faculty advisor to a number of student organizations. They include: Biobus, which turns waste oil from ISU Dining into biodiesel used in CyRide buses; the ISU chapter of netImpact which helps students to develop their skills and careers to make a positive impact in the world, especially through addressing the challenges of food and energy; and the ISU chapter of Alpha Phi Omega, a co-educational service organization.