



Tom Burks
Professor of Agricultural and Biological Engineering
University of Florida

Tom Burks is a professor in the Department of Agricultural and Biological Engineering (ABE) at the University of Florida (UF). Before coming to UF, he was a postdoctoral fellow at the University of Kentucky (UK) where he developed the Yield Monitor Test facility for Dr. Scott Shearer. He also has had 10 years of industry experience as a project engineer for FMC Corporation developing control systems for food processing machinery, and as an engineering department manager at Chief Industries, Inc, a metal building, grain storage and handling equipment manufacturer. He earned his PhD degree at the UK Biological and Agricultural Engineering (BAE) Department in 1997, along with his dual MS degrees from UK in BAE and in Electrical Engineering (EE). He also received a MA degree from Asbury Theological Seminary. Tom grew up on a farm in central Kentucky growing cattle, poultry, corn and tobacco. He now lives on a small farm, where on weekends, he enjoys his Australian Shepherd, horse, sheep and donkeys, as well as day to day farm chores.

In Tom's research program, he has worked on various approaches to citrus automation, including mass harvesting for high density citrus, robotic harvesting, autonomous navigation in citrus groves, and automated citrus disease detection systems for citrus canker and greening using visible spectrum, multi-spectral, and hyperspectral approaches. He also developed a small scale greenhouse robot. He has experience in yield monitoring systems and other precision agriculture technologies. His primary technical areas of interest are machine vision, robotics, hydraulic power systems, machinery systems, control systems, and artificial intelligence. He has published more than 40 peer-reviewed referred journal articles, and chaired 9 PhD and 12 MS graduate students who have gone on to work at companies like John Deere, Caterpillar, Cummins, GE, NASA Jet Propulsion Laboratory, Amazon, National Instruments, Microsoft, Samsung, Saudi Agriculture Ministry, and ATW Automation.

In addition to his research interest, Tom has taught 4 classes on a regular rotation every two years in ABE on topics, 'Power and Machinery of Biological Engineers', 'Instrumentation for Agricultural Engineers', 'Applied Robotics and Automation', and 'Electro-hydraulic Circuits and Control'. Recently he developed a new graduate certificate program in SmartAg Systems along with Adam Watson, and he developed a new engineering graduate course in "Control Methods in SmartAg Systems".