



**Elizabeth Hood, PhD**  
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**Academic interests:** Cell wall structure and function, Foreign gene expression in transgenic maize

**Research Focus & Techniques of Expertise:** One of the newest applications for over-expressed proteins in maize is bio-production of industrial enzymes. The Hood lab at ASU focuses on the molecular and cellular mechanisms of bio-production. Maize is an excellent choice for fulfilling many desired qualities in a host plant because of 1) the ability to accumulate large amounts of protein, 2) the safety of the product/crop, 3) low production costs, and 4) ability to ensure the product line would not enter the food/feed supply. Unlike the current crop improvement products from maize, non-food products will provide the public with direct benefits they can easily recognize, such as environmentally friendly solutions to caustic chemicals and an alternative supply of ethanol. We are currently working on overproduction of enzymes that will be useful in breaking down cell walls into sugars for fermentation and other bio-based products. Defining the molecular and genetic mechanisms of high accumulation of foreign proteins is of paramount importance. We are also interested in cell wall structure, modeling the interaction of the macromolecules.

### **Grants**

Ethanol from Agriculture for Arkansas and America

Task 1.0 Increase Accumulation and Activity of Cellulase in plants

Task 2.0 Cellulase activity enhancement

Task 3.0 Analysis of free sugar release from biomass by plant-produced enzymes

P3 Center Awards

As PI: Determination of Factors Affecting High-Level Protein Accumulation in Transgenic Maize Seed

As co-PI: Enabling Crop Deregulation with Software: A Prototype (PI: Dan Berleant, UALR)