KATHY: Plant pathology is the study of plant diseases—a malfunction of plant tissues and cells that is caused by a living organism or an environmental factor. Plant parasitic nematodes are living disease-causing agents.

GARY: So nematodes, they’re very interesting. They are transparent, microscopic, wormlike animals. They’re everywhere! There can be up to 5,000 species in a gram of soil. And they can be detrimental or beneficial.

When the parasitic nematodes attack the cotton root, the cotton gets stressed. You get a much lower-quality product...the fibers are weaker, shorter. In my opinion, they are the biggest threat to cotton since the boll weevil.

KATHY: Some of our research involves cotton breeding to develop better, more resistant seeds. To reduce cotton nematode stresses, we’ve tried overwinter crops — clovers, cereal rye, mustards—as they provide a natural pesticide/herbicide effect. We’ve experimented with improving soil health by increasing organic matter and nutrients. We’re looking for a natural bacteria which will reduce nematode plant stress. You can’t just do one thing. Plants are like people in that to be healthy you must eat right, exercise and sleep well. Cotton fibers require a healthy plant and soil. When we get it right, the cotton plant grows bigger and stronger, with longer, thicker fibers.

GARY: We’re always out in the field trying for the healthiest crop.

KATHY: Gary and I started working together in the late 80’s. We were looking at a new soybean disease that was all over America. No one knew what it was. I started isolating fungi and Gary identified the nematodes. We did a lot of testing and discovered the disease required the presence of both pathogens.

KATHY: Now he’s at Mississippi State University and I’m at Auburn University. We teach, we publish, and we do research. Best of all, we train graduate students who will be the next generation of agricultural scientists.

GARY: It’s a good feeling to work for the growers. And I like nematodes. They are fascinating. I tell my students: you have to make money, but do something you like. As far as I’m concerned, I enjoy working and feel like I am helping our cotton growers.

“NEMATODES AND FUNGI BROUGHT US TOGETHER.”