Quote of the week: “Oh...we took that out of the model. It was slowing down the simulations.”

Tasks for this week: Introduction to Layout conventions and Common Sense. Sketch a rectangular RFIC die. Label the dimensions, add some bond pads, and sketch the DC bias and signal paths.

Using at least two spiral inductors, discuss the coupling between the two and the implications for RFIC circuit design.

Set up a simulation that includes two inductors and is sensitive to coupling coefficients between 0.01 and 0.999. Vary the coupling. Then measure the physical circuit to obtain a set of coupling coefficients to use between spiral inductors on an actual rectangular die.

Darlington Pair with Feedback RFIC. Feedback for a good match to 50 ohms on the input and output and approximately 13 dB gain. 2 tone simulations to predict input 3rd order intercept.

An introduction to useful literature for RFIC Literature: Gonzalez and Cripps

Graded Homework Exercise -- Darlington MMIC, due in class April 23

Design a Darlington Pair with Feedback RFIC. Choose the feedback for a good match to 50 ohms on the input and output and approximately 13 dB gain. Use the simulator to explore the frequency response of your amplifier. Perform a 2 tone simulation of the completed amplifier to determine input 3rd order intercept.