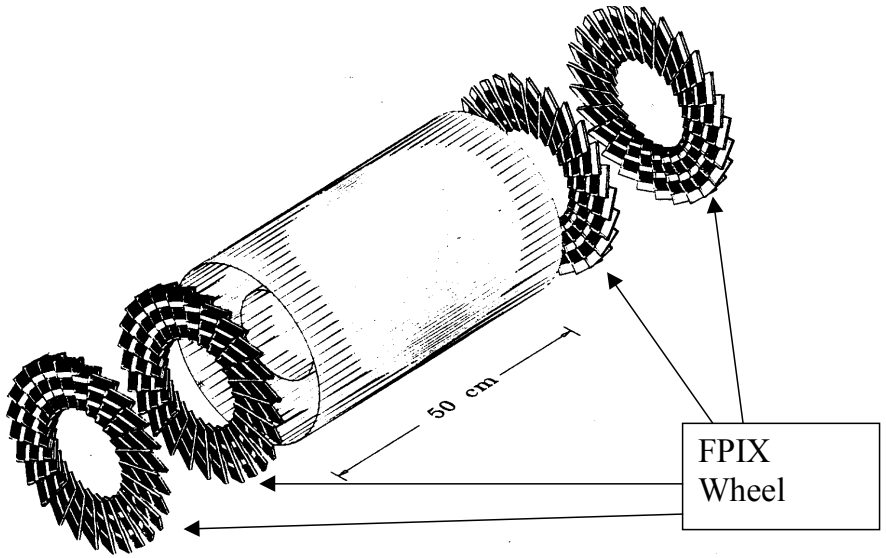
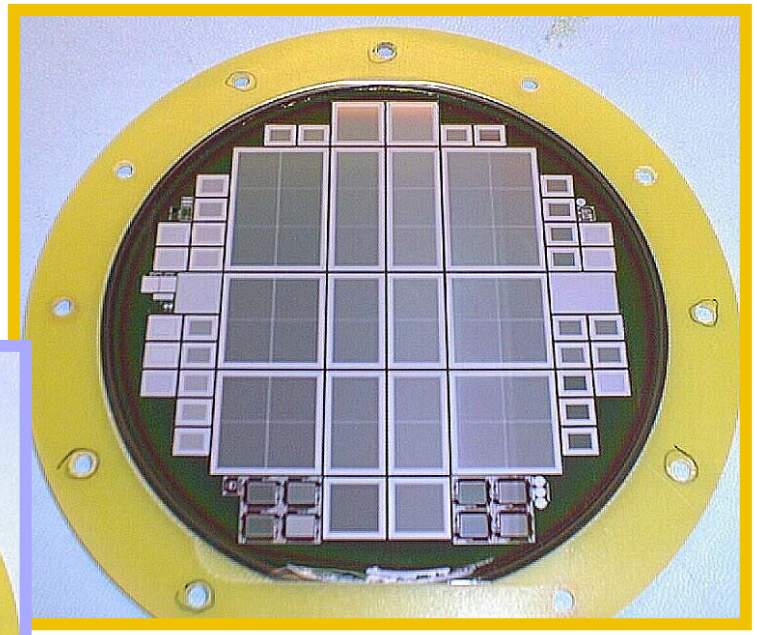
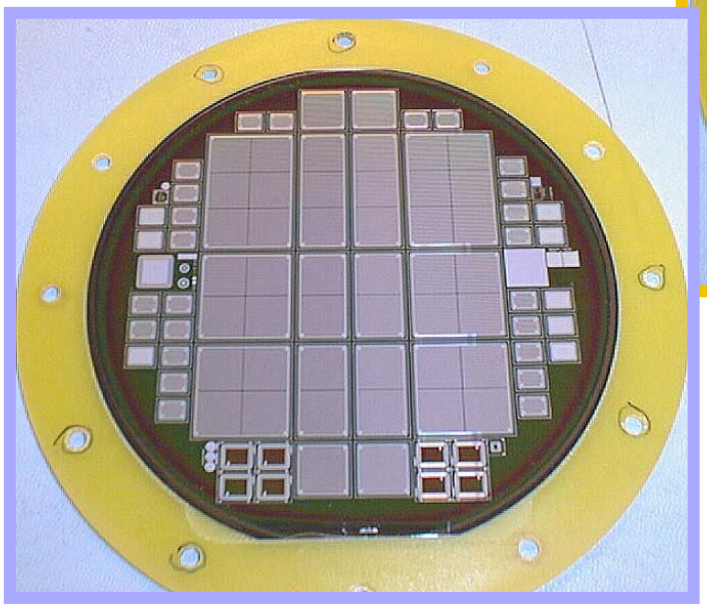
U.S. CMS Project Progress- 1st Quarter FY2003



Left- U.S. CMS has several responsibilities for the Forward Pixel (FPIX) system (shown schematically here) including sensor production. FPIX includes 4 disks containing a total of 96 turbine-like "blades". A 4" wafer can produce 7 Silicon sensors per blade, for a total of 672 Si sensors. Each pixel on a sensor is 150 μm x 150 μm for a toal of ~12 million pixels in



These inner-most sensors of the CMS detector are semiconductor devices. When a pixel is traversed by a charged particle, it produces a signal providing a highly accurate position measurement. Several such measurements for one particle define its trajectory away from the collision point.



FPIX sensor wafers have been developed and tested by Purdue University with positive results, showing an improved average pixel breakdown voltage. Above is a wafer n-side, and at left a wafer p-side from the second submission.

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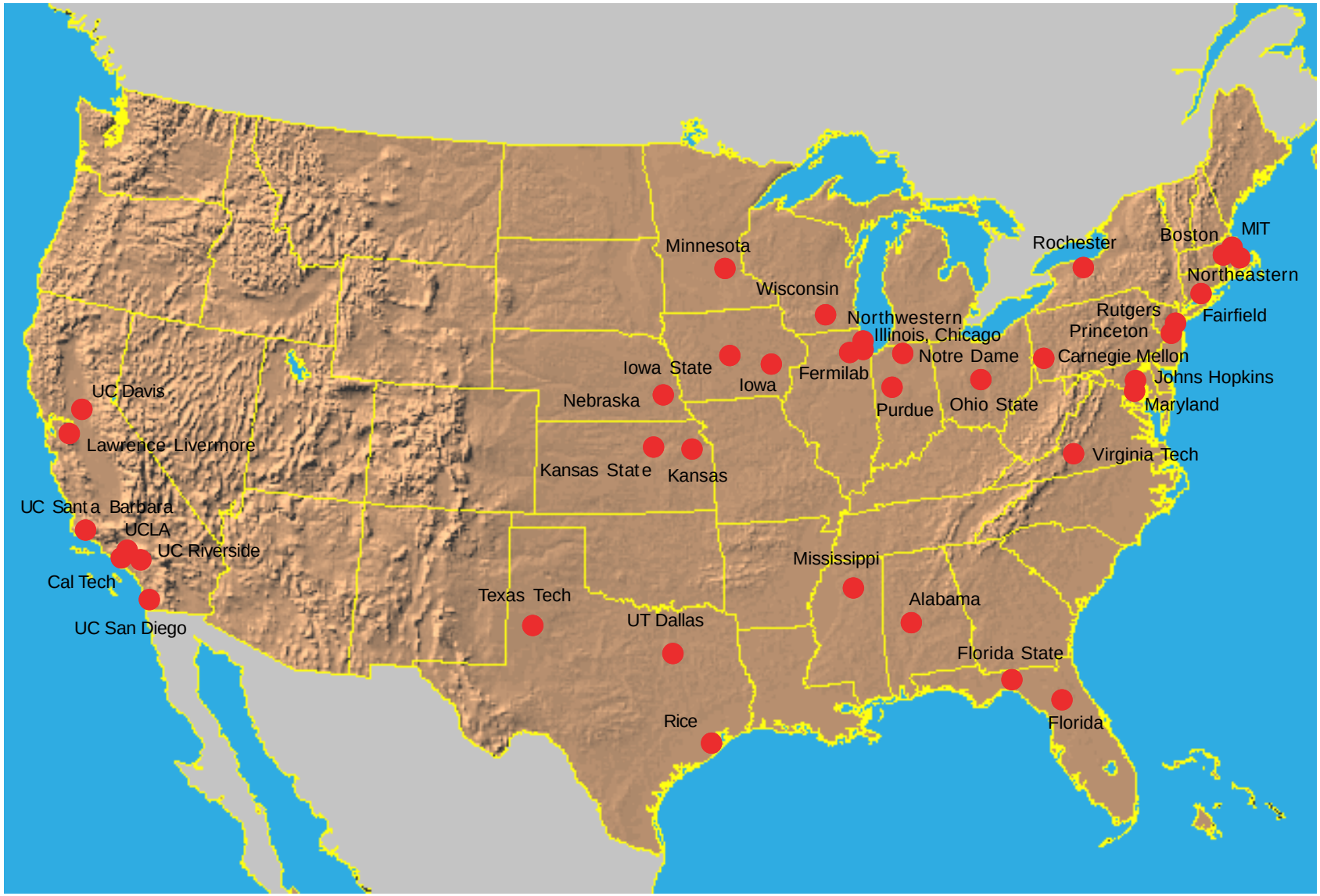

Above- The U.S. CMS collaboration has grown to 38 institutions, as groups join pursue the physics and technical opportunities. Florida Institute of Technology has joined, and Florida International University and Yale University have applied to join. New U.S. groups have recently joined the Silicon Tracker and Electromagnetic Calorimeter efforts.