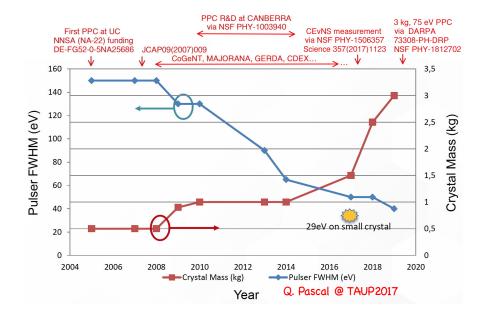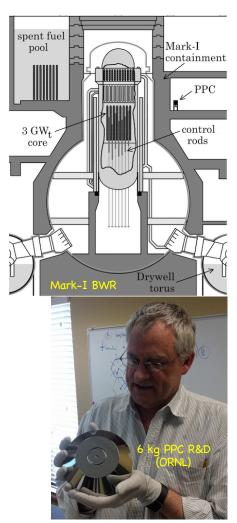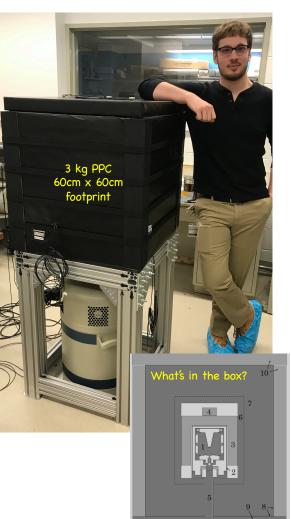# Multi-kg germanium PPCs with FPGA DAQ

- A 4-kg inverted coaxial PPC with 70 eV$_{ee}$ threshold sited 8 meters from a 3 GW$_{th}$ core would provide 1,550 CEνNS events / day, within a compact 60 cm x 60 cm shielding footprint.

- FPGA-based "intelligent trigger" allows stable ultra-low energy threshold (< 100 eV$_{ee}$) with FET-based PPC readout.

- <u>Reactor monitoring</u>: emphasis on simplicity and long-term unassisted operation using cryocoolers, with active (FPGA) and passive (parasitic capacitance reduction) control of microphonics.

- <u>Fundamental ν physics</u>: parallel program of sub-keV quenching factor characterization, essential to assess signs of new physics.

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FPGA DAQ applies deep bag of tricks in real time => ultra-low threshold