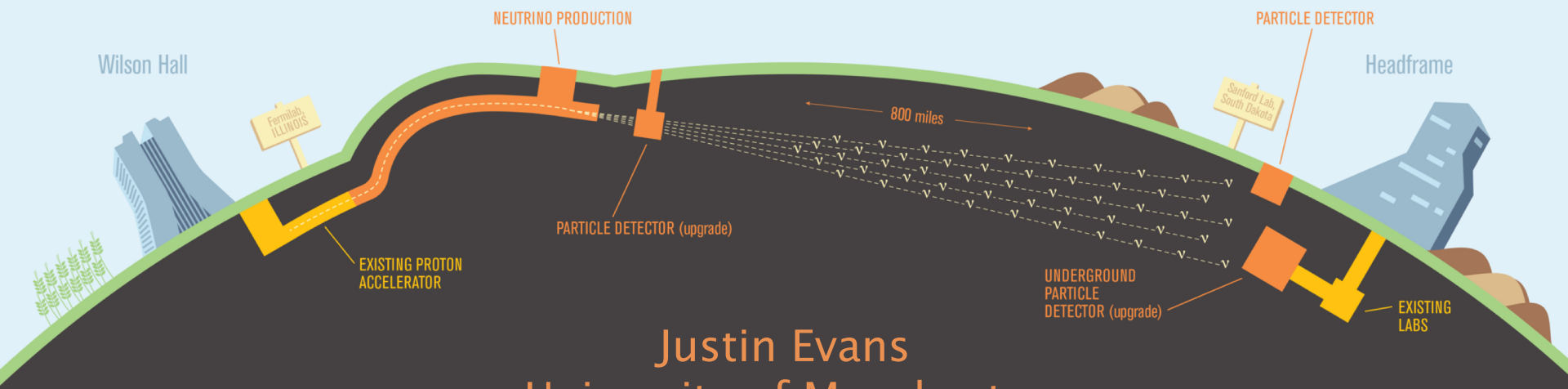


PCB production in the UK



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Universities and effort

UK universities signed up for board production

- Cambridge (0.5 FTE / year)
- Lancaster (1.5 FTE / year)
- Manchester (1.7 FTE / year)
- Sheffield (1.1 FTE / year)
- Sussex (0.8 FTE / year)

This is mainly electrical technician effort

Experience

- We built ProtoDUNE APAs so have experience of working with these boards (PSL produced them and sent them over)
- Experienced electronics and mechanical engineers at Manchester currently thinking through the production and QC procedures
 - Experience from ATLAS, LHCb, SBND, etc, etc

Procurement

Procurement will be centralized

- Money is held at STFC, not at universities
- We can choose whether to produce all boards with one company, split by requirements, etc

Plans

Our default plan is to follow the same procedures as at US sites

- i.e. as presented yesterday
- We have started (Manchester + Sheffield) thinking through how to efficiently make QC measurements over 40k boards, and what measurements to make

We are in very early stages in terms of anything more concrete

- Initial approaches have been made to a couple of PCB-production companies
- We are visiting Keyence (metrology company) in December to talk about QC (i.e. board thickness / feature position measurement) through a laser system
- Considering the possibility of a CMM

We will get as much as possible done in industry

- Each university will then take a specific board 'type' (e.g. head, foot, side, CR, bias) and be responsible for QC and any remaining assembly

Our timeline

- We want to order some boards soon after Christmas to try out the production and QC procedures
- We want to start full production of APAs next summer (July / August)