

CMS Electric Engineer with Ohio State, based in Ohio
<https://inspirehep.net/jobs/2170402>

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Nov. 28, 2022



Job Description



The Ohio State University (OSU) invites applications for a senior research associate to work on the CMS experiment at the LHC.

The successful candidate will participate in the design, construction, and operation of state-of-art electronics for collider experiment detectors for both the HL-LHC upgrade of the CMS detector and the operation of the current CMS detector during Run 3 of the LHC.

A master's degree in physics or electrical engineering with four years of experience or equivalent combination of education and experience is required. Ability to design digital electronics from schematics to board layout and stackup; ability to program firmware - schematic and HDL source (verilog and VHDL); ability to solder through-hole and SMT components; ability to troubleshoot and repair electronics boards using an oscilloscope and troubleshoot issues with testing stations; ability to work with vendors for fabrication and assembly of PCBs; ability to work with CMS collaborators worldwide to solve system issues, maintain electronics and firmware deployed at CERN in Geneva, Switzerland.

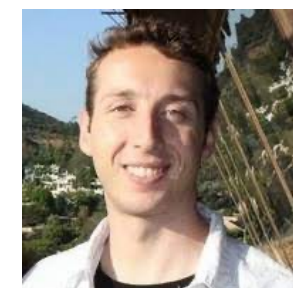
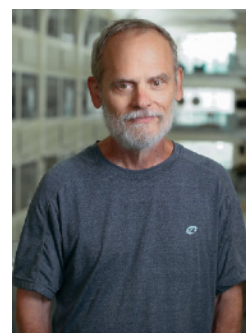
Additional desired skills include:

1. HLS experience desirable, synthesis and compilation through to bit files and PROM files; knowledge of TMR techniques for SEU mitigation
2. Ability to solder components down to 0402 , including fine pitch and BGAs
3. Ability to work with outdated software to maintain legacy firmware(Xilinx ISE 10.1, 14.7)
4. Fluency with programming and scripting languages (C, C++, Python)
5. Familiarity with version control environments (GIT)
6. Experience in integrated circuit design, including ASICs

Ohio State CMS Group



- Ohio State was part of the first wave of U.S. institutes to join CMS in 1994, playing a leading role in design/construction of CSC electronics for EMU
- The OSU CMS group currently has 3 faculty members
 - *Stan Durkin, emeritus*
 - *Brian Winer*
 - *Myself*
- We have 1 scientist/engineer (Ben Bylsma)
 - *He is retiring in 2024, we are looking to hire his replacement with this position*
- We currently have 2 postdocs (Brent, Matt)
- We currently have 5 Ph.D. students (Kai, Estefany, Mike, Ashwin, Ryan)



Shorter Job Description



- The hire will work alongside Ben Bylsma next year
 - *Learn details about CSC FE electronics needed for maintenance and operation of these detectors*
 - *Learn details of EMU upgraded electronics for HL-LHC*
 - *Once trained, take over both of these projects*
- **The job is based in Ohio, with travel to other US institutes + CERN as needed**
- **Position is open until filled**
- **This is (potentially) a permanent position**



How to apply



For additional information and to apply, follow the link below:

https://osu.wd1.myworkdayjobs.com/OSUCareers/job/Columbus-Campus/Research-Senior-Associate_R62229-1

Review of applications will begin upon receipt and continue until the position is filled. E-mail inquiries should be sent to Prof. Christopher S. Hill at chill@physics.osu.edu

To build a diverse workforce, Ohio State encourages applications from women, minorities, veterans, and individuals with disabilities. Flexible work options are available. Ohio State is an NSF ADVANCE Institution, EEO/AA employer.



Additional Material:

A bit about The Ohio State University

Flagship public university for state of Ohio



**THE OHIO STATE
UNIVERSITY**

OSU in Columbus, OH

- *The capital and largest city*
- *pop. ~1M*



One of the largest US Universities



- Founded in 1870 as one of the “land grant” universities
- *Morrill Act, signed by Lincoln as a response to the industrial revolution*
- 61,000 students
- 46,000 of them undergraduates
- One of the largest employers in the state
- 27,000 administrative staff
- 7,300 academic staff



OSU Physics Department



- Also one of the largest in US
- 60 faculty, wide range of research

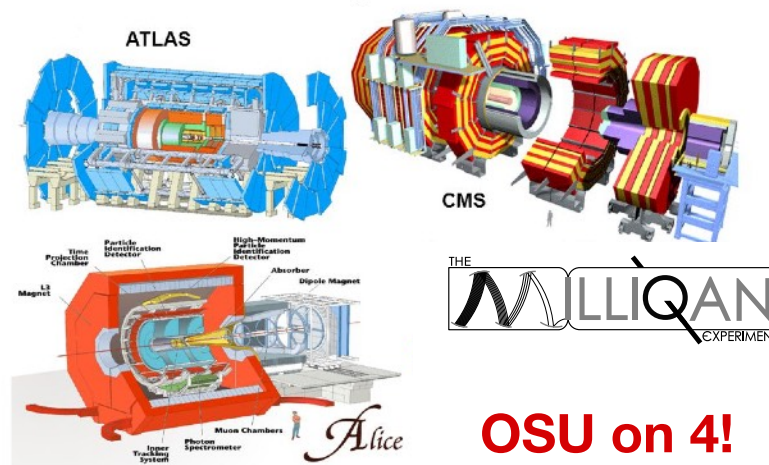
- *AMO, biophysics, condensed matter, nuclear, astrophysics, cosmology, PER, and of course HEP*



Ken Wilson,
OSU 1988–2008



LHC Experiments



OSU on 4!

Last but not least, 🏈 is a big part of life at OSU ...

Go Buckeyes!

