
Faculty Position Academic-Career Advising Panel - *some thoughts from a lab staff scientist*

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Some Observations

From a US perspective.....

- Lattice gauge theory is now central to both HEP and NP



The 2015
LONG RANGE PLAN
for NUCLEAR SCIENCE



Theory Initiative

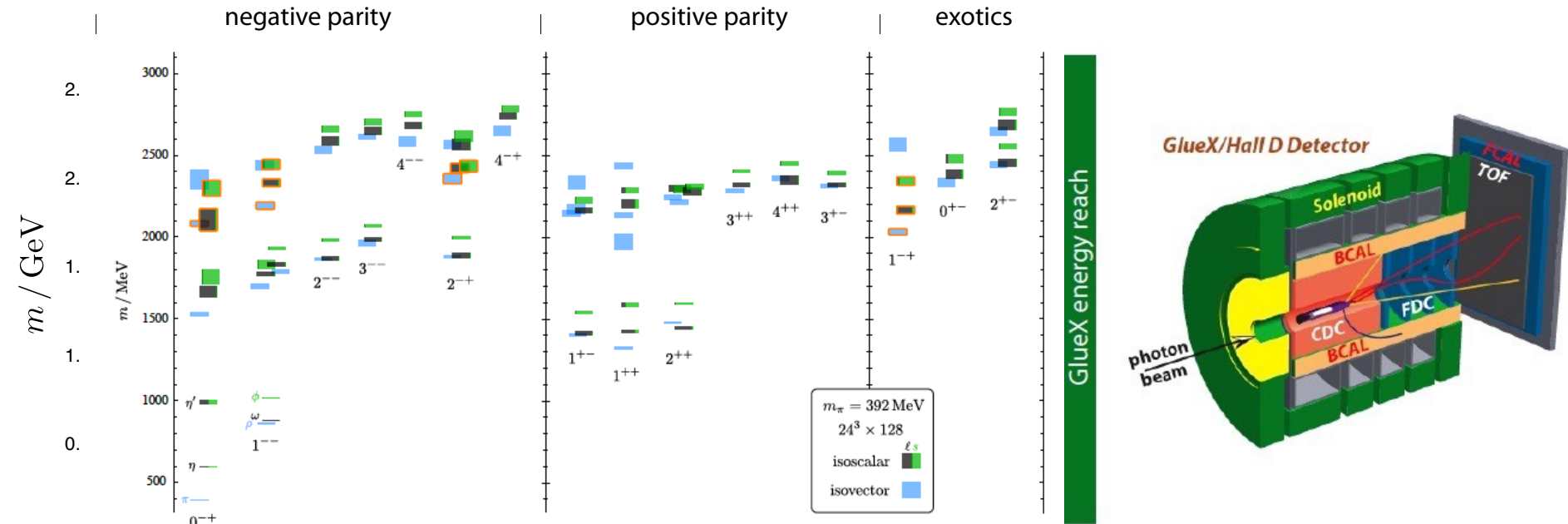
To meet the challenges and realize the full scientific potential of current and future experiments, we require new investments in theoretical and computational nuclear physics.

“We recommend new investments in computational nuclear theory that exploit the U.S. leadership in high-performance computing. These investments include a timely enhancement of the nuclear physics contribution to the Scientific Discovery through Advanced Computing program and complementary efforts as well as the deployment of the necessary capacity computing.”

“ECP is chartered with accelerating delivery of a capable exascale computing ecosystem to provide breakthrough modeling and simulation solutions to address the most critical challenges in scientific discovery, energy assurance, economic competitiveness, and national security.”

Isoscalar Meson Spectrum

Dudek et al, arXiv:1309.2608, arXiv:0909.0200



Diagonalize in 2x2 *flavor space*

$$C = \begin{pmatrix} -C^{ll} + 2D^{ll} & \sqrt{2}D^{ls} \\ \sqrt{2}D^{sl} & -C^{ss} + D^{ss} \end{pmatrix}$$

- Spin-identified single-particle spectrum: states of spin as high as four
- Hidden flavor mixing angles extracted - except 0⁺, 1⁺⁺ near ideal mixing
- **First determination of exotic isoscalar states: comparable in mass to isovector**

J. Dudek et al., PRD73, 11502

Some Observations - II

- Increasing number of long-term positions: University, Lab Staff Scientist, and “bridge”

	HEP	NP	Computation Scientist	Industry	Teaching	non-US
2007 - 2017	11	13	4	3	3	7 (?)

- Many faculty and *post-doctoral* positions are *programmatic*
 - *Bridge* or *Joint* positions with DOE National Labs or RIKEN
 - “Topical Collaborations”
 - SciDAC/ECP

Stars are aligned - diverse opportunities

Exploiting these opportunities

- You have good publication record, done significant work,.....
- Know (and read) what you are applying for.....
 - Is it a position you want, e.g. physics or computation?
 - Are you the person for the position, and can you show that?
- Particularly important for programmatic positions - research statement should reflect this!
- Example: Jefferson Lab is a (single-purpose) Dept of Energy Lab
 - We are a *nuclear physics* lab, so in your research statement
 - Address the physics (and possibly computational) goals of the lab. “My research tackles fundamental problems of proton structure.. “ rather than “My research focuses on searches for BSM physics at the LHC”.
- Bridge positions have two often overlapping constituencies
 - The laboratory - will your research strengthen the mission of the lab
 - The university - broaden the activities, engage with students, teaching....

Random thoughts...

- Research statement should be ambitious but realistic - and explain why what you propose is important.
- Having exposure is crucial - seminars, invited talks at conferences, email interactions...
- Colloquia - balance communicating to broad audience with demonstrating you have and will perform high-impact research. And attract funding!
- Don't be put off applying for US faculty positions because, say, you haven't worked in the US.