

BEST COLLABORATION

Swagato Mukherjee



May 2016, Bloomington

Beam Energy Scan Theory Collaboration



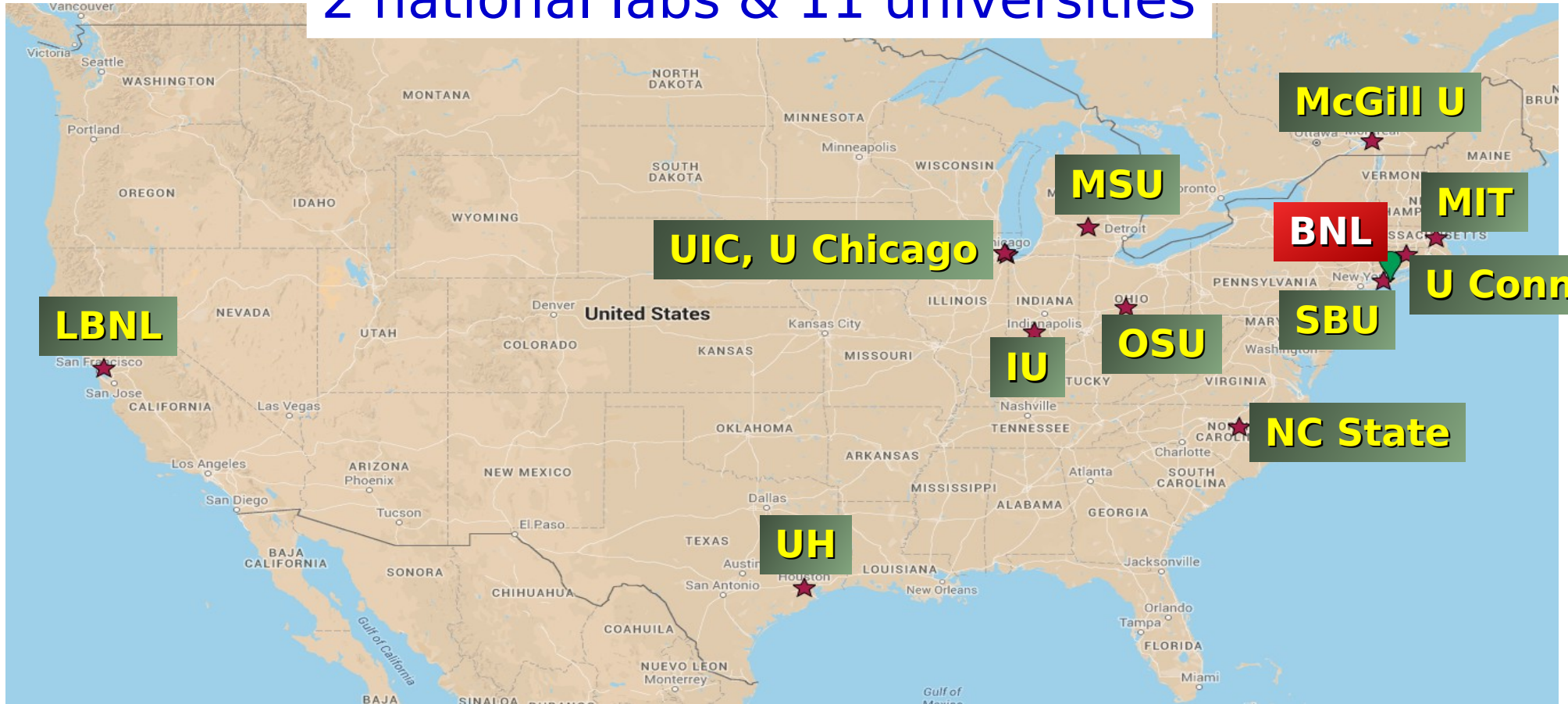
Topical Collaboration in Nuclear Theory

2016-2020

funded by:
US Department of Energy,
Office of Nuclear Physics

Topical Collaboration: fixed-term, multi-institution collaborations established to investigate a specific topic in nuclear physics of special interest to the community

2 national labs & 11 universities



17 principal investigators



S. Mukherjee (project director & co-spokesperson, BNL)

V. Koch (co-spokesperson, LBNL)

F. Karsch, B. Schenke, R. Venugopalan (BNL)

G. Dunne (U Conn)

U. Heinz (OSU)

D. Kharzeev (SBU/BNL)

J. Liao (IU)

S. Pratt (MSU)

K. Rajagopal (MIT)

C. Ratti (UH)

T. Schaefer (NCState)

M. Stephanov, H. U. Yee (UIC)

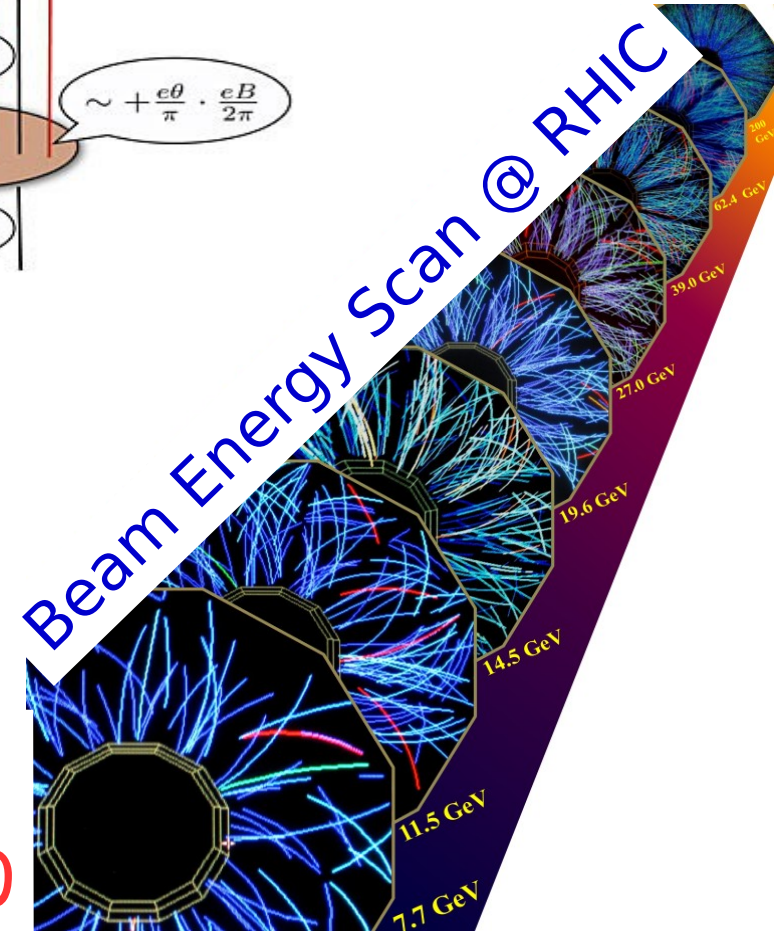
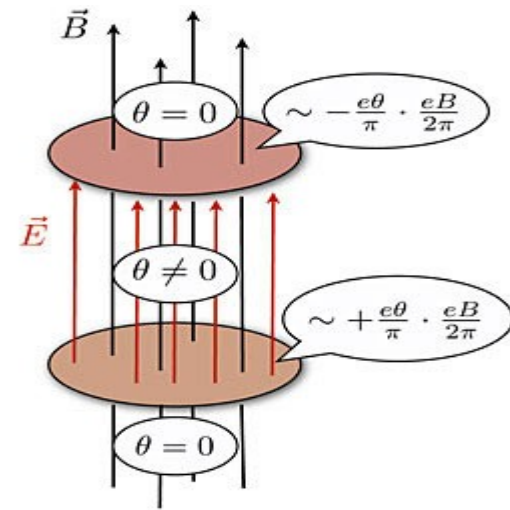
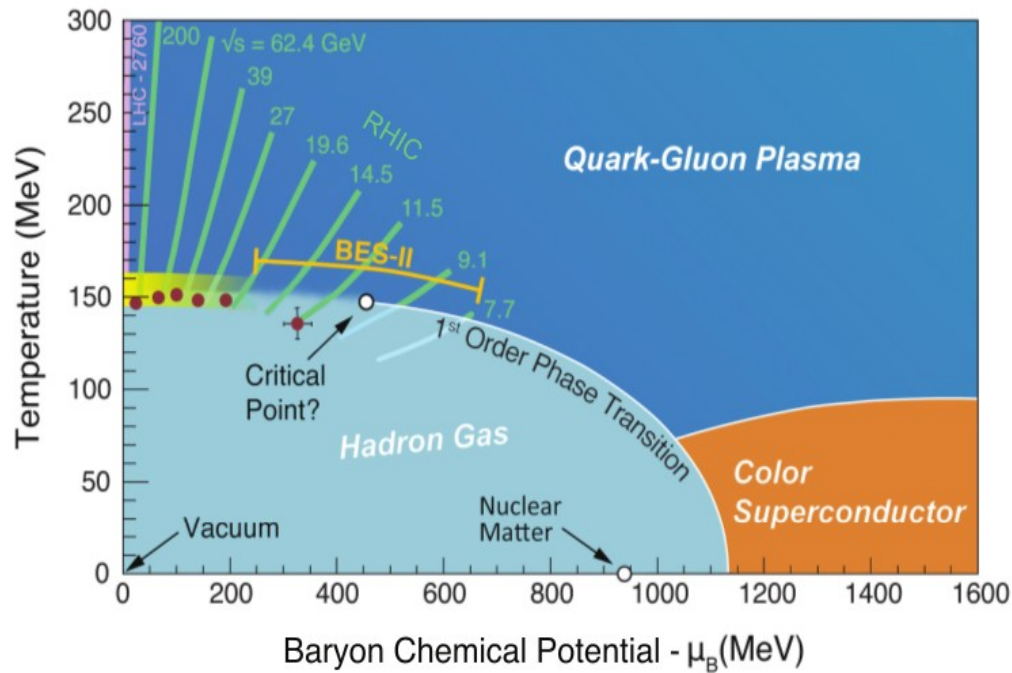
D. T. Son (U Chicago)

10 graduate students

X. An (UIC), D. Bazow (USU), S. Li (UIC), M. Mace (BNL/SBU),
K. Mamo (UIC), M. McNelis (OSU), P. Parotto (UH),
M. Prahdeep (UIC), S. Shi (IU), P. Steinbrecher (BNL)

3 postdoctoral fellows

Y. Hirono (BNL), Y. Jiang (IU), Y. Yin (BNL→MIT)



phases & properties of baryon-rich strong-interaction matter

chiral-anomaly induced effects in QGP

**BES II:
2019-2020**

- / discover, or put constraints on the existence, of a critical point in the QCD phase diagram

- / locate the onset of chiral symmetry restoration by observing correlations related to anomalous hydrodynamic effects in quark gluon plasma

- / construct and provide a theoretical framework for interpreting the results from the BES @ RHIC
 - hot-dense lattice QCD
 - initial state models
 - state-of-the-art hydrodynamic codes incorporating dissipation, hydrodynamic & critical fluctuations, effects of the chiral anomaly
 - hadronic models of the final state of a heavy ion collision