FACILITY FOR RARE ISOTOPE BEAMS

March, 2011

Dear Members of Congress:

We the undersigned 315 members of the Users Organization of the Facility for Rare Isotope Beams are writing in support of funding to support the scientific research missions of the Department of Energy's (DOE) Office of Science and the National Science Foundation (NSF). We also strongly urge Congress to provide full funding for the Facility for Rare Isotope Beams (FRIB) through the Nuclear Physics program at the DOE Office of Science. This will bolster America's global economic competitiveness and enhance our national security by enabling the U.S. to sustain and enhance its technological leadership position in the critical field of nuclear science.

FRIBUSERS, ORG

We recognize that the 112th Congress is faced with a difficult budget environment, but we are very pleased that a strong bipartisan consensus has emerged over the past few years in Congress that robust investments in science and technology play a critical role ensuring continued U.S. prosperity. The Facility for Rare Isotope Beams is a key component of the research infrastructure needed to advance the field of nuclear science, as confirmed by both the DOE Nuclear Science Advisory Committee<sup>1</sup> and the National Academies<sup>2</sup>. This national user facility will enable scientists across the country to understand the workings of nature's strong force, unravel the mysteries of the cosmic origin of atoms, devise tests for the fundamental laws of nature, and create new isotopes and tools for other fields of science, medicine, national security, and industry.

Not only does U.S. leadership in nuclear science have broad scientific and economic impact, it is also critical to the development of a talented and skilled nuclear workforce. Advances in the field of nuclear science have underpinned many of the world-changing breakthroughs in modern medical imaging, nuclear medicine, computer modeling and simulation, and energy production that have improved our lives and the world around us. However, the American Physical Society report on the Readiness of the U.S. Nuclear Workforce for the 21st Century Challenges<sup>3</sup> discusses the "critical shortages in the U.S. nuclear workforce" and states that "There will be a continuing, long-term, significant need for nuclear scientists and engineers in industry, government, and academia, across a wide range of disciplines."

Continued funding for the foundations of our nuclear science research capabilities, such as the Facility for Rare Isotope Beams, is critical to U.S. technological leadership, our national security, and to our long-term economic prosperity. We hope you will take the broad support of the nuclear science community - evidenced by this letter - into close consideration as you set Congressional budget priorities.

Sincerely,

The following undersigned Members of the FRIB Users Organization\*

\* We are signing of our own accord and not on behalf of the institution for which we are employed.

<sup>1</sup> Nuclear Science Advisory Committee 2007 Long Range Plan: "The Frontiers of Nuclear Science"; U.S. DOE

<sup>2</sup> "Scientific Opportunities with a Rare-Isotope Facility in the United States", Nat. Res. Council, Nat. Academy, 2007 <sup>3</sup> "Pagdinges of the U.S. nuclear Workforge for 21st Captury Challenges". American Physical Society Pagert from

<sup>3</sup> "Readiness of the U.S. nuclear Workforce for 21st Century Challenges", American Physical Society Report from the Panel on Public Affairs, 2008

USERS ORGANIZATION OF THE **FACILITY FOR RARE ISOTOPE BEAMS** 

## FRIB USERS.ORG

Aderemi Adekola Rutgers University

Tan Ahn Yale University

Martin Alcorta Argonne National Laboratory

> Alan Amthor Bucknell University

Narayanaswami Anantaraman National Superconducting Cyclotron Laboratory Michigan State University

> John Anderson Argonne National Laboratory

Ani Aprahamian University of Notre Dame

Sam M. Austin National Superconducting Cyclotron Laboratory Michigan State University

> Andrew Ayres University of Tennessee

Lagy Baby Florida State University, Tallahassee

Vincent Bader National Superconducting Cyclotron Laboratory

Kevin Bailey Argonne National Laboratory

Baha Balantekin University of Wisconsin-Madison

James Ball Oak Ridge National Laboratory, retired

> Laura Bandura Michigan State University

Adriana Banu James Madison University Physics and Astronomy Dept.

Dan Bardayan Oak Ridge National Laboratory

Brent Barker Michigan State University

Brad Barquest National Superconducting Cyclotron Laboratory

> Bruce Barrett University of Arizona

Ramon Barthelemy Western Michigan University

Wolfgang Bauer Michigan State University

Travis Baugher National Superconducting Cyclotron Laboratory

Thomas Baumann National Superconducting Cyclotron Laboratory

> Daniel Bazin Michigan State University

Cornelius Beausang University of Richmond

Fred Becchetti University of Michigan

Ana Becerril National Superconducting Cyclotron Laboratory Michigan State University Shadi Bedoor Western Michigan University

Carla Benatti Michigan State University Peter Bender

Florida State University Georg Berg

University of Notre Dame Jill Berryman

Michigan State University Eric Berryman

National Superconducting Cyclotron Laboratory

Carlos Bertulani Texas A&M University - Commerce

> Carrol Bingham University of Tennessee

Jeff Blackmon Louisiana State University

Scott Bogner National Superconducting Cyclotron Laboratory Michigan State University

> Georg Bollen Michigan State University

> Ryan Braid Colorado School of Mines

> > William Brantley Furman University

Nathan Brewer Vanderbilt University

Maxime Brodeur National Superconducting Cyclotron Laboratory Michigan State University

> Edward Brown Michigan State University

> > James Brown Wabash College

Alex Brown Michigan State University

Juan Burgos Michigan State University

Scott Bustabad Michigan State University

Roger Calantone Michigan State University

Shane Caldwell University of Chicago

Christopher Campbell Lawrence Berkeley National Laboratory

> Anne Caraley SUNY Oswego

Lucia Cartegni University of Tennessee

> Richard Casten Yale University

David Caussyn Florida State University

Joseph Cerny University of California, Berkeley

David Chamulak Argonne National Laboratory Christopher Chiara University of Maryland

Kelly Chipps Colorado School of Mines

Partha Chowdhury University of Massachusetts Lowell

Gregory Christian National Superconducting Cyclotron Laboratory Michigan State University

> Greg Chubaryan Texas A&M University

Cyclotron Institute Timothy Chupp University of Michigan

Jolie Cizewski Rutgers University

Ryan Clement Idaho National Laboratory

Douglas Cline University of Rochester

Philippe Collon University of Notre Dame

Paul Cottle Florida State University

Manoel Couder University of Notre Dame

Daniel Coupland National Superconducting Cyclotron Laboratory Michigan State University Aaron Couture

Los Alamos National Laboratory

Heather Crawford Lawrence Berkeley National Laboratory

Richard Cyburt

Michigan State University Pawel Danielewicz

Michigan State University

Cary Davids Argonne National Laboratory

> Piotr Decowski Smith College

Marcelo Del Santo National Superconducting Cyclotron Laboratory Michigan State University

> Willem Dickhoff Washington University

Paul Fallon Lawrence Berkeley National Laboratory

Michael Famiano Western Michigan University

> Benjamin Fenker Texas A&M University

Charles Folden Texas A&M University

Ronald Fox National Superconducting Cyclotron Laboratory Michigan State University

> Nathan Frank Augustana College

Adam Fritsch Michigan State University

FACILITY FOR RARE ISOTOPE BEAMS

## FRIBUSERS.ORG

Richard Furnstahl Ohio State University

Alexandra Gade National Superconducting Cyclotron Laboratory Michigan State University

> Alfredo Galindo-Uribarri Oak Ridge National Laboratory

Aaron Galonsky Michigan State University

Eugene Galyaev National Superconducting Cyclotron Laboratory

> Alejandro Garcia University of Washington

> Umesh Garg University of Notre Dame

Donald Geesaman Argonne National Laboratory

Amanda Gehring National Superconducting Cyclotron Laboratory Michigan State University

> Konrad Gelbke Michigan State University

Sebastian George National Superconducting Cyclotron Laboratory

Tom Ginter National Superconducting Cyclotron Laboratory

> Thomas Glasmacher Michigan State University

> Uwe Greife Colorado School of Mines

Henry Griffin University of Michigan

Robert Grzywacz University of Tennessee

Carol Guess University of Massachusetts Lowell

> Joseph Hamilton Vanderbilt University

Christine Hampton CALC

John Hardy Texas A&M University

Marc Hausmann Michigan State University

Lawrence Heilbronn University of Tennessee

Heiko Hergert National Superconducting Cyclotron Laboratory

Rachel Hodges National Superconducting Cyclotron Laboratory Michigan State University

> Calem Hoffman Argonne National Laboratory

Jeremiah Holzbauer Michigan State University

Jun Hong Michigan State University

Mihai Horoi Central Michigan University

> Meredith Howard Rutgers University

Jae-Kwang Hwang Vanderbilt University

Christian Iliadis University of North Carolina at Chapel Hill

> Sergey Ilyushkin Mississippi State University

Hironori Iwasaki National Superconducting Cyclotron Laboratory Michigan State University

Richard Jacobson National Superconducting Cyclotron Laboratory Michigan State University

> Robert V. F. Janssens Argonne National Laboratory

> > Kate Jones University of Tennessee

Ninad Joshi National Superconducting Cyclotron Laboratory Michigan State University

> Yoav Kashiv University of Notre Dame

Edwin Kashy Michigan State University

Wimmer Kathrin National Superconducting Cyclotron Laboratory Michigan State University

> Robert Kaye Ohio Wesleyan University

Micha Kilburn National Superconducting Cyclotron Laboratory

Kritsada Kittimanapun National Superconducting Cyclotron Laboratory Michigan State University

> Jeff Klatsky Florida State University

Andrew Klose Michigan State University

> Noemie Koller Rutgers University

Filip Kondev Argonne National Laboratory

Richard Kouzes

Raymond Kozub Tennessee Tech University

Anthony Kuchera Florida State University

Gerfried Kumbartzki Rutgers The State University of New Jersey

Anna Kwiatkowski National Superconducting Cyclotron Laboratory Michigan State University

> Kris Kwiatkowski Los Alamos National Lab

Suzanne Lapi Washington University in St. Louis

Alain Lapierre National Superconducting Cyclotron Laboratory

Nicole Larson National Superconducting Cyclotron Laboratory Helmut Laumer Michigan State University

Torben Lauritsen Argonne National Laboratory

> Linwood Lee Stony Brook University

Youngsun Lee Michigan State University

I-Yang Lee Lawrence Berkeley Lab

Daniela Leitner Michigan State University

Antoine LEMASSON National Superconducting Cyclotron Laboratory Michigan State University

> Felix Liang Oak Ridge National Laboratory

Sean Liddick National Superconducting Cyclotron Laboratory

> C.J. (Kim) Lister Argonne National Laboratory

> Jorge Lopez University of Texas at El Paso

Wolfgang Lorenzon University of Michigan

William Lynch Michigan State University

Wenchao Ma Mississippi State University

Augusto Macchiavelli Lawrence Berkeley National Laboratory

> Guillaume Machicoane Michigan State University

Miguel Madurga University of Tennessee

Shashikant Manikonda Argonne National Laboratory

> Brett Manning Rutgers University

Paul Mantica Michigan State University

Felix Marti Michigan State University

Milan Matos Louisiana State University

James Matta University of Notre Dame

Sean McDaniel Michigan State University

Alan McIntosh Texas A&M University

Gail McLaughlin North Carolina State University

Dennis McNabb Lawrence Livermore National Laboratory

Rhiannon Meharchand National Superconducting Cyclotron Laboratory Michigan State University

> Mike Mehlman Texas A&M Cyclotron Institute

FACILITY FOR RARE ISOTOPE BEAMS

## FRIB USERS.ORG

Krista Meierbachtol Michigan State University

Zachary Meisel National Superconducting Cyclotron Laboratory Michigan State University

Dab Melconian Texas A&M University Cyclotron Institute

> Bradley Meyer Clemson University

Deseree Meyer Rhodes College

David Miller University of Tennessee

Kei Minamisono National Superconducting Cyclotron Laboratory Michigan State University

Wolfgang Mittig National Superconducting Cyclotron Laboratory Michigan State University

Fernando Montes National Superconducting Cyclotron Laboratory

> David Morrissey Michigan State University

Chris Morse National Superconducting Cyclotron Laboratory

Michelle Mosby National Superconducting Cyclotron Laboratory

> Sigmund Mosko University of Tennessee

Oscar Naviliat National Superconducting Cyclotron Laboratory Michigan State University

> Witold Nazarewicz University of Tennessee

Ngoc Nguyen Michigan State University

Jerry Nolen Argonne National Laboratory

Francois Nortier Argonne National Laboratory

Filomena Nunes Michigan State University

Volker Oberacker Vanderbilt University

Don Olive Gardner-Webb University

> Patrick OMalley Rutgers University

William Ormand Lawrence Livermore National Laboratory

Stephen Padgett University of Tennessee-Knoxville

Steven Pain Oak Ridge National Laboratory

Gregory Pang National Superconducting Cyclotron Laboratory Michigan State University

> Thomas Papenbrock University of Tennessee

Sungkyun Park Florida State University Nancy Paul University of Notre Dame

Stanley Paulauskas The University of Tennessee at Knoxville

Georgios Perdikakis National Superconducting Cyclotron Laboratory

Jorge Pereira National Superconducting Cyclotron Laboratory

Muslema Pervin National Superconducting Cyclotron Laboratory Michigan State University

> William Peters Oak Ridge Associated Universities

> Andreas Piechaczek Oak Ridge Associated Universities

> > Jorge Piekarewicz Florida State University

Stuart Pittel University of Delaware

John Popielarski Michigan State University

Mauricio Portillo Michigan State University

Boris Pritychenko Brookhaven National Laboratory

> Michael Quinlan University of Rochester

Stephen Quinn Michigan State University

David Radford Oak Ridge National Laboratory

Francesco Raiola Colorado School of Mines

Akunuri Ramayya Vanderbilt University

Andrew Ratkiewicz National Superconducting Cyclotron Laboratory Michigan State University

> Sanjay Reddy Los Alamos National Laboratory

Matthew Redshaw Michigan State University

Jennifer Jo Ressler Lawrence Livermore National Laboratory

> Walter Reviol Washington University

> > Lewis Riley Ursinus College

Mark Riley Florida State University

Ryan Ringle National Superconducting Cyclotron Laboratory

> Grigory Rogachev Florida State University

Andrew Rogers Argonne National Laboratory

Krzysztof Rykaczewski Oak Ridge National Laboratory

> Mukesh Saini Florida State University

Francesca Sammarruca University of Idaho

Alisher Sanetullaev Michigan State University

Fred Sarazin Colorado School of Mines

Masaki Sasano National Superconducting Cyclotron Laboratory Michigan State University

> Joshua Savory Florida State University

Royce Sayer C. S. Engineering Inc.

Hendrik Schatz Michigan State University

Kyle Schmitt The University of Tennessee

Stefan Schwarz National Superconducting Cyclotron Laboratory

Nicholas Scielzo Lawrence Livermore National Laboratory

> Michael Scott Michigan State University

Gregory Severin University of Wisconsin-Madison

Dariusz Seweryniak Argonne National Laboratory

Bradley Sherrill Michigan State University

Dinesh Shetty Western Michigan University

Aimee Shore Michigan State University

John Shriner Tennessee Tech University

Angelo Signoracci Michigan State University

Anna Simon National Superconducting Cyclotron Laboratory

> Duane Smalley Colorado School of Nines

Jenna Smith National Superconducting Cyclotron Laboratory Michigan State University

> Michael Smith Oak Ridge National Laboratory

Alvin Smucker Michigan State University

Lee Sobotka Washington University

Lakshmi Soundara Pandian University of Massachusetts Lowell

> Nathan Sparks Florida State University

Gene Sprouse American Physical Society

Artemis Spyrou National Superconducting Cyclotron Laboratory Michigan State University

Mathias Steiner National Superconducting Cyclotron Laboratory

FACILITY FOR RARE ISOTOPE BEAMS

## FRIB USERS.ORG

Matthew Sternberg University of Chicago

Ionel Stetcu University of Washington

Andreas Stolz National Superconducting Cyclotron Laboratory Michigan State University

Mark Stoyer Lawrence Livermore National Laboratory

> Daniel Stracener Oak Ridge National Laboratory

Ragnar Stroberg Michigan State University

Scott Suchyta National Superconducting Cyclotron Laboratory Michigan State University

Daisuke Suzuki National Superconducting Cyclotron Laboratory

> Michael Syphers Michigan State University

Samuel Tabor Florida State University

Oleg Tarasov National Superconducting Cyclotron Laboratory Michigan State University

> Michael Thoennessen Michigan State University

Ian Thompson Lawrence Livermore National Laboratory

> Luke Titus Michigan State University

Livius Trache Texas A&M University

Robert Tribble Texas A&M University

Vandana Tripathi Florida State University

James Truran University of Chicago and Argonne National Laboratory

Betty Tsang Michigan State University Claudio Ugalde University of Chicago

Sait Umar Vanderbilt University Neelam Upadhyay

National Superconducting Cyclotron Laboratory

LeShawna Valdez Michigan State University

John Vincent Michigan State University

Sophia Vinnikova National Superconducting Cyclotron Laboratory Michigan State University

> Alexander Volya Florida State University

Phil Voss National Superconducting Cyclotron Laboratory Michigan State University

> Paul Voytas Wittenberg University

David Walter Colorado School of Mines

Xiaofeng Wang Florida State University

Hui Wang Michigan State University

Emily Wang National Superconducting Cyclotron Laboratory Michigan State University

> Jie Wei Michigan State University

> Phil Weinstein Michigan State University

> John Weisend Michigan State University

Dirk W. Weisshaar National Superconducting Cyclotron Laboratory Michigan State University

> Volker Werner Yale University

Ingo Wiedenhoever Florida State University Andrew Wilson Florida State University

Jeff Winger Mississippi State University

Jack Winkelbauer National Superconducting Cyclotron Laboratory

> John Wood Georgia Tech

Christopher Wrede University of Washington

Ching-Yen Wu Lawrence Livermore National Laboratory

> Alan Wuosmaa Western Michigan University

> > Steven Yates University of Kentucky

Sherry Yennello Texas A&M University

Patrick Young Arizona State University

Mike Youngs National Superconducting Cyclotron Laboratory Michigan State University

Stephen Zajac National Superconducting Cyclotron Laboratory

Peter Zavodszky General Electric Global Research Center

Remco Zegers National Superconducting Cyclotron Laboratory Michigan State University

> Vladimir Zelevinsky Michigan State University

> Qiang Zhao Michigan State University

Shaofei Zhu Argonne National Laboratory