

LABORATORY UPDATE FOR ALUMNI



▼
JULY
2015

Welcome to the new FRIB Laboratory Update for Alumni

Story contributed by Karen King, Communications Manager

Welcome to the new FRIB Laboratory Update for Alumni! We are excited to send our first issue of this publication, and hope you are glad to receive it.

Our goal is to stay connected to you, our National Superconducting Cyclotron Laboratory and Facility for Rare Isotope Beams alumni. For the purpose of this publication, we consider laboratory alumni to be former students, postdocs, visitors, retired faculty and staff, and anyone else who's interested. We want to keep you updated about all the latest laboratory news as we transition from the National Superconducting Cyclotron Laboratory and the FRIB Project to the new FRIB Laboratory. There's much to report on as we are deep into civil and technical construction of FRIB, managing to early completion in fiscal year 2021.

In addition, we want to feature you and share all the

important contributions you are all making to the world since leaving NSCL and FRIB.

Tell us what you've been up to! We'd like to feature at least one story each issue about a laboratory alumnus. Please send story tips about yourself and/or fellow alumni to alumni@frib.msu.edu. In this first issue we feature a story about Damian Handzy, CEO of Investor Analytics, who earned his PhD in physics in 1995 while working at NSCL.

This publication is for you, so please let us know if there is specific content you'd like to see. As the new associate laboratory director for user relations, Michael Thoennesen will serve as editor of this publication, working closely with me and the FRIB Communications group. Your comments and suggestions are always welcome at alumni@frib.msu.edu.

FRIB Project and NSCL transition to FRIB Laboratory

Story contributed by Thomas Glasmacher, FRIB Laboratory Director

Effective March 1, MSU President Lou Anna K. Simon reorganized the reporting functions for the National Superconducting Cyclotron Laboratory and the FRIB Project.

FRIB now reports to MSU's executive vice presidents and NSCL reports through FRIB. The reorganization initiates the transition to a unified FRIB Laboratory organization, the next natural step in realizing an advanced rare isotope beam facility for the nuclear science community.



Thomas Glasmacher

Some roles have changed in support of this transition:

- Thomas Glasmacher is FRIB Laboratory director and Paul Mantica is the deputy laboratory director.



Brad Sherrill

- Brad Sherrill is the NSCL director.
- Michael Thoennesen is now associate laboratory director for user relations.

Former longtime NSCL Director

Konrad Gelbke stepped down as director in May. We are so grateful to Konrad for 23 years of excellent leadership that brought the laboratory where it is today. Read more about Konrad's remarkable career later in this issue.

As noted in the story above, we will strive to send this update quarterly to keep you apprised of all the latest happenings at the FRIB Laboratory. We welcome your suggestions and questions; please email them to alumni@frib.msu.edu.

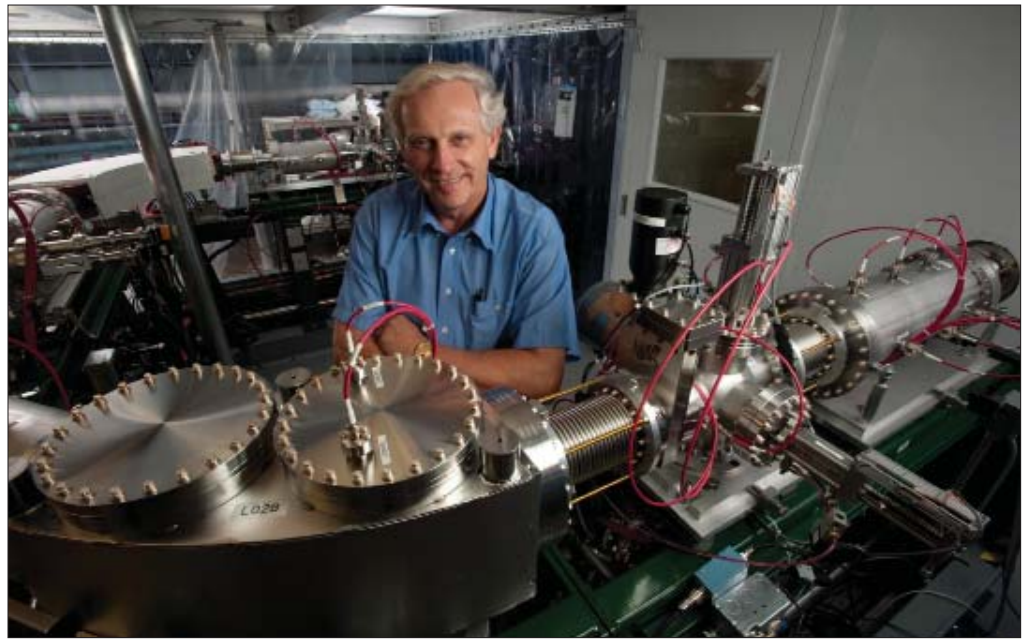
Konrad Gelbke steps down after 23 years at the helm of NSCL

On May 16, Konrad Gelbke stepped down as NSCL director after 23 years. We'd like to take this opportunity to recognize Konrad's remarkable leadership that brought the laboratory where it is today.

In 1990, Konrad was named a University Distinguished Professor. This rank is selective and is presently held by 122 individuals, roughly 2 percent of the professorate. Distinguished Professors are expected to be leaders in their specialty areas, and already in 1990 it was clear that Konrad fit that description.

Two years later, Konrad became director of NSCL on July 1, 1992, taking over from Sam Austin and following an international search. The lab was performing well, but NSF funding was tight and the laboratory had to defend its status and ensure its continuation. Konrad pushed to get the S800 funded and encouraged the transition to rare isotope science. This gave the NSCL a compelling mission and future. Moving on to a next generation accelerator system seemed necessary, and Konrad led the effort to develop, fund, and build the present Coupled Cyclotron Facility (CCF). While that would have been a crowning success for most people he had the vision to establish FRIB at MSU.

In 1999 Konrad made the bold decision to push for the RIA (rare isotope accelerator) at MSU, which evolved into FRIB. An advanced rare isotope accelerator was a long-term dream of the U.S. science community. Most people felt, initially, that the odds of success were small, but Konrad persuaded the laboratory to make this a priority while continuing to produce quality science with the CCF. He played a major part in organizing support within MSU, the state of Michigan, and the national nuclear science community. Konrad was very effective on the national stage in a time of tight budgets and changing political landscapes. Konrad worked closely with President Peter McPherson



Konrad Gelbke poses with EBIT, the Electron Beam Ion Trap. Konrad stepped down May 16 after 23 years as director of NSCL.

and later with President Lou Anna K. Simon to insure that we had a level playing field. When it was clear the RIA project was too expensive he guided the MSU team to develop a cost-effective alternative using much of the existing NSCL. He sold this concept to decision makers and the scientific community. In 2009, when MSU was selected to establish FRIB, Konrad became the first FRIB Laboratory director and oversaw significant growth in the laboratory faculty and staff.

Konrad has always had a commitment to the people in the laboratory to ensure they had a chance to succeed and grow professionally. He has a particular like for technical aspects and pushed the

development of outstanding engineering and fabrication facilities at NSCL and FRIB. His roles have been world-class physicist; leader; mentor to numerous people in the lab; CCF, RIA and FRIB Project kickstarter and leader; visionary; internal and external ambassador; government-realms negotiator/politician; always nuclear science, MSU, and NSCL/FRIB statesman.

Konrad is not leaving the lab and no doubt will be involved in the next big thing we do here. We will continue to benefit from his insight and advice. We are very grateful for his contributions to NSCL and the many milestones we have accomplished under his directorship. Thank you, Konrad.

SAVE THE DATE: OCTOBER 8, 2015

Events to mark 50 years of beam, Konrad Gelbke's remarkable career

Please mark your calendars and plan to attend special events at MSU on Thursday, October 8. We are in the early stages of planning a celebration to mark 50 years of the first beam from the K50 cyclotron, and a scientific symposium to honor former NSCL Director Konrad Gelbke.

We'll provide more details in the next issue of the FRIB Laboratory Update for Alumni. For now, please save the date!

If you already know whether you will attend, please email alumni@frib.msu.edu to RSVP.



Above-ground steel placements started in April 2015, and masonry work started in June on the northeast end of the project.



FRIB civil construction nine weeks ahead of schedule

Story contributed by Brad Bull, Conventional Facilities and Infrastructure Division Director

Construction of the FRIB conventional facilities—the tunnel for the linear accelerator and support buildings on the surface—began in March 2014 with site excavation. It has advanced swiftly since then with several large concrete and steel placements both underground and above. Civil construction is currently nine weeks ahead of schedule.

As of June, structural steel placement for the linear accelerator tunnel lid is complete. So far, 55 percent of the required structural steel for the project has been installed, with 1,550 tons of steel placed. The steel used for the tunnel lid is the largest rolled steel sections that can be purchased in the United States.

Additionally, mass backfill is nearing completion on the east end of the tunnel lid, as crews work to completely enclose the linac tunnel underground. Overall, 50,101 tons of backfill has been placed, marking 71-percent completion.

Mechanical, electrical, and plumbing (MEP) systems installation also is ongoing within the linac tunnel, and underground MEP systems installation in the linac support building has begun as well.

The surface building is being constructed in two halves in order to accelerate readiness of the east section of the building. This will allow the front end to be installed 16 months earlier than originally planned in the project baseline. Additionally, structural steel for the surface building has been erected at the east end of the building, and masonry work on the exterior enclosure has also started.

In the target area, concrete placements continue. Sixty-one percent of concrete placements for the project are complete, with 26,201 yards placed. Recently, 742 yards of concrete were placed to create the labyrinth wall between the tunnel and target area. Concrete work in the tunnel area continues, with a new wall being placed almost every other day.

Keep up with construction progress at
frib.msu.edu/cameras

Office tower addition in full swing

Story contributed by Jessica Kolp, Construction Team Leader

On February 6, the MSU Board of Trustees approved construction for a new FRIB office addition, east of the most recent office tower addition. The new office tower will house both permanent FRIB staff and visiting researchers.

The six-story addition will be approximately 74,000 square feet and will provide private and open offices, as well as flexible laboratory and collaborative space, including conference rooms and a 265-seat lecture hall.

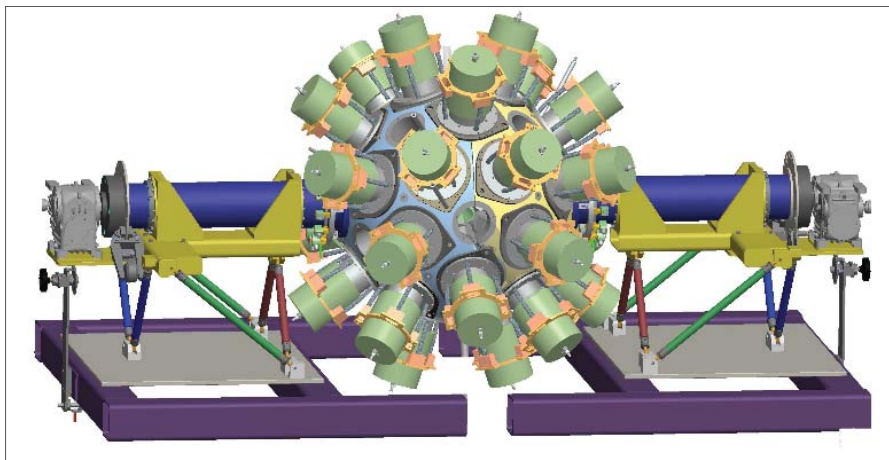
The project required the demolition of an existing one-story building to construct the new tower. Demolition started in March and was completed in mid-April.

Caissons (drilled piers, which are essentially concrete columns that the building will sit on) were completed the last week of May, and underground utility work has started in preparation for the shallow foundation concrete work.

The project is scheduled to be completed by August 2016.



The new office tower (on far left in above rendering) will connect to the existing building.



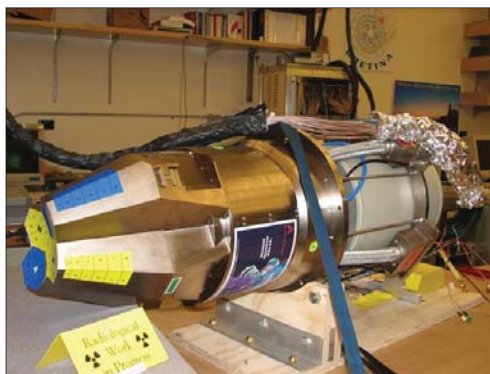
Gamma-Ray Energy Tracking Array (GRETA) central to maximizing physics output of FRIB

Story contributed by Augusto Macchiavelli, GRETA Project Manager Designee, Lawrence Berkeley National Laboratory

Gamma-ray spectroscopy continues to play a crucial role in our quest to understand the structure of atomic nuclei. The scientific program at FRIB is broad and exciting and, in fact, the majority of envisioned benchmark experiments rely on high-resolution, high-efficiency, in-flight γ -ray detection. A 4π tracking array will provide a large increase in sensitivity and resolving power over existing arrays.

Thus, the Gamma-Ray Energy Tracking Array (GRETA) will be central to maximizing the physics output of FRIB research, both using fast-fragmentation beams and reaccelerated beams. For example, a marriage of GRETA with the High Resolution Spectrometer will deliver a unique flagship capability of this facility. A white paper on GRETA science opportunities is available at lecmeeting.org/whitepapers/GRETA_WP_LE_TM_Full.pdf.

The GRETA project builds upon GRETINA (1π coverage), which has successfully demonstrated the technology and scientific impact of a gamma ray tracking array with extremely productive physics campaigns at NSCL and ATLAS. GRETA requires the addition of 18 detector modules, new electronics, computing, and mechanical support. The current



Top: An engineering drawing, based on the current GRETINA frame, of the 4π configuration of GRETA consisting of 30 of these modules. Above: A photograph of a GRETINA quad module consisting of 4 HPGe capsules (6x6 segmented) closely packed in a common cryostat.

proposal aims for Critical Decision 0 (CD-0) in 2015, and optimizes the schedule for Day-One experiments and completion when FRIB reaches full power operations.

For more information, please refer to the GRETINA/GRETA website: physics.fsu.edu/GRETINA.org/.

NSCL alumnus Damian Handzy wins 2015 Outstanding Alumni Award

Damian Handzy, who earned his doctorate in physics while working at the National Superconducting Cyclotron Laboratory (NSCL) in 1995, was awarded the 2015 Outstanding Alumni Award by the College of Natural Science Alumni Association. The award recognizes alumni for outstanding professional achievement and support of the college or university, who also exemplify MSU's commitment to the land-grant mission of teaching, research and outreach through their dedication to professional, community and/or MSU service.

Damian has been a leader in the field of financial risk management for the past 18 years.

After working as a manager for Deloitte & Touche for four years, he co-founded Investor Analytics (IA) in 1999 with fellow NSCL alumnus Phil Zecher to help financial professionals make better risk decisions; in 2006, he was named chairman and CEO. Damian's clients include pensions, endowments, hedge funds and mutual funds. His views and comments are routinely sought by prominent investment management publications and he is a frequent speaker at noted industry events.

Damian advocates incorporating advancements from related disciplines to improve risk management—especially lessons from behavioral economics, cognitive science, complexity theory and biological evolution—so his clients understand the decision-making process that leads to success. As a result of pro-

HANDZY from Page 4

viding clients an advanced, intuitive, and easy-to-use technology platform, IA was recognized with three industry awards in 2010—Risk Magazine's Software Product of the Year, HFM-Week's Best Risk Manager Software Supplier and FSOkx's Excellence in Risk Management and Compliance. Earlier this year, Damian won the 2015 SmartCEO Deals of Distinction Award.

Damian told us, "People on Wall Street often ask me if I use my physics background in my financial work. Of course, I tell them – it's the only background I have! Thinking like a physicist on Wall Street is quite valuable: I'm in a sea of people who can't think that way. But the lessons of physics are applicable only so far because markets are not like systems of identical particles. Imagine how much harder physics would be if protons had personalities! ... That's what markets are like: each participant behaves according to his/her own set of rules and the emergent effects of their interactions are what we call 'the market.' The nascent field of 'Complexity Science' is the study of complex adaptive systems – things like beehives, cities, organs, and financial markets. Complexity Science on the right track towards a real understanding of markets, but we're still a long way off. Andrew Lo, an MIT economist likes to joke, 'in physics they have three laws that describe 99 percent of observed phenomena while in economics, we have 99 laws that describe 3 percent of what we see.' I, for one, would like to change that."

"Already as a student, Damian showed a strong interest in finding



Photo by Harley Seeley

Damian Handzy, center, poses with University Distinguished Professor Wolfgang Bauer (left) and Phil Duxbury, chairperson of MSU Physics-Astronomy.

connections to other disciplines or human endeavors," former NSCL Director Konrad Gelbke said. "As a physicist, he is trained to think quantitatively, but his success is based on several other important attributes: he understands human nature and communicates extraordinarily well, he can focus and persevere where others are ready to give up, and he does not shy away from tackling complex problems that do not have ready-made answers. Most importantly, he has a clear vision where he wants to go and can lead others to follow. I am

convinced that Damian will continue to have a bright and rewarding career for many years which I will continue to following with great interest and delight."

Damian was honored at the College of Natural Science Alumni Association's annual awards program on April 24 at MSU's Kellogg Hotel and Conference Center. More than 120 people attended to acknowledge alumni, faculty and students for their outstanding achievements and excellence.

WE WANT TO HEAR FROM YOU!

Send us your story ideas

Like this story about NSCL alumnus Damian Handzy, we want to feature at least one story each issue about you—our FRIB/NSCL alumni. Let us know what you are up to! Email story tips about you and/or your fellow alumni to alumni@frib.msu.edu. Tell us about discoveries, business ventures, partnerships, awards, and other professional developments, and we may feature them in a future issue.

The FRIB Laboratory Update for Alumni is published by the FRIB Laboratory and distributed via e-mail. Please e-mail questions, comments, address changes, story tips, contributions, or requests to unsubscribe from this list to alumni@frib.msu.edu. If you are in touch with other NSCL/FRIB alumni, please forward this to them and invite them to contact us to subscribe.



MICHIGAN STATE UNIVERSITY