## 50 years of beam celebration

On December 4, 1967, Nobel Prize winners Glenn T. Seaborg and Willard F. Libby helped dedicate the Texas A&M Cyclotron Institute only three days after it had achieved its first external cyclotron-accelerated particle beam. The following are some of the historical milestones of the Cyclotron Institute [1]:

1962 - Proposal to the Atomic Energy Commission for construction and operation of a cyclotron at The Agricultural and Mechanical College of Texas.

1964 - Cyclotron Institute created by Board minute order.

1965 - AEC entered contract with TAMU to build a cyclotron:

| | (Actual Dollars) | (2015 dollars) |
|---|---|---|
| TAMU | $2,000,000 | $15,580,000 |
| Welch Foundation | $1,000,000 | $ 7,790,000 |
| Atomic Energy Commission | $3,000,000 | $23,371,000 |

1967 - August 8, 4:40 PM Internal beam 88" cyclotron.
December 1, 12:42 AM External beam 88" cyclotron.

1968 - First experiments and first paper published from Institute.

1969 - First research student to obtain Ph.D. from research at the Institute.
H.L. Rook - Schweikert

1970 - Enge Split Pole Spectrograph.

1972 - NIH Support - M.D. Anderson neutron therapy cancer project began.
Treatment of patients 2 days per week.

1977 - Cyclotron Improvement Grant.

1979 - 2 DEC Vax 780 Computer Systems.

1980 - Cancer Therapy program concluded. M.D. Anderson building cyclotron in Houston.
Consolidate Physics, Chemistry, and Operation funding at Department of Energy.

1982 - Cyclotron Expansion approved by Board of Regents.

1985 - ECR Source and Neutron Ball.

1986 - Proton Spectrometer.

1987 - December 7, Dedication of K500 cyclotron.

1989 - Mars.
$BaF_2$ Array.

1991 - Computer System.

1992 - MDM .

1993 - Beam Analysis System.

1995 - ECR Upgrade.
SEE Line Inaugurated - Boeing.
FAUST.

1997 - NIMROD.

1999 - MDM Upgrade .
New ECR.

New Beam Line.

Precision Online Decay facility.

2000 - NIMROD Upgrade.

Beam intensity Upgrade

2005 - Cyclotron Institute Upgrade Project [2].

2010 - $H^-$ Souce.

2013 - FAUST-QT

2016 - TAMUTRAP.

TIARA for Texas.

2017 - TexAT

Throughout 2017 the Cyclotron Institute commemorated 50 years of beam with a series of celebratory activities. From April to December 2017, we had the “50 Years of Beam Seminar Series” [3] featuring former students, post-docs, and researchers from the Institute.

An international scientific symposium was held from November 15 – 17, 2017 in the Mitchell Institute auditorium at Texas A&M. The event drew over 100 attendees from leading institutions around the world. Many of the speakers were world-leading experts in their respective fields – a true testament to the status of the Cyclotron Institute on the world stage of nuclear science.

The scientific program of the symposium [4] was arranged to highlight the diverse range of topics studied at the Cyclotron Institute over its 50-year history. These included the nuclear equation of state, nuclear astrophysics, nuclear structure, fundamental symmetries, high-energy nuclear physics, and applications of cyclotron-based nuclear science. In addition to the rich and diverse program of invited and contributed scientific talks, a session focusing on historical talks from Mr. Whit McFarlin and former Institute directors Drs. Dave Youngblood, Joe Natowitz, and Robert Tribble was held on the afternoon of November 16. The focus on history allowed attendees to take a step back and reflect on the development of the Institute, scientific and technical milestones achieved over the years, and to place present and future research projects into the broader historical context. A poster session was also held on the evening of November 15, where the talented group of current Cyclotron Institute graduate students and postdocs presented their research to symposium attendees.

As fitting for a celebration symposium, the program was not entirely focused on talks and poster presentations. A celebration banquet was held on the evening on November 16, with attendees gathering at the TAMU Equine Center to enjoy a catered dinner provided by Napa Flats. At the symposium, the past, present, and future employees of the Institute were recognized, and the current director, Dr. Sherry Yennello, gave a speech highlighting the past accomplishments at the Institute and expressing excitement for the future, as the Institute enters its second 50 years of being a world leader in nuclear science.

In the morning of November 17, a “recognition session” was held [5], where leaders from the Department of Energy, The Robert A. Welch Foundation, State of Texas and Texas A&M University recognized the excellent contributions of the Cyclotron Institute over the past 50 years. Also present was Col. John O. “Jack” Teague (son of Congressman Olin”Tiger” Teague). As fitting for a celebration event in College Station, the attendees were treated to a lunch of Texas Bar-B-Que.

In closing the 50 years of beam celebration in December 2017, we had Dr. Che-Ming Ko remind us about 50 Years of Theoretical Nuclear Physics Research at the Cyclotron Institute, and Drs. Joe Natowitz and Dave Youngblood talked about their 50 years of research at the Cyclotron Institute.

We have been blessed with a group of superb, inventive, and hard working support staff over the past five decades, as D.H. Youngblood said in his historical talk, "The lab would not exist without their effort and contributions". The Cyclotron Institute began as a small laboratory 50 years ago and has turned into a Department of Energy Center of Excellence for Nuclear Physics today, as mentioned in the congratulation letter from Tim Hallman, Associate Director of the Office of Science for Nuclear Physics [6].

It has been fun and we had a great time. Thanks to our wonderful friends, Shana Hutchins, Chris Jarvis and Jennifer Hollein the Dean's office, and our own Julie Anderson, Paula Barton, Haley Forbes, Ruben Gallegos, Sharon Jeske, Victoria Tepe, and Kristina Zimmerhanzel.

Happy 50$^{th}$ anniversary Cyclotron Institute, many more 50 years to come!


[1] D.H. Youngblood, private communication.

[2] Cyclotron Institute Upgrade White Paper. https://cyclotron.tamu.edu/wp-content/uploads/facility_upgrade.pdf

[3] 50 Years of Beam Seminar Series, *Progress in Research*, Cyclotron Institute, Texas A&M University (2017-2018), p. VI-13

[4] The scientific program of the 50 Years of Beam Symposium, *Progress in Research*, Cyclotron Institute, Texas A&M University (2017-2018), p. VI-17

[5] Recognition Event Program, *Progress in Research*, Cyclotron Institute, Texas A&M University (2017-2018), p. VI-22

[6] Timothy Hallman, Congratulation letter from the Office of Science for Nuclear Physics, *Progress in Research*, Cyclotron Institute, Texas A&M University (2017-2018), p. VI-23.


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