

# Dr. Eddie F. Holik, III (Trey)

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## EDUCATION

Texas A&M University

*Doctorate in Physics* “Stress Management as an Enabling Technology for High-Field Dipoles”

**August 2014**                      **GPA – 4.0**

*Masters in Physics* “Simulation Results of an Inductively-Coupled RF Plasma Torch in Two and Three Dimensions for Producing a Metal Matrix Composite for Nuclear Fuel Cladding”

**December 2008**                      **GPA – 4.0**

Angelo State University

*Bachelor of Science in Physics*

**May 2006**                              **GPA – 4.0**

*Bachelor of Science in Mathematics*

**May 2006**                              **GPA – 4.0**

## TEACHING

*Physics at Angelo State University:* Teach Introductory and Fundamental Physics to majors and non-majors as well as all physical science courses and the associated laboratories. Also teach upper level classes such as Engineering Statics, Mathematical Methods, Modern Physics, Electricity and Magnetism, Mechanics, and multiple research sections each semester. Regularly update teaching material and pedagogy including notes, homeworks, exams, and activities. Attended the 2019 Building Strong STEM Courses Workshop. Attended the 2017 Lilly-Austin Conference for Evidence-Based Teaching and Learning. Was certified at the 2014 Summer Institute on Teaching offered by the CITR. Developed two core physical science courses into online offerings.

*Angelo State University Undergraduate Mentorship:* Mentored 14 students in laser physics, temperature/humidity measurement, reaction rate analysis, drafting, mechanics, and superconductivity. Invited several advanced physics majors to participate in the peer revision process with IEEE.

*Texas A&M University Teaching Assistant:* Served as a Teaching Assistant in 2006 and 2007 for freshmen Mechanics and Electricity and Magnetism. Taught in the Visual Physics program where teamwork and inquiry-driven learning drives labs rather than regimented procedures.

*NSF GK-12 PEER Fellowship:* Served as an NSF GK-12 PEER teaching fellow for ten hours per week in the classroom in urban and rural schools dispersed in three different counties 2009 – 2010. Prepared lessons to captivate students and increase understanding with the hope of creating future STEM professionals.

*TAMU Undergraduate Mentorship:* Mentored five undergraduates for constructing and testing capacitive stress transducers, machine shop experience, profiling and calibrating a reaction bake furnace, fabricating precision mica and s-glass insulation pieces, and researching Nb<sub>3</sub>Sn superconductor heat treatments. Students have won TAMU Research Week Awards and one student was a 2011 Goldwater Scholar finalist.

*TAMU Physics Festival:* Designed and presented a magnetohydrodynamics demonstration with salt water along with five other events 2007 – 2012.

*Texas Science Olympiad*: Wrote and proctored the Shock Value event for the Texas Science Olympiad in 2010 and 2011. Held a clinic for over 40 Texas high school teachers on the event.

## SCHOLARLY ACTIVITY

*LARP Low- $\beta$  Nb<sub>3</sub>Sn Quadrupole Development (Fermilab 2015–Present)*: Toohig Fellow and de facto project deputy manager(2015 – 2018) for developing the interaction region focusing quadrupoles for the Hi-Lumi LHC upgrade. The project is the first implementation of Nb<sub>3</sub>Sn into a high-energy synchrotron accelerator. The Low- $\beta$  Quads are enabling the LHC Luminosity upgrade. Work was in collaboration with Brookhaven, Berkeley and Fermi national labs along with CERN. Four high school and five university students assisted with this research including one Angelo State student working for pay at Fermilab for one week.

*16 Tesla Dipole Design (Fermilab 2017–19)*: Developed a bold new magnet cross section to obtain 16 tesla for an accelerator dipole magnet. The preliminary design fulfills all important specifications outlined by the CERN Future Circular Collider design study. The design builds upon current United States magnet technology with rational, incremental changes rather than designs based on non-existent technology.

*Stress Management in High-Field Nb<sub>3</sub>Sn Dipoles (TAMU 2010–14)*: Designed, built, and tested the first ever ‘Stress Managed’ superconducting accelerator dipole magnet. The scope of this project was significantly more costly (\$5.5M) and time consuming (5+ years) for a PhD project and will likely be the last superconducting dissertation magnet fabricated at a university. Funding for superconducting magnet research has since drastically decreased at the university level.

*Nb<sub>3</sub>Sn Dipole Development (TAMU 2010–14)*: First to develop a system to measure coil resistance to ground during impregnation. Designed and fabricated a dilatometer for 10-stack cryogenic cable contraction. Used 3D OPERA<sup>®</sup> to determine iron shaping to modify high field values and locations. Simulated Quench propagation. FEI Quanta 600 FE-SEM Nb<sub>3</sub>Sn experience.

*United States Particle Accelerator School (UCSC, UNM, and UT 08–12)*: Have accelerator science credits in Linear, Synchrotron, and Cyclotron Accelerators (V. Litvinenko, T. Satogata, E. Pozdeyev), Beam Transport Design and Insertion Devices (R. Schlueter and S. Prestemon), Plasma Physics and Collective Effects in Beams (P. Colestock and G. Rumolo), and Superconducting Magnet Design (P. Ferracin, E. Todesco, S. Prestemon, and H. Felice).

*Inductively-Coupled RF Plasma torch system (TAMU 2007–10)*: Designed and began fabrication of a novel plasma torch that for the first time would enable non-equilibrium phase reactions. This work included simulation with a Magnetohydrodynamics (MHD) model with FLUENT<sup>®</sup>. Was a named AFCI/GNEP DOE Fellow.

*Solid State Physics with InGaAs Quantum wells (ASU 2005–06)*: Operated a 1.25-watt argon laser system and optics table and studied Photoluminescence of InGaAs quantum wells. Characterized CCD and InGaAs photon detectors using SpectraMAX and LabVIEW software.

## PROFESSIONAL SERVICE

*ASU Outreach and Recruitment (2014 – Present)*: Presented physics demos to multiple elementary, junior high, and high school for outreach and recruitment across the state (Veribest, Wall, Paint Rock, Mason, Menard, Houston, San Antonio, Brownsville, Burnet, etc.). This also includes participating in True Blue

Fridays, Discover ASU, Volleyball Intramurals, and physics demos for visiting high schools on average of one to two per semester with Christabel Romine.

*ASU Departmental and University Service:* Served on the Science and Engineering Curriculum Committee 2019 – 2020. Served on the Core Curriculum Committee 2018 – 2019. Served on the University Curriculum Committee 2017 – 2018. Sponsor a Freshman Seminar Class, GS1181, entitled ‘Smart Money’ 2019. Member of multiple faculty search committees. Compiled a draft of the departmental research T&P guidelines along with Andy Wallace 2016 – 2019. Sigma Pi Sigma Physics Honor Society Sponsor with David Bixler 2014 – Present. Society of Physics Students Sponsor 2016 – Present. Graduation Marshal for four ceremonies 2017 – 2019. I have written a review for University Physics Volume 2 published by Openstax 2019. Help when visiting high schools use lab facilities. Regularly accompany Geology faculty with field trips. Served on Honors Thesis Committee for CJ Brewer 2019.

*ASU Society of Physics Students Sponsor (2016 – Present):* Facilitate weekly meetings and presenters. Keep the organization up to date with opportunities for REUs, graduate schools, and employment. Help schedule shows for the SPS to present physics demonstrations for any group at any age (girl/boy scout troops, science days, STEM camps, Library events, Mall events, etc.). Approached for the SPS to present one or two shows per month on average. In the summer, organizes a week long ‘Peer Pressure Road Show’ for students to present a polished physics show. The trip contacts upwards of 1200 students over 1000+ miles driven. The SPS travels to the biennial American Physical Society meetings in Texas. Travel nationwide for the SPS Physcon conference in San Francisco and in Rhode Island.

*ASU Sigma Pi Sigma Physics Honor Society Sponsor (2014 – Present):* Conduct the annual induction ceremony along with David Bixler and order membership paraphernalia.

*Additional ASU Faculty Sponsor:* Angelo State Men’s Club Volleyball 2016 – Present. Angelo State Women’s Club Volleyball 2018 – Present. Women’s Volleyball Bronze Flight SIVA Conference Champion 2019. Conference 1A Region II UIL Science Event director 2017 – Present, Angelo State Tau Kappa Epsilon Fraternity 2018 – 2019. Angelo State Social Ballroom Dance Club 2017 – 2019.

*Technical and Lead Editor (2015 – Current):* Refereed journal articles for *IEEE Transactions on Applied Superconductivity* for several conferences: The Magnet Technology Conference, The Applied Superconductivity Conference, and the Low Temperature Superconductivity Workshop. Three ASU undergraduates were incorporated in the editing process.

*Department of Energy Technical Reviewer (2015 – Current):* To date I have reviewed 12 DoE SBIR/STTR phase I proposals traditionally worth \$250k each. I have also reviewed one successful Phase II proposal worth \$1.6M.

*Open Source Resource Reviewer (2019):* I have written a review for University Physics Volume 2, published by Openstax.

*Fermilab outreach and recruitment (2015 – 2018):* Multiple tours of the coil fab facilities at FNAL. Volunteered for the annual FNAL Technical Division picnic. Volunteered at the Water’s Edge Bible Church in Chicago. Gave dozens of physics demos at local schools and at Fermilab family days. High-energy physics lobbyist at Washington DC for three of four years funded by the LHC Users Association.

## HONORS

*Angelo State University:* Presidential and TTU Chancellor's Award Winner for Excellence in Research/Creative Endeavor 2019. My online course introduction video was used by Jayna Phinney in her workshops and presentations as an example 2019. OER Stipend Award 2019. Recognized as a "Favorite Faculty Member" by the Angelo State Resident Assistants 2018. Nominated by ASU physics department for faculty excellence in research award 2015. Was certified at the Summer Institute on Teaching offered by the CITR 2014. Selected by the Homecoming committee to participate in a dunk tank fundraiser for the Make-A-Wish Foundation and was featured on the cover of the RAMpage 2014. Received the ASU Presidential Award 2006 and was a Carr Research Fellow 2006. Inducted into the Sigma Pi Sigma Physics Honor Society 2005, the Pi Mu Epsilon Mathematics Honor Society 2004, and the Alpha Chi National Honor Society 2004.

*Fermi National Accelerator Laboratory:* Offered a tenure track *Scientist I* position at Fermilab. Turned the position down to continue the tenure track faculty position at Angelo State University 2018. Delivered an invited plenary talk at the Magnet Technology Conference in Amsterdam to 1200 attendees 2017. Named the 2014 Tim Toohig Fellow for Accelerator Science which is a highly competitive, world-wide fellowship in collaboration with CERN, Berkeley National Lab, Brookhaven National Lab, and Fermi National Accelerator Lab 2015.

*Texas A&M University:* Received the APS Presentation award 2009 and 2011. Inducted into the Phi Kappa Phi Honor Society 2013 and the National Scholars Honor Society 2007.

## GRANTS

*Angelo State University:* Applied for SPIE outreach grant and awaiting response 2019. Sponsor for two Texas Space Grant Consortium Design Challenge teams 2019. Sponsored four Undergraduate Faculty-Mentored Grants 2016-Present. Procured funds for the SPS from the summer 'Explore STEM!' Camp held at ASU 2018. Received the Carr Student Research Grant for spectroscopy measurements 2005 – 2006, the Ray Dawson Alumni Scholarship in Physics 2005-2006, the Dr. Merrill W. Everhart Scholarship in Science 2004-2005, the Special Academic Scholarship in Applied Physics 2002-2006, the Carr Academic Scholarship 2002-2006, and the United States Achievement Academy Grant 2002.

*U.S. LHC Accelerator Research Program:* The Toohig Fellowship includes \$15,000 annual discretionary funding as part of the \$17.5M/y LARP program for Quality Control and Quality Assurance toward the construction and testing of Hi-Lumi LHC IR quadrupoles 2015 – 2018.

*Texas A&M University:* Received the APS Travel Grant 2011 and the TAMU Office of Graduate Studies Travel Grant 2011. Was named a NSF GK-12 PEER Fellow 2009 – 2010, a Graduate Research Assistant 2009 – 2013, a AFCI/GNEP DOE Fellow 2007 – 2008, and a Teaching Assistant 2006 – 2007.

## MEMBERSHIP

Angelo State Women's Club Volleyball Sponsor 2018 – Present  
Angelo State Tau Kappa Epsilon Fraternity Sponsor 2018 – Present  
Conference 1A Region II UIL Science Event director 2017 – Present  
Angelo State Social Ballroom Dance Club Sponsor 2017 – Present  
Society of Physics Students Sponsor 2016 – Present

Angelo State Men's Club Volleyball Sponsor 2016 – Present  
IEEE member 2015 – Present  
Sigma Pi Sigma Sponsor 2014 – Present  
Science Olympiad Event Director 2010 – 2011  
Graduate Teaching Academy 2006 – 2007  
Student Senator 2005 – 2006  
American Physical Society 2004 – Present

## PUBLICATIONS

- 1) Ezio Todesco et al., “Progress on HL-LHC Nb<sub>3</sub>Sn Magnets,” IEEE Transactions on Applied Superconductivity **28** (4), June 2018
- 2) Eddie Frank Holik, Giorgio Ambrosio, Giorgio Apollinari, “Two-Layer 16 T Cos  $\theta$  Dipole for the FCC,” IEEE Transactions on Applied Superconductivity **28** (3), April 2018
- 3) Jose Ferradas Troitino et al., “Applied Metrology in the Production of Superconducting Model Magnets for Particle Accelerators,” IEEE Transactions on Applied Superconductivity **28** (3), April 2018
- 4) Stoyan Stoynev et al., “Summary of Test Results of MQXFS1—The First Short Model 150 mm Aperture Nb<sub>3</sub>Sn Quadrupole for the High-Luminosity LHC Upgrade,” IEEE Transactions on Applied Superconductivity **28** (3), April 2018
- 5) Susana Izquierdo Bermudez et al., “Geometric Field Errors of Short Models for MQXF, the Nb<sub>3</sub>Sn Low- $\beta$  Quadrupole for the High Luminosity LHC,” IEEE Transactions on Applied Superconductivity **28** (3), April 2018
- 6) Eddie Frank Holik, Giorgio Ambrosio, Andrea Carbonara, Daniel R. Dietderich, Joseph Dimarco, Ian Pong, GianLuca Sabbi, Carlo Santini, Jesse Schmalzle, and Xiaorong Wang, “Field Quality and Fabrication Analysis of HQ02 Reconstructed Nb<sub>3</sub>Sn Coil Cross Sections,” IEEE Transactions on Applied Superconductivity **27** (4), June 2017
- 7) Eddie Frank Holik, Giorgio Ambrosio, Michael Anerella, Rodger Bossert, Eugenio Cavanna, Daniel Cheng, Daniel R. Dietderich, Paolo Ferracin, Arup K. Ghosh, Susana Izquierdo Bermudez, Steven Krave, Alfred Nobrega, Juan Carlos Perez, Ian Pong, GianLuca Sabbi, Carlo Santini, Jesse Schmalzle, Peter Wanderer, Xiaorong Wang, and Miao Yu, “Fabrication of First 4-m Coils for the LARP MQXFA Quadrupole and Assembly in Mirror Structure,” IEEE Transactions on Applied Superconductivity **27** (4), June 2017
- 8) Guram Chlachidze et al., “Performance of the First Short Model 150-mm-Aperture Nb<sub>3</sub>Sn Quadrupole MQXFS for the High-Luminosity LHC Upgrade,” IEEE Transactions on Applied Superconductivity **27** (4), June 2017
- 9) J. DiMarco et al., “Magnetic Measurements of the First Nb<sub>3</sub>Sn Model Quadrupole (MQXFS) for the High-Luminosity LHC,” IEEE Transactions on Applied Superconductivity **27** (4), June 2017
- 10) Xiaorong Wang, Giorgio Ambrosio, Guram Chlachidze, Joseph DiMarco, Arup K. Ghosh, Eddie Frank Holik, Soren O. Prestemon, GianLuca Sabbi, and Stoyan Emilov Stoynev, “Analysis of Field Errors for LARP Nb<sub>3</sub>Sn HQ03 Quadrupole Magnet,” IEEE Transactions on Applied Superconductivity **27** (4), June 2017
- 11) Susana Izquierdo Bermudez, Giorgio Ambrosio, Guram Chlachidze, Paolo Ferracin, E. Holik, Joseph DiMarco, Ezio Todesco, GianLuca Sabbi, Giorgio Vallone, and Xiaorong Wang, “Magnetic Analysis of the Nb<sub>3</sub>Sn Low-Beta Quadrupole for the High-Luminosity LHC,” IEEE Transactions on Applied Superconductivity **27** (4), June 2017
- 12) Giorgio Ambrosio et al., “MQXFS1 Quadrupole Fabrication Report,” Deliverable Report as part of the HiLumi LHC Design Study, FERMILAB-TM-2660-TD, July 2016
- 13) P. Ferracin et al., “Development of MQXF: The Nb<sub>3</sub>Sn Low- $\beta$  Quadrupole for the HiLumi LHC,” IEEE Transactions on Applied Superconductivity **26** (4), June 2016

- 14) E.F. Holik, G. Ambrosio, M. Anerella, R. Bossert, E. Cavanna, D. Cheng, D. R. Dietderich, P. Ferracin, A. K. Ghosh, S. Izquierdo Bermudez, S. Krave, A. Nobrega, J. C. Perez, I. Pong, E. Rochepault, G. L. Sabbi, C. Santini, J. Schmalzle, and M. Yu, "Fabrication and Analysis of 150 mm Aperture Nb<sub>3</sub>Sn MQXF Coils," *IEEE Transactions on Applied Superconductivity* **26** (3), June 2016
- 15) P. Ferracin et al., "Status of the Development of MQXF, the Nb<sub>3</sub>Sn low-beta quadrupole for the HiLumi LHC," *IEEE Transactions on Applied Superconductivity* **26** (3), June 2016
- 16) E. Roshepault et al., "Dimensional Changes of Nb<sub>3</sub>Sn Rutherford Cables During Heat Treatment," *IEEE Transactions on Applied Superconductivity* **26** (3), June 2016
- 17) S. Izquierdo Bermudez et al., "Second-Generation Coil Design of the Nb<sub>3</sub>Sn low-beta Quadrupole for the High Luminosity LHC," *IEEE Transactions on Applied Superconductivity* **26** (3), June 2016
- 18) J. DiMarco et al., "Test Results of the LARP Nb<sub>3</sub>Sn Quadrupole HQ03a," *IEEE Transactions on Applied Superconductivity* **26** (4), June 2016
- 19) Giorgio Ambrosio et al., "MQXFS1 Quadrupole Design Report," Deliverable Report as part of the HiLumi LHC Design Study, FERMILAB-TM-2613-TD, April 2016
- 20) E. Cavanna et al., "Design of the Nb<sub>3</sub>Sn Inner Triplet," Deliverable Report as part of the HiLumi LHC Design Study, CERN-ACC-2015-0093, September 2015
- 21) G. Chlachidze et al., "LARP MQXFSM1 (Mirror) Magnet Test Summary," FERMILAB-TD-15-018, Fermilab, August 2015
- 22) Tim Elliott, Raymond Garrison, Trey Holik, Andrew Jaisle, Alfred McInturff, Peter McIntyre, Dmytro Abraimov, Van Griffin, and Ashleigh Francis, John Cintorino, Sonny Dimaiuta, Piyush Joshi, Bill Mckee, Joe Muratore, and Maxim Marchevsky, "Testing of TAMU3: a Nb<sub>3</sub>Sn Block-Coil Dipole with Stress Management," United States, Web. doi:10.2172/1215795, September 2015
- 23) E.F. Holik (2014) "Stress Management as an Enabling Technology for High-Field Superconducting Dipole Magnets," Dissertation, Texas A&M University
- 24) K. Melconian, S. Assadi, K. Damborsky, E.F. Holik, J. Kellams, P. McIntyre, N. Pogue, and A. Sattarov, "Design and development of an MgB<sub>2</sub>-based sector dipole and beam transport channel for a strong-focusing cyclotron," *Advances in Cryogenic Engineering*, **1573**, 8, January 2014.
- 25) E.F. Holik, R. Garrison, N. Diaczenko, T. Elliott, A. Jaisle, A.D. McInturff, P.M. McIntyre, A. Sattarov, "Construction Challenges and Solutions in TAMU3," *Advances in Cryogenic Engineering*, **1573**, 9, January 2014.
- 26) E.F. Holik, E.P. Benson, R. Garrison, N. Diaczenko, T. Elliott, A. Jaisle, A.D. McInturff, P.M. McIntyre, A. Sattarov, "Construction and Component Testing of TAMU3, A 14 Tesla Stress-Managed Nb<sub>3</sub>Sn Model Dipole," *Advances in Cryogenic Engineering*, **1434**, 7, June 2012.
- 27) C.P. Benson, E.F. Holik, A. Jaisle, A.D. McInturff, P.M. McIntyre, "Improved Capacitive Stress Transducers for use in High-Field Superconducting Magnets," *Advances in Cryogenic Engineering*, **1434**, 8, June 2012.
- 28) E.F. Holik, A.D. McInturff, E.P. Benson, R. Garrison, N. Diaczenko, T. Elliott, A. Jaisle, P.M. McIntyre, A. Sattarov, "Current progress of TAMU3: A Block Coil Stress-Managed High Field (>12T) Nb<sub>3</sub>Sn Dipole," in *Proceedings of the 2011 Particle Accelerator Conference*, New York, New York, pp. 1163, April 2011.
- 29) E.F. Holik, A.D. McInturff, P.M. McIntyre, A. Sattarov, "Nb<sub>3</sub>Sn Block-Coil Dipole for High-Field Substitution in the LHC Lattice," in *Proceedings of the 2011 Particle Accelerator Conference*, New York, New York, pp. 1033, April 2011.
- 30) P.M. McIntyre, K. Damborsky, E.F. Holik, F. Lu, A.D. McInturff, N. Pogue, A. Sattarov, E. Sooby, "20T Dipoles and Bi-2212: The Path to LHC Energy Upgrade," *IEEE/CSC & ESAS European Superconductivity News Forum (ESNF)*, No. 16, April 2011.
- 31) A. McInturff, R. Blackburn, N. Diaczenko, T. Elliott, E.F. Holik, A. Jaisle, P. McIntyre, and A. Sattarov, "Current Status of the Texas A&M Magnet R&D Program," *IEEE Transactions on Applied Superconductivity* **21** (3), August 2010

- 32) L. Johnson, E.F. Holik, B. Sanchez, V. Traweek, et al., “Peer Perspectives Volume II: A Novel Approach to Quality GK-12 Interactions,” a TAMU Department of Veterinary Medicine publication, Fall 2010
- 33) E.F. Holik (2008) “Simulation Results of an Inductively-Coupled RF Plasma Torch in Two and Three Dimensions for Producing a Metal Matrix Composite for Nuclear Fuel Cladding,” Thesis, Texas A&M University

## PRESENTATIONS

- 1) LHC Accelerator Upgrade Project Group Meeting, April 8<sup>th</sup> 2019, Video Conference Oral Presentation, “Wedge Tolerance Impact on Field Quality”
- 2) Joint Fall Meeting of the Texas Sections of the APS, AAPT, and SPS, October 19<sup>th</sup> – 20<sup>th</sup> 2018, University of Houston, Texas. Oral Presentation: “A New Design for a 16 Tesla Cos  $\theta$  accelerator magnet”
- 3) Angelo State University Physics Department, September 24<sup>th</sup> and October 1<sup>st</sup> 2018, “High Energy Physics and High Field Magnets” Angelo State Society of Physics Students meeting.
- 4) Fermi National Accelerator Lab Magnet Systems Task Force, October 26<sup>th</sup> 2017, Fermilab, “State-of-the-art 16 Tesla Dipole Designs and FNAL/US expertise”
- 5) Fermi National Accelerator Lab Magnet Systems Associate Scientist Talk, October 26<sup>th</sup> 2017, Fermilab, “A story of Nb<sub>3</sub>Sn magnet technology...”
- 6) Magnet Technology Conference 25, August 27<sup>th</sup> – 31<sup>st</sup>, 2017, Amsterdam, Netherlands, “Two-layer, Cos  $\theta$  Dipole for the FCC,” Invited plenary presentation for 1200 conference attendees, Wed-Mo-Pl6
- 7) Magnet Technology Conference 25, August 27<sup>th</sup> – 31<sup>st</sup>, 2017, Amsterdam, Netherlands, “Two-layer 16 Tesla Cos  $\theta$  Dipole Design Based on MQXF Low-Beta Quadrupoles,” Wed-Af-Or23
- 8) Nb<sub>3</sub>Sn Rutherford Cable Characterization for Accelerator magnets, November 16<sup>th</sup> – 17<sup>th</sup> 2017, CIEMAT, Madrid, Spain, “Cable Insulation Parameters and Dimensional Change in HQ, QXF, and TAMU3”
- 9) Applied Superconductivity Conference, September 5<sup>th</sup> – 9<sup>th</sup>, 2016, Denver, CO, “Fabrication of First 4-m Coils for the LARP MQXFA Quadrupole and Assembly in Mirror Structure,” 2LPo2B-07
- 10) Applied Superconductivity Conference, September 5<sup>th</sup> – 9<sup>th</sup>, 2016, Denver, CO, “Analysis of HQ02 Coil Cross Sections,” 4LPo1G-04
- 11) Angelo State University Physics Department, September 19<sup>th</sup>, 2016, “High Energy Physics and High Field Magnets” Physics Colloquium
- 12) Fermilab MS Dept. Seminar, August 16<sup>th</sup>, 2016, Hermitage Room, “Nb<sub>3</sub>Sn IR quad fab and field quality: Explained, Analyzed, Still Mysterious?”
- 13) LARP DOE Review, July 13<sup>th</sup>, 2016, Fermilab, “MQXF Test Analysis”
- 14) Fermilab Users Meeting, June 16<sup>th</sup>, 2016, Fermilab Ramsey Auditorium, “LARP-LHC Upgrades”
- 15) LARP / Hi-Lumi LHC CM26, May 18<sup>th</sup>, 2016, SLAC, “Measured and Expected field quality in MQXFS1a”
- 16) CERN TE-MPE-PE weekly meeting, March 24<sup>th</sup>, 2016, “Preliminary Analysis: Turn to Turn Voltage During Impulse. How to test to 50 V Turn to Turn?”
- 17) Fermilab All Experiments Meeting, March 28<sup>th</sup>, 2016, “IR Quads for Hi-Lumi LHC: MQXFS1 Test Status”
- 18) Low Temperature Superconductivity Workshop, February 10<sup>th</sup>, 2016, Santa Fe, NM, “Nb<sub>3</sub>Sn Cable Growth and S-2 Insulation”
- 19) Fermilab TD Retreat, January 26<sup>th</sup>, 2016, “A funny thing happened on the way to Hi-Lumi LHC...”

- 20) CERN Superconducting Magnet Section Meeting, November 12<sup>th</sup>, 2015, CERN, “What has ‘Gonze’ been working on,” Invited Oral Presentation
- 21) 5<sup>th</sup> Joint Hi-Lumi LHC – LARP Annual Collaboration Meeting, October 26<sup>th</sup> – 30<sup>th</sup>, 2015, CERN, “MQXF Coil Fabrication: Observations and Summary,” Oral Presentation
- 22) International Conference on Magnet Technology, October 18<sup>th</sup> – 23<sup>rd</sup>, 2015, Seoul, Korea, “Fabrication and Analysis of 150 mm Aperture Nb<sub>3</sub>Sn MQXF Coils,” Oral Presentation, 3OrCC-02
- 23) European Conference on Applied Superconductivity, September 6<sup>th</sup> – 10<sup>th</sup>, 2015, Lyon, France, “Different Methods for Studying and Analyzing Dimensional Change due to Heat Treatment of Nb<sub>3</sub>Sn Rutherford Cable for Accelerator Magnets Coils,” 2A-LS-P-02.11
- 24) Low Temperature Superconductivity Workshop, November 4<sup>th</sup>, 2013, St. Petersburg, FL, “TAMU5: A flared-end Nb<sub>3</sub>Sn background field dipole for testing HFS insert windings”
- 25) Cryogenic Engineering Conference, June 17-21, 2013, “Stress Management Construction Difficulties and Solutions in TAMU3,” Oral Presentation, 3EOE1-04
- 26) Cryogenic Engineering Conference, June 17-21, 2013, “Superconducting RF Cavity for a Strong Focusing Cyclotron designed to destroy Nuclear Waste,” Oral Presentation, 2EOC3-04
- 27) Angelo State University Physics Department, February 10<sup>th</sup>, 2013, “Accelerator Physics, Stress Management, and Plasma Torches Oh My!!!,” Colloquium
- 28) Applied Superconductivity Conference, October 7-15, 2012, “Construction of TAMU3, 14 T Nb<sub>3</sub>Sn Dipole with Stress Management in its Windings,” Portland, Oregon, Poster
- 29) Joint Spring 2012 Meeting of the Texas Sections of the APS, AAPT, and SPS, March 22-24, 2012, San Angelo, TX. Oral Presentation: “Current Progress in Fabrication of a 14 Tesla Nb<sub>3</sub>Sn Dipole”
- 30) Joint Fall 2011 Meeting of the Texas Sections of the APS, AAPT, and SPS, October 6-8, 2011, Commerce, TX. Oral Presentation: “Stress Management in TAMU3, a 14 Tesla Nb<sub>3</sub>Sn Model Dipole”
- 31) YESS Energy Symposium: Alternative Energies – A Global Perspective, January 10-12, 2011, College Station, TX. Poster Presentation: “Metal Matrix Composites of SiC in High Temperature Steels for Generation IV Reactor Materials”
- 32) Joint Fall 2010 Meeting of the Texas Sections of the APS, AAPT, Zone 13 of SPS, October 21-23, 2010, San Antonio, TX. Oral Presentation: “Construction of TAMU3: a 14 Tesla Nb<sub>3</sub>Sn Model Dipole”
- 33) Joint Fall 2009 Meeting of the Texas Sections of the APS, AAPT, and SPS, October 22-24, 2009, San Marcos, TX. Oral Presentation: “TAMU3: High-Field Superconducting Dipole Development for Future Hadron Colliders”
- 34) Texas & Four Corners of the American Physical Society Joint Fall 2008 Meeting, October 17-18, 2008, El Paso, TX. Oral Presentation: “Simulation results of a Plasma Torch for Metal Matrix Composite Production in Nuclear Fuel Cladding”
- 35) Joint Fall 2007 Meeting of the Texas Sections of the APS, AAPT, and SPS, October 18-20, 2007, College Station, TX. Oral Presentation: “RF Plasma Torch System for Metal Matrix Composite Production in Nuclear Fuel Cladding”
- 36) Joint Spring 2006 Meeting of the Texas Sections of the APS, AAPT, and SPS, March 23-25, 2006, San Angelo, TX. Oral Presentation: “Addressing Temperature Issues and Dependence for InGaAs/GaAs Quantum Well Photoluminescence”