

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, Spring 2014 to present: Teach Introductory and Fundamental Physics to majors and non-majors as well as all physical science courses and the associated laboratories.

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.

SCHOLARLY ACTIVITY

16 Tesla Dipole Design (Fermilab 2017–18): Developed a bold new magnet cross section to obtain 16 tesla for an accelerator dipole magnet.

LARP Low- β Nb₃Sn Quadrupole Development (Fermilab 2015–18): Toohig Fellow and de facto project deputy manager for developing the interaction region focusing quadrupoles for the Hi-Lumi LHC upgrade. The project is the first implementation of Nb₃Sn into a high-energy synchrotron accelerator. The Low- β Quads are enabling the LHC Luminosity upgrade. Four high school and five university students assisted with this research including one Angelo State student working for pay at Fermilab for one week.

Stress Management in High-Field Nb₃Sn Dipoles (TAMU 2014): 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. 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[®] to determine iron shaping to modify high field values and locations. Simulated Quench propagation. FEI Quanta 600 FE-SEM Nb₃Sn experience.

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.

ASU Departmental and University Service: Served on the Core Curriculum Committee 2018 – 2019. Served on the University Curriculum Committee 2017 – 2019. Member of multiple faculty search committees. Compiled a draft of the departmental research T&P guidelines along with Andy Wallace. Sigma Pi Sigma Physics Honor Society Sponsor with David Bixler 2014 – Present. Society of Physics Students Sponsor 2016 – Present. Graduation Marshal for four ceremonies. Help when visiting high schools use lab facilities. Regularly accompany Geology faculty with field trips.

Technical and Lead Editor (2015 – 2018): Refereed journal articles for *IEEE Transactions on Applied Superconductivity*.

Fermilab outreach and recruitment (2015 – 2018): Multiple tours of the coil fab facilities at FNAL.

HONORS AND GRANTS

Angelo State University: Recognized as a “Favorite Faculty Member” by the Angelo State Resident Assistants 2018. 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.

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.

U.S. LHC Accelerator Research Program: The Toohig Fellowship includes \$15,000 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.

Angelo State University: Sponsored three Undergraduate Faculty-Mentored Grants 2016-Present. Procured funds for the SPS from the summer ‘Explore STEM!’ Camp held at ASU 2018.

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
American Physical Society 2004 – Present

PUBLICATIONS AND PRESENTATIONS

As of March 2019 there are 29 publications and 35 presented abstracts available upon request.