

Alexander M. Long

SCIENTIST 3 · MATERIAL SCIENCE AND TECHNOLOGY (MST) · LOS ALAMOS NATIONAL LABORATORY

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Publication h-index: 13 · Citizenship: United States of America · Active Q-Clearance

Education

University of Notre Dame

Notre Dame, Indiana USA

PH.D., PHYSICS

(June 2009 - July 2016)

- Thesis Topics: An Indirect Study of The Astrophysical $^{34}\text{Ar}(\alpha,p)^{37}\text{K}$ Reaction and its Influence on Type-1 X-Ray Burst Light Curves.
- Advisor: Professor Michael Wiescher

Florida State University

Tallahassee, Florida USA

B.S., PHYSICS WITH HONORS

(August 2004 - May 2009)

- Honors Thesis Topic: Time-of-Flight Calibrations of Neutron Wall Array at John D. Fox Superconducting Accelerator Laboratory
- Advisor: Professor Grigory Rogachev (Now at Texas A&M University)

Research Experience

Lujan Neutron Scattering Center and Weapons Neutron Research Facility

LANSCE @ LANL, USA

INSTRUMENT SCIENTIST FOR FP5 AND FP11

Dec. 2018 - Present

- **Primary liaison for neutron imaging projects at LANSCE**
 - Leading & supporting all neutron imaging measurements on FP4, FP5, FP11, and FP60R beamlines.
 - Enabling world-class advanced neutron imaging capabilities through developing and commissioning several novel neutron imaging detectors, sample environments, and data analysis codes.
 - Fostering growth of neutron imaging as LANSCE through collaboration meetings, invited talks and seminars.
 - Actively developing new neutron imaging techniques to meet LANL's scientific missions.
 - PI or Co-PI on several LANL-LDRD or DOE-NE funded projects (See "Awarded Funding" section).
 - Converted all motion control to Zaber motion stages and developed python based motion control programs that are integrated with the LANSCE EPICS framework.
- **Developed Energy Resolved Neutron Imaging (ERNI) capabilities on FP5/ERNI**
 - Developed ERNI techniques such as neutron resonance imaging (NRI) and Bragg-edge imaging (BEI) on FP5.
 - Mentoring grad students in developing a new state-of-the-art neutron resonance imaging analysis code **TRINIDI**.
 - Led the execution of first-of-a-kind NRI measurements on irradiated nuclear fuel pellet.
 - Actively participating in rebuild of FP12 for future ERNI-based post-irradiation examination capability.
 - Developing open-sourced user-friendly python package **PLEIADES** for neutron resonance imaging analysis with SAMMY.
- **Developed ERNI capabilities with photon-counting neutron imaging technology at LANSCE**
 - Led effort to bring photon-counting TPX3Cams to Lujan Center and WNR. Now have three TPX3Cam based systems that can operate on four different flight paths.
 - Lead scientist in developing TPX3Cam data acquisition and analysis code **HERMES**.
 - Developing machine learning algorithms to enable more advanced and robust neutron imaging analysis of TPX3 data.
 - Collaborating with scientist in Physics- and NEN-divisions to introduce Timepix technology to respective imaging efforts.
- **Developed novel neutron imaging technique to measure thermophysical properties of molten salts and uranium metals**
 - Developed density measurement technique called Density via Neutron Radiography (DvNR)
 - Successfully applied and published use of DvNR technique to measure densities of Uranium and Plutonium based salts
 - Part of team to bring first-of-a-kind DOE-NE GAIN funding to LANL in collaborations with TerraPower
 - Lead scientist in applying DvNR to measure densities of molten uranium and uranium-niobium metals
- **Developed hydrogen mapping capabilities using neutron imaging techniques**
 - Developed neutron imaging capabilities at Lujan Center to probe temperature driven hydrogen diffusion in metal hydrides.
 - Successfully published reports and publications for DOE-NE Microreactor program.
 - Led design and commissioning of state-of-the-art compact dual zone furnace.
 - Built pipelines for neutron imaging based hydrogen mapping capabilities with Colorado School of Mines.
- **Developed fast (MeV) neutron imaging and scintillation characterization capabilities on Flight Path 60R at WNR**
 - Co-led NNSA DNN NA-22 programmatic work on 60R to characterize nano-guide scintillator materials for fast neutron imaging.
 - Effectively showcased event-mode imaging as a Fast Neutron Resonance Radiography technique using MeV neutrons.
 - Successfully demonstrated the use of TPX3Cams to observe mm sized proton recoil tracks in fast plastics.
- **Developed Bragg edge and grain-mapping capabilities on FP4/HIPPO and FP5/ERNI at Lujan Center**
 - Co-lead design and commission of first-ever simultaneous diffraction and transmission measurements at LANSCE on FP4.
 - Performed simultaneous NRI and diffraction measurements on irradiated UO_2 sample on FP4/HIPPO.
 - Performed several Bragg edge CT scan on various AM sample on FP5/ERNI using TPX3Cams.
- **Fostered and Developed Neutron Grating Interferometry (nGI) capabilities on FP11/ASTERIX.**
 - Built collaborations of nGI expertise with scientist from NIST and PSI.
 - Supported several external nGI measurements to investigate pore sizes in AM metals and various concrete mixtures.
 - Part of collaboration to successfully propose a new neutron imaging beamline, CUPI²D, for the Second Target Station (STS).

Weapons Neutron Research Facility

LANSCCE @ LANL, USA

POST DOCTORAL RESEARCHER

Sept. 2016 - Dec. 2018

- **Assisted with development of the Low Energy (N,Z) (LENZ) experimental program at WNR/LANSCCE.**
 - Developed digital data acquisition systems, along with unpacking and analysis codes for the LENZ experimental program.
 - Developed and operated several (n,Z) experimental setups on FP15R for the LENZ program.
 - Presented nuclear data cross-section measurements at Cross Section Evaluation Working Group (CSEWG)
- **Investigated H production reaction $^{55}\text{Mn}(n,p)^{55}\text{Cr}$ for core structural materials to be used in future nuclear reactor designs.**
 - Performed cross-section measurements on the $^{55}\text{Mn}(n,p)^{55}\text{Cr}$ reaction using LENZ to investigate the influence of this reaction as a source of neutron irradiation damage in structural materials in future fission and fusion devices.
- **Investigations of neutron irradiation damage in F-M steels through precision measurements of the He gas production reaction $^{56}\text{Fe}(n,\alpha)$.**
 - Performed $^{56}\text{Fe}(n,\alpha)$ and $^{52}\text{Cr}(n,\alpha)$ reaction cross-section measurements using LENZ to better understand He production rates in various F-M steels material candidates considered for use in future reactor core designs.

Awarded Funding

2024	NSUF Visions @ LANSCCE: Elevating Neutron Resonance Imaging Techniques at LANSCCE for Next Generation Nuclear Materials Research , PI	INL NSUF
2024	Implementation and Demonstration of 2D and 3D crystal and microstructure measurements using pulsed neutrons , Co-PI	LANL TED
2023-2024	Thermophysical Density Measurements of Molten Uranium Niobium Alloys , PI	LANL LDRD-DI
2023-2024	Strengthening LANL's Radiography Applications via Event-Mode Imaging and ML Techniques , Co-PI	LANL LDRD-ER
2022-2025	Development of Hydrogen Transport Models for High Temperature Metal Hydride Moderators , Co-PI	DOE-NE NEUP
2021-2023	Density Measurements of Plutonium Bearing Salts via Neutron Beam Dilatometry , Co-I	DOE-NE GAIN
2020-2023	In-situ Spatial Mapping of Hydrogen in Yttrium Hydrides at LANSCCE , Co-PI	DOE-NE MRP
2021-2023	Advanced Characterization to Enable Prediction of Actinide-Molten Salt Behavior , Co-I	LANL LDRD-DR
2021	Exploring Safeguard Signatures with Energy Resolved Neutron Imaging for Future Molten Salt Reactor Designs , PI	LANL LDRD-MFR
2019-2022	Prioritizing the Prior: Advanced Inversion Algorithms for Scientific Data Analysis , Co-I	LANL LDRD-DR

Mentoring

2022-2023	James Torres (Post-Doc) , Now Instrument Scientist on MARS beamline at HFIR/ORNL	Mentor
2020-2023	Thilo Balke (Graduate Student) , Now Research Scientist at Samsung	Co-Mentor
2020-2023	Danielle Schaper (Graduate Student) , Now Post-doc in P-1	Co-Mentor
2021-2023	Daniel Eigenbach (Post-bach Student) , Now Research Technologist in MST-8	Co-Mentor
2019-2020	Darcy Newmark (Undergraduate Student) , Now Graduate Student at MIT	Mentor

Honors

2023	Distinguished Performance Award: Hydride Moderator Development Team ,	LANL
2016	Recipient of the Nuclear Science Laboratory's Cornelius P. Browne Memorial Award ,	UND
2014	Notre Dame Graduate Student Union Conference Presentation Award ,	UND
2014	Notre Dame Graduate School Professional Development Award ,	UND
2008	Guenter Schwarz Memorial Scholar Award ,	FSU

Organizations, Committees, and Positions

2023-Pres.	LANL Point of Contact , Nuclear Science User Facilities	INL
2023	Organizing Member , Computational Imaging XXI Conference	IS&T
2022-Pres.	Reviewer , Journal of Industrial & Engineering Chemistry Research	ASC
2021-Pres.	Reviewer , Journal of Imaging; Crystals; and Quantum Beam Science	MDPI
2016	Vice Chair , Frontiers in Nuclear Astrophysics Meeting Organizing Committee	JINA-CEE
2010-2011	Committee Member , Department of Physics Graduate Recruitment Committee	UND
2011-2014	Board Member , Graduate Physics Students Conference Committee	UND

Computational Experience

Base Languages	Python, C/C++, BASH & ZSH, HTML/CSS, Java, \LaTeX
Proficient Python Libraries	NumPy, SciPy, Pandas, Matplotlib, Pillow, Scikit Image, Scikit Learn, Tomopy, pyEpics, pyTorch
Macro Programing	ImageJ (Java), ROOT (C/C++), Qt (python), CUDA(C)
Modeling & Simulations	Geant4, SAMMY, SRIM, TALYS, XNet, DWUCK4, AutoCAD

Technical Experience

Imaging Systems	CCD, CMOS, and sCMOS cameras Timepix2 & Timepix3 based imaging cameras Optical systems: scintillators, lenses, and image intensifiers
Radiation Detection	Fast Plastics + PMT Neutron Detectors Silicon Detectors: Diodes and Double sided High Purity Germanium Detectors ^3He Proportional Counters Multi-Wire Drift Chambers Mircochannel Plate Detectors
Analog Pulse Processing	Pre-Amplifiers, Constant Fraction Discriminators, Amplifiers, Gate-Generators
Digital Pulse Processing	Timepix3 SPIDR Readout boards CAEN Family Digitizers
Ion Beam Production	Multi-Cathode Source of Negative Ions by Cesium Sputtering @ NSL: Operations Helium Ion Source @ NSL: Operations Electron Cyclotron Resonance Ion Source @ NSL: Operations and maintenance
Ion Beam Transportation	10 MV FN Tandem Accelerator @ NSL: Operations and maintenance 5 MV Van der Graaf Accelerator @ NSL: Operations and maintenance Beamline optics and fabrication Dispersion matching of beam lines to magnetic spectrographs
Vacuum Systems	Roughing pumps, Roots Blowers, Turbo-molecular Pumps, Cryogenic pumps

Seminars and Talks (invited)

Sifting Through Light: A Need for Efficient Processing and Reconstruction in Photon-Counting Based Neutron Imaging Data	<i>Cleveland, OH</i>
MATERIALS DATA SCIENCE FOR STOCKPILE STEWARDSHIP CENTER OF EXCELLENCE, CASE WESTERN UNIVERSITY	2024
Neutron PIE: Accelerating Post-Irradiation Examination with Advanced Neutron Imaging for Next-Gen. Nuclear Reactor Materials	<i>South Bend, IN</i>
NUCLEAR SCIENCE SEMINAR, DEPARTMENT OF PHYSICS, UNIVERSITY OF NOTRE DAME	2023
Neutron Imaging at LANSCE: Characterizing Future Materials for Next Gen. Nuclear Reactors	<i>Pittsburgh, PA</i>
MATERIALS SCIENCE & TECHNOLOGY	2022
Characterizing Materials for Next Generation Nuclear Reactors using Neutron Imaging	<i>Virtual</i>
UNIVERSITY OF LAS VEGAS NEVADA, NSST CONSORTIUM SEMINAR	2022
Neutron Imaging at LANSCE	<i>Virtual</i>
TMS ANNUAL MEETING AND EXHIBITION	2021
Energy Resolved Neutron Imaging at LANSCE	<i>Virtual</i>
DENVER X-RAY CONFERENCE	2020
Probing He Gas Production Reactions using LENZ at LANSCE	<i>Los Alamos, NM</i>
ISR-1 SEMINAR	2018

Publications

PEER-REVIEWED

'Remote Density Measurements of Molten Salts via Neutron Radiography.' Long, A. M., Parker, S. S., Carver, D. T., Jackson, J. M., Monreal, M. J., Newmark, D. A., & Vogel, S. C. *Journal of Imaging*, 7(5), 88 (2021).

' α -unbound levels in ^{34}Ar from $^{36}\text{Ar}(p,t)^{34}\text{Ar}$ reaction measurements and implication for the astrophysical $^{30}\text{S}(\alpha,p)^{33}\text{Cl}$ reaction rate'. A.M. Long, T. Adachi, M. Beard, G. P. A. Berg, M. Couder, R. J. deBoer, M. Dozono, J. Görres, H. Fujita, Y. Fujita, K. Hatanaka, D. Ishikawa, T. Kubo, H. Matsubara, Y. Namiki, S. O'Brien, Y. Ohkuma, H. Okamura, H. J. Ong, D. Patel, Y. Sakemi, Y. Shimbara, S. Suzuki, R. Talwar, A. Tamii, A. Volya, T. Wakasa, R. Watanabe, M. Wiescher, R. Yamada, and J. Zenihiro *Physical Review C* 97, 054613 (2018)

'An indirect study of the stellar $^{34}\text{Ar}(\alpha,p)^{37}\text{K}$ reaction rate through $^{40}\text{Ca}(p,t)^{38}\text{Ca}$ reaction measurements' A.M. Long, T. Adachi, M. Beard, G. P. A. Berg, Z. Buthelezi, J. Carter, M. Couder, R. J. deBoer, R. W. Fearick, S. V. Förtsch, J. Göres, J. P. Mira, S. H. T. Murray, R. Neveling, P. Papka, F. D. Smit, E. Sideras-Haddad, J. A. Swartz, R. Talwar, I. T. Usman, M. Wiescher, J. J. Van Zyl, and A. Volya *Physical Review C* 95, 055803 (2017)

'Demonstration of Neutron Time-of-Flight Diffraction with an Event-Mode Imaging Detector' T.Jäger, A. S. Losko, A. Wolfertz, S. Schmidt, M. Bertelsen, A. Khaplanov, S.R. Agnew, F. Funama, M. Morgano, M. Roth, J. R. Gochanour, A.M. Long, L. Lutterotti, and S.C. Vogel *Journal of Applied Crystallography* (Submitted Fall 2023)

'TRINIDI: Time-of-Flight Resonance Imaging with Neutrons for Isotopic Density Inference' T. Balke, A.M. Long, S.C. Vogel, B. Wohlberg, & C.A. Bouman *IEEE Transactions on Computational Imaging* vol. 10, pp. 154-169, 2024

'The Complex, Unique and Powerful Imaging Instrument for Dynamics (CUPI2D) at the Spallation neutron Source' A. Brugger, H.Z. Bilheux, J.Y.Y. Lin, G.J. Nelson, A. Kiss, D.J.P. Morris, M. Connolly, A.M. Long, A.S. Tremsin, A. Strzelec, M. Anderson, R.J. Agasie, C.E.A. Finney, M.L. Wissink, M.H. Hubler, R. Pellenq, C.E.White, B.J. Heuser, A. Craft, J.M. Harp, C. Tan, K. Morris, B. Schillinger, & S.C.Vogel *Review of Scientific Instruments* 94, 051301 (2023)

'Effects of Hydrogen Redistribution at High Temperatures in Yttrium Hydride Moderator Material.' Trelue, H. R., Long, A. M., Luther, E. P., Carver, D. T. & Mehta, V. K. *The Journal of The Minerals, Metals & Materials Society*, 73, 3513-3518 (2021).

'Flexible 3D printed silicones for gamma and neutron radiation shielding.' Talley, S. J., Robison, T., Long, A. M., Lee, S. Y., Brounstein, Z., Lee, K. S., & Labouriau, A. *Radiation Physics and Chemistry*, 188, 109616 (2021).

'Determination of $^{20}\text{Ne}(p,\gamma)^{21}\text{Na}$ cross sections from $E_p = 500 - 2000 \text{ keV}$ '. S. Lyons, J. Gorres, R.J. deBoer, E. Stech, Y. Chen, G. Gilardy, Q. Liu, A.M. Long, M. Moran, D. Robertson, C. Seymour, B. Vande Kolk, and M. Wiescher *Physics Review C* 97 (2018)

'Probing astrophysically important states in the ^{26}Mg nucleus to study neutron sources for the s-process'. Talwar, R., Adachi, T., Berg, G.P.A., Bin, L., Bisterzo, S., Couder, M., DeBoer, R.J., Fang, X., Fujita, H., Fujita, Y., Gorres, J., Hatanaka, K., Itoh, T., Kadoya, T., Long, A., Miki, K., Patel, D., Pignatari, M., Shimbara, Y., Tamii, A., Wiescher, M., Yamamoto, T., Yosoi, M. *Physics Review C* 93 (2016)

'Low energy neutron background in deep underground laboratories'. Best, A., Gorres, J., Junker, M., Kratz, K.-L., Laubenstein, M., Long, A., Nisi, S., Smith, K., Wiescher, M. *Nuclear Instruments and Methods in Physics Research* 812 (2016)

' (α,γ) cross section measurements in the region of light p nuclei'. Quinn, S.J., Spyrou, A., Simon, A., Battaglia, A., Bowers, M., Bucher, B., Casarella, C., Couder, M., Deyoung, P.A., Dombos, A.C., Gorres, J., Kontos, A., Li, Q., **Long, A.**, Moran, M., Paul, N., Pereira, J., Robertson, D., Smith, K., Smith, M.K., Stech, E., Talwar, R., Tan, W.P., Wiescher, M. *Physics Review C* 92 (2015)

'Systematic study of (α,γ) reactions for stable nickel isotopes'. Simon, A., Beard, M., Spyrou, A., Quinn, S.J., Bucher, B., Couder, M., DeYoung, P.A., Dombos, A.C., Gorres, J., Kontos, A., **Long, A.**, Moran, M.T., Paul, N., Pereira, J., Robertson, D., Smith, K., Stech, E., Talwar, R., Tan, W.P., Wiescher, M. *Physics Review C* 92 (2015)

'First Direct Measurement of $C^{12}(C^{12},n)Mg^{23}$ at Stellar Energies'. Bucher, B., Tang, X.D., Fang, X., Heger, A., Almaraz-Calderon, S., Alongi, A., Ayangeakaa, A.D., Beard, M., Best, A., Browne, J., Cahillane, C., Couder, M., Deboer, R.J., Kontos, A., Lamm, L., Li, Y.J., **Long, A.**, Lu, W., Lyons, S., Notani, M., Patel, D., Paul, N., Pignatari, M., Roberts, A., Robertson, D., Smith, K., Stech, E., Talwar, R., Tan, W.P., Wiescher, M., Woosley, S.E. *Physical Review Letters* 114 (2015)

'First application of the γ -summing technique in inverse kinematics'. Quinn, S.J., Spyrou, A., Simon, A., Battaglia, A., Bowers, M., Bucher, B., Casarella, C., Couder, M., Deyoung, P.A., Dombos, A.C., Greene, J.P., Gorres, J., Kontos, A., Li, Q., **Long, A.**, Moran, M., Paul, N., Pereira, J., Robertson, D., Smith, K., Smith, M.K., Stech, E., Talwar, R., Tan, W.P., Wiescher, M. *Nuclear Instruments and Methods in Physics Research* 575 (2014)

'Measurement of the $^{58}Ni(\alpha,\gamma)^{62}Zn$ reaction and its astrophysical impact'. Quinn, S.J., Spyrou, A., Bravo, E., Rauscher, T., Simon, A., Battaglia, A., Bowers, M., Bucher, B., Casarella, C., Couder, M., Deyoung, P.A., Dombos, A.C., Gorres, J., Kontos, A., Li, Q., **Long, A.**, Moran, M., Paul, N., Pereira, J., Robertson, D., Smith, K., Smith, M.K., Stech, E., Talwar, R., Tan, W.P., Wiescher, M. *Physics Review C* 89 (2014)

'Measurement of the $^{90,92}Zr(p,\gamma)^{91,93}Nb$ reactions for the nucleosynthesis of elements near $A=90$ '. Spyrou, A., Quinn, S.J., Simon, A., Rauscher, T., Battaglia, A., Best, A., Bucher, B., Couder, M., Deyoung, P.A., Dombos, A.C., Fang, X., Gorres, J., Kontos, A., Li, Q., Lin, L.Y., **Long, A.**, Lyons, S., Meyer, B.S., Roberts, A., Robertson, D., Smith, K., Smith, M.K., Stech, E., Stefanek, B., Tan, W.P., Tang, X.D., Wiescher, M. *Physics Review C* 88 (2013)

'Testing the mutually enhanced magicity effect in nuclear incompressibility via the giant monopole resonance in the $^{204,206,208}Pb$ isotopes'. Patel, D., Garg, U., Fujiwara, M., Adachi, T., Akimune, H., Berg, G.P.A., Harakeh, M.N., Itoh, M., Iwamoto, C., **Long, A.**, Matta, J.T., Murakami, T., Okamoto, A., Sault, K., Talwar, R., Uchida, M., Yosoi, M. *Physics Letters B* 726 (2013)

'Systematic study of (p,γ) reactions on Ni isotopes'. Simon, A., Spyrou, A., Rauscher, T., Fröhlich, C., Quinn, S.J., Battaglia, A., Best, A., Bucher, B., Couder, M., Deyoung, P.A., Fang, X., Gorres, J., Kontos, A., Li, Q., Lin, L.-Y., **Long, A.**, Lyons, S., Roberts, A., Robertson, D., Smith, K., Smith, M.K., Stech, E., Stefanek, B., Tan, W.P., Tang, X.D., Wiescher, M. *Physics Review C* 87 (2013)

' SuN : Summing $NaI(Tl)$ gamma-ray detector for capture reaction measurements'. Simon, A., Quinn, S.J., Spyrou, A., Battaglia, A., Beskin, I., Best, A., Bucher, B., Couder, M., Deyoung, P.A., Fang, X., Gorres, J., Kontos, A., Li, Q., Liddick, S.N., **Long, A.**, Lyons, S., Padmanabhan, K., Peace, J., Roberts, A., Robertson, D., Smith, K., Smith, M.K., Stech, E., Stefanek, B., Tan, W.P., Tang, X.D., Wiescher, M. *Nuclear Instruments and Methods in Physics Research* 730 (2013)

CONFERENCE PROCEEDINGS:

'Recent Nuclear Astrophysics Measurements using the TwinSol Separator'. Bardayan, D.W., Ahn, T., Allen, J., Becchetti, F.D., Blackmon, J.C., Brodeur, M., Frentz, B., Gupta, Y.K., Hall, M.R., Hall, O., Henderson, S., Hu, J., Kelly, J.M., Kolata, J.J., **Long, A.**, Long, J., Macon, K., Nicoloff, C., O'Malley, P.D., Ostdiek, K., Pain, S.D., Riggins, J., Schultz, B.E., Smith, M., Strauss, S., Torres-Isea, R.O. *Journal of Physics: Conference Series* 703 (2016)

'First direct measurement of $^{12}\text{C}(^{12}\text{C},n)^{23}\text{Mg}$ at stellar energies'. Tang, X.D., Bucher, B., Fang, X., Heger, A., Almaraz-Calderon, S., Alongi, A., Ayangeakaa, A.D., Beard, M., Best, A., Browne, J., Cahillane, C., Couder, M., DeBoer, R.J., Kontos, A., Lamm, L., Li, Y.J., **Long, A.**, Lu, W., Lyons, S., Notani, M., Patel, D., Paul, N., Pignatari, M., Roberts, A., Robertson, D., Smith, K., Stech, E., Talwar, R., Tan, W.P., Wiescher, M., Woosley, S.E. *EPJ Web of Conferences* 109 (2016)

'Constraining the $^{12}\text{C}+^{12}\text{C}$ fusion cross section for astrophysics'. Bucher, B., Fang, X., Tang, X.D., Tan, W.P., Almaraz-Calderon, S., Alongi, A., Ayangeakaa, A.D., Beard, M., Best, A., Browne, J., Cahillane, C., Couder, M., Dahlstrom, E., Davies, P., DeBoer, R., Kontos, A., Lamm, L., **Long, A.**, Lu, W., Lyons, S., Ma, C., Moncion, A., Notani, M., Patel, D., Paul, N., Pignatari, M., Roberts, A., Robertson, D., Smith, K., Stech, E., Talwar, R., Thomas, S., Wiescher, M. *EPJ Web of Conferences* 93 (2015)

'P process overview: (p,γ) and (α,γ) reactions in regular and inverse kinematics'. Spyrou, A., Quinn, S.J., Simon, A., Battaglia, A., Best, A., Bucher, B., Couder, M., DeYoung, P.A., Dombos, A.C., Fang, X., Gorres, J., Greene, J., Kontos, A., Li, Q., Lin, L.Y., **Long, A.**, Lyons, S., Meyer, B.S., Rauscher, T., Roberts, A., Robertson, D., Smith, K., Smith, M.K., Stech, E., Tan, W.P., Tang, X.D., Wiescher, M. *Proceedings of Science* (2014)

'Searching for the low-energy resonances in the $^{12}\text{C}(^{12}\text{C},n)^{23}\text{Mg}$ reaction cross section relevant for s-process nucleosynthesis'. Bucher, B., Fang, X., Almaraz-Calderon, S., Alongi, A., Ayangeakaa, A.D., Beard, M., Best, A., Browne, J., Cahillane, C., Couder, M., Deboer, R., Kontos, A., **Long, A.**, Lu, W., Lyons, S., Notani, M., Patel, D., Paul, N., Roberts, A., Robertson, D., Smith, K., Stech, E., Talwar, R., Tan, W., Tang, X.D. *Journal of Physics: Conference Series* 420 (2013)

'Experimental investigation of the $^{12}\text{C}+^{12}\text{C}$ fusion at very low energies by direct and indirect methods'. Fang, X., Bucher, B., Almaraz-Calderon, S., Alongi, A., Ayangeakaa, A.D., Best, A., Berg, G.P.A., Cahillane, C., Dahlstrom, E., Deboer, R.J., Freer, M., Fujita, H., Fujita, Y., Gorres, J., Hatanaka, K., Howard, A., Itoh, T., Kadoya, T., Kawabata, T., Kolata, J.J., Li, Q., Li, Y.J., Liu, B., **Long, A.**, Lui, Y.-W., Lyons, S., Matsuda, Y., Miki, K., Paul, N., Roberts, A., Smith, M.K., Talwar, R., Tamii, A., Tan, W.P., Tang, X.D., Wiescher, M., Yokota, N. *Journal of Physics: Conference Series* 420 (2013)

'P-process measurements with SuN '. Spyrou, A., Simon, A., Quinn, S.J., Battaglia, A., Best, A., Beskin, I., Bucher, B., Couder, M., DeYoung, P.A., Fang, X., Gorres, J., Kontos, A., Li, Q., Liddick, S.N., **Long, A.**, Lyons, S., Padmanabhan, K., Peace, J., Roberts, A., Robertson, D., Smith, K., Smith, M.K., Stech, E., Stefanek, B., Tan, W.P., Tang, X.D., Wiescher, M. *AIP Conference Proceedings* 1498 (2012)

'High precision measurements for the rp-process'. Berg, G.P.A., Fujita, Y., Gorres, J., Harakeh, M.N., Hatanaka, K., **Long, A.**, Neveling, R., Smit, F.D., Talwar, R., Tamii, A., Wiescher, M. *Journal of Physics: Conference Series* 387 (2012)

'Measurements of ISGMR in Sn, Cd and Pb isotopes and the asymmetry of nuclear matter incompressibility'. BFujiwara, M., Li, T., Patel, D., Garg, U., Berg, G.P.A., Liu, Y., Marks, R., Matta, J., Nayak, B.K., Madhusudhana-Rao, P.V., **Long, A.**, Sault, K., Talwar, R., Hashimoto, H., Nakanishi, K., Okumura, S., Yosoi, M., Ichikawa, M., Itoh, M., Matsuo, R., Terazono, T., Uchida, M., Iwao, Y., Kawabata, T., Murakami, T., Sakaguchi, H., Terashima, S., Yasuda, Y., Zenihiro, J., Akimune, H., Iwamoto, C., Okamoto, A., Kawase, K., Adachi, T., Harakeh, M.N. *AIP Conference Proceedings* 1377 (2011)