

Kahl, David (Daid) Miles — Curriculum Vitae

Education and degrees awarded

Ph.D. Physics, the University of Tokyo, Tokyo, Japan (2008–2012)

Thesis: Examination of the $^{30}\text{S}(\alpha, p)$ thermonuclear reaction rate by $^{30}\text{S}+\alpha$ resonant elastic scattering

Supervisors: Shigeru KUBONO & Hidetoshi YAMAGUCHI

[Monbukagakusho Research Scholarship](#) – full tuition, stipend, and airfare

Convocation date: September 14, 2015

M.Sc. Physics & Astronomy, McMaster University, Hamilton, Ontario, Canada (2006–2008)

Thesis: ^{30}S Beam development and the ^{30}S waiting point in type I X-ray bursts

Supervisor: Alan A. CHEN

Merit-based scholarships – full tuition plus stipend

Convocation date: November 21, 2008

B.Sc. Physics & Astronomy, Beloit College, Beloit, Wisconsin, USA (2001–2005)

Honors Term Thesis: Motivation for relocating the Thompson Observatory

Major: Physics (Departmental Honors); *Minor:* Political Science

Thompson Observatory Prize in Astronomy and Astrophysics)

[Eaton Scholarship](#) and Political Science scholarships – received maximum merit-based financing allowed

Convocation date: May 15, 2005

Diploma, Mattawan High School, Mattawan, Michigan, United States (1997–2001)

Convocation date: May 2001

Current position

Research Scientist (CS III), Extreme Light Infrastructure – Nuclear Physics, Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (IFIN-HH), Romania (2021–present)

Fellowships and Grants

[Visiting Fellow Programme](#), the University of Jyväskylä, Jyväskylä, Finland (October–December 2021)

Rated #1 in Physics for the [TE2021 Young Researcher Grant](#) valued at 450k RON (\approx €90k)

Previous work experience

Postdoctoral Research Associate, School of Physics & Astronomy, the University of Edinburgh (2016–2020)

Assistant Research Staff, Center for Nuclear Study, the University of Tokyo, RIKEN Campus (2012–2015)

US DOE Research Experiences for Undergraduates, Argonne National Laboratory, USA (2005)

Project title: Ion chamber commissioning for the measurement of ^{16}N β -delayed α -decay

Supervisor: K. Ernst REHM

Scientific and societal impact of research

Publications

My publications include an edited book, a magazine article, 55 peer-reviewed scientific articles (16 as first or one of the primary authors), and 88 conference proceedings (8 as first author). See my **ORCID: 0000-0003-3368-7307** or the independent document on Publications for a complete list.

Referee for scientific and scholarly journals

The European Physical Journal

Journal of Physics

Nuclear Instruments and Methods in Physics Research

Invited lectures and talks

1. “Radioactive Nuclides in Outerspace.” Invited talk (online) at International Research Network for Nuclear Astrophysics (IRENA), Michigan State University, East Lansing, Michigan, USA, February 2022.
2. “Radioactive Nuclides in Outerspace.” Invited seminar at JYFL, Jyväskylä, Finland, November 2021.
3. “Time Projection Chambers, Maxwell’s Demon, and Entropy.” Invited talk (online) at Workshop on Nuclear Photonics and Research Opportunities at ELI-NP (Măgurele, Romania) and I.I.T. Ropar (Rupnagar, Punjab, India), September 2021.
4. “Radioactive Nuclides in Outerspace.” Invited seminar at INFN-LNS, Catania, Italy, October 2018.
5. “Impact of the $^{26}\text{Al}(p, \gamma)$ reaction to galactic ^{26}Al yield.” Invited talk at Origin of Matter and Evolution of Galaxies (OMEG2017), Daejeon, Korea, June 2017.
6. “Experimental Investigation of X-ray Bursts via ^{30}S alpha Resonant Elastic Scattering.” Special Seminar, National Superconducting Cyclotron Laboratory, Michigan State University, East Lansing, Michigan, USA, June 2015.
7. “ ^{30}S Alpha Resonant Elastic Scattering to Investigate the Astrophysical $^{30}\text{S}(\alpha, p)$ Reaction Rate.” Special Heavy Ion Discussion Group, Argonne National Laboratory, Argonne, Illinois, USA, June 2015.
8. “Active Target Studies of the αp -process at CRIB.” Invited talk at Origin of Matter and Evolution of Galaxies (OMEG12), Tsukuba, Japan, November 2013.
9. “Isomer Thermalization in Nucleosynthesis.” Invited talk at the Astrophysics Journal Club, McMaster University, Hamilton, Ontario, Canada, July 2010.

Invited outreach presentations

1. “Introduction to Nuclear Physics for Non-Proliferation.” Invited talk (online) at Health Education and Research Occupations (H.E.R.O.) High School, New York, USA, October 2020.
2. “Introduction to Nuclear Physics for Non-Proliferation.” Invited talk at Fettes College (independent secondary school), Edinburgh, UK, September 2016.
3. “Introduction to Nuclear Physics for Non-Proliferation.” Invited talk by McMaster Science for Peace / Pugwash Society, McMaster University, Hamilton, Ontario, Canada, March 2007.
4. “Introduction to Nuclear Physics for Non-Proliferation.” Invited talk at the Annual Student Symposium, Beloit College, Beloit, Wisconsin, USA, April 2005.
5. “Introduction to Nuclear Physics for Non-Proliferation.” Invited talk at the APS/AAPT/SPS Texas Section Meeting, Stephen F. Austin State University, Nacogdoches, Texas, USA, March 2005.

Contributed research talks

1. “Time Projection Chambers.” Talk at New Trends in Nuclear Physics Detectors, Warsaw, Poland, October 2021.
2. “Uncertainties in the $^{18}\text{F}(p, \alpha)^{15}\text{O}$ Reaction Rate in Classical Novae.” Talk (online) at Nuclei in the Cosmos (NIC XVI), Chengdu, China, September 2021.
3. “Me, Al Cameron, and the Heat Death of the Universe.” Talk at the Carpathian School of Physics, Sanaia, Romania, August 2021.
4. “Uncertainties in the $^{18}\text{F}(p, \alpha)^{15}\text{O}$ Reaction Rate in Classical Novae.” Talk (online) at Nuclear Burning in Massive Stars, Kyoto (Japan) & Melbourne (Australia), July 2021.
5. “Uncertainties in the $^{18}\text{F}(p, \alpha)^{15}\text{O}$ Reaction Rate in Classical Novae.” Talk (online) at the National Astronomy Meeting 2021, Bath, UK, July 2021.
6. “Isomer Beam Elastic Scattering: $^{26\text{m}}\text{Al}(p, p)$ for Astrophysics.” Talk at Nuclear Physics in Astrophysics (NPA8), Catania, Italy, June 2017.
7. “Explosive Destruction of ^{26}Al .” Talk at The Second Sicily – East Asia Workshop on Low-Energy Nuclear Physics (SEA2016), Wako, Japan, June 2016.
8. “Experimental Investigation of the $^{30}\text{S}(\alpha, p)$ Thermonuclear Reaction in X-ray Bursts.” Talk at Origin of Matter and Evolution of Galaxies (OMEG2015), Beijing, China, June 2015.
9. “ $^{30}\text{S}+\alpha$ Resonant Elastic Scattering with an Active Target.” Talk at Sicily – East Asia Workshop on Low-Energy Nuclear Physics (SEA), Ortigia, Italy, July 2014.
10. “Investigation of the $^{18}\text{Ne}(\alpha, p)$ Breakout Reaction in X-Ray Bursts.” Talk at Nuclear Physics in Astrophysics VI, Lisbon, Portugal, May 2013.
11. “ ^{30}S Beam Development & X-Ray Bursts.” Talk at the 5th European Summer School on Experimental Nuclear Astrophysics, Santa Tecla, Italy, September 2009.
12. “ ^{30}S Beam Development & X-Ray Bursts.” Talk at the 8th CNS-EFES Summer School, Center for Nuclear Study, the University of Tokyo, Wako, Japan, August 2009.
13. “Status of ^{30}S Beam Development at RIKEN for a Future Measurement of $^{30}\text{S}(\alpha, p)^{33}\text{Cl}$ Cross Section.” Talk at the 6th Exotic Beam Physics Summer School, National Superconducting Cyclotron Laboratory, Michigan State University, East Lansing, Michigan, USA, August 2007.
14. “On the Waiting Point at $A=30$ in X-Ray Bursts: $^{30}\text{S}(\alpha, p)^{33}\text{Cl}$ with CRIB.” Talk at JINA Frontiers 2007, University of Notre Dame, South Bend, Indiana, USA, August 2007.
15. “Study of $^{25}\text{Al}+p$ Resonances Using $^{27}\text{Si}(p, d)^{26}\text{Si}^*$ Reactions.” Talk at the NSCL User’s Meeting, National Superconducting Cyclotron Laboratory, Michigan State University, East Lansing, Michigan, USA, August 2007.

Leadership roles*Accepted experimental proposals*

Transfer reactions induced by lithium via α nuclear-clusters in astrophysics

Laboratory: Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (Romania)

Spokesperson: D. Kahl

Status: Approved

High Resolution Study of the $^{18}\text{Ne}(d, p)$ Reaction, and the Destruction of the Cosmic γ -ray Emitter ^{18}F in Novae

Laboratory: TRIUMF (Canada)

Spokespersons: C. R. Bruno & D. Kahl

Status: Approved with high priority (awaiting machine time)

^{26}mAl proton resonant elastic scattering with CRIB

Laboratory: Radioactive Ion Beam Factory (Japan)

Spokesperson: D. Kahl

Status: Experiment successfully completed March 2017

Graduate student supervision

Dr. Conor HAMILL, Ph.D. Physics & Astronomy, University of Edinburgh (Edinburgh, UK): Convocation 2021

Role: Secondary supervisor

Thesis topic: $^{25}\text{Mg}(d, p)$ at Triangle Universities Nuclear Laboratory (North Carolina, USA)

Mr. Hideki SHIMIZU, M.Sc. Physics, the University of Tokyo (Tokyo, Japan): Convocation March 2018

Role: Experiment spokesperson

Thesis: “Toward the experimental evaluation of the contribution of the isomer to the ^{26}Al problem in ongoing nucleosynthesis in the galaxy”

Other training

Lifetime licenses within Japan. Training Center, Safety Technology Co., Ltd., Uozu, Toyama, Japan

Skill training for slinging, September 9, 2013

Skill training for operation of pendant-controlled cranes, September 23, 2013

Computing skills

Expertises in: ROOT, C++, Bash script, LISE++

Linux system installation and administration (based on source code)

Makefile cross-compiling C++ with Fortran

HTML, markdown, and general website design

Linguistic skills

Mother tongue: English

Other: Conversational Japanese (self-assessment)

Teaching experience

Extreme Light Infrastructure – Nuclear Physics

C++ With Applications: Summer 2021

The University of Edinburgh, School of Physics & Astronomy

Research Methods in Physics: 2018–2019; 2019–2020

In this year-long course, I discuss secondary research methods with a small group of students.

Introduction to LaTeX seminar: 2018; 2019

Students particularly appreciated my assistance at a voluntary hands-on workshop introducing LaTeX.

The University of Tokyo, Center for Nuclear Study

I initiated, organized, and ran several educational events for other graduate students

Nuclear Astrophysics Seminar, Summer 2010

Linux Administration Workshop, Spring 2010

McMaster University, Department of Physics & Astronomy

Teaching Assistant, Nuclear Physics, Spring 2008

Teaching Assistant, Engineering Physics, Autumn 2006–Spring 2008

Guest Lecturer, Origins of the Elements, Autumn 2007

Teaching Assistant, Physics Drop-In-Centre, Autumn 2007

Beloit College, Department of Physics & Astronomy

Teaching Assistant, Astronomy, Autumn 2004

Panel (jury) member for degree final presentations – University of Edinburgh

M.Phys. (Physics): 2019, 2020

M.Phys. (Astronomy/Astrophysics): 2018