



Student Conference 2023

University of Tennessee at Knoxville

April 13–15, 2023 | Knoxville, TN



CALL FOR PAPERS

OFFICIALS

General Co-Chairs

Emma Houston, ehouston10@vols.utk.edu
Katy Worrell, kworrell@vols.utk.edu

Technical Program Chair

Lance Drouet, ldrouet@vols.utk.edu

DEADLINES

JANUARY

SUBMISSION OF SUMMARIES: **January 30, 2023**

FEBRUARY

REVIEWS COMPLETED AND AUTHORS NOTIFIED WITH REVISION REQUESTS: **February 17, 2023**

FEBRUARY

FINAL SUBMISSIONS WITH REVISIONS DUE: **February 27, 2023**

APRIL

CONFERENCE: **April 13-15, 2023**

FORMAT

Submissions, including research, internship projects, senior design projects, and nuclear-policy analysis, are invited. Authors are required to use the ANS template provided at ans.org/pubs/transactions/

SUBMISSION

Students can submit a 1–4-page summary to be considered for a full presentation or poster presentation. Students can select if they also would like to be considered for a 5-minute lightning talk, in addition to consideration for a full presentation or a poster presentation. Due to availability, lightning-talk spaces will be extremely limited. Summaries will be chosen for only one presentation format (Full, Poster, or Lightning Talk).

Summary acceptance will be based on the quality of work, clarity and conciseness, and impact.

GENERAL CONFERENCE EMAIL

ans23stucon@gmail.com

SUBMIT A SUMMARY

epsr.ans.org/meeting/?m=387

PROGRAM SPECIALIST

Janet Davis
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UTK ANS
STUDENT
CONFERENCE

TRACKS*

1. REACTOR PHYSICS

The Reactor Physics track invites work in nuclear data, particle interactions and transport, reactor and nuclear systems analysis, methods, design, validation, and operating experience and standards.

2. NUCLEAR FUELS AND MATERIALS

The Nuclear Fuels and Materials track invites work that intersects material science and nuclear technology development. This includes reactor materials such as fuel, cladding, and coolant in conventional reactors, as well as development of fuels in advanced reactors and materials appropriate for enabling advancement in fission and fusion technology.

3. THERMAL HYDRAULICS

The Thermal Hydraulics track invites work that advances the fields of thermal and hydraulic phenomena as it relates to nuclear energy.

4. INSTRUMENTATION, CONTROL SYSTEMS, AND CYBER SECURITY

The instrumentation, control systems, and cybersecurity track invites work that contributes to human interfaces with nuclear systems, instrumentation and control of nuclear systems, and security of plant information.

5. FUEL CYCLES, WASTE MANAGEMENT, AND DECOMMISSIONING

The Fuel Cycles, Waste Management, and Decommissioning track invites work on the lifetime of nuclear fuel, from its fabrication and in-core management to its recycle and disposal, including high-level, low-level, and mixed wastes. Work may also relate to decontamination, decommissioning, and environmental restoration of former nuclear sites.

6. POWER REACTOR OPERATIONS, SAFETY, AND RELIABILITY

The Power Reactor Operations, Safety, and Reliability track invites work on improving the longevity and safety of construction and operational nuclear sites with efficient technology, processes, and procedures.

7. RADIATION PROTECTION AND MEDICAL PHYSICS

The Radiation Protection and Medical Physics track invites work related to the radiological sciences for the safe use and implementation of nuclear sources in and beyond medical physics.

8. ISOTOPE PRODUCTION

The Isotope Production track invites work in nuclear science and engineering technologies involving isotopes, radiation applications, and associated equipment in scientific research, development, and industrial processes.

9. RADIATION DETECTION AND IMAGING

The Radiation Detection and Imaging track invites work in advancements of detector technology and radiation imaging techniques.

10. NUCLEAR CRITICALITY SAFETY

The Nuclear Criticality Safety track invites work on the practice of ensuring that fissile material operations outside of reactors are performed safely, including operational criticality safety, human factors, nuclear data, cross section measurement, critical and subcritical experimentation, and radiation transport code.

11. NONPROLIFERATION, SECURITY, AND SAFEGUARDS

The Nonproliferation, Security, and Safeguards track invites work in security and safeguards of the peaceful use of nuclear technology and materials. Topics include physical protection, vulnerability assessment, human reliability, insider threats, radiological security, nuclear and radiological terrorism, nuclear forensics, international trade and export controls, nuclear material accounting and control, in addition to policy and legal considerations for nuclear security and safeguards.

12. NUCLEAR ADVOCACY AND POLICY

The Nuclear Advocacy and Policy track invites work on advocacy and policy advancements of nuclear topics to all audiences. This is inclusive of politics surrounding nuclear interests and developing communications with the general public.

13. COMPUTATIONAL METHODS, ARTIFICIAL INTELLIGENCE, AND MACHINE LEARNING

The Computational Methods, Artificial Intelligence, and Machine Learning track invites work in computational methods in the nuclear field. This track encompasses artificial intelligence and machine learning as they pertain to nuclear uses.

14. FUSION AND PLASMA PHYSICS

The Fusion and Plasma Physics track invites work in fusion energy and plasma physics. Topics also include plasma-material interactions, plasma diagnostics, semiconductor fabrication, and plasma chemistry.

15. SPACE NUCLEAR POWER AND PROPULSION

The Space Nuclear Power and Propulsion track invites work in advancements of nuclear applications for space use.

16. NUCLEAR TECHNOLOGY IN SOCIETY AND EDUCATION

The Nuclear Technology in Society and Education track invites work on the intersection of nuclear technology within society and education. Work in the professional development and education of nuclear sciences is captured here.

*Many tracks are closely aligned with ANS Division goals and therefore descriptions can be accredited to the corresponding division.