UTORII-SEED-Proposal-Preparation

- There are several types of UTORII grants https://utorii.com/grants/
- Scope and rules are changing from year-to-year
- Last year we have tried (unsuccessfully) UTORII **PACT** Proposal
- This year seems SEED rules are more for us than PACT
- There are clear UT guidelines for the SEED https://tennessee.inforeadv4.com/#competitionDetail/1897802
- Reqs and format of ORNL **SPP** submission are not described

“UT-ORII established its seed funding program in 2021 to support new and highly innovative multidisciplinary research projects designed by ORNL-UT research teams. All UT faculty and ORNL staff members are eligible to apply.”

https://utorii.com/ut-orii-seed-program/

Selection Criteria

•Technical merit of the proposed research
•Integration of novel graduate student training activities
•Likelihood for future external funding
•Potential for the establishment of a meaningful, sustained collaboration between the two institutions; including joint publications, student mentoring, team development, etc.

The deadline for SPP submission to ORNL is June 30th, 2023. UT-ORII seed proposal deadline is July 31, 2023, with funding anticipated to begin January 1, 2024. The application is available on InfoReady.

Preference will be given to proposals that align with the current or emerging UT-ORII Convergent Initiatives listed below:

- Autonomous, Smart, Secure and Resilient Energy Systems
- Electrochemical Energy Systems
- Advanced Science and Engineering of Materials and Manufacturing
- Predictive Systems Biology for Circular and Sustainable Economies

- Proposals should articulate interdisciplinary approaches and include advances in developing the knowledge and skills that integrate data science, engineering, and technology with contextual applications.

- Funding provided to successful teams will support the development of preliminary data and will provide UT-ORII graduate students with enriching, rewarding team science experiences. Proposing teams must include at least two ORNL scientist PIs and two UT faculty PIs.

- Initial awards will be funded in the $150-200K (total costs) range for one-year. In addition, funded teams will receive support for up to three GRAs. PIs accepting a GRA on a UT-ORII seed project must commit to mentor and financially support the student beyond this seed funding period. Opportunities for one-year funded extensions will also be provided as described below, dependent on successful performance review.

First Year Application Instructions

Proposals must include the following information:

A. Cover Page

- PI names, positions and institutions
- Project title

B. Research Proposal (6-page max with 12-point font, not including references)

- Project Summary written for a general audience (150-word max)
- Description of the proposed research (including overarching goal and specific aims, approaches to be employed)
- Description of how this project addresses specific topic areas of the call
- Description of innovative approaches to graduate student training and inclusion of data science knowledge and skills development
- Summary, including a broader impact statement of how the proposed project aligns with the missions of UT and ORNL

C. Appendices

- Appendix A: A budget* From UT: 1 Postdoc, 3 Undergrad Students, 1-2-3 (?) GRA; ORNL and UT : PI's time
- Appendix B: A letter of commitment from all senior personnel, including continued funding for each GRA supported on the project until completion of their degree.
- Appendix C: A one-page bio for each PI and senior personnel that includes external grants over the past five years, professional awards, and five most recent publications YK, LH, LB, MF – can use last year old
- Evidence of successful UT-ORNL collaborations should be included, if available

------ in work ------

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Appendix D

Evidence of successful UT-ORNL Collaboration

UT-ORNL Collaboration for exploration of oscillation nature of the neutrons was started in 2016. Since that time the Collaboration

- Performed two experiments at SNS MAGREF beamline 4A (IPTS-22947) is 2019 and 2020 and one experiment at HFIR GP-SANS instrument (IPTS-24916) in 2021. The next experiment for the search of $n - n'$oscillations at HFIR GP-SANS (IPTS- 27957) is scheduled for the Fall 2023.Search for neutron transition magnetic moment will be pursued in 2024.
- On the results of the first experiment performed in 2019 we published a PRL paper. Results of the second experiment (2020) are presently prepared by the collaboration for publication in PRD.
- Where are 8 papers that were written by our collaboration or with common participation of the members of collaborations. Four of these papers were written together with members of ESS collaboration.
- 1 UT postdoc, 3 UT graduates, and 6 UT undergraduate students took part in the experimental research and contributed to the publications of the collaborating group as authors.
- Group submitted to DOE-NP a common research 2-year proposal for two initial experiments at HFIR GP-SANS instrument for period 8/1/2022 – 7/31/2024. The project was granted by DOE/NP with a total of $200K.

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June 21, 2023

Professor Yuri Kamyshkov
Department of Physics and Astronomy
The University of Tennessee, Knoxville
Knoxville, Tennessee 37966

Dear Professor Kamyshkov:

Letter of Collaboration – The University of Tennessee-Oak Ridge Innovation Institute (UT-ORII) Seed Funding program, "Investigating exotic neutron transformations at ORNL and ESS"

Dr. Leah Broussard and Dr. Matthew Frost of Oak Ridge National Laboratory (ORNL) are pleased to participate with the University of Tennessee, Knoxville in response to the The University of Tennessee-Oak Ridge Innovation Institute (UT-ORII) Seed Funding program funding opportunity announcement. The proposal is titled "Investigating exotic neutron transformations at ORNL and ESS" and is highly complementary to ongoing research at ORNL funded by the DOE Office of Nuclear Physics, Physics Division (FWP number ERKBP76 and ERKBP86).

If the proposal is selected for funding, we intend to collaborate in the following ways.

- Advise on analysis of data and interpretation of simulations and provide additional mentorship of students supported by this effort.
- Ensure compliance of designs with the neutron instrument configuration and ORNL policies.
- Assist with preparation of beamtime proposals and with beamtime operations, contingent on submission of a successful user proposal.
- This research will generate collaborative research publications, which will be published in peer-reviewed journals
- If funds are approved, funding totaling $50K is being requested for ORNL for a 1-year period.

We look forward to working with you on this effort. Questions regarding this project should be directed to the ORNL Principal Investigator, Name, (865) ###-### or email@ornl.gov.

Sincerely,

Leah Broussard
Research Staff
Physics Division

Sincerely,

Cynthia Jenks
Associate Laboratory Director
Physical Sciences Directorate

CJJ:ljb initials

c: Marcel Demarteau
Alexander Saunders
David Radford
Canajo Moore
File - NoRC

New Warm/Cold 18 PC Simulations

Warm is room temperature 25 meV ; Cold is 1 meV

After passing PC	Scattered in detector	Non-interacting	Comment
Number in detector	6171 / 7005	80,200 / 824,211	Can it be that COLD had x10 more initial n?
Average Velocity m/s	2837 / 1318	1473 / 1364	
Velocity RMS m/s	1060 / 575	161 / 224	
Av. Wavelength Å	1.63 / 3.15	2.72 / 3.00	
Wavelength RMS, Å	0.75 / 1.10	0.35 / 0.59	

Were the same in the earlier simulations

? Is it possible to set the temperature even lower, say to 1 μeV ?