ATLAS Proposal Form Worksheet

This worksheet shows all questions in the electronic ATLAS proposal form. Users may utilize this worksheet to gather the necessary information in preparation for submitting the electronic form.

This worksheet will not be accepted as a substitute for the electronic ATLAS proposal form.

For question please contact Daniel Santiago-Gonzalez (dsg@anl.gov).

* Required

1. PI last name *

_____

2. PI first and middle name *

_____

Co-PI (alternate)

3. Co-PI email address

_____

4. Co-PI last name

_____

5. Co-PI first and middle name

_____

6. Who is filling this form? *

Mark only one oval.

- ◯ PI
- ◯ Co-PI
- ◯ Other: _____

PI demographics

The information contained in this sections will not be part of the proposal review process and will not be made public. Rather, the information collected here will be aggregated by the user liaison and used, for example, to track success rate of various groups.

7. PI gender *

Mark only one oval.

- ◯ Female
- ◯ Male
- ◯ Prefer not to say
- ◯ Other: _____

8. PI career level *

Mark only one oval.

- ◯ Graduate student
- ◯ Early career (less than 10 years after PhD)
- ◯ Mid career (10+ years after PhD)
- ◯ Senior (20+ years after PhD)
- ◯ Prefer not to say
- ◯ Other

9. Has the PI submitted another proposal to a previous ATLAS PAC? *

Mark only one oval.

- ◯ Yes, as PI or Co-PI *Skip to question 10*
- ◯ Yes, as collaborator (i.e. not as PI or Co-PI) *Skip to question 15*
- ◯ No *Skip to question 15*
- ◯ Don't know *Skip to question 15*
- ◯ Prefer not to say *Skip to question 15*

Status of your previous ATLAS experiments from the last few years

10. Have your ATLAS experiment(s) produced any student dissertations? *

Mark only one oval.

- ◯ Yes
- ◯ No

11. Please provide links to the dissertations

12. Have your ATLAS experiment(s) produced any publications? *

Mark only one oval.

- ◯ Yes
- ◯ No

13. Please provide links to the publications

14. Status of data from your latest ATLAS experiment as PI or Co-PI *

Think about the data from the last ATLAS experiment that ran for which you were PI or Co-PI

Mark only one oval.

- ◯ Published
- ◯ Manuscript under review (submitted)
- ◯ Manuscript in preparation
- ◯ On-going data analysis
- ◯ Data is not publishable - beam or technical issues
- ◯ Data is not publishable - other reasons
- ◯ Not applicable
- ◯ Other: _____

Proposal type and beam time request

15. Please select the proposal type *

NOTES: select "Re-submission" if the same physics case of present proposal was reviewed at a previous ATLAS PAC meeting. Select "Letter of intent" to motivate the development of a new capability or to implement a significant technical effort at ATLAS. Some examples are: development of a new beam (stable, in-flight, long-lived radioactive), significantly modify existing device, development of a new detector, etc. Some LOIs may request no beam time (0 days).

Mark only one oval.

- ◯ New proposal
- ◯ Re-submission
- ◯ Letter of intent

16. Proposal title *

_____

17. Is the proposed experiment part of a student thesis/dissertation? *

Mark only one oval.

- ◯ Yes
- ◯ No

Beam time request

18. Total number of days requested for your experiment *

You may use 0 days, for example, if this is a letter of intent.

_____

19. Is beam tuning time included in your request? *

If it is not included, ATLAS operations typically assigns 1 day for stable, long-lived or low-energy CARIBU beams, and 2 days for in-flight or reaccelerated CARIBU beams

Mark only one oval.

- ◯ Yes
- ◯ No
- ◯ Not applicable

20. Is this one continuous run? *

In other words, are all requested days consecutive?

Mark only one oval.

- ◯ Yes *Skip to question 23*
- ◯ No *Skip to question 21*
- ◯ Not applicable *Skip to question 23*

Beam time splitting

21. Please specify desired splitting of days *

For example, 2+3 indicates 5 days are split into 2 non-consecutive periods of 2 and 3 days

_____

22. Days between runs? *

Please indicate how many days ought to be left between each run. A number is expected as answer but text is allowed if needed.

_____

Impact on Workforce Development and Diversity, Equity, and Inclusion (DEI)

23. Are there actions related to the proposed work that aim at supporting workforce training? *

List applicable actions or type "N/A" if this does not apply to your proposal or LOI.

_____

_____

_____

_____

_____

24. Are there actions related to the proposed work that aim at improving workforce diversity/equity, or at developing of a more inclusive community? *

List applicable actions or type "N/A" if this does not apply to your proposal or LOI.

_____

_____

_____

_____

_____

Beam specifications

25. Beam type *

See https://www.anl.gov/atlas/available-beams for more details. For long-lived radioactive beams extracted directly from the ECR ion sources (e.g. 14C, 85Kr, 223Ra), please select "Long-lived radioactive".

Mark only one oval.

- ◯ Stable *Skip to question 44*
- ◯ Long-lived radioactive *Skip to question 39*
- ◯ In-flight (RAISOR) *Skip to question 26*
- ◯ Reaccelerated nuCARIBU *Skip to question 33*
- ◯ Low-energy nuCARIBU *Skip to question 51*
- ◯ No beam (for LOIs, or when only using radioactive sources e.g. 67Cu, 252Cf) *Skip to question 50*

In-flight beams

On-target specifications for in-flight (RAISOR) beams. See https://www.anl.gov/atlas/inflight-radioactive-beams for a list of possible beams. Contact Calem Hoffman (crhoffman@anl.gov) for more details.

Primary beam(s) and production target(s) will be selected by ATLAS operations staff based on the specified secondary beam.

Please separate specifications of multiple beams with commas.

26. In-flight (radioactive) beam species *

Example: 18F, 26Al

_____

27. In-flight beam designation *

Use the table in the following website to get the beam designation: https://www.anl.gov/atlas/inflight-radioactive-beams

Mark only one oval.

- ◯ Available
- ◯ Expected
- ◯ Not shown in table

28. Energy units *

Mark only one oval.

- ◯ MeV
- ◯ MeV/u

29. Energy *

On-target beam energy. A number is expected as answer, however text is allowed in case you need to make comments (this is not common). The beam energy units will be taken from your selection in the previous question.

30. Intensity (pps) *

Preferred format: 5.0E+4. Use the table in the following website to see the maximum available/expected intensity (rate): https://www.anl.gov/atlas/inflight-radioactive-beams

31. Minimum purity (%) *

What is the minimum beam purity needed to achieve your physics goals? Use the table in the following website to see the expected purity for your beam: https://www.anl.gov/atlas/inflight-radioactive-beams. If you have questions about the beam contaminants, please contact Calem Hoffman (crhoffman@anl.gov).

32. In addition to the in-flight and primary beam(s) above, do you need other stable beam(s)? *

Mark only one oval.

- Yes *Skip to question 44*
- No *Skip to question 48*

Reaccelerated nuCARIBU beams

On-target specifications for reaccelerated nuCARIBU beam(s). See https://www.anl.gov/atlas/caribu-beams for a list of available beams and their expected intensity.

Please separate specifications of multiple beams with commas.

33. Nuclide(s) *

34. Energy units *

Mark only one oval.

- MeV
- MeV/u

35. Reaccelerated beam energy *

On-target beam energy. A number is expected as answer, however text is allowed in case you need to make comments (this is not common). The beam energy units will be taken from your selection in the previous question.

_____

36. Intensity (pps) *

Preferred format: 5x10^4

_____

37. Need the MRTOF device to suppress isobaric contaminants? *

The Multi-Reflection Time-Of-Flight (MRTOF) device can significantly suppress isobaric contaminants but will reduce the beam intensity by a factor of 3 to 5.

Mark only one oval.

- ◯ Yes
- ◯ No

38. In addition to the nuCARIBU beam(s) above, do you need other stable beam(s)? *

Mark only one oval.

- ◯ Yes *Skip to question 44*
- ◯ No *Skip to question 48*

Skip to question 48

Long-lived radioactive beams

On-target specifications for long-lived radioactive beam(s) extracted directly from the ECR3 ion source. For more information please email Daniel Santiago (dsg@anl.gov).

39. Nuclide(s) *

Check all that apply.

- ☐ 14C
- ☐ 85Kr
- ☐ 223Ra
- ☐ Other: _____

40. Energy units *

Mark only one oval.

- MeV
- MeV/u

41. Energy *

On-target beam energy. A number is expected as answer, however text is allowed in case you need to make comments (this is not common). The beam energy units will be taken from your selection in the previous question.

42. Intensity (pnA) *

On-target beam intensity in particle nano Amperes (pnA). A number is expected as answer, however text is allowed in case you need to make comments or if you need to use units other than pnA (this is not common). Note: 1 pnA = 6.25x10^9 ions/sec

43. In addition to the long-lived radioactive beam(s) above, do you need other stable beam(s)? *

Mark only one oval.

- Yes *Skip to question 44*
- No *Skip to question 48*

Skip to question 48

Stable beams

On-target specifications for stable beam(s) extracted directly from the ECR2 or ECR3 ion sources. For more information see https://www.anl.gov/atlas/stable-beams or contact Daniel Santiago (dsg@anl.gov).

Please separate specifications of multiple beams with commas.

44. Nuclide(s) *

45. Energy units *

Mark only one oval.

- MeV
- MeV/u

46. Energy *

On-target beam energy. A number is expected as answer, however text is allowed in case you need to make comments (this is not common). The beam energy units will be taken from your selection in the previous question.

47. Intensity (pnA) *

On-target beam intensity in particle nano Amperes (pnA). A number is expected as answer, however text is allowed in case you need to make comments or if you need to use units other than pnA (this is not common). Note: 1 pnA = 6.25x10^9 ions/sec

Skip to question 48

Special beam timing options

Our accelerator delivers the heavy-ion beams in "buckets", with a period of ~82 ns. Within one bucket, the beam particles are typically concentrated in a few ns. The devices in this section provide additional control of the beam timing structure. However most experiments do not require such precise control.

48. Primary beam sweeper *

Not used in most experiments. Located near the low-energy side of the accelerator, this device can let through or remove ("sweep") primary beam buckets. This is not the RIB sweeper. For more details on the capabilities of the beam sweeper, please contact Daniel Santiago (dsg@anl.gov).

Mark only one oval.

- Yes
- No

49. Rebuncher/Debuncher *

Not used in most experiments. This device allows for some control over the beam time structure within a beam bucket. It is typically used to narrow the beam pulse width. For example, this device is needed when using Neutron Shell. For details on the capabilities of the rebuncher, please contact Daniel Santiago (dsg@anl.gov).

Mark only one oval.

- Yes
- No

Skip to question 50

Experimental devices and end stations

Please select the experimental devices or end stations to be used in your experiment (may select more than one)

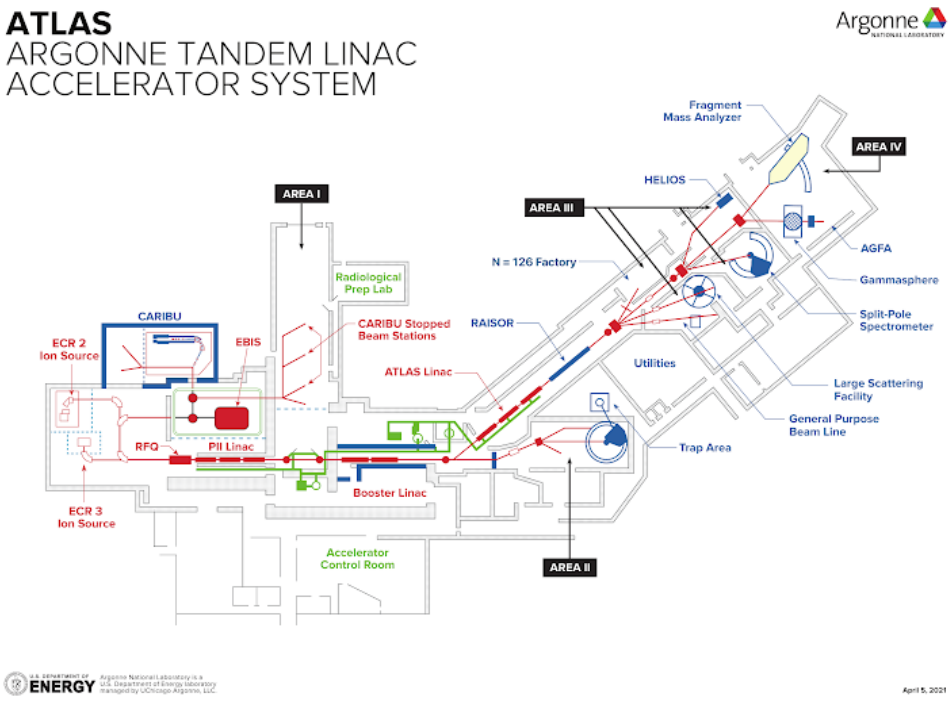
50. Equipment *

Check all that apply.

- [ ] ATSCAT
- [ ] AGFA
- [ ] BPT
- [ ] CPT
- [ ] FMA
- [ ] Gammasphere
- [ ] HELIOS
- [ ] MicroBall
- [ ] MUSIC
- [ ] Neutron Shell
- [ ] N=126 factory
- [ ] Plunger
- [ ] Split-Pole Spectrometer
- [ ] X-array
- [ ] Other: _____

ATLAS floorplan

Use floor plan below to identify equipment location. To download a large-resolution image click on the following link (a new window will pop up): https://www.anl.gov/sites/www/files/2022-03/ATLAS_floor_plan_Mar2022.pdf. Notes: 1) Gammasphere can be moved between FMA and AGFA beam lines. 2) The ATSCAT chamber is located in the room labeled "Large Scattering Facility". 3) MUSIC is located in the room labeled "Split-Pole Spectrometer". 4) The Beta Paul Trap (BPT) is located in the room labeled "Trap Area". 5) Low-energy beams from nuCARIBU can be delivered to target AREA I if your experiment requires a low background.



Skip to question 56

Low-Energy nuCARIBU beams

Click here to see the list of available beams with intensity estimates. Typical beam energies are 2 kV (CARIBU/nuCARIBU area) or 25 kV (Target area 1, variable energy). For more details contact Guy Savard (savard@anl.gov) or Daniel Santiago (dsg@anl.gov).

Please separate specifications of multiple beams with commas.

51. Nuclide(s) *

_____

52. Intensity (pps)

Leave blank if using estimated intensities from our website.

_____

53. Need the MRTOF device to suppress isobaric contaminants? *

The Multi-Reflection Time-Of-Flight (MRTOF) device can significantly suppress isobaric contaminants but will reduce the beam intensity by a factor of 3 to 5.

Mark only one oval.

- ◯ Yes
- ◯ No

54. Experiment end station *

Please select the detector system(s) or end station(s) to be used in your experiment (may select more than one)

Check all that apply.

- ☐ ATLANTIS (for laser spectroscopy)
- ☐ MTAS
- ☐ SuN
- ☐ X-array
- ☐ Other: _____

55. In addition to the nuCARIBU beam(s) above, do you need other stable beam(s)? *

Mark only one oval.

- ◯ Yes *Skip to question 44*
- ◯ No

Skip to question 56

Target and beam stop specifications

Form more information on available targets see the Center for Accelerator Target Science (CATS) website at https://www.anl.gov/phy/center-for-accelerator-target-science or contact Claus Mueller-Gatermann (cmuellergatermann@anl.gov)

56. Target material(s) *

If using degrader foils please indicate it here.

_____

57. Target thickness (mg/cm2)

For solid targets and degrader foils.

_____

58. General target specifications *

Select all that apply for your required target

Check all that apply.

- [ ] Not applicable
- [ ] is provided by CATS or ATLAS
- [ ] is provided by user
- [ ] new targets could be made from "natural" material (no enrichment)
- [ ] enriched material is preferred for new targets
- [ ] is radioactive
- [ ] is in gas form
- [ ] is installed on a rotating wheel

59. Beam stop material(s) *

Common beam stop materials: Al, Ta, Fe. Select all that apply.

Check all that apply.

- [ ] Not applicable
- [ ] Aluminium
- [ ] Iron
- [ ] Tantalum
- [ ] Don't know
- [ ] Other: _____

Safety

Does your experiment require ...

60. 1. use of flammable gases? *

Mark only one oval.

- ◯ Yes
- ◯ No

61. 2. lift of heavy equipment? *

If the load weighs in excess of 50 lbs, is awkward or hard to handle or requires the use of crane, please select Yes.

Mark only one oval.

- ◯ Yes
- ◯ No

62. 3. use of electrical equipment from outside ATLAS? (exclude computers) *

Mark only one oval.

- ◯ Yes *Skip to question 63*
- ◯ No *Skip to question 65*

External electrical equipment

Include any high voltage or high power electrical equipment that would be added to the existing experimental station or beam line

63. Describe electrical equipment *

_____

_____

_____

_____

_____

64. Maximum voltage required (V)

_____

Safety (cont.)

Does your experiment require ...

65. 4a. use of ATLAS owned calibration sources?

OPTIONAL. Select all that apply

Check all that apply.

- [ ] Gamma-ray sources (Example: 88Y, 56,57,60Co, 152Eu, 182Ta, 243Am with less than 10 micro-Ci)
- [ ] Alpha sources (Example: 228Th, GdCm with less than 10 micro-Ci)
- [ ] Fission source

66. 4b. radioactive materials from outside ATLAS? *

Sources, targets, etc.

Mark only one oval.

- ◯ Yes *Skip to question 67*
- ◯ No *Skip to question 70*

External radioactive materials

67. Describe radioactive material(s) *

In addition to the description, please indicate if material will be used as target, as source or for other purpose.

68. Type of ionizing radiation

Check all that apply.

- [ ] alpha
- [ ] beta
- [ ] gamma
- [ ] neutron

69. Total activity (Bq)

alpha + beta + gamma + neutron in Becquerel (1 Bq = 2.7e-11 Ci)

Safety (cont.)

Does your experiment require ...

70. 5. other unusual operations? *

Mark only one oval.

- ◯ Yes *Skip to question 71*
- ◯ No *Skip to section 22 (Wrapping up (click "Submit" button to finish))*

Unusual operations

71. Describe unusual safety operations or requirements *

Wrapping up (click "Submit" button to finish)

Remember to **click the Submit** button below and to **send your proposal manuscript** via a separate email to atlas-proposals@anl.gov.

We will confirm reception of your file within 3 days.

Please read before submitting

By clicking 'Submit' you certify that the information presented on this form is correct and that all of the collaborators listed on your proposal have agreed to participate in the experiment.