ERCAP

Energy Research Computing Allocation Process

AY 2022

Clayton Bagwell
NERSC Account and Allocation Support

ERCAP

- ***Energy Research Computing Allocations Process*** **(ERCAP)**
  - Accessed through the ERCAP Application Interface at:
    - https://ercap.nersc.gov
    - Use your NERSC username, password, and One-Time Password
  - Renew current projects and request new projects
  - Science objectives, approach, and resource requirements
    - Computer time, Archival and Community storage space
  - Reviewed and awarded by DOE Office of Science Programs
  - Allocation awards for renewals are announced in December
    - Allocation Year (AY) 2022 starts January 19, 2022

ERCAP AY 2022 Milestones

- ERCAP open for AY 2022 allocations - September 7, 2021
- ERCAP submissions due October 4, 2021
  - ERCAP requests can be submitted year round, but the vast majority of time is allocated to projects that submit by Oct. 4
  - There may be no time available in your area for submissions after the deadline
- DOE Office of Science program managers in your field review the proposals and make awards
- Award announcements the week of December 15, 2021
- AY 2022 starts January 19, 2022

New Unit of Currency: Node Hours

- Allocations, charging and usage tracking for 2022 will be in units of Node Hours
  - This is a change from the current “NERSC Hour” (see next slide)
- Two distinct allocation pools that are not interchangeable (also new for 2022)
  - CPU Node Hours
  - GPU Node Hours
- One **CPU Node Hour** is charged for running on one Perlmutter CPU-only node for one hour.
  - CPU allocations can also be used on Cori (with a scaling factor)
- Similarly, one **GPU Node Hour** is charged for running on a single Perlmutter GPU-accelerated node for one hour

Converting “NERSC Hours” to “CPU Node Hours”

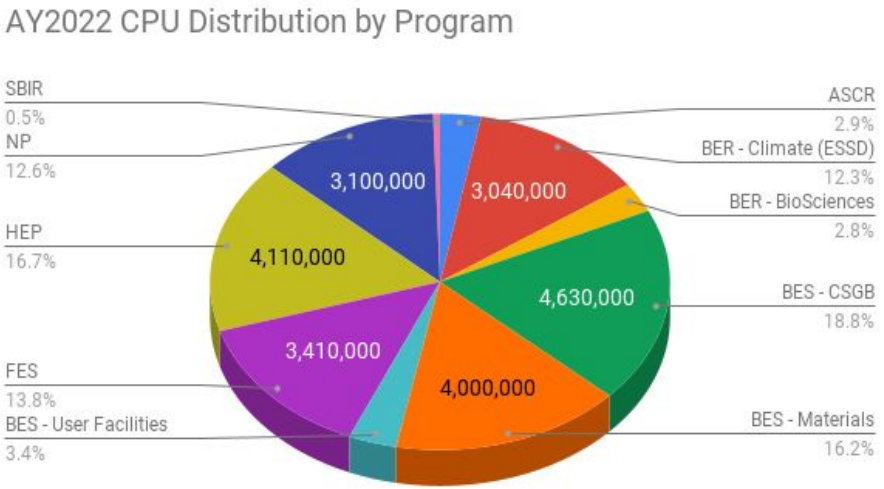
- NERSC has run performance tests on Perlmutter’s CPU processors and compared to the performance on Cori KNL and Haswell nodes
- An average across a variety of codes led us to set the following performance scaling factors for running on Cori nodes
  - Cori Haswell: 0.34
  - Cori KNL: 0.20
- With these factors, one “**CPU Node Hour**” is equivalent to ~400 “**NERSC Hours**”
- To convert **NERSC Hours** to **CPU Node Hours**, divide by 400*
  - 1,000,000 **NERSC Hours** ÷ 400 = 2,500 **CPU Node Hours**

Available CPU Time and Distribution

The CPU time available for AY 2022 is ~24.65 Million **CPU Node Hours**

To help you size your request, we have published the total allocation available for each Office of Science area at

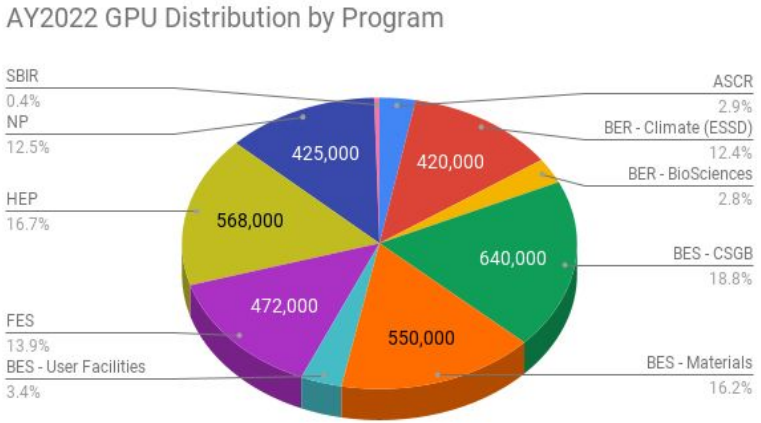
`https://bit.ly/2XjONSO`



Available GPU Time and Distribution

The amount of GPU time available for AY 2022 will be ~3.4 Million **GPU Node Hours**

To help you size your request, we have published the total allocation available for each Office of Science area at



`https://bit.ly/2XjONSO`

Check https://docs.nersc.gov/applications/ to see if your software application will be installed for Perlmutter GPU nodes or is known to have a GPU version available

Getting Assistance

You can contact us with questions or about any problems you may be having at any time.

- Email: allocations@nersc.gov

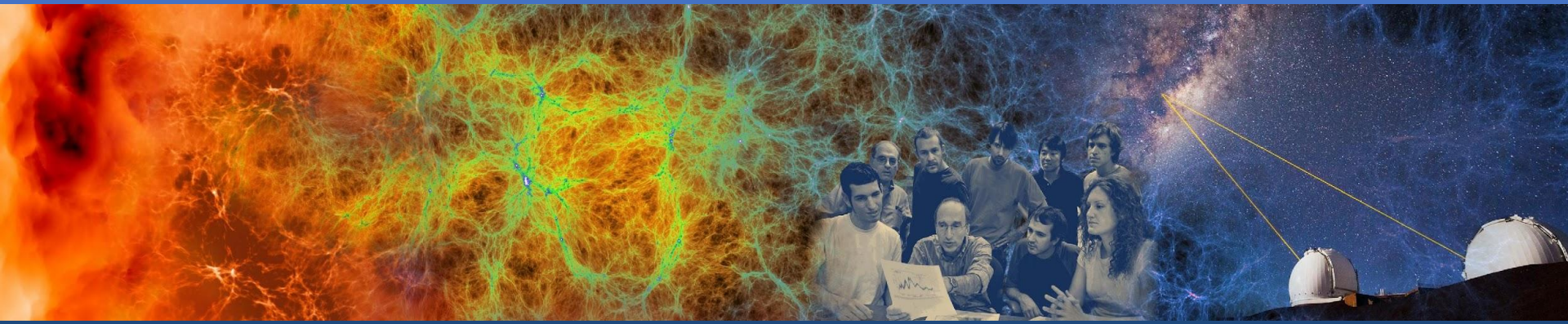
Questions about popular GPU application availability and performance on Perlmutter GPUs:

- Submit a ticket at: https://help.nersc.gov/

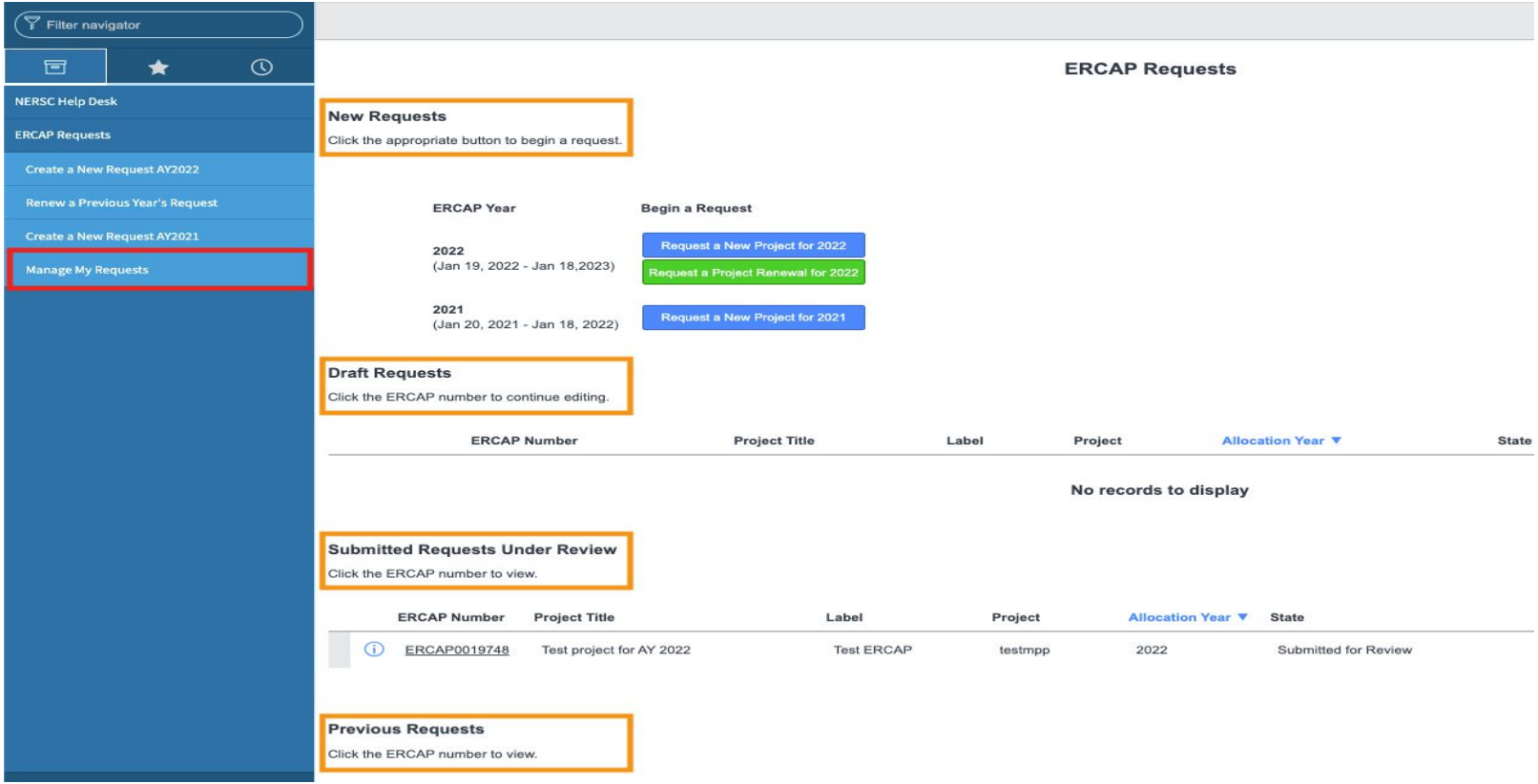
Join us for ERCAP Office Hours

- September 30, October 4, 2021
  - 09:00 PDT - 12:00 PDT and 13:00 PDT - 16:00 PDT
- Join us on Zoom to get hands-on help
  - Zoom session login information is online here: **`https://bit.ly/3tHuvOF`**

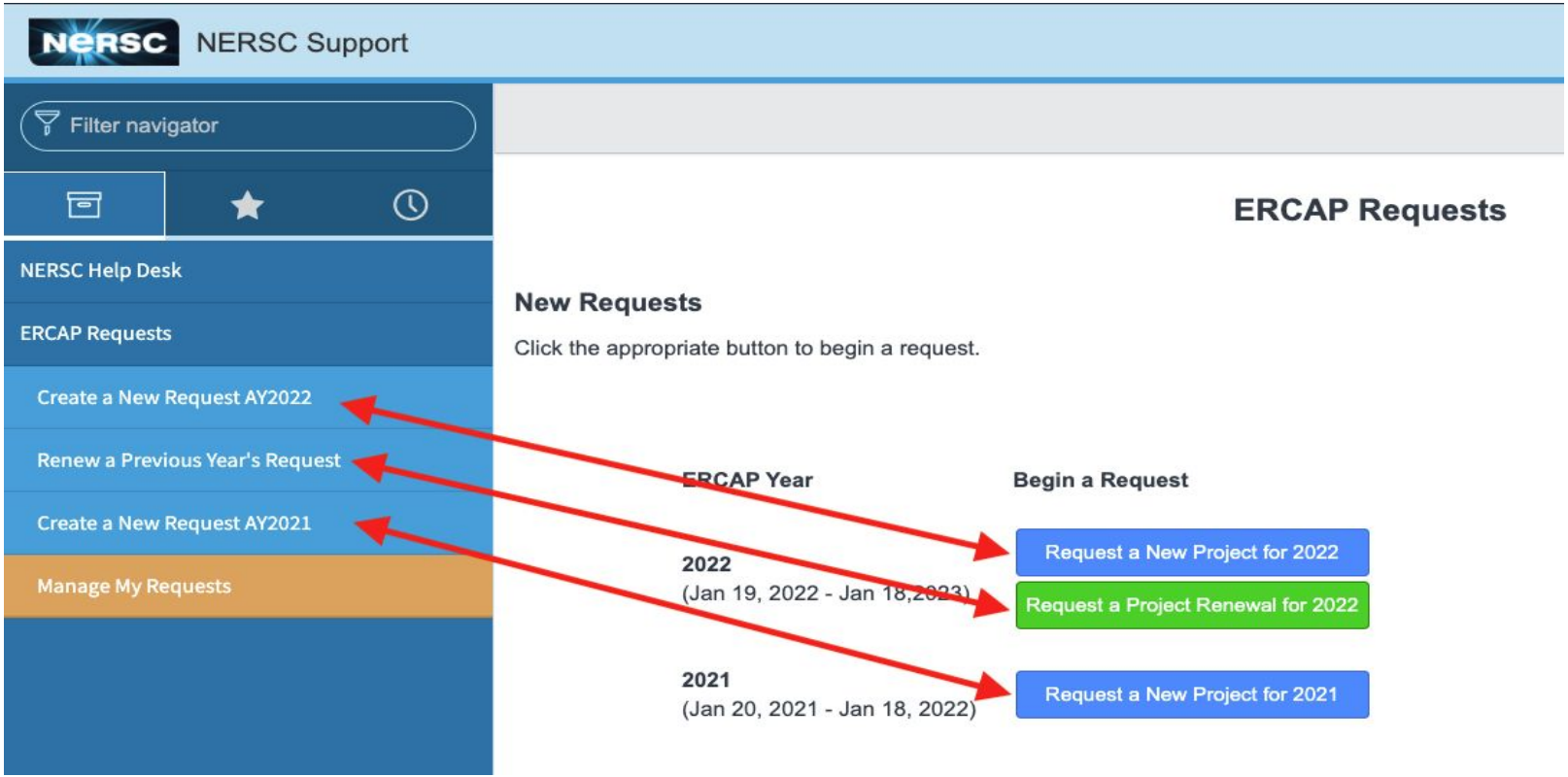
Demonstration



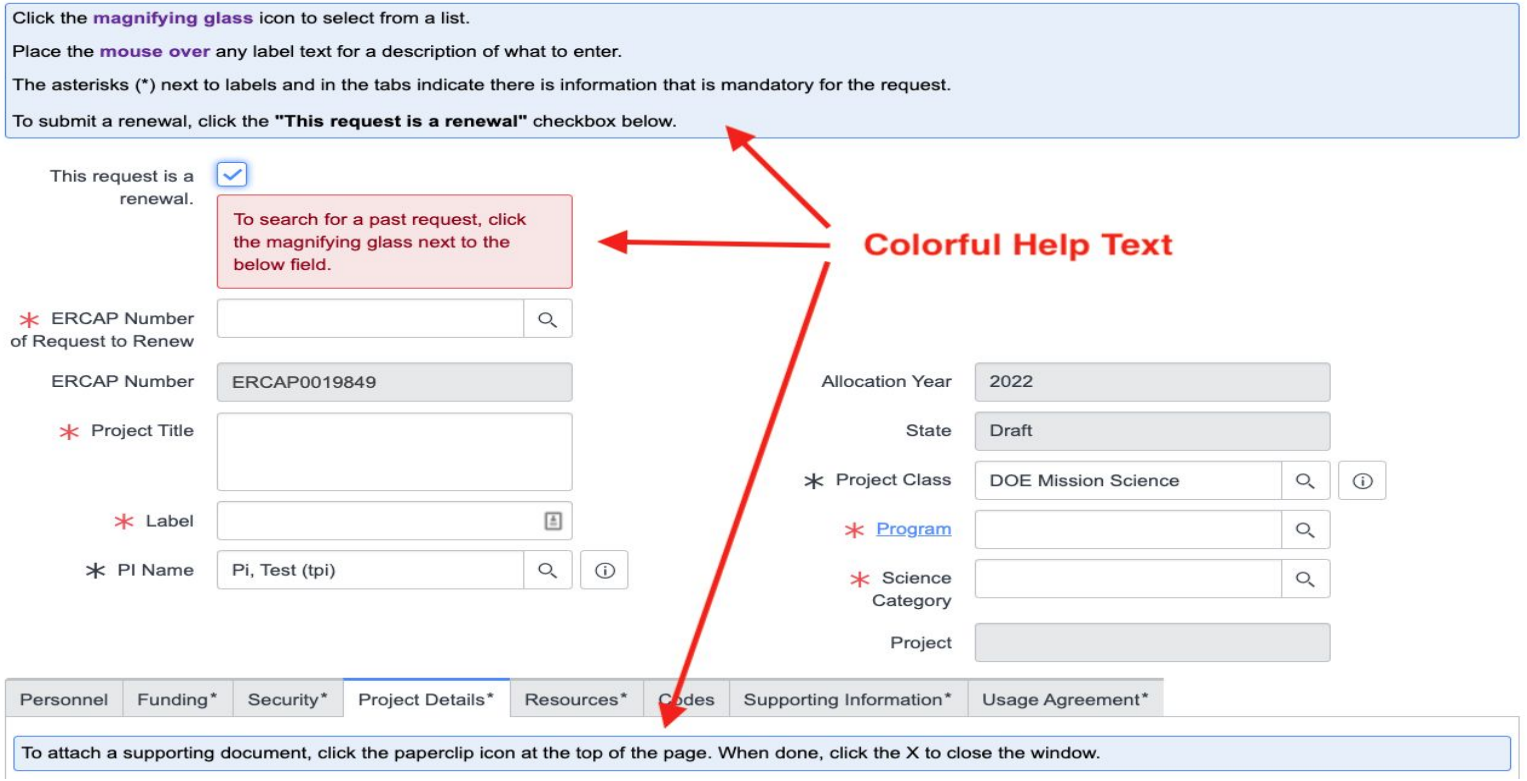
ERCAP Requests Homepage



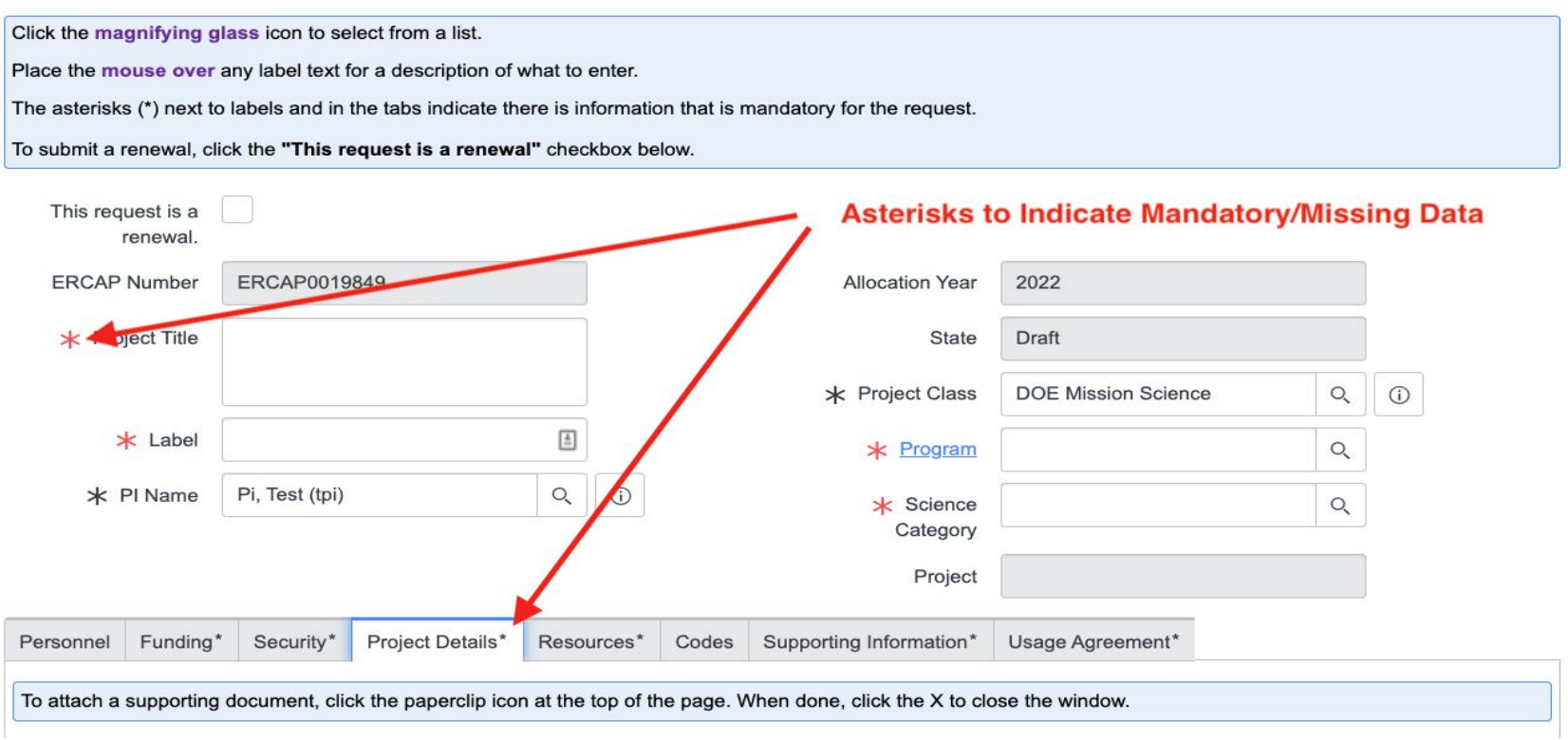
Start Request Options



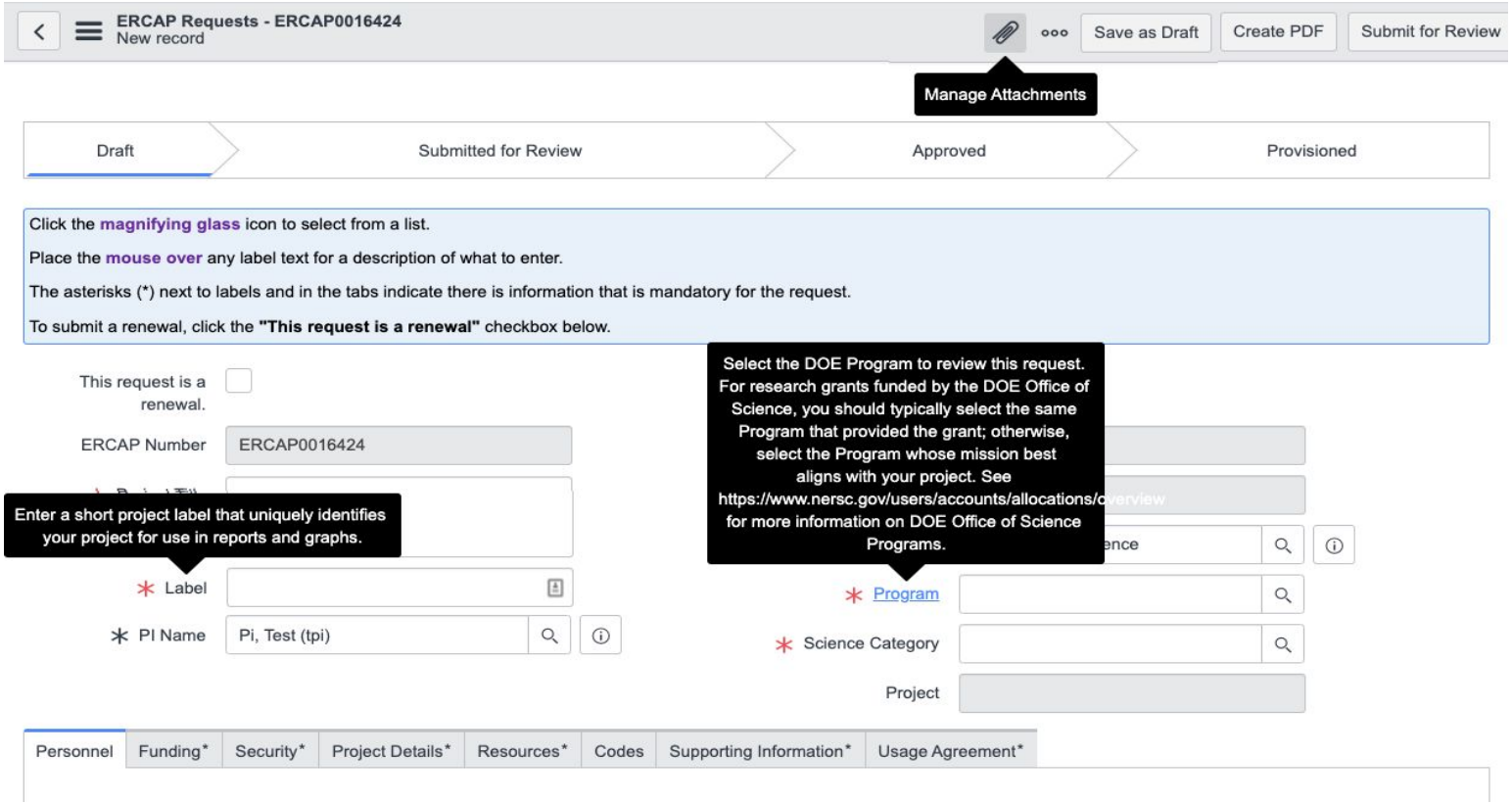
ERCAP Request - Help Text



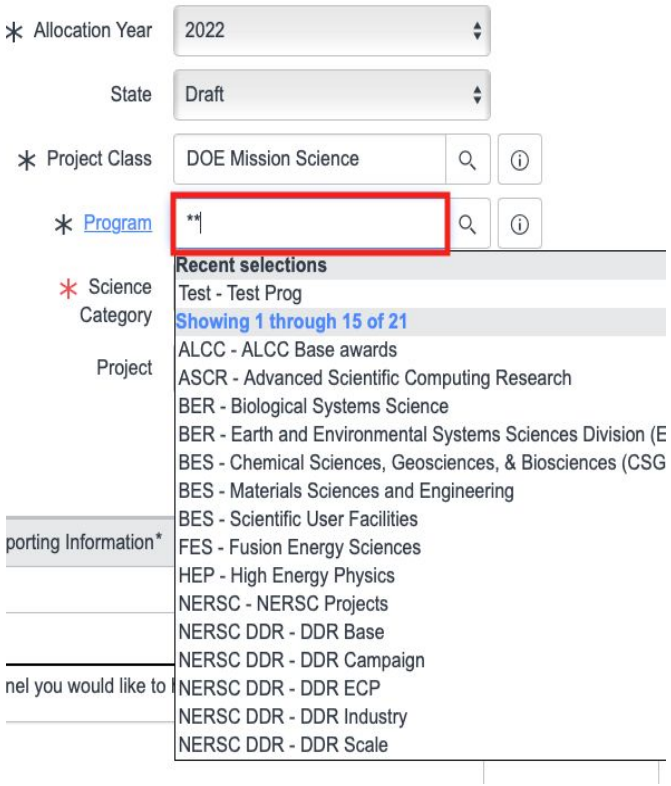
Mandatory/Missing Items

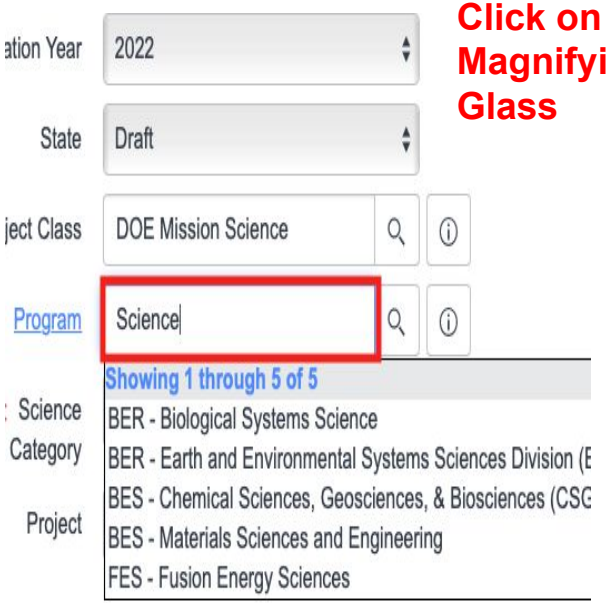


Hover Text and Info Links

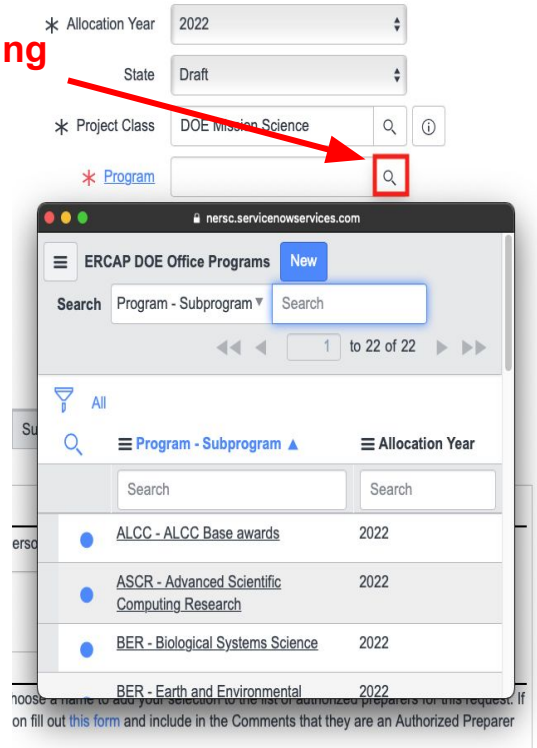


Search Options

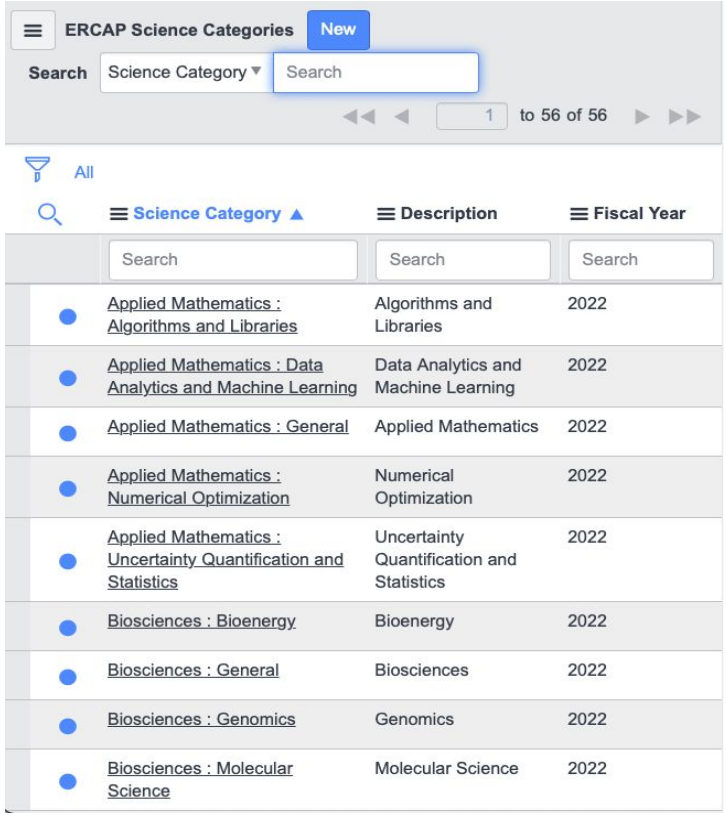


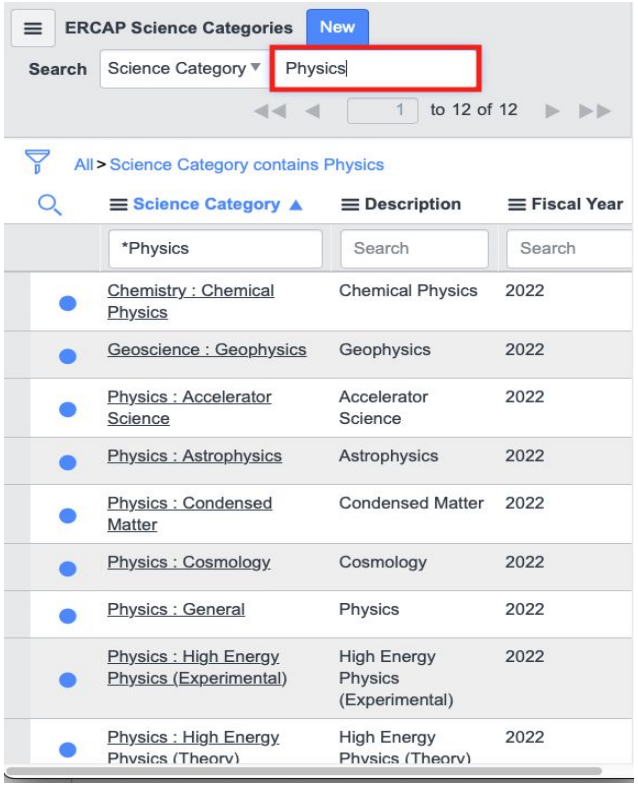


Click on Magnifying Glass

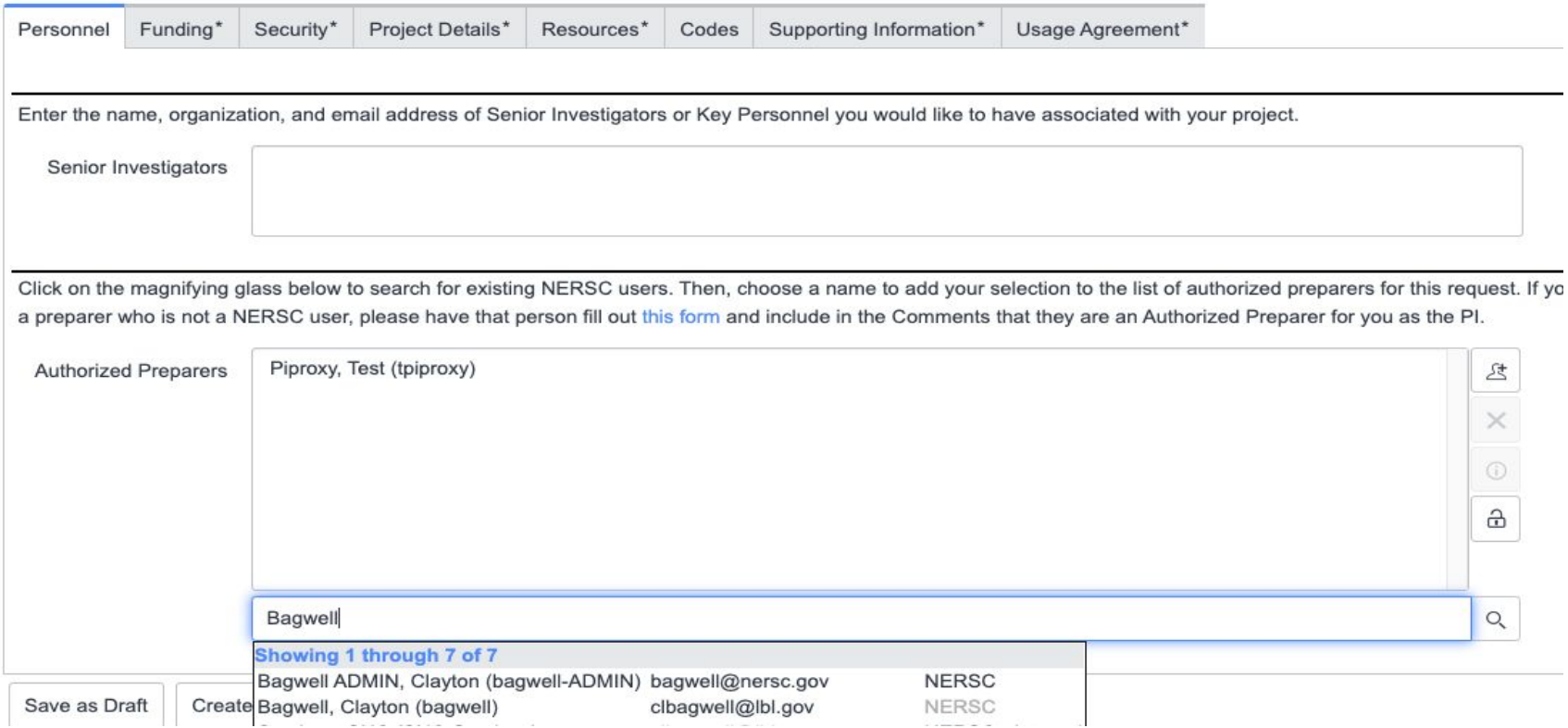


Refining your search

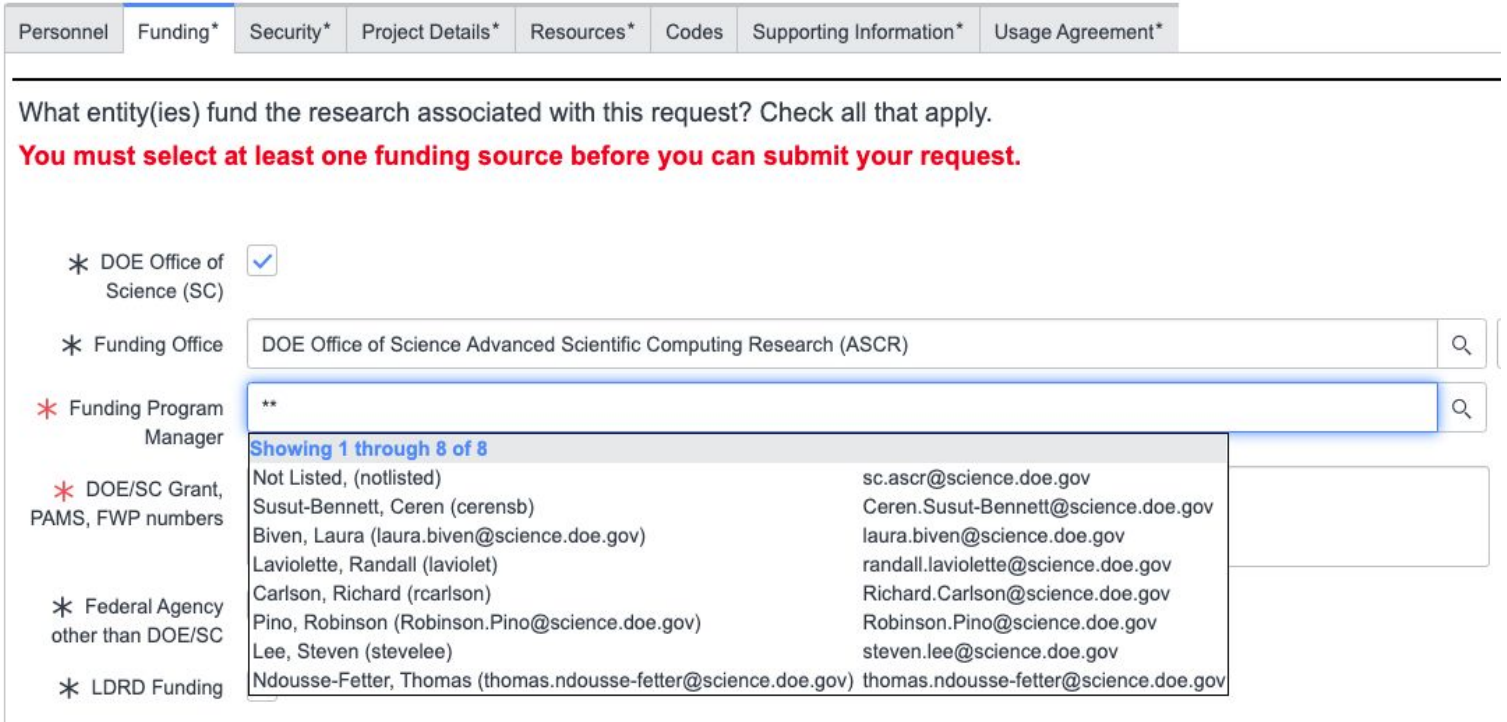




Personnel Tab - Authorized Preparers

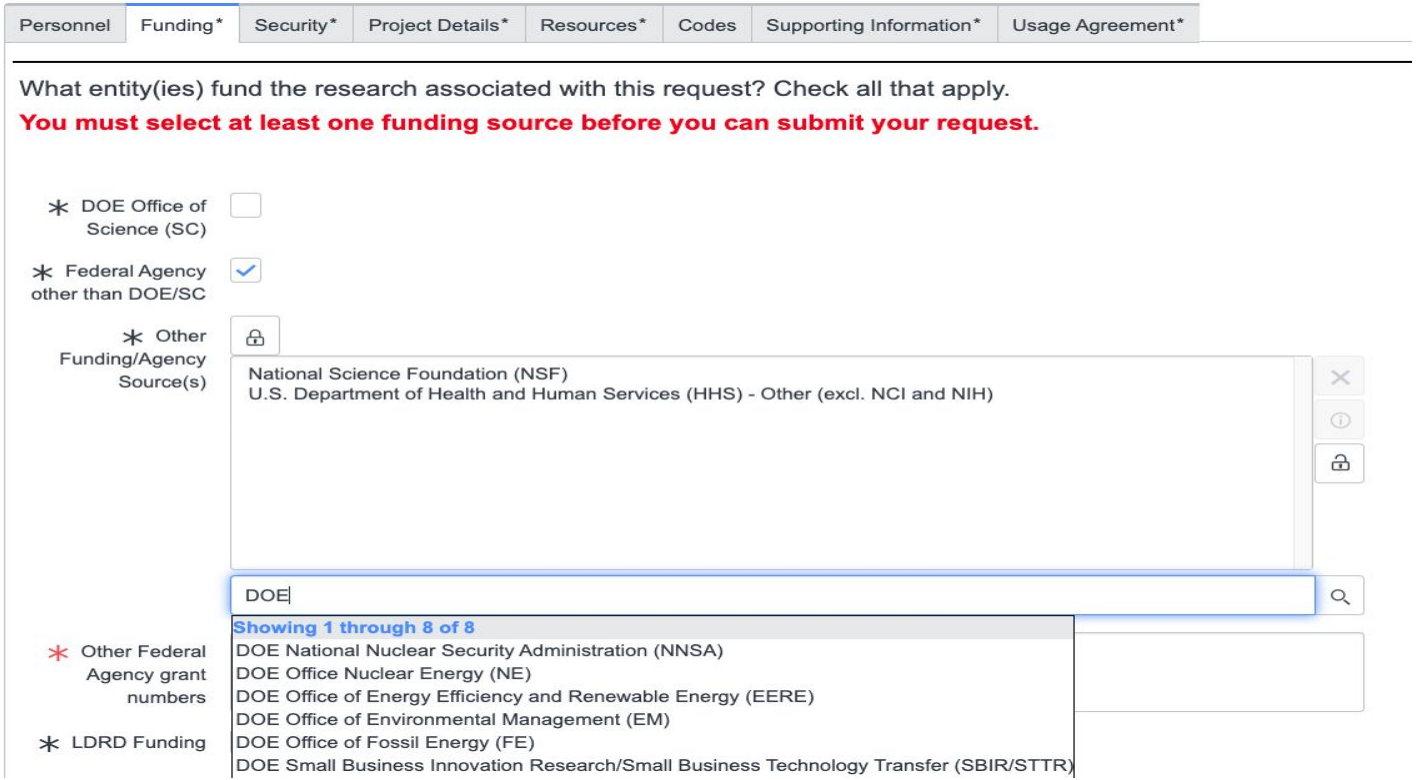


Funding Tab - DOE/SC Program Managers

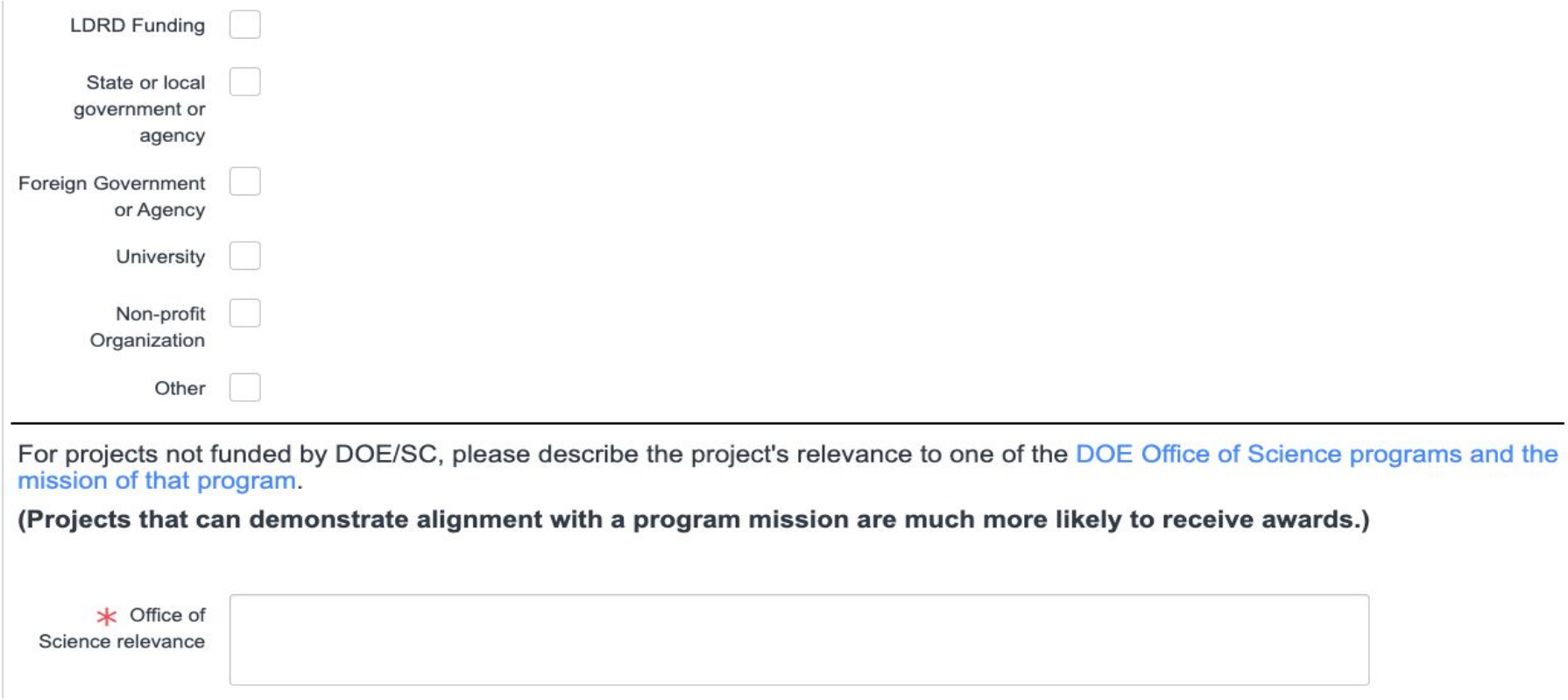


http://www.nersc.gov/users/accounts/allocations/doe-science-offices-programs-and-allocation-managers/

Funding Tab - Federal Agencies



Funding Tab - Additional Options



Security Adherence

Personnel | Funding* | Security* | Project Details* | Resources* | Codes | Supporting Information* | Usage Agreement*

NERSC supports only open research intended to be published in open scientific journals. Proprietary research is not allowed.

In addition, NERSC **does not allow the use of the following:**

- **Classified or controlled military defense information**
- **Export controlled or ITAR codes or data**
- **Personally identifiable information**
- **Protected health information**

Please select one option below:

Select either Yes or No

* I attest that this project adheres to these guidelines. ☐

* I request an exception to these policies, based on the following: ☐

* Please Explain Policy Exception

Characters left: 250

Project Details - Two Project Descriptions

Personnel | Funding* | Security* | Project Details | Resources* | Codes | Supporting Information* | Usage Agreement*

To attach a supporting document, click the paperclip icon at the top of the page. When done, click the X to close the window.

Provide a brief summary of your project easily understood by people outside your field. What will this project accomplish? What is the significance of this work?

* Project Summary and Goals	This is my easy to understand, Scientific American level project description. It is easily understood by people outside of my field. It describes what my project will accomplish and the significance of my research.

Provide a more technically detailed explanation of your research for proposal reviewers.

* Detailed Description for DOE Managers	This is my more highly technical description of my project, aimed at the DOE managers, and lays out my research plan in detail.

Project Details - Accomplishments & Publications

Supply formatted citations (author(s), title, publication name, date, and DOI) for all publications supported by the use of NERSC resources and have been accepted or are in press or published. Do not include publications listed here last year.

For example, *Hsu, J., Prather, M. J., Cameron-Smith, P., Veidenbaum, A., and Nicolau, A.: "A radiative transfer module for calculating photolysis rates and solar heating in climate models: Solar-J v7.5", Geosci. Model Dev., 10, 2525-2545, 2017, DOI:10.5194/gmd-10-2525-2017.*

* Refereed Publications (?)

"Three-Dimensional Supernova Explosion Simulations of 9-,
10-, 11-, 12-, and 13-M$_{\odot}$ Stars," (Adam Burrows, David Radice,
& David Vartanyan), MNRAS, 482, 3153, 2019 (arXiv:1902.00547) (DOI:10.1093/mnras/stz543).

"Crucial Physical Dependencies of the Core-Collapse Supernova Mechanism,"
(Adam Burrows, David Vartanyan, Joshua C. Dolence, M. Aaron Skinner, & David Radice),
Space Science Reviews, 214, 33 (2018) (arXiv:1611.05859); doi.org/10.1007/s11214-017-0450-9

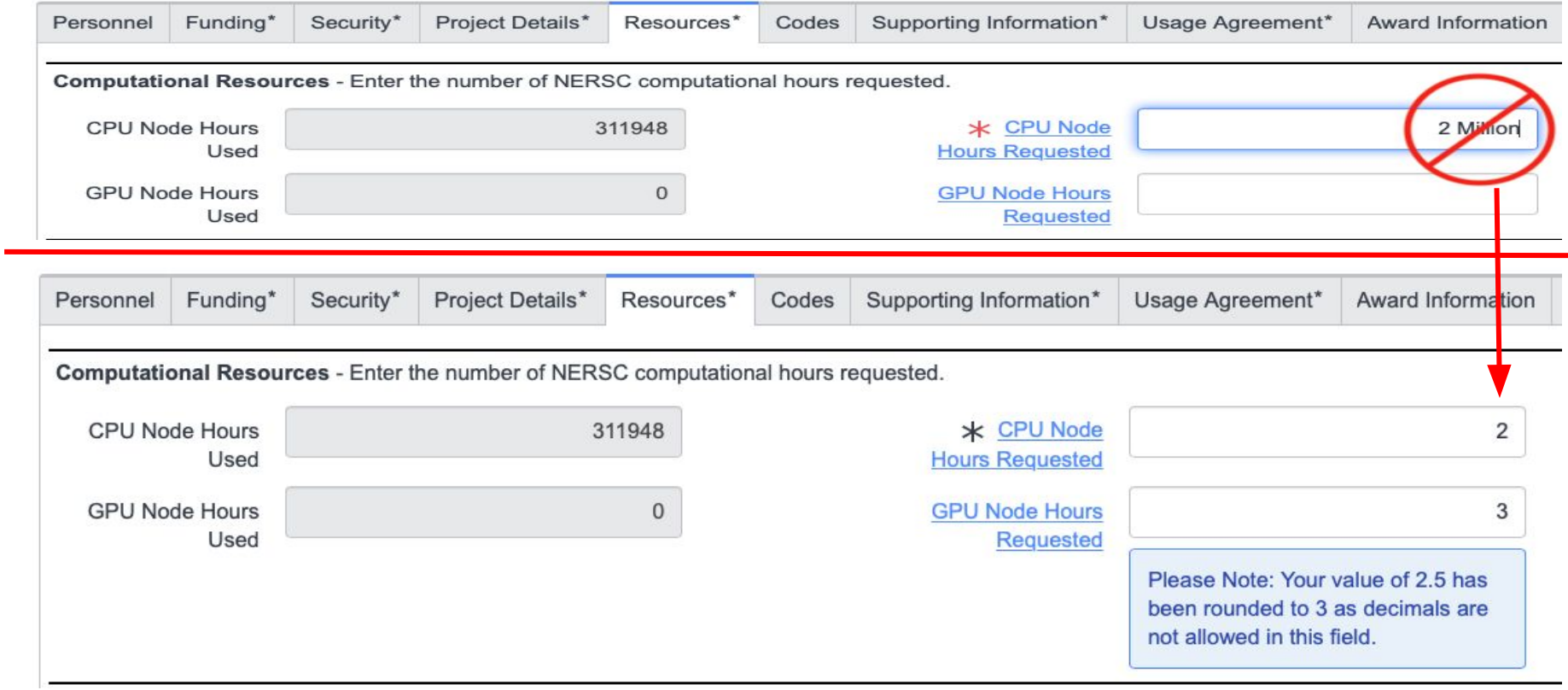
"Fornax: A Flexible Code for Multiphysics Astrophysical Simulations,"
(M. Aaron Skinner, Joshua Dolence, Adam Burrows, David Radice, \& David Vartanyan),
Ap.J. Suppl., 241, 7, 2018 (arXiv:1806.07390); doi.org/10.3847/1538-4365/ab007f

"A Successful 3D Core-Collapse Supernova Explosion Model," (D.
Vartanyan, A. Burrows, D. Radice, M.A. Skinner, & J. Dolence),
MNRAS, 482, 351, 2019 (arXiv:1809.05106), doi/10.1093/mnras/sty2585/5106363.

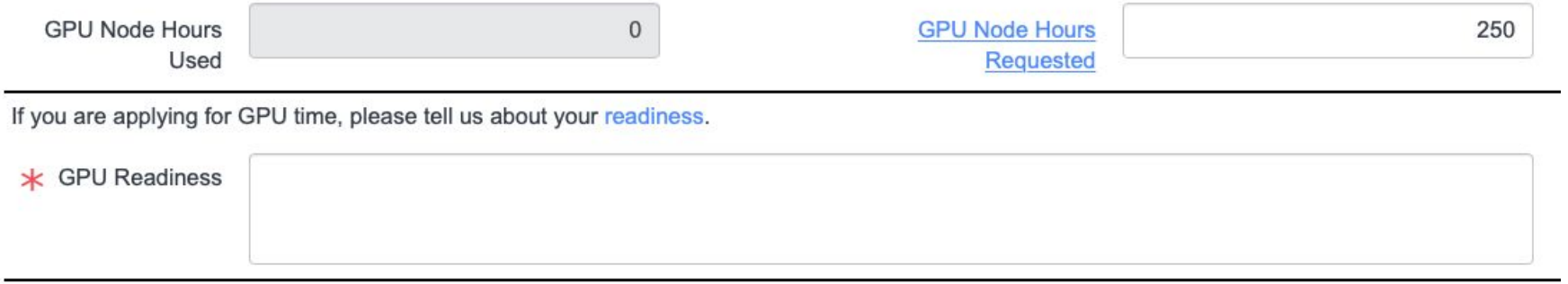
"Characterizing the Gravitational Wave Signal from Core-Collapse Supernovae,"
(David Radice, Viktoriya Morozova, Adam Burrows, David Vartanyan, & Hiroki Nagakura),
Ap. J. Letters, 876, L9, 2019 (arXiv:1812.07703); https://doi.org/10.3847/2041-8213/ab191a.

"Temporal and Angular Variations of 3D Core-Collapse Supernova Emissions and their
Physical Correlations," (David Vartanyan, Adam Burrows, & David Radice), accepted to
MNRAS, 2019 (arXiv:1906.08787); DOI:10.1093/mnras/stz2307.

Resources Tab



GPU Node Hour Requests



- When requesting GPU Node Hours, you must include a statement of your code's readiness to run on GPUs
- Refer to the 2022 ERCAP Guide:
  - https://www.nersc.gov/users/accounts/allocations/2022-call-for-proposals-to-use-nersc-resources/2022-ercap-guide/#toc-anchor-3

CFS and Archival Storage Requests

Archival storage - Enter the amount of Archival (HPSS) storage requested in TBs (Default 1 TB).

Archival Storage Used (TB)	85	* Archival Storage Requested (TB)	1

Shared Project Storage - Enter the amount of Community File System (CFS) storage requested in TBs (Default 20 TBs). For projects with multiple CFS directories, the figures represent the sum of all CFS directories.

CFS Storage Used (TB)	0	CFS Storage Requested (TB)	20

- Archival HPSS, Community Storage (CFS) usage and request amounts are in TBs
- DOE Managers will be reviewing and awarding Community Storage space

Resource Tab - Justification & Special Requirements

Briefly describe how you estimated the compute hours and storage space requested above.

* Justification for Request

If your forecasted computer usage will be uneven throughout the year, please provide a percentage breakdown by quarter so we can consider this in our allocation management planning.

Key Events or Deadlines

Check this box if your project requires real-time access to computing resources, e.g., if associated with a live experiment.

Need real-time computing? ☐

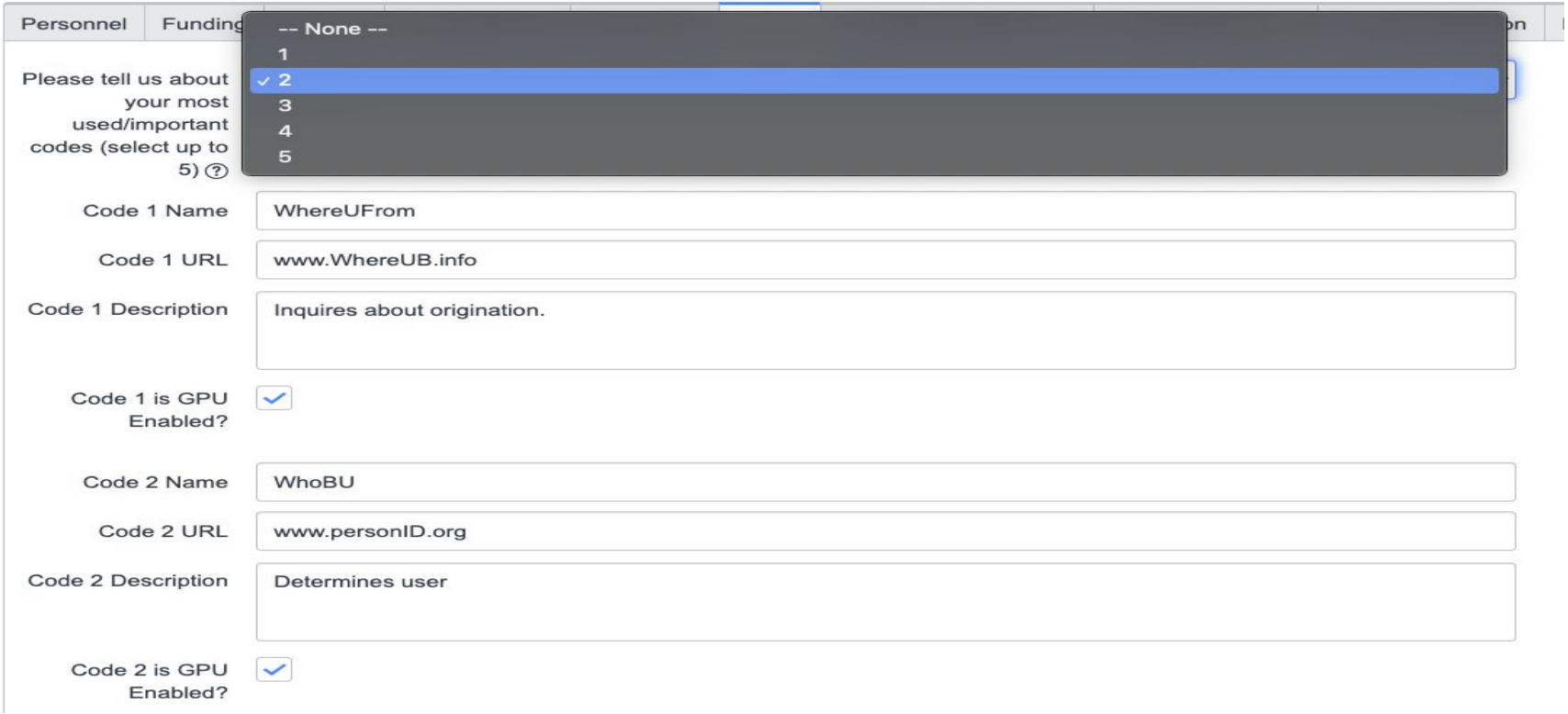
Is the primary purpose of this request to support the operation of and/or data analysis from an experimental or observational facility or mission?

Experimental or Observational project? ☐

If this project has multi-year needs in support of a mission or DOE project, or has other special needs, please describe those here.

Special Requirements

Codes Tab


Personnel
Funding
-- None --
1
2
3
4
5
Please tell us about your most used/important codes (select up to 5)
Code 1 Name
WhereUFrom
Code 1 URL
www.WhereUB.info
Code 1 Description
Inquires about origination.
Code 1 is GPU Enabled?
Code 2 Name
WhoBU
Code 2 URL
www.personID.org
Code 2 Description
Determines user
Code 2 is GPU Enabled?

Supporting Information Tab

Personnel | Funding* | Security* | Project Details* | Resources* | Codes | Supporting Information | Usage Agreement*

List any additional HPC resources that may be awarded or otherwise committed to this project (e.g., a DOE INCITE application or award, an XSEDE award, etc.).

✳ Other HPC Support: No INCITE or XSEDE allocation.

Supply any other additional information you would like to be considered in support of this request.

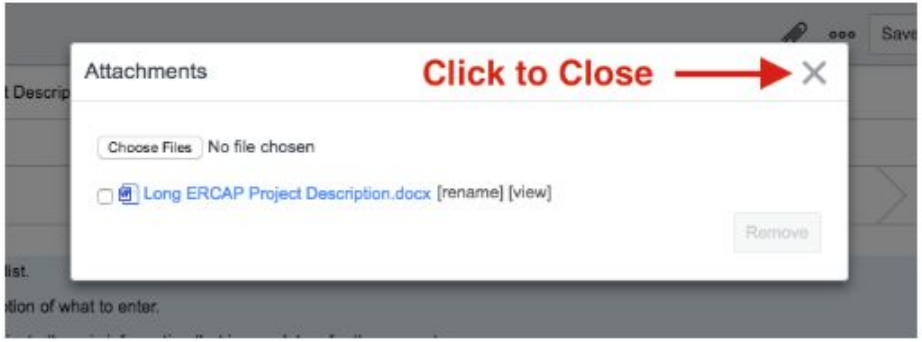
Additional Information:

To attach a supporting document, click the paperclip icon at the top of the page. When done, click the X to close the window.

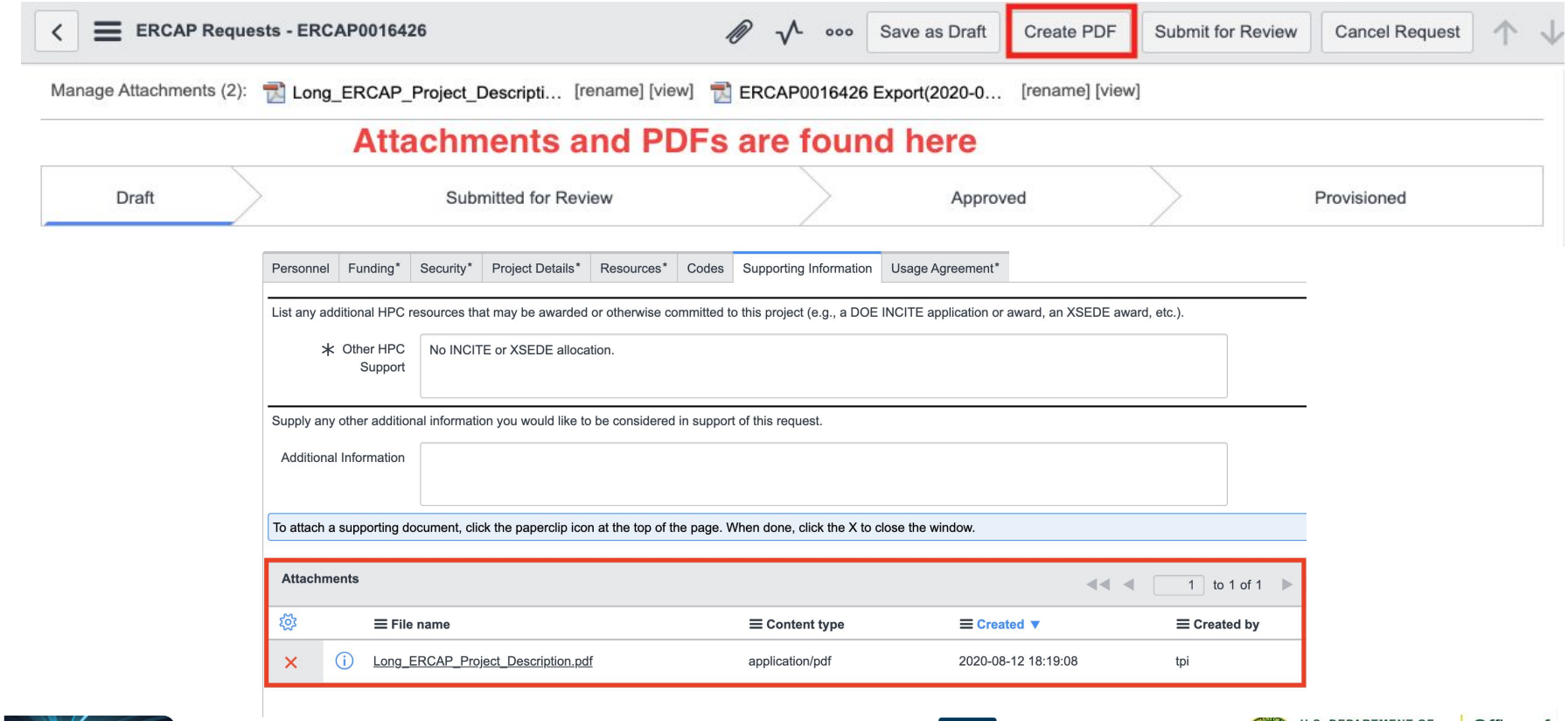
Attachments 1 to 1 of 1

File name	Content type	Created ▼	Created by
Long_ERCAP_Project_Description.pdf	application/pdf	2020-08-12 18:19:08	tpi

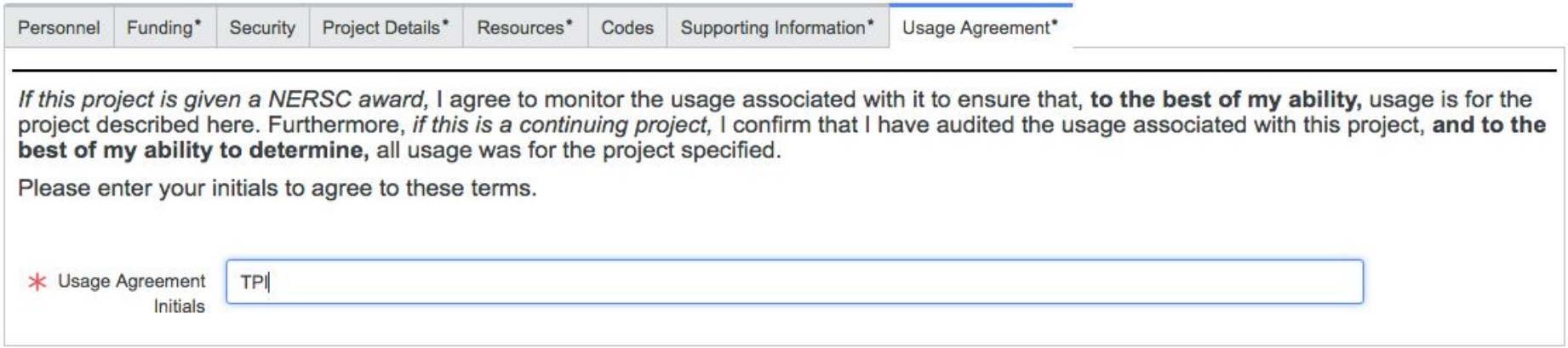
Adding Attachments



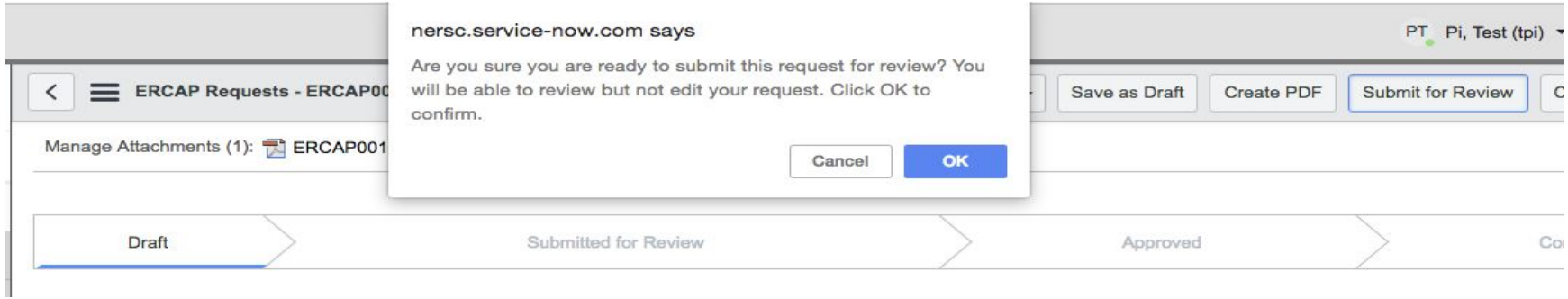
Create a PDF of a Request

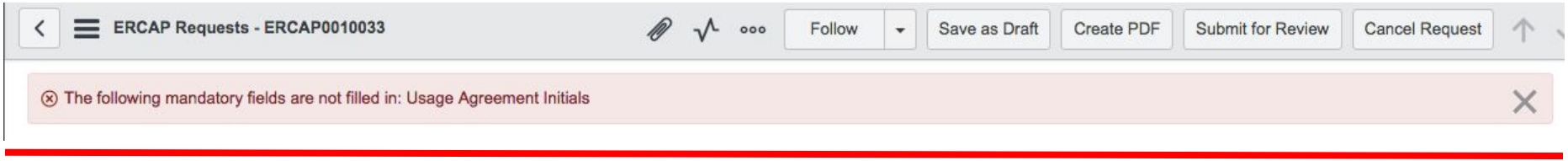


Usage Audit Agreement



Submit Request





Submitted Requests Under Review

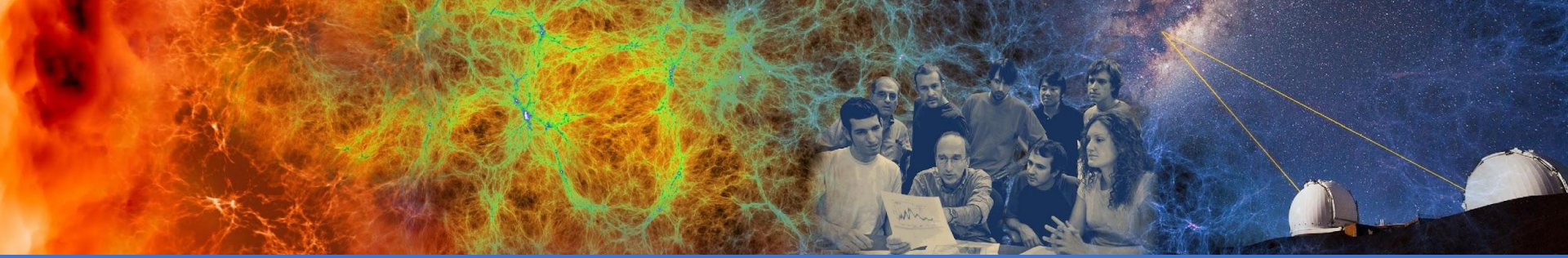
Click the ERCAP number to view.

ERCAP Number	Project Title	Label	Project	Allocation Year ▼	State	Updated	Updated by
ERCAP0016415	Test project - AY 2021	Test 2021 ERCAP	testmpp	2021	Submitted for Review	2020-08-11 09:57:54	bagwell-ADMIN

Questions?

Resources

- **DOE/SC Program Managers**
  - http://www.nersc.gov/users/accounts/allocations/doe-science-offices-programs-and-allocation-managers/
- **ERCAP Application URL**
  - https://ercap.nersc.gov
- **NERSC Account Support**
  - http://help.nersc.gov
  - accounts@nersc.gov
- **NERSC Allocation Support**
  - http://help.nersc.gov
  - allocations@nersc.gov
  - Zoom Office Hours Login Instructions - https://www.nersc.gov/users/accounts/allocations/2022-call-for-proposals-to-use-nersc-resources/ercap-office-hours/
  - https://www.nersc.gov/users/accounts/allocations/2022-call-for-proposals-to-use-nersc-resources/2022-ercap-guide/#toc-anchor-3



Thank You

Iris - https://iris.nersc.gov