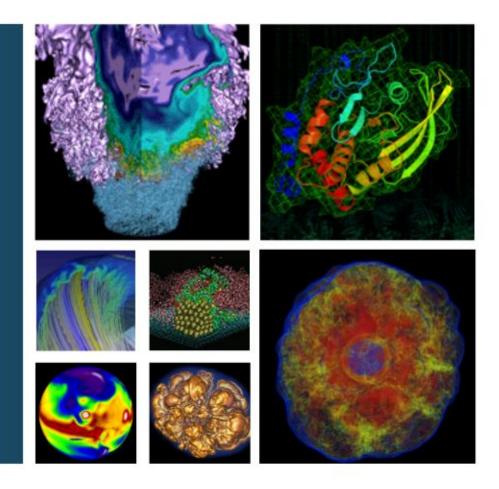
NERSC Users Group Monthly Meeting





September 20, 2018





Agenda

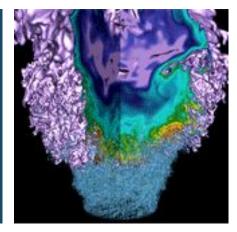


- NERSC MFA Update
- ERCAP System Tutorial

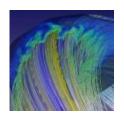




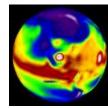
NERSC MFA Updates

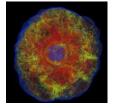


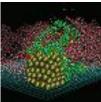
















Why MFA? Why Now?



- NERSC systems represent a large investment by DOE and need to be protected
- Compromised credentials can be an avenue for further attack and compromise
- MFA is much more common place with users both in accessing other HPC centers as well as web-based resources (Google, GitHub, Facebook, etc)
- NERSC is the only major ASCR facility that hasn't required MFA for users





...This is going to wreck my progres...



- NERSC understands that the current mode of access is extremely convenient and productive
- NERSC has strived to craft a strategy for MFA that helps to improve security while looking for ways to minimize the impact to users





Making MFA a little easier...



sshproxy	Use MFA to get ssh key that will expire in 24 hours. Longer term available with prior authorization.
myProxy	Use MFA to get a proxy certificate.
Shibboleth	Login with MFA first time you hit a Shibbolized site, no authentication required for any Shibbolized site for 24 hours.
hpss	Use MFA to obtain an HPSS token.





Opt-In vs. Opt-Out



Opt-In: User can enable/disable MFA as desired

Opt-Out: User cannot disable MFA without NERSC authorization





Alternatives to Google Authenticator



Hardware token: Yubikey

Desktop app: authy





sshproxy





sshproxy



Analogous to myproxy, serves time-limited ssh keys Uses the magic of ssh *certificates*

- ssh keys signed by an ssh CA cert
- ssh certs include expiration dates
- And other restrictions that can improve security

sshproxy generates ssh key & certificate which user downloads

- Requires MFA
- Default key lifetime: 24 hours
 - Process available for longer keys, with authorization
- Simple RESTful api
- Client-side scripts available to provide simple user interface





sshproxy in action



```
canon$ 1s ~/.ssh
config id rsa
                          id rsa.pub known hosts
canon$ ./sshproxy.sh
Enter your password+OTP
Successfully obtained ssh key /Users/canon/.ssh/nersc
Key is valid: from 2018-08-31T09:59:00 to 2018-09-01T10:00:05
canon$ 1s ~/.ssh
config id rsa.pub
                             nersc
id rsa
              known hosts
                             nersc-cert.pub
canon$ ssh -i ~/.ssh/nersc cori.nersc.gov
--- ridiculously long banner deleted ---
canon@cori12:~>
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Less typing...







Shibboleth





Shibboleth Login (in production)

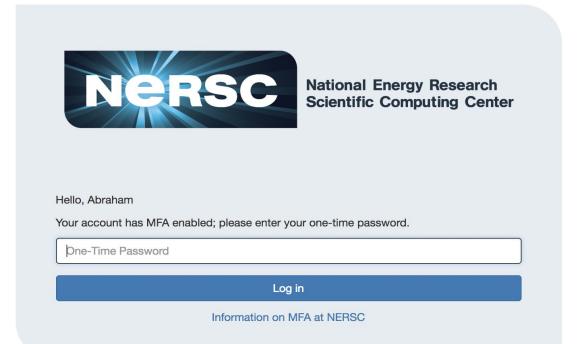


National Energy Research Scientific Computing Center	
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Log in	
Forgot your password?	













Jupyter





Jupyter (coming soon)



Sign in		
Username:		
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Opt-Out





Password Reset Process



Password reset procedure remains the same

- User requests password reset
- gets an email with a one-time link

Tokens will not get changed or removed when password is reset

- Users chooses new password
- Then has to login with new password + OTP

Users can separately request to purge tokens

- When user changes phone, they often turn in old phone before getting new phone
- Same workflow as password reset (one-time link via email)
- User will still have MFA enabled, NIM will direct user to token creation









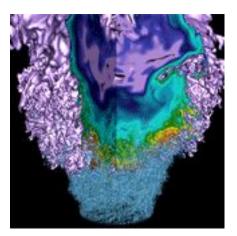








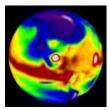
ERCAP System Tutorial

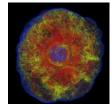


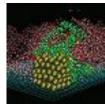












Clayton Bagwell User Engagement Group





ERCAP



Energy Research Computing Allocations Process (ERCAP)

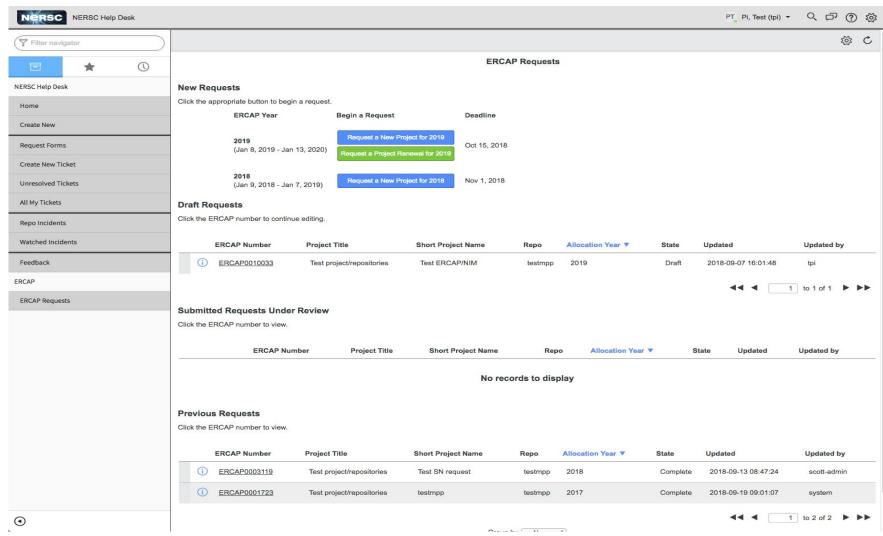
- Accessed through the NERSC Help Desk at:
 - https://ercap.nersc.gov
 - Use your NIM username and password
- Renew current projects
- Science objectives, approach, and resource requirements
 - Computer time and archival storage space
- Reviewed and awarded by DOE Science Offices
- Most allocations are awarded in December
 - Allocation year starts in January (AY 2019 January 8, 2019)





New Look and Feel



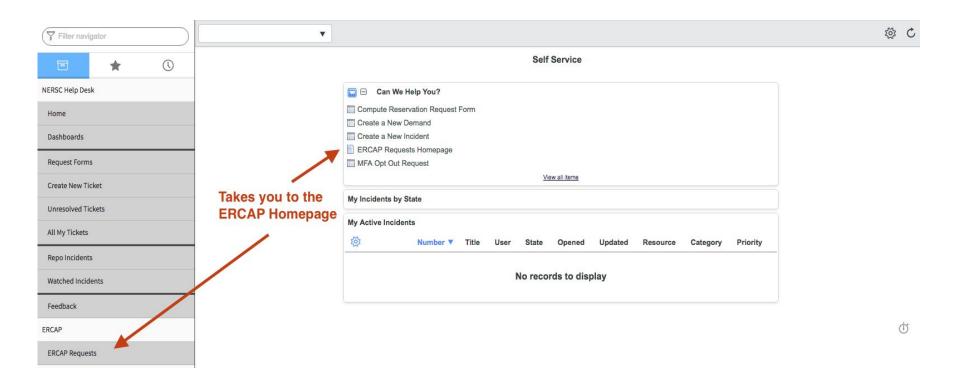






Find us from the Help Desk Homepage



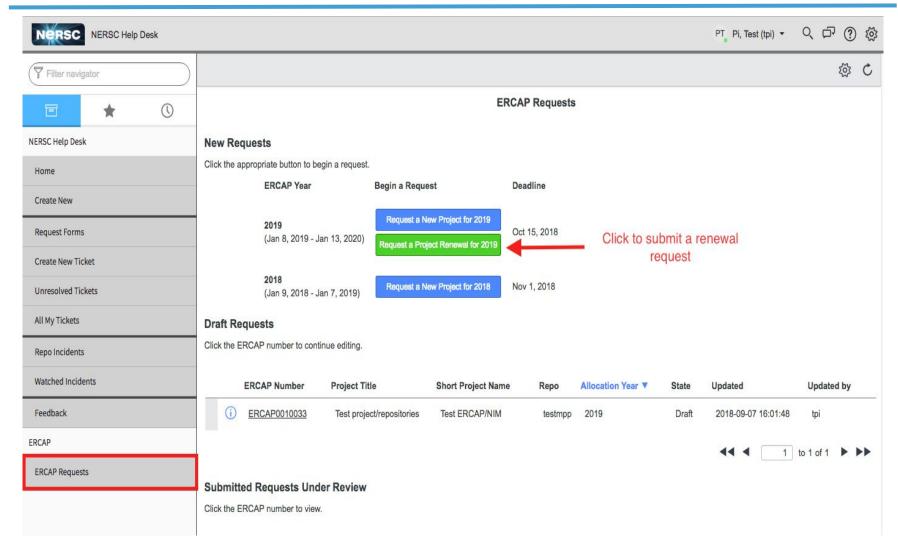






New Look and Feel









Reminiscent of old NIM form



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FES - Fusion Energy Sciences



DOE Offices and Sub-Programs



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New Science Categories (Again!)



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•	Chemistry	Chemistry	2019
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•	Chemistry : Catalysis	Catalysis	2019
	Chemistry: Chemical Physics	Chemical Physics	2019
•	Chemistry: Photosynthetic Systems	Photosynthetic Systems	2019
	Chemistry: Physical Chemistry	Physical Chemistry	2019
•	Computer Science	Computer Science	2019
•	Computer Science : Data and I/O	Data and I/O	2019
	Computer Science : Hardware and Architecture	Hardware and Architecture	2019
•	Computer Science : Optimization and Tuning	Optimization and Tuning	2019
•	Computer Science : Quantum and Neuromorphic	Quantum and Neuromorphic	2019
•	Computer Science : Sys Soft - Prog Envs	Systems Software and Programming Environ	2019
•	Computer Science : Visualization	Visualization	2019
	<u>Energy</u>	Energy	2019
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•	Physics : Condensed Matter	Condensed Matter	2019
•	Physics : Cosmology	Cosmology	2019
•	Physics : HEP (Experment)	High Energy Physics (Experimental)	2019
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Authorized Preparers



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Funding - DOE/SC Program Managers



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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.

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Provide a more technically detailed explanation of your research for review by the DOE managers.

★ Project
Description for DOE
Managers

This is my more highly technical description of my project, aimed at the DOE managers, and designed to show off my impressive scientific acumen. It provides more detail about my proposed research.

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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. E.G, 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

- 1. Yan, Q.; Yu, J.; Suram, S. K.; Zhou, L.; Shinde, A.; Newhouse, P. F.; Chen, W.; Li, G.; Persson, K. A.; Gregoire, J. M.; Neaton, J. B. Solar Fuels Photoanode Materials Discovery by Integrating High-Throughput Theory and Experiment. Proc. Natl. Acad. Sci. 2017, 114 (12), 3040–3043.
- 2. Rajput, N. N.; Murugesan, V.; Shin, Y.; Han, K. S.; Lau, K. C.; Chen, J.; Liu, J.; Curtiss, L. A.; Mueller, K. T.; Persson, K. A. Elucidating the Solvation Structure and Dynamics of Lithium Polysulfides Resulting from Competitive Salt and Solvent Interactions. Chem. Mater. 2017, 29 (8), 3375–3379.
- 3. Wills, L. A.; Qu, X.; Chang, I.-Y.; Mustard, T. J. L.; Keszler, D. A.; Persson, K. A.; Cheong, P. H.-Y. Group Additivity-Pourbaix Diagrams Advocate Thermodynamically Stable Nanoscale Clusters in Aqueous Environments. Nat. Commun. 2017, 8, 15852.
- 4. Qu, X.; Zhang, Y.; Rajput, N. N.; Jain, A.; Maginn, E.; Persson, K. A. Computational Design of New Magnesium Electrolytes with Improved Properties. J. Phys. Chem. C 2017, 121 (30), 16126–16136.
- 5. Han, K. S.; Rajput, N. N.; Vijayakumar, M.; Wei, X.; Wang, W.; Hu, J.; Persson, K. A.; Mueller, K. T. Preferential Solvation of an Asymmetric Redox Molecule. J. Phys. Chem. C 2016, 120 (49), 27834–27839.
- Sa, N.; Rajput, N. N.; Wang, H.; Key, B.; Ferrandon, M.; Srinivasan, V.; Persson, K. A.; Burrell, A. K.; Vaughey, J. T. Concentration Dependent Electrochemical Properties and Structural Analysis of a Simple Magnesium Electrolyte: Magnesium Bis(trifluoromethane Sulfonvl)imide in Diglyme. RSC Adv. 2016, 6 (114), 113663–113670.

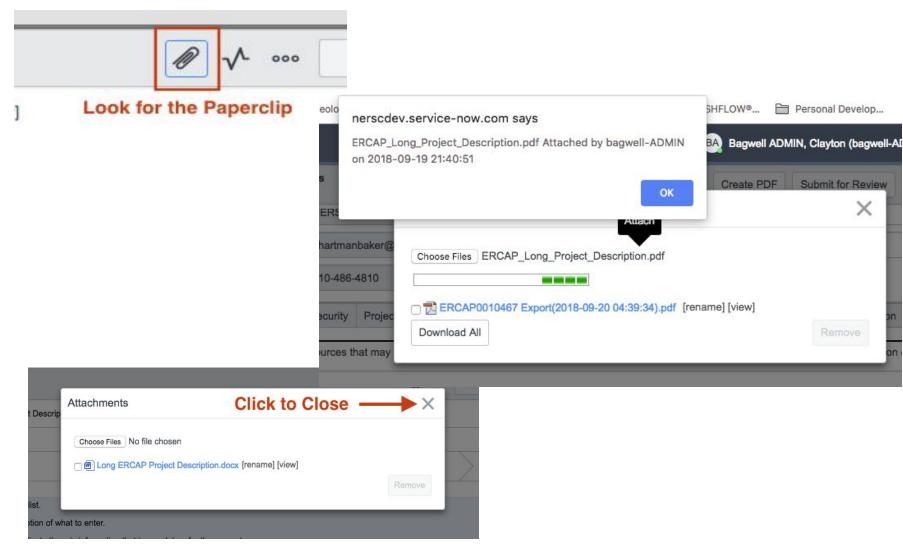
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Attachments and PDFs









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Usage Audit



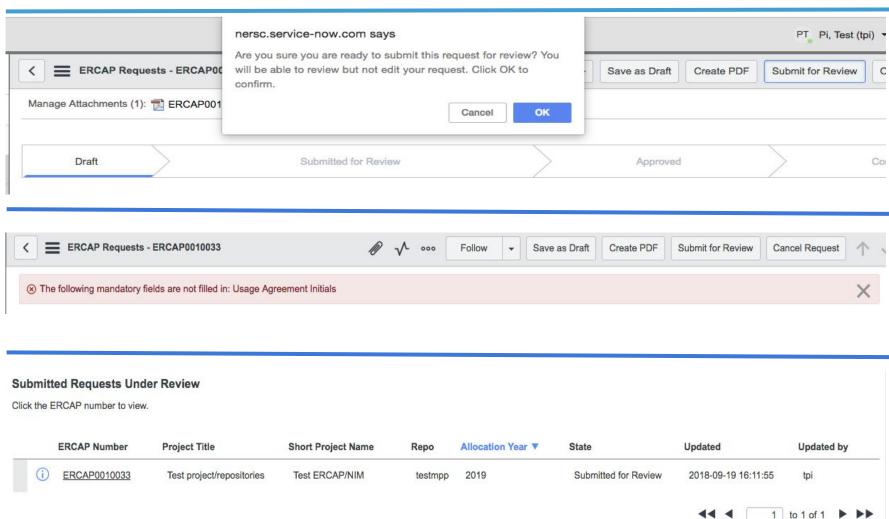
Personnel	Funding*	Security	Project Details*	Resources*	Codes	Supporting Information*	Usage Agreement*
project de best of r	escribed h	ere. Fur to deter		s is a continue was for the	uing pro	oject, I confirm that I h	th it to ensure that, to the best of my ability, usage is for the nave audited the usage associated with this project, and to the
* Usage	Agreement Initials	TPI					





Submit Request









ERCAP Office Hours



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

Email: <u>allocations@nersc.gov</u>

Phone: 1-800-66-NERSC opt 2

If you have a special, last minute problem or question, join us for ERCAP Office Hours

- October 12 & 15, 2018 ERCAP Office Hours
 - 08:00 PDT 17:00 PDT
- Join us on Zoom to get hands-on help
 - Zoom session link to be announced





Questions?









Resources



DOE/SC Program Managers

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

NERSC Account Support

- http://help.nersc.gov
- accounts@nersc.gov
- 1-800-66-NERSC, menu option 2 or 510-486-8612

NERSC Allocation Support

- http://help.nersc.gov
- allocations@nersc.gov
- 1-800-66-NERSC, menu option 2 or 510-486-8612







The End



