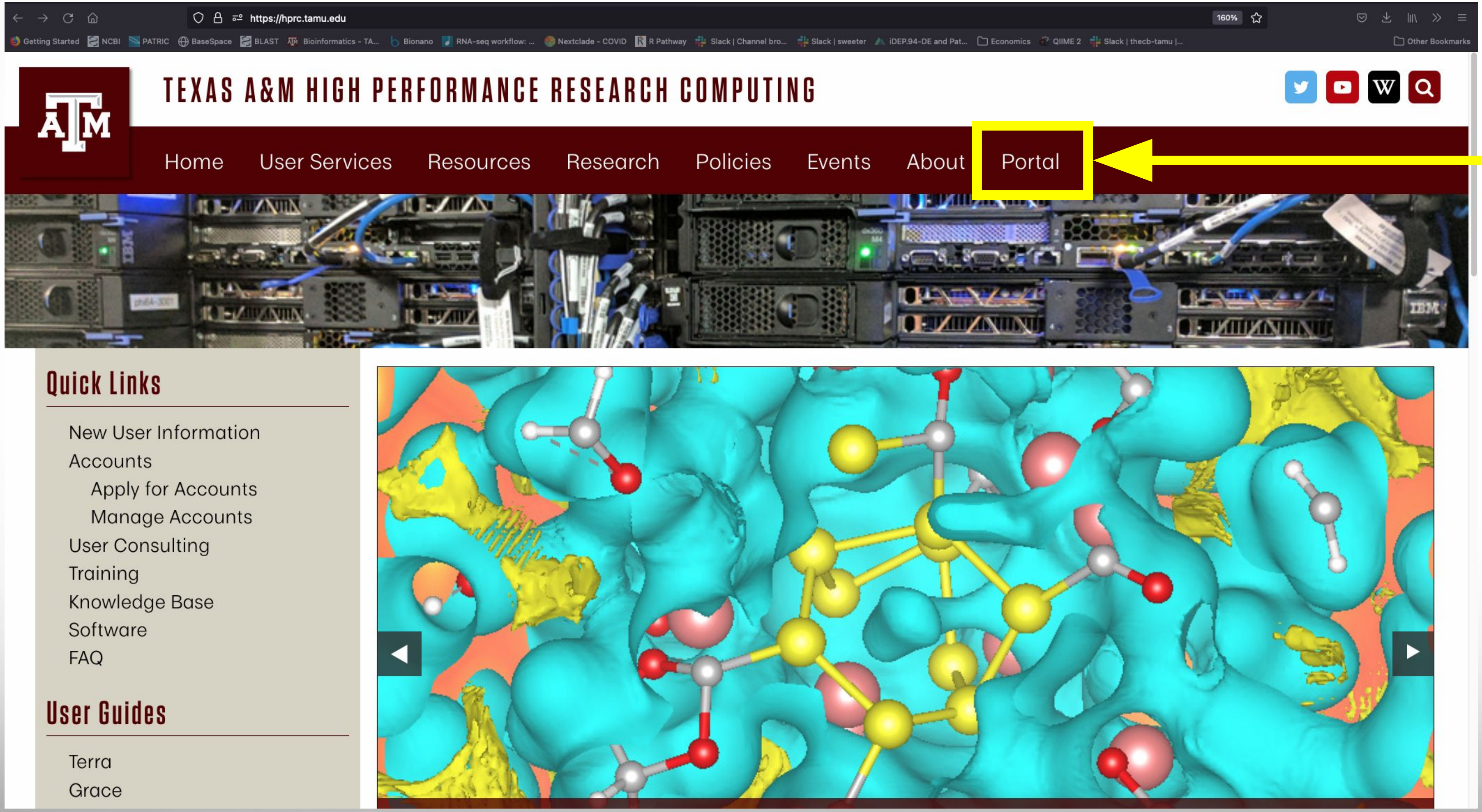
Introduction to R

25 March 2022

Getting Started Using the Grace Cluster

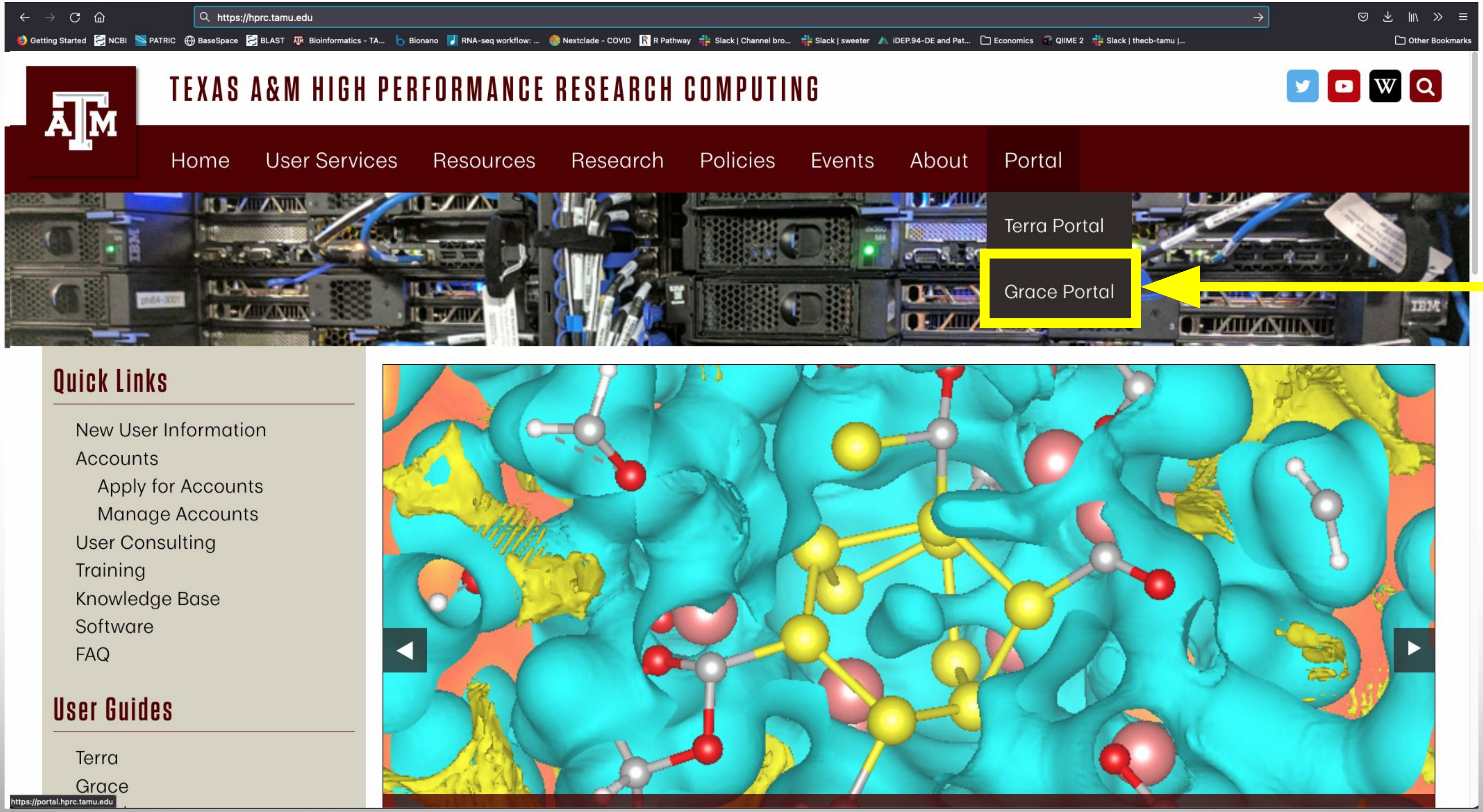
https://hprc.tamu.edu/



Click on “Portal”

Getting Started Using the Grace Cluster

https://hprc.tamu.edu/



Click on “Grace Portal”

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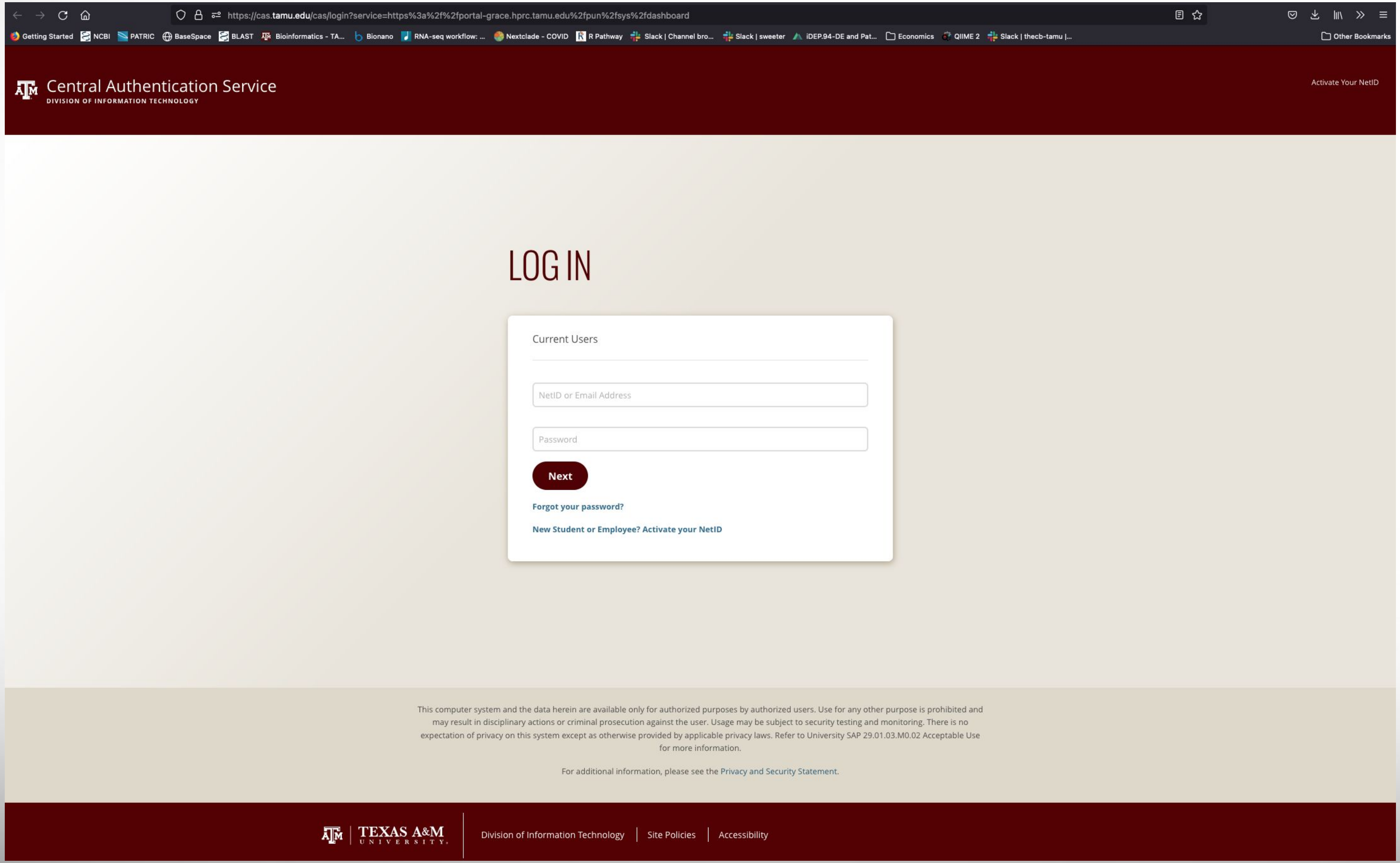


Central Authentication Service
DIVISION OF INFORMATION TECHNOLOGY

LOG IN

Current Users

NetID or Email Address

Password

Forgot your password?

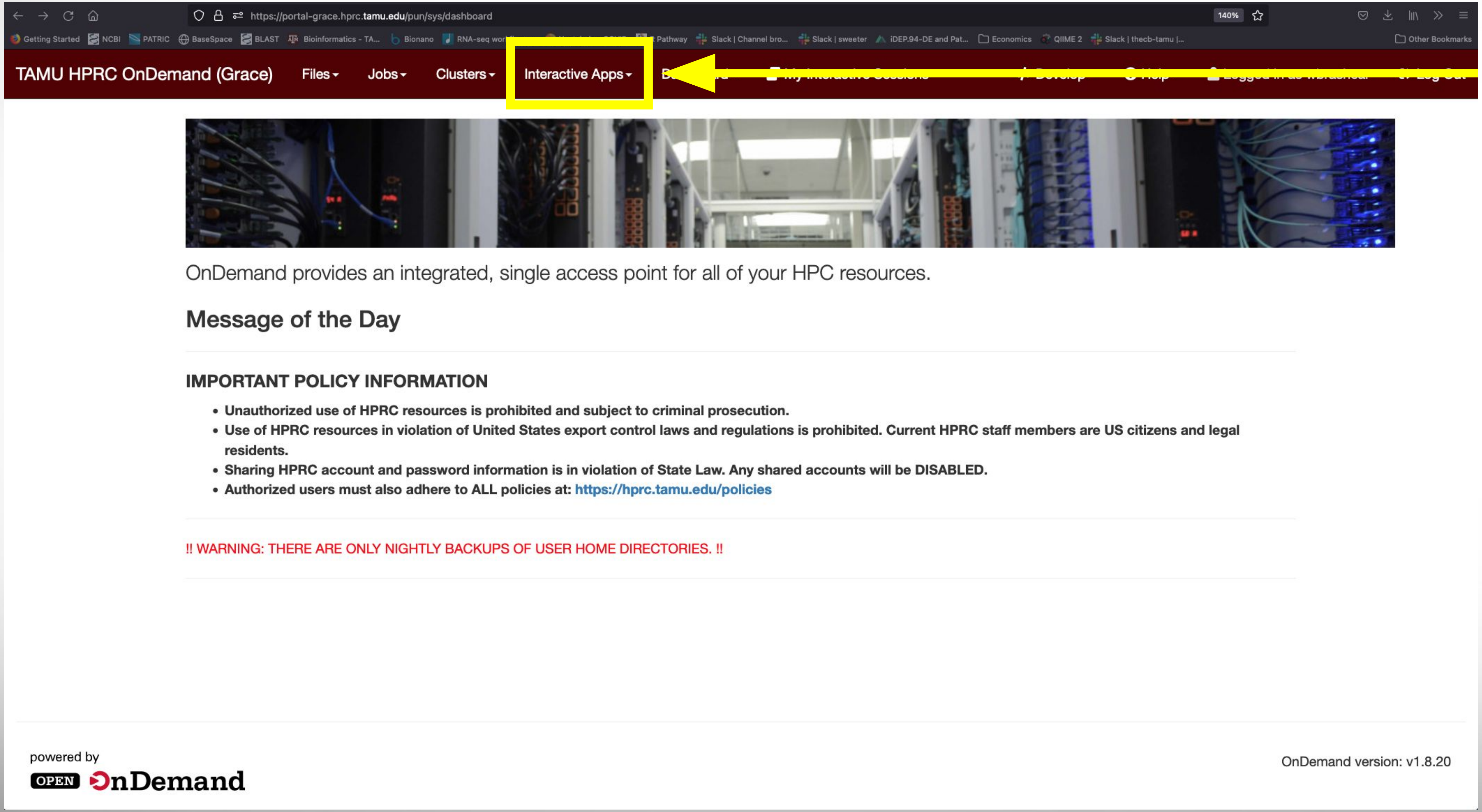
New Student or Employee? Activate your NetID

This computer system and the data herein are available only for authorized purposes by authorized users. Use for any other purpose is prohibited and may result in disciplinary actions or criminal prosecution against the user. Usage may be subject to security testing and monitoring. There is no expectation of privacy on this system except as otherwise provided by applicable privacy laws. Refer to University SAP 29.01.03.M0.02 Acceptable Use for more information.

For additional information, please see the Privacy and Security Statement.

Log in to CAS

Getting Started Using the Grace Cluster



OnDemand provides an integrated, single access point for all of your HPC resources.

Message of the Day

IMPORTANT POLICY INFORMATION

- **Unauthorized use of HPRC resources is prohibited and subject to criminal prosecution.**
- **Use of HPRC resources in violation of United States export control laws and regulations is prohibited. Current HPRC staff members are US citizens and legal residents.**
- **Sharing HPRC account and password information is in violation of State Law. Any shared accounts will be DISABLED.**
- **Authorized users must also adhere to ALL policies at: https://hprc.tamu.edu/policies**

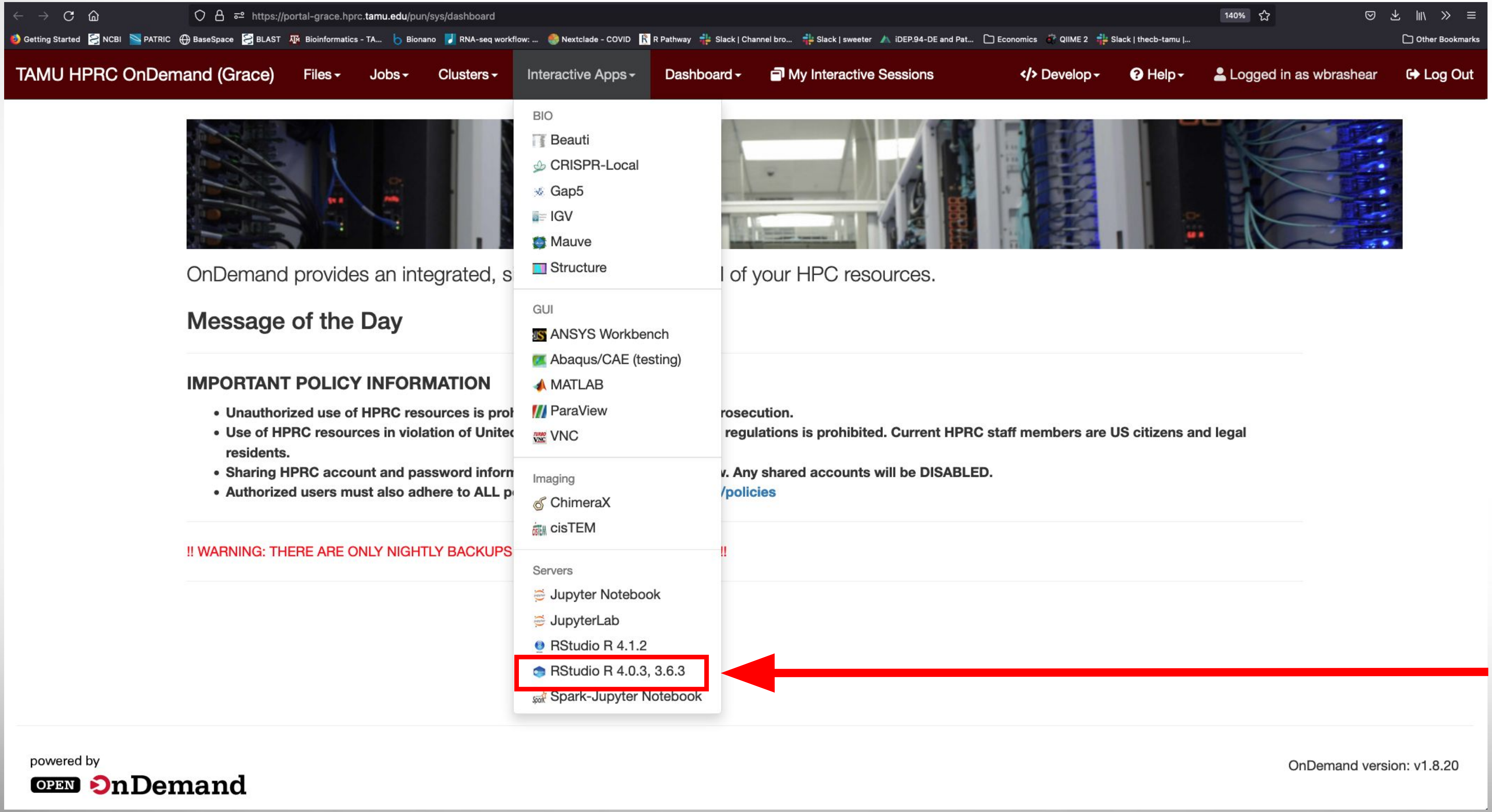
!! WARNING: THERE ARE ONLY NIGHTLY BACKUPS OF USER HOME DIRECTORIES. !!

powered by OPEN OnDemand

OnDemand version: v1.8.20

Click on “Interactive Apps”

Getting Started Using the Grace Cluster



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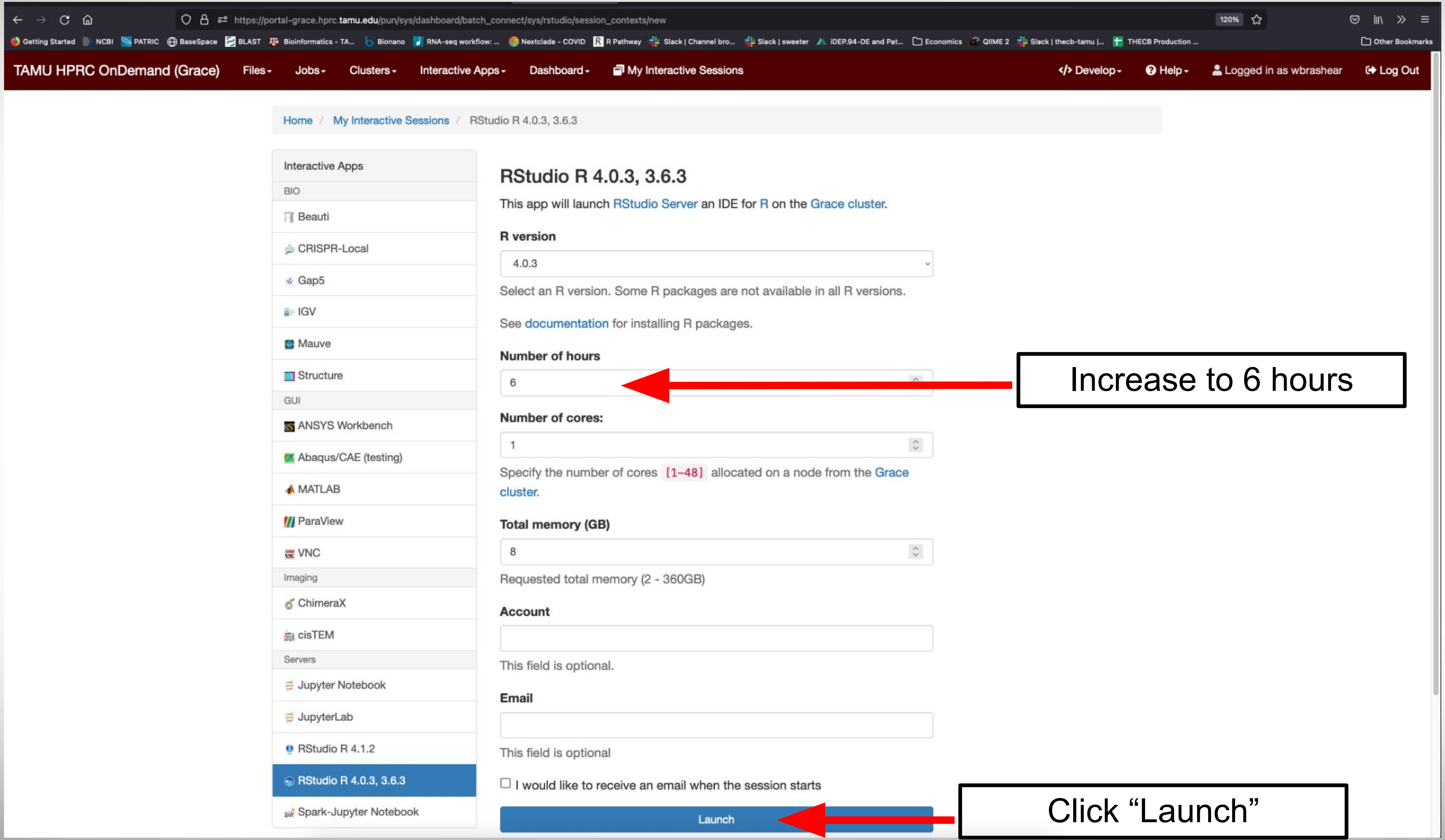
OnDemand version: v1.8.20

RStudio R
4.0.3,3.6.3

Getting Started Using the Grace Cluster



RStudio R 4.0.3, 3.6.3

This app will launch RStudio Server an IDE for R on the Grace cluster.

R version: 4.0.3

Select an R version. Some R packages are not available in all R versions.

See documentation for installing R packages.

Number of hours: 6

Number of cores: 1

Specify the number of cores [1-48] allocated on a node from the Grace cluster.

Total memory (GB): 8

Requested total memory (2 - 360GB)

Account

This field is optional.

Email

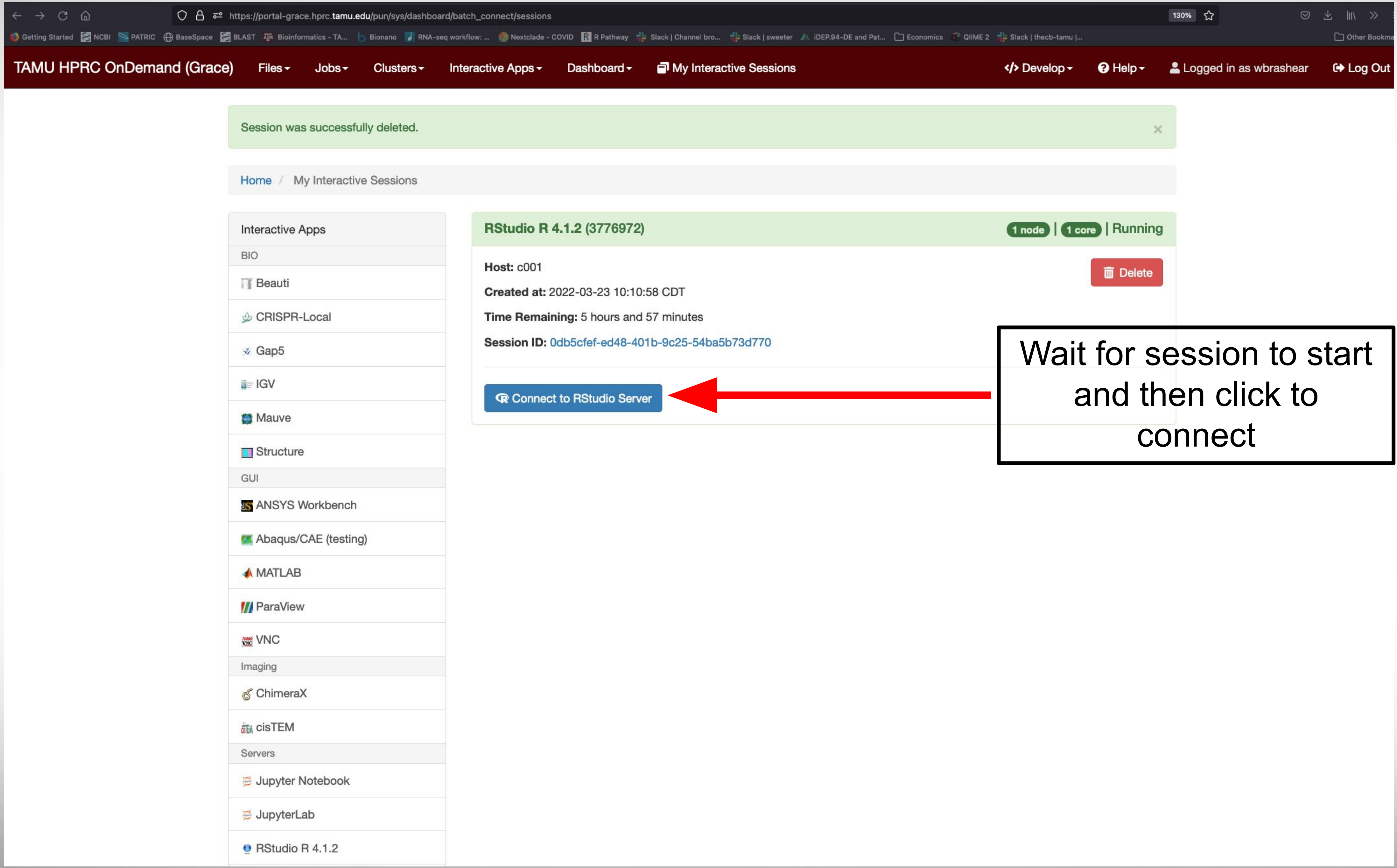
This field is optional

☐ I would like to receive an email when the session starts

Increase to 6 hours

Click “Launch”

Getting Started Using the Grace Cluster



Session was successfully deleted.

RStudio R 4.1.2 (3776972) 1 node | 1 core | Running

Host: c001

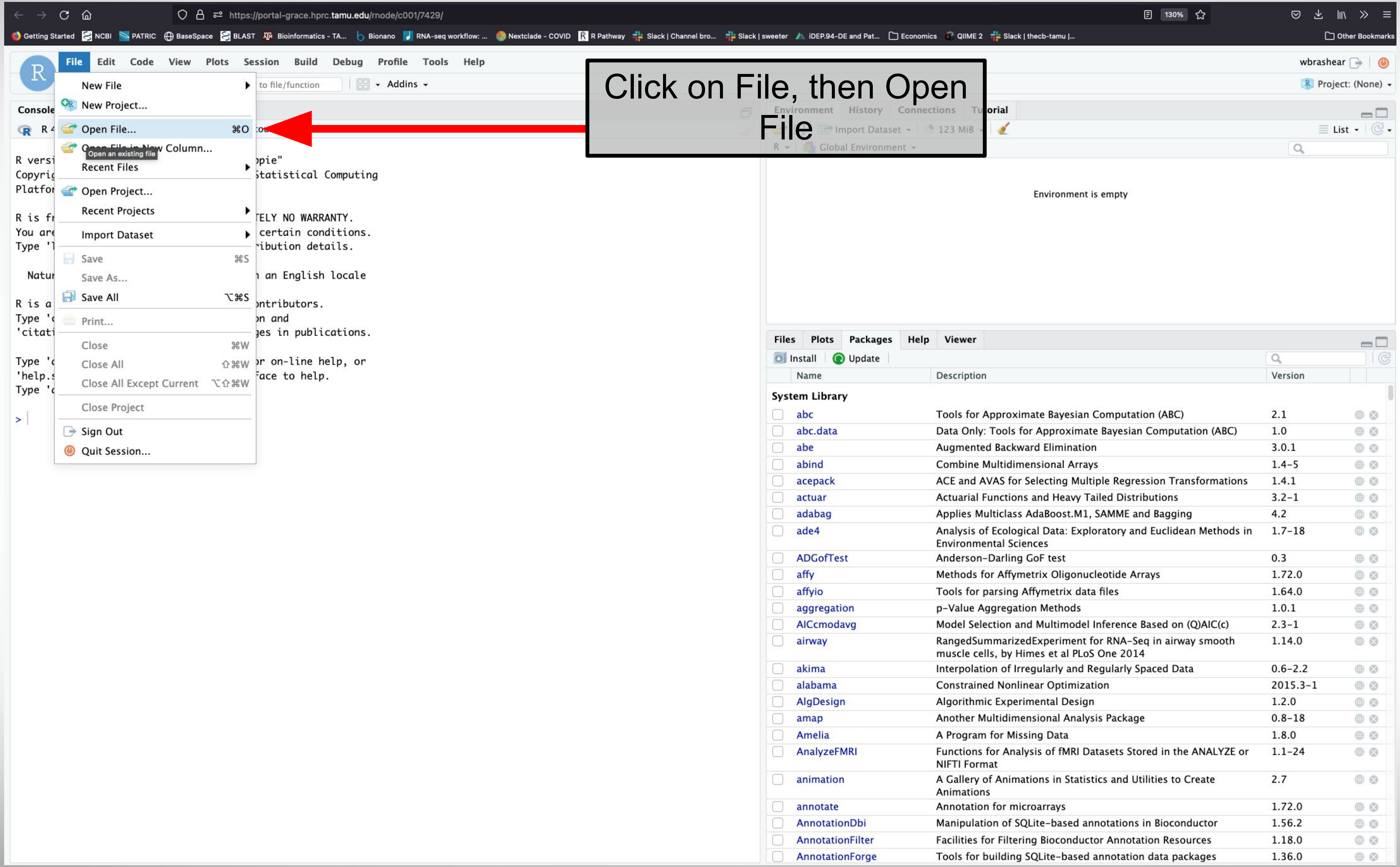
Created at: 2022-03-23 10:10:58 CDT

Time Remaining: 5 hours and 57 minutes

Session ID: 0db5cfef-ed48-401b-9c25-54ba5b73d770

Wait for session to start and then click to connect

Getting Started Using the Grace Cluster



Click on File, then Open File

```
R versi                              ppie"
Copyrig                              Statistical Computing
Platfor

R is fr                              TELY NO WARRANTY.
You are                              certain conditions.
Type 'l                              ribution details.

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Type 'c                              on and
'citati                              ges in publications.

Type 'd                              or on-line help, or
'help.s                              face to help.
Type 'q

>
```

	Name	Description	Version
	System Library		
☐	abc	Tools for Approximate Bayesian Computation (ABC)	2.1
☐	abc.data	Data Only: Tools for Approximate Bayesian Computation (ABC)	1.0
☐	abe	Augmented Backward Elimination	3.0.1
☐	abind	Combine Multidimensional Arrays	1.4-5
☐	acepack	ACE and AVAS for Selecting Multiple Regression Transformations	1.4.1
☐	actuar	Actuarial Functions and Heavy Tailed Distributions	3.2-1
☐	adabag	Applies Multiclass AdaBoost.M1, SAMME and Bagging	4.2
☐	ade4	Analysis of Ecological Data: Exploratory and Euclidean Methods in Environmental Sciences	1.7-18
☐	ADGofTest	Anderson-Darling GoF test	0.3
☐	affy	Methods for Affymetrix Oligonucleotide Arrays	1.72.0
☐	affyio	Tools for parsing Affymetrix data files	1.64.0
☐	aggregation	p-Value Aggregation Methods	1.0.1
☐	AICcmodavg	Model Selection and Multimodel Inference Based on (Q)AIC(c)	2.3-1
☐	airway	RangedSummarizedExperiment for RNA-Seq in airway smooth muscle cells, by Himes et al PLoS One 2014	1.14.0
☐	akima	Interpolation of Irregularly and Regularly Spaced Data	0.6-2.2
☐	alabama	Constrained Nonlinear Optimization	2015.3-1
☐	AlgDesign	Algorithmic Experimental Design	1.2.0
☐	amap	Another Multidimensional Analysis Package	0.8-18
☐	Amelia	A Program for Missing Data	1.8.0
☐	AnalyzeFMRI	Functions for Analysis of fMRI Datasets Stored in the ANALYZE or NIFTI Format	1.1-24
☐	animation	A Gallery of Animations in Statistics and Utilities to Create Animations	2.7
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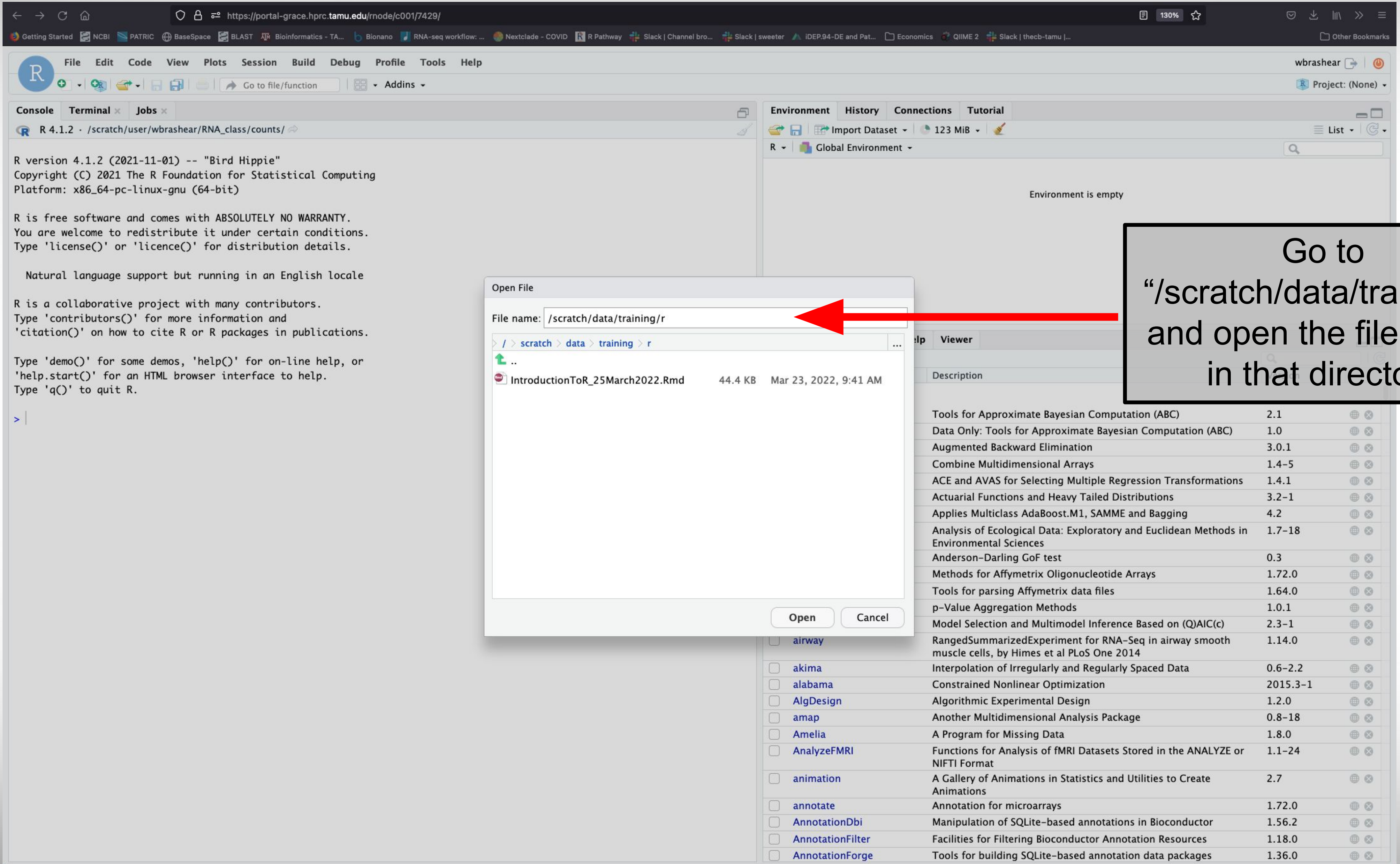

R 4.1.2 · /scratch/user/wbrashear/RNA_class/counts/

```
R version 4.1.2 (2021-11-01) -- "Bird Hippie"
Copyright (C) 2021 The R Foundation for Statistical Computing
Platform: x86_64-pc-linux-gnu (64-bit)

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Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

> 
```

Environment is empty

Open File

File name: /scratch/data/training/r

/ › scratch › data › training › r

..

IntroductionToR_25March2022.Rmd	44.4 KB	Mar 23, 2022, 9:41 AM

		Description	
		Tools for Approximate Bayesian Computation (ABC)	2.1
		Data Only: Tools for Approximate Bayesian Computation (ABC)	1.0
		Augmented Backward Elimination	3.0.1
		Combine Multidimensional Arrays	1.4-5
		ACE and AVAS for Selecting Multiple Regression Transformations	1.4.1
		Actuarial Functions and Heavy Tailed Distributions	3.2-1
		Applies Multiclass AdaBoost.M1, SAMME and Bagging	4.2
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Go to "/scratch/data/training/r" and open the file that is in that directory

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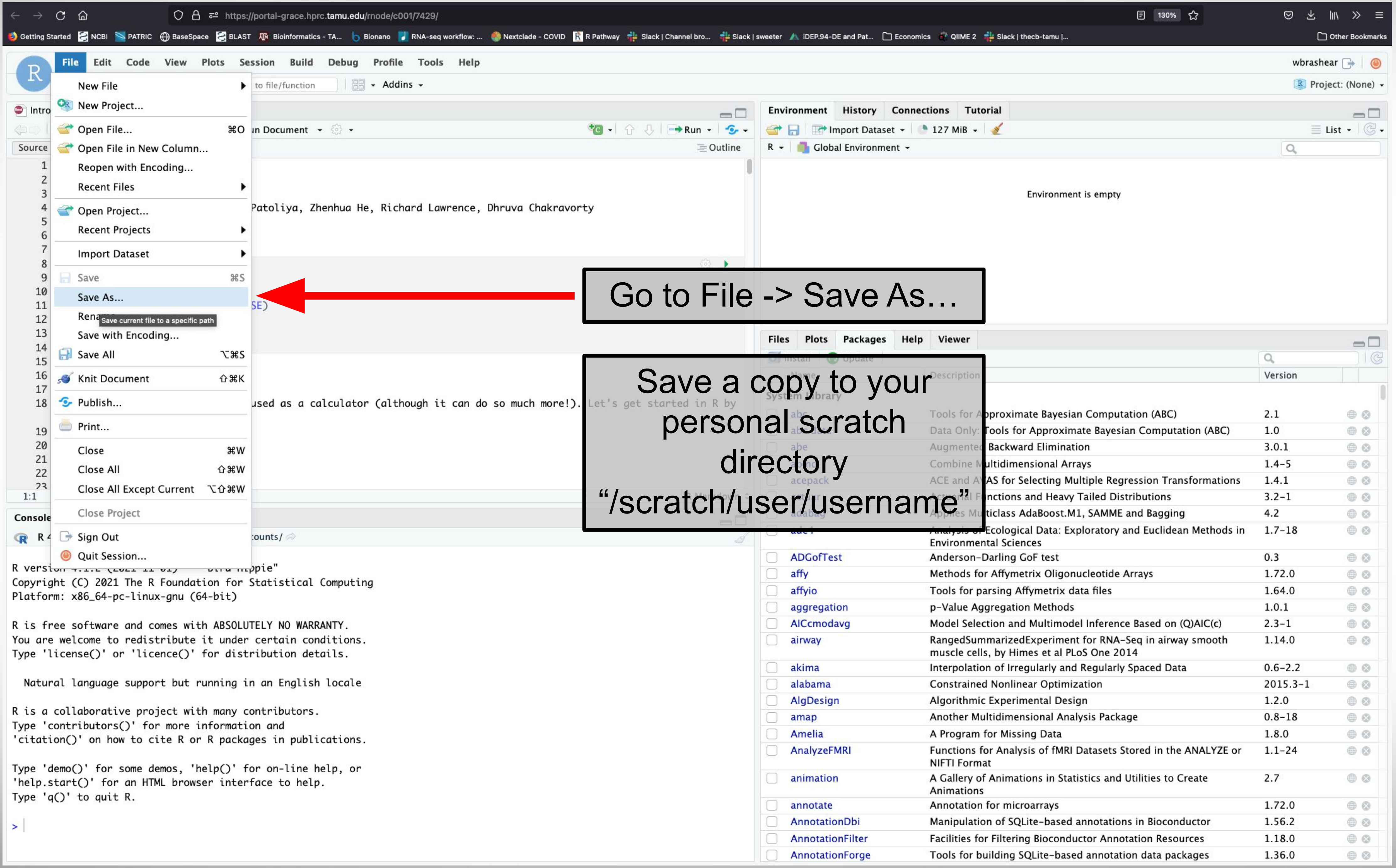

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R version 4.1.2 (2021-11-01) -- "Bird Hippie"
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Go to File -> Save As…

Save a copy to your personal scratch directory “/scratch/user/username”

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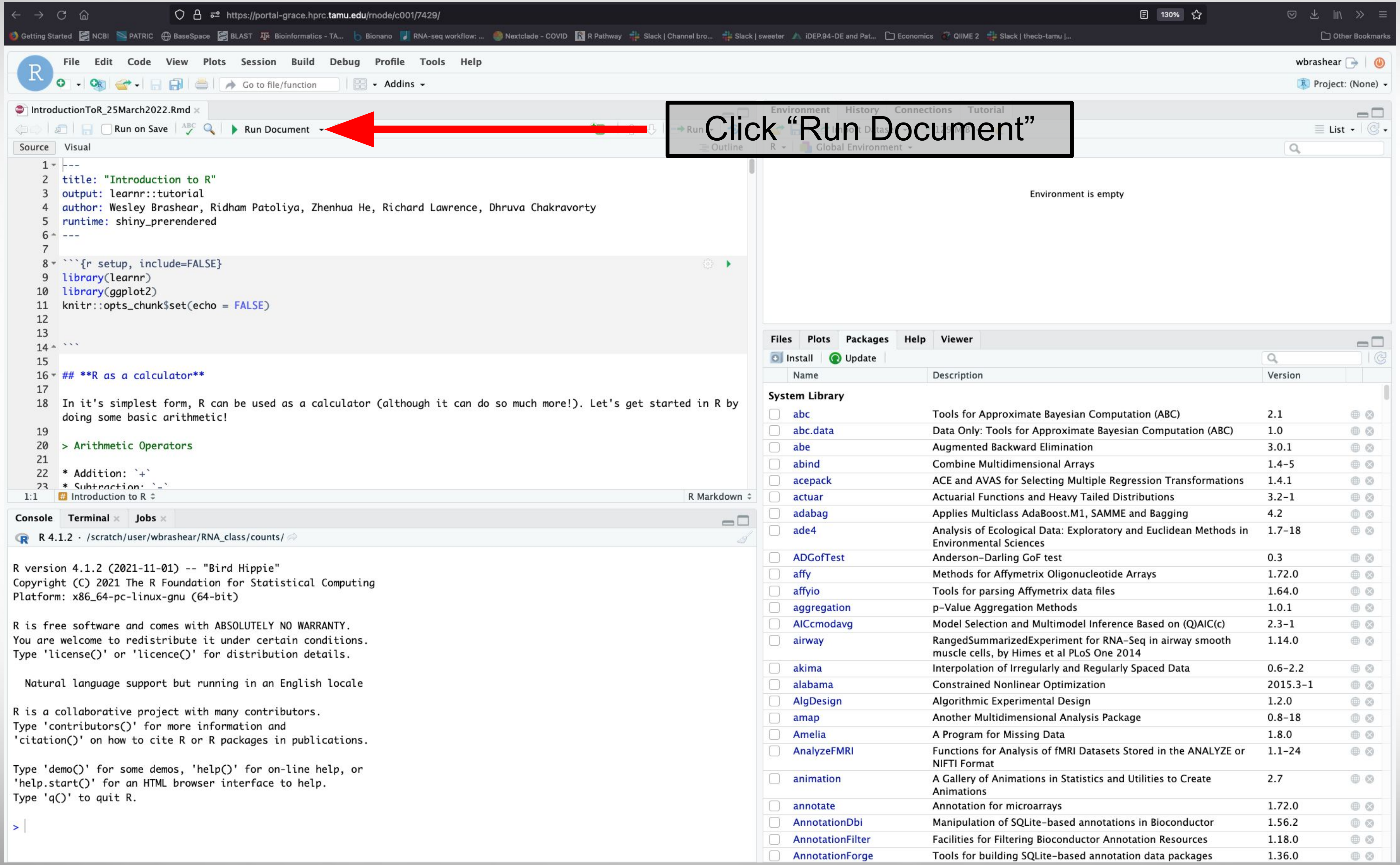

Click “Run Document”

~~~
---
title: "Introduction to R"
output: learnr::tutorial
author: Wesley Brashear, Ridham Patoliya, Zhenhua He, Richard Lawrence, Dhruva Chakravorty
runtime: shiny_prerendered
---

```{r setup, include=FALSE}
library(learnr)
library(ggplot2)
knitr::opts_chunk$set(echo = FALSE)


~~~

R as a calculator

In it's simplest form, R can be used as a calculator (although it can do so much more!). Let's get started in R by doing some basic arithmetic!

> Arithmetic Operators

* Addition: `+`
* Subtraction: `-`
```

```
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