

## ***NRT-IMPACTS Graduate Training Program***

### **Mini Data Carpentry Genomics Workshop**

*Thursday, December 12, 10:30am - 3pm*

*247 Plant Biology Lab*

#### **Goal**

This workshop is for those who have no or little prior experience in genomic data analysis. At the end of the workshop, you should be able to teach researchers basic concepts, skills, and tools for working with genomic data. This workshop is designed and organized by 13 graduate students in the Forum in Computational and Plant Science of the NRT-IMPACTS graduate training program.

#### **Topics**

This workshop is designed based on the Data Carpentry Genomics Workshop. The topics include:

- Best practices for organizing bioinformatics projects and data,
- Use of command-line utilities and tools using High Performance Computing Center (HPCC),
- Assess sequence quality, and
- Identify genetic variants using sequence data.

#### **What you need**

- Laptop with wireless internet
- HPCC account (the organizer will request one for you if you don't have it).
- Access to the presentation and data files (will be verified during the workshop)
- Install FileZilla Software

#### **Schedule**

<b>Lesson 1</b>	<b>Project organization and Management for Genomics:</b> <a href="#">link</a>	<b>10:30-11:00 am</b>
	<a href="#">Slides for lesson 1</a>	
<b>Lesson 2</b>	<b>Introduction for the Command Line for Genomics:</b> <a href="#">link</a>	<b>11:00-12:00 pm</b>
	1. <a href="#">Slides for lesson 2</a> 2. <a href="#">Tutorial</a>	
<b>Lunch &amp; discussion</b>		<b>12:00-12:30 pm</b>
<b>Lesson 3a</b>	<b>Data Wrangling and Processing for Genomics :</b> <a href="#">link</a>	<b>12:30-1:30 pm</b>
	<a href="#">Slides for lesson 3a</a>	
<b>Lesson 3b</b>	<b>Variant calling workflow and automation:</b> <a href="#">link</a>	<b>1:30-2:30 pm</b>
	<a href="#">Slides for lesson 3b</a>	
<b>Wrap up</b>		<b>2:30-2:45 pm</b>

**Instruction team**

<b>Name</b>	<b>Affiliation/Expertise</b>
Beth Gettings	Plant Biology/ Discipline-Based Education Research (DBER)
Nolan Bornowski	Plant Breeding Genetics and Biotechnology/Genomics
Seth Hunt	Plant Biology/Ecosystem ecology, DBER
Rie Sadohara	Plant Breeding Genetics and Biotechnology/Genomics
Robert Shrote	Plant Breeding, Genetics, and Biotechnology
Levi Bauer	Genetics and Genome Sciences
Yunfei Long	Electrical and Computer Engineering/Computer Vision
Hao Wang	Computational Mathematics Science and Engineering/Computational Biology
Fabio Gomez	Biochemistry and Molecular Biology
Prabhjot Kaur	Plant Breeding, Genetics and Biotechnology, Horticulture