

# Welcome to this Training Session with Theiagen Genomics



We will soon be getting started



# **Software Development Practices for Public Health Bioinformatics**

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Week 00: Training Kick Off!

A Northeastern Bioinformatics Regional Resource Offering Provided by the Massachusetts  
Department of Public Health in Collaboration with Theiagen Genomics

# Course Introduction

# Training Workshop Instructors



*Inês Mendes, PhD*

- Senior Bioinformatics Scientist with Theiagen Genomics since 2023
- PhD in Computational Biology
- MSc in Bioinformatics and Computational Biology
- BSc in Cellular and Molecular Biology

# Training Workshop Instructors



*Shelly Scribner, PhD*

- Public Health Team Lead with Theiagen Genomics
- PhD in Microbiology and Immunology
- BS in Biology

# Training Workshop Resources

## Training Information, Communication, and Support

- **GitHub Repo** created to host training resources and information:
  - <https://github.com/theiagen/Northeast-SDP4PHB-2025>
- **Support contact:**
  - support@theiagen.com

# Training Objectives

## Software Development Practices for Public Health Bioinformatics

- Knowledge of **best software development practices applied to public health bioinformatics** such as **design documents** and the use of **integrated development environments**
- Proficiency in using **version control systems** for collaborative development
- Ability to deploy **continuous integration** and acceptance testing
- Understanding **workflow managers** and how to construct an analysis pipeline

# Training Format

## Virtual Training Workshop

All sessions hosted via Zoom. Below are key dates for this workshop (all in Eastern Time):

- **Monday (x4), February 24 - March 17, 2025, 11:00 am**
  - Training Lectures & Exercises (90m)
- **Wednesdays (x4), February 26 - March 19, 2025, 11:00 am**
  - Training Office Hours (60m)

*All participants should have received a  
**Calendar invite** with Zoom call-in information*



# Course Agenda

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## Week 1 - 3: Software Development Practices

Focus on the development life cycle and best practices for sustainable bioinformatics solutions

- Will consist of both live lectures and hands-on exercises

## Week 4: Use of Workflow Managers

Use of **Zoom polls** to assess understanding throughout

Focus on building and deploying a Nextflow workflow

- Will consist of both live lectures and hands-on exercises

# Course Agenda

## Software Development Practices

### **Week 1 - February 24/26, 2025**

- Introducing the development journey with a focus on design documents a development environments

### **Week 2 - March 03/05, 2025**

- Focus on Git fundamentals and collaborative development practices

### **Week 3 - March 10/12, 2025**

- Focus on testing and bringing code modifications into production

# Course Agenda

## Use of Workflow Managers

**Week 4 - March 17/19, 2025**

- Basics of workflow managers, with a focus on Nextflow
  - Local and Docker deployment



# GitPod Access for Hands-On Exercises

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## Prerequisites for Hands-On Exercises

In addition to lectures, this course consists of several hands-on exercises to reinforce the coursework material. To participate in these exercises, trainees will need the following resources:

1. GitHub Account
2. GitPod Account
3. GitPod Configuration for Public Repositories
4. GitPod Workspace

**Detailed instructions** for setting these up are available in our course [GitHub repository](#)

