

# **Pattern Analysis (PRIMER) Workshop**

**Presenter: Michael Arthur**

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**Date: 16<sup>th</sup>, 17<sup>th</sup>, and 18<sup>th</sup> of July**

**Time: 9am to 5pm**

**Breaks - 10.30am/12.30pm/2.30pm**

**Place: Gold Coast Campus**

**Science1 G24 (Registration 16<sup>th</sup> 8.45am)**

**Science1 G24 (Tea/Coffee/Lunch)**

**Health Sc.G05 3.39 (Computer Lab.)**

**Sponsors (Centres):**

**Griffith School of Environmental  
Centre for Innovative Conservation  
Strategies**

**Supplied & BYO:**

**PRIMER package (supplied)**

**Lunch\tea\coffee (supplied)**

**Workshop notes (supplied)**

**Workshop (PRIMER) datasets (supplied)**

**Your data - your questions (BYO)**

# Pattern Analysis - Day 1

- **Registration - 8.45am**
- **Start - 9.00am**
- **Session 1a - Introduction**
  - Multivariate data (abiotic and biotic datasets)
- **Session 1b - Data Std/Trans**
  - Common transformations - e.g.  $\log(x+1)$ ,  $X^{0.25}$
  - Common standardisations - range, rel. abund.
- **Break - 10.30am-10.45am**
- **Session 2a - Distance Measures**
  - Euclidean, Manhattan, Bray-Curtis
- **Session 2b - What to Use?**
  - Ecological datasets, Physical-Chemical datasets
- **Lunch - 12.30pm-1.00pm**
- **Session 3 - PRIMER Package**
  - Introduction to PRIMER (Windows Ver. 5)
- **Break - 2.30pm-2.45pm**
- **Session 4 - Classification**
  - Hierarchical Agglomerative Clusters
  - Data/examples - SPSS & PRIMER(Cluster)
- **End - 5.00pm**

## Pattern Analysis - Day 2

- **Start** - 9.00am
- **Session 1 - Ordination**
  - PCA and Multidimensional Scaling (MDS)
  - Data/examples - SPSS & PRIMER(MDS)
- **Break** - 10.30am-10.45am
- **Session 2a - Explaining Patterns**
  - Understanding the pattern - variables & factors
  - Data/Examples - PRIMER(Simper & Bubble plots)
- **Session 2b - "ANOVA"-ANOSIM**
  - Testing hypotheses using randomisation methods
  - Data/Examples - PRIMER(Anosim, Anosim2)
- **Lunch** - 12.30pm-1.00pm
- **Session 3 - Mantel's Test**
  - Testing differences between matrices
  - Data/Examples - PRIMER(Relate)
- **Break** - 2.30pm-2.45pm
- **Session 4 - Linking Biotic/Abiotic**
  - Relating patterns in biotic data to env. data
  - Data/Examples - PRIMER(Bio-Env and Bvstep)
- **End** - 5.00pm

## Pattern Analysis - Day 3

- **Start** - 9.00am
- **Session 1** - "Repeated" Measures
  - Examining multivariate datasets through time
  - Meta analysis - ordination of several datasets
  - Data/Examples - PRIMER(2stage)
- **Break** - 10.30am-10.45am
- **Session 2** - PRIMER Options
  - Results, presentation, and options
  - Examples, case studies
- **Lunch** - 12.30pm-1.00pm
- **Session 3** - Your Time (Practice)
  - Its time to play with your data or
  - PRIMER datasets can be supplied for you to practice with.
- **Break** - 2.30pm-2.45pm
- **Session 4** - Your Time (Practice)
  - Its time to play with your data or
  - PRIMER datasets can be supplied for you to practice with.
- **End** - 4.00pm