

# EVAN Toolbox (ET) Training Day



**EVAN-SOCIETY**  
setting landmarks in science

Form and shape analysis for biological objects

**Wednesday, 20<sup>th</sup> September 2017, 10:00-17:00**

[2333 CC Leiden, Einsteinweg 2, Faculty of Archaeology, Van Steenis building](#)

Organised by the EVAN-Society ([www.evan-society.org](http://www.evan-society.org)),

Leiden University, Faculty of Archaeology (<https://www.universiteitleiden.nl/en/archaeology>)

*Scheduled Teachers: Gerhard Weber, Paul O'Higgins*

## **Agenda** (may deviate according to needs of participants):

- 10:00 - 11:00** What is the EVAN-Toolbox (ET)?  
Basic concepts of Geometric Morphometrics  
(landmarks, distances, coordinates, shape variables, size)  
How the user interface of ET works, what are Visual Programming Networks (VPNs)?  
Building our first VPN - a simple Generalized Procrustes Analysis (GPA)  
VPNs: created by participants
- 11:15 - 13:00** Background of GPA, using the pre-defined GPA VPN, tuning the GPA node  
Background of Principal Component Analysis (PCA), using the PCA VPN  
Background of warping and transformation grids, using the 3D Warper  
Visualizing sexual dimorphism, using Group Means VPN  
Examining allometry, concept of form space  
VPNs: GPA, PCA, Group Means
- 13:00 - 14:00** Lunch
- 14:00 - 15:30** What are the biological interpretations of the results, what do we have to alter?  
Regression of shape on size and sex  
Reflected Relabeling, symmetrize specimens, analyze asymmetries  
VPNs: Regression, Reflected Relabeling
- 15:30 - 15:45** Coffee break
- 15:45 - 17:00** Semilandmarks (sLM): why and when use them?  
Creating LM and sLM on curves and surfaces (human molar), using Templand  
Export LM & sLM to ET and Excel  
VPNs: Templand, Export

Please download the manuals at <http://evan-society.org/node/42> in advance.

Please bring your own laptop and mouse, preferably a Win PC with NVIDIA graphics card, alternatively a Mac with windows emulation.