

**Parametric Places 2016: DATA Making + PUBLIC Space**

In association with the UIxD Urban Interactions Lab  
Course Number, Time and Location: ARCH 4/523, Winter 2016; T + TH, 2:00- 3:50pm, LA 279  
Instructor: Philip Speranza, speranza@uoregon.edu

How do we measure the city today? How do we measure natural and anthropological phenomena? At what scale of time?

OpenStreetMaps.com, Grasshopper, plugins HUMAN and ELK, Arduino, Firefly and other media provide new methods to understand the social qualities of cities in ways that are: 1) democratically open; 2) systematic; & 3) custom formulated.

The research method taught in this class will investigate the off-site and on-site use of data using Rhino Grasshopper, plugins and custom scripts. These tools will be integrated with mobile app technology to measure on-site phenomena, codify this qualitative information and create a customize design tool. These tools will not be seen as singular design solutions but rather as design agents that combine human and non-human authorship (Manuel De Landa 2008) (Bruno Latour 2005). Unlike GIS software ESRI ArcGIS and ESRI City Engine, the use of custom Grasshopper scripts allow the simultaneous analysis and synthesis of new custom data for design simulation. Students will design urban interventions at the scale of public space in Eugene or Barcelona.

**Part I** of the course will investigate work at the scale of parametric urbanism in Eugene and Barcelona. Students will learn parametric urban design and the ability to create new data using in-situ observation optionally using Arduino microprocessors, sensors and the Firefly plugin for Grasshopper.

**Part II** of the course will allow students to develop an analytical approach using data collection in Eugene to measure social phenomena and other information that affects the health of our communities. Students will work in groups of two to measure in-situ data using Rhino Grasshopper with ELK, HUMAN and other plugins for simulation. Students are encouraged to use this media elective project as a research tool for studio, terminal studio and other course work.

Students projects from this course since 2010 have been published and presented at: **ACADIA Cincinnati 2015, ACADIA LA 2014; EU City, Architecture and Information Sustainable Places 2014 Conference in Nice, France; SIM Sustainable Intelligent Manufacturing 2013 in Lisbon** and the **Journal of Urban Design Special Issue on Pedagogy**. There will be an opportunity extend projects via the Barcelona Urban Design Summer Program or independent study.

*Basic knowledge of Rhino Grasshopper is required. Readings, media exercises and urban design methods will occur in lectures, workshops and online. [http://www.lcabcn2014uo.wordpress.com](http://www.lcabcn2014uo.wordpress.com), [http://parametricplaces14.wordpress.com](http://parametricplaces14.wordpress.com)*