

Model Making and Prototyping

 Tags: [art](#), [engineering](#), [visions_voices](#)

A guide to selected library resources to complement the October 7, 2009 Visions and Voices presentation "Learning and Innovation: 21st-Century Model Making and Prototyping"

Last Updated: Jun 17, 2013 | URL: <http://libguides.usc.edu/prototyping> | [Print Guide](#) | [Email Alerts](#)

[Home](#) | [Videos - some links of interest](#) | [USC Books & Journals on the Topics](#) | [A Few Citations from the Talks](#)

[Home](#) | [Comments\(0\)](#) | [Print Page](#)

Search: This Guide

Events

Learning and Innovation: 21st-Century Model Making and Prototyping

Wednesday, October 7, 2009

Harris Hall, [Gin D. Wong Auditorium](#)

7:00 p.m.

[Comments \(0\)](#)

Definitions

The **three (3) dimensions** in our universe are height, width and depth.

A **model** is a representation of something else, usually an object or a process.

A prototype most often means a **full-scale model of an object**, particularly in engineering.

[Comments \(0\)](#)

Introduction

The 21st century has inspiring new tools for fabrication, design and production that facilitate the creation of 3-D models and prototypes across all disciplines. This technology can speed up the process of innovation and learning through the rapid and accurate actualization of 3-D graphics.

Join USC's Visions & Voices program on Wednesday, October 7, 2009 in the Gin D. Wong Auditorium of Harris Hall for a dynamic discussion with Dr. **Zoz Brooks** of the Discovery Channel's **Prototype This**. Brooks will discuss innovative and exciting uses of prototyping.

The presentation will be followed by a panel discussion featuring: **Marty Doscher**, IT/CAD manager at Morphosis and Trojan Alum; **Scott Easley**, Assistant Director of USC's **Gamepipe Laboratory**; **Mark Ganter**, University of Washington 3-D graphics and Mechanical Engineering Professor; and, **Behrokh Khoshnevis**, USC Professor of Industrial and Systems Engineering and Director of the Manufacturing Engineering Program in the Viterbi School.

Note: **Neil Leach**, Visiting Professor of Architecture at USC, spoke in place of Professor Khoshnevis, and shared images from his own work on design as well as Professor Khoshnevis' work on robotic building systems.

Sara Tompson of the [USC Libraries](#) has selected some information resources to help you explore this multidisciplinary topic.

[Comments \(0\)](#)

About This Guide

Visions and Voices and the USC Libraries present Explorations, a series of research guides that allow you to build on your experiences at Visions and Voices events.

- [Browse upcoming Visions and Voices events](#)
- [Explore USC Libraries Visions and Voices research guides](#)

[Comments \(0\)](#)

3D Representations in 2D Have Been Used for Millenia



[Comments \(0\)](#)

Powered by [Springshare](#); All rights reserved. [Report a tech support issue](#).
View this page in a format suitable for [printers](#) and [screen-readers](#) or [mobile devices](#).

* Asterisk in guide title indicates core subject guide

Model Making and Prototyping

 Tags: [art](#), [engineering](#), [visions_voices](#)

A guide to selected library resources to complement the October 7, 2009 Visions and Voices presentation "Learning and Innovation: 21st-Century Model Making and Prototyping"

 Last Updated: Jun 17, 2013 | URL: <http://libguides.usc.edu/prototyping> |  [Print Guide](#) |  [Email Alerts](#)
[Home](#) | [Videos - some links of interest](#) | [USC Books & Journals on the Topics](#) | [A Few Citations from the Talks](#)
[Videos - some links of interest](#)
 [Comments\(0\)](#)
 [Print Page](#)

 Search:
[This Guide](#)

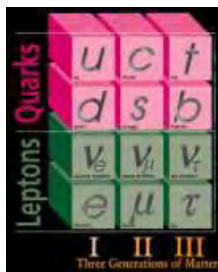
Three Dimensionality

- Professor Gantner, one of the event's panelists, has a ["Printing Ceramics" video on YouTube](#)
- Stanford University researchers have created "Make 3D" for turning photos into 3-D images and made it freely available. See
 - [Presentation](#) on YouTube
 - [Demonstration](#) on YouTube
- "How Stuff Works" is both a book and an active Web site that typically has very accurate information and understandable images. Here is their [How 3D Graphics Work](#)
- Commercial video on using the popular modelling program [AutoCAD](#) for 3-D modelling [CAD= Computer-Aided Design].

[Comments \(0\)](#)

Modelling

- The [Standard Model of Particle Physics](#) (from the SciTech UK program). The Standard Model is a partially-proven representation of the elemental particles and forces in our universe.
 - (See Fermilab's Standard Model diagram linked below)
- [Basic Sewing Patterns](#) (from eHow). A pattern is a type of model.
- [Computer Modeling Tiny Things](#) by Industrial Research Limited. Using mathematical models for nanotechnology, fluid processes and more.



(<http://www.fnal.gov/pub/inquiring/matter/madeof/image002.jpg>)

[Comments \(0\)](#)

Prototyping

- Wired Magazine video on [rapid prototyping with 3D printouts](#)
- Envisia Technologies' [rotational molding](#) from the PrototypeZone site
- IEEE's *Spectrum* magazine video on [How Microprojectors Evolved from Prototype to Product](#)

[Comments \(0\)](#)

About This Guide

Visions and Voices and the USC Libraries present Explorations, a series of research guides that allow you to build on your experiences at Visions and Voices events.

- [Browse upcoming Visions and Voices events](#)
- [Explore USC Libraries Visions and Voices research guides](#)

[Comments \(0\)](#)

Powered by [Springshare](#); All rights reserved. [Report a tech support issue](#).
View this page in a format suitable for [printers](#) and [screen-readers](#) or [mobile devices](#).

* Asterisk in guide title indicates core subject guide

Model Making and Prototyping

 Tags: [art](#), [engineering](#), [visions_voices](#)

A guide to selected library resources to complement the October 7, 2009 Visions and Voices presentation "Learning and Innovation: 21st-Century Model Making and Prototyping"

Last Updated: Jun 17, 2013 | URL: <http://libguides.usc.edu/prototyping> |  Print Guide |  Email Alerts

 Home Videos - some links of interest **USC Books & Journals on the Topics** A Few Citations from the Talks

 USC Books & Journals on the Topics  Comments(0)  Print Page Search: This Guide

Book Search

Search USC's Homer Catalog:

Note: "Prototypes" is the main Library of Congress Subject Heading for this topic

Comments (0)

Search for Relevant Articles in these Journal Citation Databases

Engineering Village 2, which includes the Compendex and Inspec article citation databases which cover most fields of engineering and computer science, currently cites the largest number of articles on prototyping of any USC database. EV2 has direct links to all the articles in journals to which USC subscribes. A good place to start your search.

The multidisciplinary **ProQuest** suite of databases cites the next largest number of articles dealing with prototyping and modelling topics. ProQuest contains thousands of articles fulltext in PDF format, as well as links to the articles in journals and elsewhere.

If you are interested in prototyping in specific disciplines, you may want to search for journal articles via these citation databases as they contain a great deal of relevant content:

- [ACM Digital Library](#) (all of the Association for Computing Machinery journal publications)
- [Aerospace and High Technology Database](#)
- [Earthquake Engineering Abstracts](#)
- [IEEE Xplore](#) (journals, conference proceedings and some standards)

NOTE: The database links in this list include the proxy server, so you should be able to get to them with

Selected Ebooks on Relevant Topics

All of the Following are in the eBrary Electronic Library
to Which USC Subscribes

Note: If you are off-campus, you must first authenticate as a valid user with your USC username and password on the proxy server at this web address:

<https://libproxy.usc.edu/login>

Systems Approach to Engineering Design

Author: Sydenham, Peter

Publisher: Artech House, Incorporated

Released: 2003

Chapter 11 is entitled "Prototyping and Modeling in Design."

Responsive Production and the Agile Enterprise

Author: Forrester, Dr Paul

Publisher: Emerald Group Publishing Limited

Released: 2002

Rapid Tooling: Technologies and Industrial Applications

Author: Hilton, Peter D. Jacobs, Paul F.

Publisher: Marcel Dekker Incorporated

Released: 2000

Rapid Prototyping of Digital Systems

Author: Hamblen, James O. Furman, Michael D.

Publisher: Kluwer Academic Publishers

Released: 1999

Comments (0)

Selected Print Books on Prototyping and Modelling



Rapid prototyping and engineering applications: a toolbox for prototype development - Liou, Frank W.

Call Number: TS171.8.L56 2008 Science & Engineering Library

REFERENCE

ISBN: 0849334098

Presence: the inherence of the prototype within images and other objects - Shepherd, Rupert.

Call Number: N7430.5.P74 2006 Architecture & Fine Arts Library

ISBN: 0754634930

Kudos

Thanks to Emily Ross, Civil Engineering major in the Viterbi School of Engineering, Concrete Canoe Co-Captain for the USC Chapter of the American Society of Civil Engineers (ASCE) and Student Assistant for the Libraries' Associate Deans for researching all the books and journals cited on this page!

Comments (0)

Model Making and Prototyping Tags: art, engineering, visions_voices

A guide to selected library resources to complement the October 7, 2009 Visions and Voices presentation "Learning and Innovation: 21st-Century Model Making and Prototyping"

Last Updated: Jun 17, 2013 | URL: <http://libguides.usc.edu/prototyping> | [Print Guide](#) | [Email Alerts](#)

- Home
- Videos - some links of interest
- USC Books & Journals on the Topics**
- A Few Citations from the Talks

A Few Citations from the Talks [Comments\(0\)](#) [Print Page](#) Search: This Guide

Some links noted by speakers

- [Bathsheba Grossman sculptures](#)
- [Erik Demaine origami etc.](#)
- [Fab at Home](#) -- 3D printers and rapid prototypers
- [Rep Rap](#) - open source prototyping

[Comments \(0\)](#)

Some books cited



Designing for a digital world - Neil Leach
Call Number: NA2500.L432 2006 Architecture & Fine Arts Library
ISBN: 0262622009



The diamond age - Neal Stephenson
ISBN: 0553573314
Not yet available at USC, try interlibrary loan.
Publishers Weekly = "Cyber-fiction from Stephenson, in which an engineer living in a neo-Victorian future is commissioned to write a subversive primer for girls."

[Comments \(0\)](#)

Subject Guide



Sara R. Tompson

Links:
[Profile & Guides](#)

Powered by [Springshare](#); All rights reserved. [Report a tech support issue](#).
View this page in a format suitable for [printers](#) and [screen-readers](#) or [mobile devices](#).

* Asterisk in guide title indicates core subject guide