VISUAL INDEX
WEEK 1:
FLATBED SCANNER

MAKING SCIENCE AND ENGINEERING PICTURES
A PRACTICAL GUIDE TO PRESENTING YOUR WORK

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microneedles

P. DeMuth, Department of Biological Engineering; The Irvine Lab, Koch Institute for Integrative Cancer Research; The Hammond Lab, Koch Institute for Integrative Cancer Research

Massachusetts Institute of Technology

DeMuth, P. C., Y. Min, D. J. Irvine, et al. "Implantable Silk Composite Microneedles for Programmable Vaccine Release Kinetics and Enhanced Immunogenicity in Transcutaneous Immunization." *Advanced Healthcare Materials* 3, no. 1 (January 2014).

watch gears

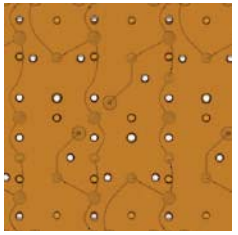
unpublished

analytical chemicals

G. Whitesides, Department of Chemistry and Chemical Biology; Whitesides Research Group

Harvard University and Diagnostics For All

Martinez, A. W., S. T. Phillips, G. M. Whitesides, et al. "Diagnostics for the Developing World: Microfluidic Paper-Based Analytical Devices." *Analytical Chemistry* 82, no. 1 (January 1, 2010).

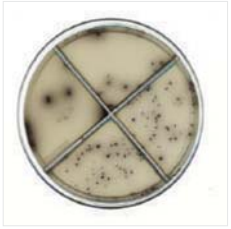


human physiome chip

L. Griffith, Charles Stark Draper Laboratory

Massachusetts Institute of Technology

unpublished

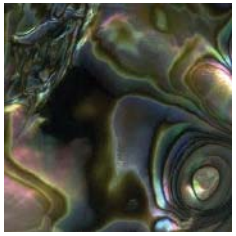


E. coli

S. Bhatia, Laboratory for Multiscale Regenerative Technologies

Massachusetts Institute of Technology

Danino, T., J. Lo, A. Prindle, et al. "In Vivo Gene Expression Dynamics of Tumor-Targeted Bacteria." *ACS Synthetic Biology* 1, no. 10 (October 2012).



mother-of-pearl

Frankel, F., and G. Whitesides. *On the Surface of Things: Images of the Extraordinary in Science*. San Francisco: Chronicle Books, 1997.

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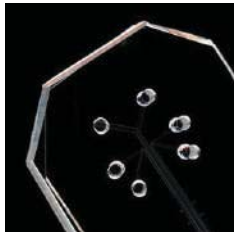
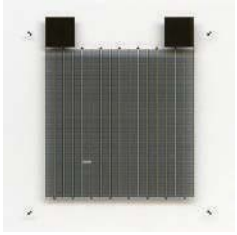


lung on chip

D. Ingber, Wyss Institute for Biologically Inspired Engineering

Harvard University

Huh, D., B. D. Matthews, A. Mammoto, et al. "Reconstituting Organ-Level Lung Functions on a Chip." *Science* 328, no. 5986 (June 25, 2010).



microscale solar cell

J. Rogers, Department of Materials Science and Engineering; Rogers Research Group

University of Illinois at Urbana-Champaign

Yoon, J., A. J. Baca, S.-I. Park, et al. "Ultrathin Silicon Solar Microcells for Semitransparent, Mechanically Flexible and Microconcentrator Module Designs." *Nature Materials* 7, no. 11 (November 2008).

dried flower

unpublished

agate

unpublished

electronic camera

J. Rogers, Department of Materials Science and Engineering; Rogers Research Group

University of Illinois at Urbana-Champaign

H. C. Ko, M. P. Stoykovich, J. Song, et al. "A Hemispherical Electronic Eye Camera Based On Compressible Silicon Optoelectronics." *Nature* 454, no. 7205 454, no. 7205 (August 7, 2008).

microfluidic device

S. Quake, Department of Bioengineering; Quake Group

Stanford University

"Dr. Stephen Quake: Exploring Novel Insights into Cancer's Molecular Origins" [Spotlight]. Fluidigm. https://www.fluidigm.com/articles/dr-stephen-quake.

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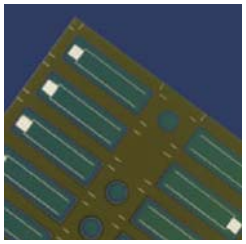


solar cell

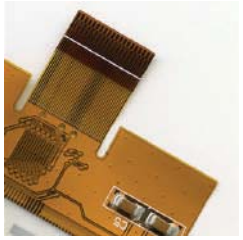
T. Buonassisi, Photovoltaic Research Laboratory

Massachusetts Institute of Technology

Steinmann, V., R. Jaramillo, K. Hartman, et al. "3.88% Efficient Tin Sulfide Solar Cells Using Congruent Thermal Evaporation." *Advanced Materials* 26, no. 44 (August 20, 2014).

raw egg

unpublished



e-ink detail

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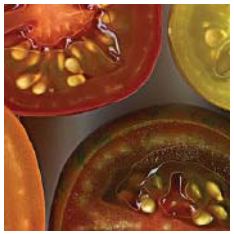
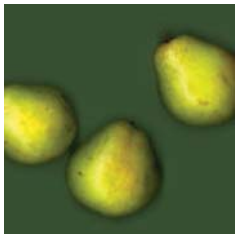


heirloom tomatoes

unpublished



pears

unpublished

music box

unpublished

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euplectella

J. Aizenberg, The Aizenberg Biomineralization and Biomimetics Lab

Harvard University

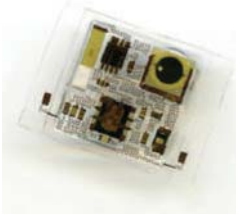
J. Aizenberg, A. C. Weaver, M. S. Thanawala, et al. "Skeleton of Euplectella sp.: Structural Hierarchy from the Nanoscale to the Macroscale." *Science* 309, no. 5732 (July 8, 2005).

paper-based analytics

G. Whitesides, Department of Chemistry and Chemical Biology; Whitesides Research Group

Harvard University and Diagnostics For All

Martinez, A. W., S. T. Phillips, G. M. Whitesides, et al. "Diagnostics for the Developing World: Microfluidic Paper-Based Analytical Devices." *Analytical Chemistry* 82, no. 1 (January 1, 2010).

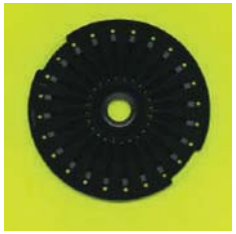


soft microfluidic sensor

J. Rogers, Department of Materials Science and Engineering; Rogers Research Group

University of Illinois at Urbana-Champaign

Xu, S., Y. Zhang, L. Jia, et al. "Soft Microfluidic Assemblies of Sensors, Circuits, and Radios for the Skin." *Science* 344, no. 6179 (April 4, 2014).



diagnostic device

D. Duffy Laboratory

Quanterix Corporation

Kan, C. W., A. J. Rivnak, T. G. Campbell, et al. "Isolation and Detection of Single Molecules on Paramagnetic Beads Using Sequential Fluid Flows in Microfabricated Polymer Array Assemblies." *Lab on a Chip* 12, no. 5 (2012).

microarrays

D. Walt, Department of Chemistry; Walt Laboratory

Tufts University and Illumina

Illumina. http://www.illumina.com

microfluidics

M. Toner, Department of Surgery and Center for Engineering in Medicine; BioMEMS Resource Center

Massachusetts General Hospital

Karabacak, N. M., P. S. Spuhler, F. Fachin, et al. "Microfluidic, Marker-Free Isolation of Circulating Tumor Cells from Blood Samples." *Nature Protocols* 9, no. 3 (2014).

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Resource: Making Science and Engineering Pictures: A Practical Guide to Presenting Your Work

Felice Frankel