

## **Integrating Arts & Sciences: Some STEAMing Initiatives and Resources**

*prepared by the Standing Committee on Liberal Arts Institutions, CCAS*

CCAS Annual Meeting • San Antonio, TX • November 2014

*This list includes some initiatives at CCAS member institutions shared through the CCAS listserv as well as information about national initiatives and some on-line articles and resources identified by CCAS colleagues. This is only a partial list of expanding efforts and dialogues aimed at (re)integrating the humanities, arts, and sciences.*

### **Faculty groups:**

*Institution:* Ohio State University

*What:* Steamfactory: interdisciplinary collaboration in the OSU community across the areas of Science, Technology, Engineering, Arts and Math. To disseminate research, technology and pedagogy through public interaction and creative new ways in which our work can impact a broader audience. junior faculty cohort across disciplines, self-initiated and going strong.

<https://steamfactory.osu.edu/>

*Contact:* David C. Manderscheid, Executive Dean and Vice Provost, manderscheid.1@osu.edu

*Institution:* California State University, San Marcos

*What:* SHTEAM Café: faculty group working on how to do this better in courses, gen ed, etc.

*Contact:* Adam Shapiro, Dean, College of Humanities, Arts, Behavioral & Social Sciences  
ashapiro@csusm.edu

*Institution:* Washington & Lee

*What:* The Integrative/Quantitative Center (IQ Center) has stimulated a group of faculty from the visual arts and sciences to form a faculty cohort on Imaging Technology to "further our knowledge of new digital technologies as they apply to the arts and humanities and to promote the use of such tools in W&L classrooms."

*Contact:* Suzanne Keen, Dean of the College, KeenS@wlu.edu

*Institution:* Nicholls State University and Louisiana Academy of Sciences

*What:* New Sciences and Humanities Division of the Louisiana Academy supporting faculty research integrating science and humanities.

*Contact:* John Doucet, Dean, College of Arts and Sciences, john.doucet@nicholls.edu

### **Major/Minor/Certificate Programs**

*Institution:* University of Texas, Dallas

*What:* The School of Arts and Humanities has a resolutely interdisciplinary structure (no departments!) and philosophy that is reflected in successful programs integrating the arts and humanities with the sciences and engineering: e.g. Our humanities-based majors in Arts & Technology (BA, MA, MFA, PhD) and Emerging Media and Communications (BA, MA); a minor in Medical and Scientific Humanities is designed for science/pre-health majors.

*Contact:* Dennis M. Kratz, Dean, School of Arts and Humanities, dkratz@utdallas.edu

*Institution:* California Polytechnic State University

*What:* New combined liberal arts & engineering major based in the liberal arts college; also four new STS minors: science, technology, and society (STS) minors within our college that will be open to all students (ethics, public policy, science, and technology; gender, race, culture, science, and technology; media arts society and technology; and science and risk communication). This initiative includes some new interdisciplinary hires.

*Contact:* Douglas L. Epperson, Dean, College of Liberal Arts, dleppers@calpoly.edu

*Institution:* SUNY-New Paltz  
*What:* New 3D design and printing program jointly created by the Schools of Science and Engineering and Fine and Performing Arts  
*Contact:* Daniel Freedman, Dean, School of Science and Engineering, freedmad@newpaltz.edu

*Institution:* Wright State  
*What:* History and Philosophy of Science that incorporates Physics laboratory experiments into philosophical and historical discussions and writing.  
*Contact:* Kristin Sobolik, Dean, College of Liberal Arts, Sobolik, kristin.sobolik@wright.edu

### **Specific Course**

*Institution:* Wright State  
*What:* STEAM3: course designed for art and music education students teaching them how to use creative arts to teach science and math in K-12 education.  
*Contact:* Kristin Sobolik, Dean, College of Liberal Arts, kristin.sobolik@wright.edu

*Institution:* California State University Channel Islands  
*What:* Physics of Music, the Chemistry of Ceramics, Environmental History, Politics and the Environment, and Psychology and Literature. Co-taught courses; though more expensive to mount, courses have been very successful.  
*Contact:* Karen T. Carey, Associate Vice President for Arts and Sciences, karen.carey@csuci.edu

*Institution:* Fashion Institute of Technology  
*What:* Focusing on a number of STEAM initiatives. In the fall of 2014, introducing the College's first interdisciplinary experimental course: Digital Literacies for Designers. This is a team-taught course with a member of the faculty from fashion design and computer graphics.  
*Contact:* Joanne Arbuckle, Dean, School of Art & Design

*Institution:* Worcester Polytechnic Institute  
*What:* The WPI method is freshman cohorts taking great problem seminars such as Feed the World, Heal the World, Power the World.  
*Contact:* Karen Oates, Dean of Arts & Sciences, koates@WPI.EDU

### **Liberal Education/Gen Ed Curriculum**

*Institution:* Nebraska Wesleyan University  
*What:* Archway: new liberal education curriculum, which includes thematic threads that integrate multiple disciplines; e.g., Identity, Democracy, Power, Environmentalism, Gender & Sexuality, Global Human Health, and Chaos. Not team-taught. Uses portfolios and a "thread assessment plan."  
*Contact:* Jeff Isaacson, Assistant Provost, jai@nebrwesleyan.edu

### **NATIONAL INITIATIVES**

**American Academy of Arts & Sciences** [www.amacad.org](http://www.amacad.org)  
See their Commission on Humanities and the Social Sciences, and its report *The Heart of the Matter*.

**Phi Beta Kappa** [www.pbk.org/Arts&Sciences](http://www.pbk.org/Arts&Sciences)  
To strengthen support for the value of the arts and sciences today with higher educations at a crossroads, ΦBK has launched a multi-year National Arts & Sciences Initiative.

**Association of American Colleges and Universities** [www.aacu.org/resources/integrative-learning](http://www.aacu.org/resources/integrative-learning)  
See, among other things, their Integrative Learning workshops and publications.

## SELECTED ARTICLES, BLOGS, RESOURCES:

- Walter Isaacson, "The Intersection of the Humanities and the Sciences," the 2014 Jefferson Lecture, sponsored by NEH. <http://www.neh.gov/about/awards/jefferson-lecture/walter-isacson-lecture>
- [www.plosbiology.org/article/info%3Adoi%2F10.1371%2Fjournal.pbio.1001491](http://www.plosbiology.org/article/info%3Adoi%2F10.1371%2Fjournal.pbio.1001491)  
Integrating Art and Science in Undergraduate Education; describes a program at DePauw University.
- <http://www.edutopia.org/stem-to-steam-resources>
- [http://www.risd.edu/about/stem\\_to\\_steam/](http://www.risd.edu/about/stem_to_steam/)  
<http://www.ucira.ucsb.edu/changing-stem-to-steam-qa-with-john-maeda-president-rhode-island-school-of-design/> Two articles on the STEM to STEAM initiative championed by John Maeda, President, Rhode Island School of Design.
- <http://www.forbes.com/sites/henrydoss/2013/09/17/the-innovation-curriculum-stem-steam-or-sea/>  
Reflections on innovations in higher education curriculum.
- <http://blogs.scientificamerican.com/guest-blog/2012/08/22/from-stem-to-steam-science-and-the-arts-go-hand-in-hand/> An article by Steven Ross Pomeroy, assistant editor for Real Clear Science, a science news aggregator.
- <http://libguides.utoledo.edu/STEAM> Links to STEM to STEAM resources.
- <http://www.sciencemag.org/content/343/6171.toc>. Science/AAAS Visualization Challenge, which provides some beautiful examples of how art and design can be used to communicate science.
- <http://informalscience.org/research/wiki/Integrating-the-arts-and-humanities-into-STEM-learning>  
Mentions some case studies and includes a bibliography.
- <http://steam-notstem.com/about/whitepaper/> by Harvey White, Chairman (SHW)2 Enterprises
- <http://chronicle.com/blogs/wiredcampus/a-new-department-marks-the-rise-of-a-discipline-computational-media/54883>. An article about the field of computational media, integrating computer science with arts and humanities.
- [the frailest thing.com/2013/10/05/the-humanities-the-sciences-and-the-nature-of-education/](http://the frailest thing.com/2013/10/05/the-humanities-the-sciences-and-the-nature-of-education/) by blogger Michael Sacasas (PhD candidate)
- [www.oxfordscholarship.com/view/10.1093/acprof:oso/9780199794393.001.0001/acprof-9780199794393](http://www.oxfordscholarship.com/view/10.1093/acprof:oso/9780199794393.001.0001/acprof-9780199794393) *Creating Consilience: Integrating the Sciences and the Humanities* by Edward Slingerland and Mark Collard
- E.O. Wilson, *Consilience: The Unity of Knowledge*. New York: Alfred A. Knopf, 1998.

## K-12 Initiatives (there are many)

- <http://online.wsj.com/news/articles/SB10001424052702304747004579224003721262792>  
Article in *The Wall Street Journal* on blending science and the arts in public education, with a focus on NY public schools.
- <http://www.ed.gov/blog/topic/science-and-math-stem/> Scroll down to see article on Bracken STEAM Academy of Las Vegas.
- <http://www.steamedu.com/> Aimed at K-12 educators, but provides some good ideas.