

## H-STAR Two-Year Report September 1, 2010 – August 31, 2012

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\*Some confidential personnel and financial details have been deleted from this posted version.



## 1. Overview and Mission

H-STAR is a Stanford interdisciplinary research institute reporting to the Dean of the School of Education.<sup>1</sup>

H-STAR focuses on advancing the human sciences, often in the context of their application to the design and uses of information technology and their influences on people, with a particular emphasis on education and learning. All H-STAR programs conduct research at the intersection of human sciences and information technology in the areas of learning, mobility, collaboration, entertainment and commerce.

H-STAR is the only organizational unit on campus focusing on the multi-disciplinary core of theory, research, and methods that are needed for world-class work on the central topics in K-12 learning sciences and technology design. See Section 4 for a description of the NSF funded LIFE Center's research on these issues.

While the primary mission of H-STAR is university research, H-STAR affiliated faculty members (listed in section 12) are among campus leaders in undergraduate education.

Having a broad scope of interest that has commonalities with every School, H-STAR is defined by research mission rather than permanent faculty affiliation; we facilitate, fund, and support research within our mission anywhere on the campus. All Stanford faculty are potentially H-STAR researchers. To date, a total of 64 (current) Stanford researchers from all five schools have carried out H-STAR supported research, participated in an H-STAR research planning retreat, or hosted a visiting H-STAR researcher from another university. (See lists in sections 6 and 12.) In addition, some 90 Stanford faculty have received over \$3.5M in research support through H-STAR's Media X Industry Partners Program.

Most of the faculty supported by H-STAR (listed in Section 12) are based social science and humanities-affiliated departments (rather than engineering and research-equipment intensive disciplines such as physics). Those disciplines typically do not have the extensive infrastructure needed to support the large scale interdisciplinary research projects they wish to pursue. As a result, H-STAR meets an important campus need that would otherwise go unfilled.

H-STAR supported/affiliated researchers who submitted a report published a total of 33 books and 535 research articles, and filed 4 patents.<sup>2</sup> (A complete list is provided as an appendix.)

We pursue our mission in a number of ways: we organize and service interdisciplinary grants, contacts, and other funding opportunities; we bring together faculty to work collaboratively on projects — both across the campus and in collaboration with faculty at other universities around the world; and we organize events such as lectures, small seminars, workshops and conferences, sometimes through our Media X program.

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<sup>1</sup> Following its formation in 2005, H-STAR initially reported to the Dean of Research. It was transferred to the School of Education for university administrative reasons in July 2011.

<sup>2</sup> About 30% of H-STAR faculty did not submit a report, so the actual totals are likely 30% higher.

The total volume for federal and non-federal sponsored research funding awarded to H-STAR in FY11 was \$6.0M, of which \$3.9M was F&A (indirect cost charges). For FY12, the figure was \$6.5M with \$4.0M F&A. See Section 9 for a complete listing of all sponsored projects.

H-STAR employs 25 regular staff (academic and non-academic FTE), of which 5 employees are performing shared administrative support functions, such as research administration, financial, human resources, and building management in two locations, Wallenberg Hall and Cordura Hall. We also currently have 25 casual and temporary employees. Between September 2010 and August 2012, under academic staff, we supported 30 graduate students.

The primary source of funding for H-STAR research is the normal system of federal and foundation grants.

## **2. How H-STAR works**

H-STAR provides such faculty (and their students and research assistants) with office space, physical and “virtual” meeting rooms (via IP videoconferencing), lecture rooms, lab space, seminars and lectures, printing and copying facilities, secretarial services, the services of administrative, financial and technical support personnel, assistance with identifying and securing funding for research, and, through the Media X program, contacts with industries relevant to their research pursuits.

The primary means for funding H-STAR research is external grants, secured by the faculty and researchers. The administrative and financial support staff of H-STAR provides help and support for faculty in proposal preparation and grant management.

H-STAR also takes the initiative to secure large-scale, institute-level research funding that provides support to many institute faculty members when the opportunity arises. In particular, in 2004 the LIFE Center (Learning in Informal and Formal Environments) was established as one of the first three national Science of Learning Centers (SLCs) in partnership with the University of Washington and SRI International. The NSF has funded the LIFE Center for the maximum ten-year period for a total of approximately \$47M. This Center has supported faculty and students across education, communication, and psychology, and has served as a tremendous interdisciplinary training ground for building capacity in the university for fundamental learning sciences research across schools and departments. LIFE-center funded doctoral students are now employed as professors in universities including: Keio University (Tokyo); Purdue; Teachers College, Columbia; UC Davis, U. Central Florida, Virginia Tech, and in universities and thinktanks and companies as postdocs or researchers or directors including CMU, Durham University (UK), Institute of Play (Chicago), KidAdaptive.com, Microsoft Gaming Studio, Sesame Workshop (Joan Ganz Cooney Center), SRI International, Stanford University, and the Tech Museum of Innovation (San Jose). LIFE Center faculty are among the core faculty and governing board members for the new Center for Neurobiological Imaging (CNI: <http://cni.stanford.edu/>) that opened in Jordan Hall during 2011.

LIFE Center faculty are among the core faculty for the new Center for Neurobiological Imaging that opened in Jordan Hall during 2011.

H-STAR has research space on the fourth floor of Wallenberg Hall, and administrative offices and research space in Cordura Hall. The Cordura Hall space comprises four administrative offices, three multi-person offices devoted to research projects, and a small conference room currently used as an office due to lack of space.

### **3. Major programs within H-STAR (excluding the LIFE Center)**

**3a. Media X.** H-STAR's industry partnership program, Media X, is a self-funded program that seeds campus-wide research and coordinates industry interest. The program currently includes 14 industry partners. The program supports and funds research initiatives on domains involving people and technology, rather than by discipline. Since the program began in 2001, Media X has supported more than \$3.5M of Stanford research, spread across over 90 Stanford faculty PIs, receiving over 200 proposals, representing faculty from all seven schools, and involving over 100 graduate students.

Research funding from Media X has been in the form of seed grants to support early investigation of promising ideas that show likelihood of leading to larger projects. Media X research funds are open to all researchers in the Stanford community, and preference is given to novel interdisciplinary collaborations. Many of these "seed" funded projects leverage large federal and foundation grants (bringing faculty and student work closer to societal impact through commercial diffusion.) A significant number have led to new interdisciplinary proposals for federal and foundation grants that build on the Media X seed projects. (See *Section 8* for more details about Media X.)

**3b. Energy Project** This \$6.2M, two-year project, commended in January 2010, focuses on the development of an interactive software system that encourages people to be more energy efficient at home. The funding includes \$4,992,651 from the U.S. Department of Energy's Advanced Research Projects Agency-Energy (ARPA-E) and about \$1.28 million in matching grants from Stanford and the California Energy Commission. The PI is Byron Reeves, who was a co-founder of the H-STAR institute.

**3c. CTEL/CLAD** CTEL stands for California Teacher of English Learners, and CLAD stands for Cross-cultural, Language, and Academic Development. The Stanford Online CTEL/CLAD Program is a pioneering program of technology-enhanced learning, taught by Stanford School of Education faculty Kenji Hakuta and Guadalupe Valdés and operated by H-STAR. The program leads to the California CLAD credential, a professional K-12 teaching credential required by the State for any public school teacher providing instruction to English Learners.

As part of their coursework, participants in the Stanford Online CTEL/CLAD program analyze videos of teacher practice in real classrooms and engage in carefully selected readings through three online courses. Participants learn about the latest methods in teaching English language learners and are introduced to education policy and the scientific fields of linguistics, human learning, and anthropology as they pertain to English learners. Since it began its online operations in 2003, the Stanford Online CTEL/CLAD Program has serviced nearly 2,400 teachers. The program has served over 100 school districts, the majority of which are in California. The Stanford CTEL/CLAD Program finished its last course on August 3, 2012 and is currently working to openly share its vast resources with educators nationally.

Total number of program graduates to date: 2,373 students  
Total number of enrollees in AY 2010-2012: 473  
Number currently enrolled: 0

Among the school districts served by the program are:

|  |   |
|--|---|
| Albany Unified School District                           | Long Beach Unified 3                          |
| Alisal Union School District                             | Los Altos School District 3                   |
| Alum Rock Union Elementary 2                             | Los Gatos Saratoga Uhsd                       |
| Amador County Office Of Education                        | Marin County Office Of Education 2            |
| Antioch Unified 2  | Mendocino Unified                             |
| Archdiocese Of San Francisco, Dept Of Catholic Schools 4 | Modesto City Schools 3                        |
| Atascadero Unified School District 8                     | Montebello Unified 4                          |
| Auburn Enlarged City School District                     | Moraga Unified School District 3              |
| Berkeley Unified School District 7                       | Newark Unified School District 2              |
| Berryessa Union School District                          | Novato Unified School District                |
| Buffalo Public School 2                                  | Oakland Unified 5                             |
| Buttonwillow School District 2                           | Pajaro Valley Unified School District 5       |
| Calaveras County Office Of Education                     | Palo Alto Unified School District 6           |
| Cambrian   | Pasadena Unified 3                            |
| Capistrano Unified 3                                     | Portola Valley School District 4              |
| Carlsbad Unified   | Riverside Unified School District 10          |
| Carmel Unified School District 2                         | Sacramento City Unified School District 3     |
| Castro Valley Unified                                    | San Bernardino City Unified School District 2 |
| Cupertino Union School District 4                        | San Carlos School District 5                  |
| El Dorado Union School District 12                       | San Diego Unified School District 3           |
| Fort Bragg Unified School District                       | San Francisco Unified School District 12      |
| Fremont Union High School District 7                     | San Jose Unified School District 6            |
| Gilroy Unified School District 2                         | San Luis Coastal Unified School District 2    |
| Glendora Unified School District 3                       | San Mateo High School District 3              |
| Irvine Unified School District                           | San Ramon Valley Unified School District 5    |
| Juneau School District                                   | Santa Clara Co Office Of Education 4          |
| King City Joint Union High School District               | Santa Clara Unified School District 9         |
| Lake Elsinore Unified School District                    | Saratoga Union School District 7              |
| Los Angeles Unified School District 15                   | Sunnyvale School District 4                   |
| Lompoc Unified School District                           | Vallejo Unified School District 4             |

**3c. Triple Helix Research Group.** In July 2011, H-STAR co-organized and hosted the Triple Helix IX International Conference on University-Industry-Government Interactions. This was the first time in the fifteen year history of the Triple Helix Conference series that it had been held in Silicon Valley. The conference addressed the theme “Silicon Valley: Global Model or Unique Anomaly?”

Over 260 leading academics, prominent policy-makers and top business people, venture capitalists, business angels, consultants, and entrepreneurs from thirty-seven countries and all continents explored the inner workings of Silicon Valley and other international technology conurbations, analyzed strategic innovation policy and practice issues in developed and developing countries, discussed the challenge and benefits of collaboration between the institutional spheres of university, industry, and government, show-cased best practice, explored new models for knowledge transfer and entrepreneurship, and appraised the success and challenges of the university third mission.

#### 4. The LIFE Center

The National Science Foundation (NSF) has been funding Science of Learning Centers (SLCs) in order to extend the frontiers of knowledge on learning of all types and create the intellectual, organizational, and physical infrastructure needed for the long-term advancement of learning research. Launched in Fall 2004, the Learning in Informal and Formal Environments (LIFE) Center is now in its eighth year of a ten-year research collaboration between the University of Washington in Seattle (College of Education, and Institute for Learning & Brain Sciences).

H-STAR, SRI International and other partnering institutions. H-STAR Institute Director Roy Pea serves as Stanford University Co-Director and Co-PI of the LIFE Center, leading Stanford's contributions to this scientific center.

The purpose of the LIFE center (<http://www.life-slc.org>) is to develop and test principles about the social foundations of human learning in informal and formal environments, including how people learn to innovate in contemporary society, with the goal of enhancing human learning from infancy to adulthood.

The Center is engaged in many interdisciplinary studies of learning, incorporating diverse methodologies such as brain imaging, comparative experimentation, ethnographic inquiry and virtual reality. From its inception, LIFE Center research incorporated three academic traditions. LIFE's socio-cultural research tradition relied on ethnographic, interview, and survey methods to document the impact of culture and social activities on learning in and out of school. LIFE's experimental and neural studies used behavioral and neuroscience methods to document the mechanisms underlying social learning from a developmental and neural perspective, showing the deep reach of culture on the developing individual's mind and brain. LIFE's work on formal learning and technology examined teachable agents and learning in designed learning environments. LIFE's Center-mode work integrated these traditions into a set of six "Social Learning Drivers" that need to be taken into account in any transformative theory of the social foundations of human learning. Collectively, these six can be viewed as an integrative network of concepts that need to be explored separately and as an integrated whole in order to better understand social learning. The six are: (1) Imitation & Joint Attention, (2) Language, (3) Identity, (4) Guiding & Collaborating, (5) Choosing & Valuing, and (6) Simply Believing a Virtual Interaction is Social.

LIFE has two Missions to achieve its Purpose:

- To identify and investigate underlying principles of how people learn socially by strategically sampling learning across settings, domains, and ages, and by using multiple methodologies (neurobiological, cognitive, developmental, and socio-cultural) to spark conceptual collisions and syntheses among viewpoints.
- To foster research and education collaborations with individual and institutional partners, and to promote qualitative improvements, both theoretical and practical, in our collective capacities for understanding and supporting human learning.

Stanford faculty leading LIFE projects include LIFE leadership group Professors Roy Pea (Stanford Co-PI and Co-Director), and Co-Leads Brigid Barron and Daniel Schwartz (former LIFE Co-Director), with contributing faculty Professors Jeremy Bailenson, Byron Reeves,

Shelley Goldman, Anthony Wagner, Paulo Blikstein and Geoffrey Cohen. Over twenty doctoral students, postdocs and staff are involved in LIFE Center research work each year as well

## 5. International research collaborations

H-STAR has several international collaborations with universities and industries throughout Europe and Asia. The most significant during the period 2010–12 are listed below:

**5a. Finland** H-STAR has had close ties with Finnish universities for several years, focused on research on education and the human-centered design of technology, both areas where both Finland and Stanford have international reputations. Throughout the two-year period of this report, the Finnish government technology agencies (TEKES) has funded Stanford's infrastructure costs in supporting research collaborations on the Stanford campus between university scholars from Finnish universities, working on projects with Stanford faculty PIs.

In October 2010, H-STAR co-organized and hosted a three-day Finnish-Stanford research workshop on Learning, Learning Environments, and Technologies.

In January 2012, in conjunction with the Finnish Consul General in Los Angeles, and assisted by Stanford's SCOPE center, H-STAR organized a high level, two day conference titled "Empowerment through Learning in a Global World." The enormous success of the Finnish education system in recent years has made them the envy of the world. The workshop focuses on the question: How did they do it, and what can we in the USA learn from the Finnish experience? Distinguished international speakers included Andreas Schleicher, Special Advisor on Education Policy to the Secretary General of the OECD, the man in charge of the international PISA tests of educational achievement, Pasi Sahlberg, the Director of the Center for International Mobility, Finland, and the author of the bestselling book *FINNISH LESSONS: What Can the World Learn from Educational Change in Finland?*, Henry Tirri, Executive Vice President and CTO of Nokia, Sue Burr, Executive Director of the State Board of Education, State of California, Krista Kiuru, Minister of Housing and Communications, Finland, Esko Hamilo, Under-Secretary of State, External Economic Relations, Ministry of Foreign Affairs of Finland, and Markku Mattila, President of the Academy of Finland.

Of particular note, frequent Stanford visiting professor Jari Multisilta from Finland (Tampere University, and later University of Helsinki as CICERO Director), and former Vice-Chancellor Professor of University of Helsinki (and Stanford visiting professor) Hannele Niemi represented Finland at the creation of a new NSF program – SAVI (Science Across Virtual Institutes) – that was designed for US and Finnish faculty to collaborate on learning technology projects (convened at the Finnish Embassy in DC in June 2012, and leading to Stanford University and Finnish faculty collaborative projects being funded in summer-autumn 2012). Funding will begin in Winter 2012-2013 on both sides of the Atlantic.

**5b. Denmark** Paralleling the H-STAR partnership with the Finnish university system, we have a similar, ongoing research collaboration with the Danish university system, funded by the Danish Agency for Science, Technology, and Innovation (DASTI). As with the TEKES-funded partnership with Finland, DASTI has funded Stanford's infrastructure costs in supporting research collaborations on the Stanford campus between university scholars from Danish universities, working on projects with Stanford faculty PIs.

During the two-year period of this report H-STAR hosted a number of visits by Danish government ministers and officials, including a large visiting group in August 2011 from Aalborg University, which is interested in establishing a collaborative research project with H-STAR. H-STAR Executive Director Dr. Keith Devlin made several visits to Denmark during the same two-year period.

H-STAR also hosted several Danish-Stanford research workshops. In addition H-STAR organized and hosted three three-day research workshops in which Danish research interacted with Stanford colleagues: two on business innovation (February 2011 and May 2011, the latter co-sponsored by the European Union) and one that took an in depth examination of Virtuality from various disciplinary perspectives (May 2011).

**5c. Sweden** Through its prior management of the Wallenberg Foundation grants to Stanford, H-STAR developed regular contacts with scholars in Swedish universities, and frequently hosts visitors from Sweden. H-STAR played a supporting and facilitating role in preparing the proposal for the new award from the Wallenberg Foundation that commenced in 2011. We are currently engaged in a number of discussions about future research collaboration with Swedish universities.

**5d. Norway** Norwegian Science Week. The Norwegian Transatlantic Science Week, sponsored and arranged by the Royal Norwegian Embassy in Washington, D.C., is an annual event. Every second year it is held in Washington DC and the other years in various US cities. In 2011, it was held on the West Coast for the first time, with a two day conference at US Berkeley followed by a one day conference at Stanford. At the request of Provost John Etchemendy, H-STAR undertook the task of organizing the Stanford day on November 27.

The main goal of Science Week is to *increase transatlantic cooperation in research, innovation and higher education*. The Norwegian government aims to facilitate and increase cooperation between Norway and North America and initiate bilateral agreements on science and technology cooperation. Participants included policy makers, innovators, educators, and researchers.

The Stanford conference offered talks and panel discussions on Silicon Valley, microelectronics and nanotechnology, knowledge-based industries, big ICT systems, research-based international graduate education, and energizing research and education through innovation.

The day ended with a banquet at the Computer History Museum, with an illustrated lecture by Stanford Physics Professor Phil Scherrer, on “New Views of the Sun from the Solar Dynamics Observatory.”

**5e. Estonia** Under the leadership of H-STAR Executive Director Dr. Keith Devlin, H-STAR has engaged in a number of ad hoc collaborations with Estonia, now acknowledged as one of the world’s leading nations in innovation, particularly in the ICT sphere. During the two-year period covered by this report, Devlin visited Estonia three times (November 2010, June 2011, and December 2011), meeting with Estonian government ministers and academics, and hosted four visits by Estonian government ministers, industry leaders, and academics (April 2011, June 2011, November 2011, and April 2012).

**5f. Germany** Several H-STAR researchers have strong links to colleagues at German universities. H-STAR faculty co-developed in the 2004-2006 period an international series of research workshops, funded by NSF in the USA and the DFG in Germany, on network-



supported collaborative learning, which have led to continued collaborative research, joint publications and enriched mutual influences across a knowledge network of 10 American universities and 7 German universities. One new journal, the *International Journal of Computer-Supported Collaborative Learning* (iJCSCL, published by Springer/Kluwer) was initiated as a result of these developments, and H-STAR Director Roy Pea is on its Editorial Board. It is now one of the highest impact factor journals in educational research in the Web of Science.

**5g. Taiwan** H-STAR developed a partnership with the Center for Learning Sciences and Technology at Taiwan's National Central University, invited by Center Director Professor Tak-Wai Chen and a delegation to Stanford including Taiwan's Deputy Director of the Ministry of Education. H-STAR Director Roy Pea has advised Center Director Tak Wai-Chen in his formation of the G1:1 initiative, to which HSTAR has extensively contributed. G1:1 was a pioneering global one-to-one computer to learner initiative with participation for over twenty countries, a devoted website to projects, results, tools and datasets, and a sponsor of over about a dozen conferences on the subject with professional societies such as IEEE. The aim is developing global collaborative research models on 1:1 personal (and increasingly mobile) computer learning (<http://www.g1on1.org>). Many country-specific 1:1 learner:computer models have developed globally since these 2005-2006 origins.

## 6. International visiting faculty

In addition to H-STAR's international collaborations, we act on behalf of Stanford faculty to organize and support visiting faculty collaborators. We organized and supported 13 visiting faculty from overseas in 2010–11 and 25 visiting faculty from overseas in 2011–12. The departments of the hosting Stanford faculty were School of Education (13 visitors), Dept of Communication (8), Dept of Mechanical Engineering (8), Stanford Humanities Lab (5), Dept of Electrical Engineering (1), Dept of Psychology (1), Dept of Anthropology (1), Dept of Computer Science (1).

### 2010–11

Jari Multisilta, Dept of Information Technology, Tampere University of Technology, Pori, Finland.  
*July 2010 - December 2010. Working with Roy Pea, H-STAR.*

Hannele Niemi, Faculty of Behavioural Sciences, CICERO Learning Network, University of Helsinki, Finland.  
*September 2010 - November 2010. Working with Roy Pea, H-STAR.*

Arttu Perttula, Tampere University of Technology, Pori, Finland.  
*September 2010 - November 2010. Working with Roy Pea, H-STAR.*

Lassi Liikkanen, Helsinki Institute of Information Technology, Helsinki, Finland.  
*September 2010 - August 2011, working with Cliff Nass, Dept of Communication.*

Mohsen Soltani, Department of Electronic Systems, Aalborg University, Denmark.  
*September 2010 - December 2010. Working with Stephen Boyd, Dept of Electrical Engineering.*

Peter Lindgren, International Center for Innovation, Aalborg University, Denmark.  
*September 2010 - February 2011. Hosted by Jeffrey Schnapp, Stanford Humanities Lab.*

Ole Jensen, Department of Management Engineering, Technical University of Denmark.  
*September 2010 - March 2011. Working with Larry Leifer, Dept of Mechanical Engineering.*

Heidi Enwald, Dept of Information Studies, University of Oulu, Finland  
*January 2011 - March 2011. Hosted by Byron Reeves, Dept of Communication.*

Kerstin Fischer, IFKI, University of Southern Denmark, Denmark  
*February 2011. Working with Herbert Clark, Dept of Psychology.*

Jerry Lindholm, Dept of Marketing, Aalto University, Helsinki, Finland.  
*March 2011 - September 2011. Hosted by Byron Reeves, Dept of Communication.*

Remzi Ates Gursimsek, Dept of Communication, Business & Information Technologies, Roskilde University, Denmark  
*March 2011 - June 2011. Hosted by Michael Shanks, Stanford Humanities Lab*

Falk Heinrich, Dept of Communication, Aalborg University, Denmark.  
*April 2011 - July 2011. Hosted by Michael Shanks, Stanford Humanities Lab.*

Jeonghye Han, Dept of Computer Education, Cheongju National University of Education, Korea  
*February 2011 - January 2012. Working with Roy Pea, H-STAR.*

## **2011–12**

Miikka Eriksson, Faculty of Education, Centre for Media Pedagogy, University of Lapland, Finland.  
*August 2011 - July 2012. Working with Roy Pea, H-STAR.*

Pekka Aula, Dept of Social Research, University of Helsinki, Finland. *August 2011 - July 2012. Working with Larry Leifer, Center for Design Research.*

Jeonghye Han, Dept of Computer Education, Cheongju National University of Education, Korea  
*February 2011 - January 2012. Working with Roy Pea, H-STAR.*

Tim McAloone, Dept of Management Engineering, Technical University of Denmark (DTU), Denmark.  
*September 2011 - December 2011. Working with Larry Leifer, CDR.*

Bettina Dahl Soendergaard, Centre for Science Education, Aarhus University, Aarhus, Denmark.  
*September 2011 - November 2011. Working with Roy Pea, H-STAR.*

Sanne Haase, Danish Centre for Studies in Research and Research Policy, Aarhus University, Denmark.  
*September 2011 - November 2011. Working with Sheri Sheppard, Dept of Mechanical Engineering.*

Christina Neumayer, IT University of Copenhagen, Copenhagen, Denmark.  
*September 2011 - December 2011. Working with Fred Turner, Dept of Communication.*

Michael Biskjaer, Dept of Information and Media Studies, Aarhus University, Aarhus, Denmark  
*September 2011 - December 2011. Working with Larry Leifer, CDR.*

Xibin Han, Institute of Education, Tsinghua University, Beijing, China.  
*September 2011 - December 2011. Working with Roy Pea, H-STAR.*

Birgit Jaeger, Dept of Society and Globalization, Roskilde University, Roskilde, Denmark.  
*September 2011 - December 2011. Working with Banny Banerjee, Dept of Mechanical Engineering.*

Akihisa Kaneko, Sony Corporation, Tokyo, Japan.  
*September 2011 - September 2012. Hosted by Byron Reeves, Dept of Communication.*

Nevena Jensen, Aarhus School of Architecture, Kolding School of Design, Kolding, Denmark.  
*October 2011 - November 2011. Working with Larry Leifer, CDR.*

Ursula Plesner, Dept of Organization, Copenhagen Business School, Denmark.  
*October 2011 - December 2011. Working with Michael Shanks, Stanford Humanities Lab.*

Kaarina Nikunen,  
Swedish School of Social Sciences, University of Helsinki, Helsinki, Finland.  
*January 2012 - December 2012. Hosted by Byron Reeves, Department of Communication.*

Saana Korva, Faculty of Education, Centre for Media Pedagogy, University of Lapland, Finland. *March 2012 - April 2012. Working with Roy Pea, H-STAR.*

Claus Bossen, Dept of Information & Media Studies, Aarhus University, Denmark. *February 2012 - May 2012. Working with Tanya Luhrmann, Dept of Anthropology.*

Morten Karnoe Soendergaard, Dept for Learning and Philosophy, Aalborg University, Denmark. *March 2012 - May 2012. Hosted by Byron Reeves, Dept of Communications.*

Connie Svabo, Dept of Environmental, Social and Spatial Change, Roskilde University, Denmark. *March 2012 – May 2012. Working with Michael Shanks, Dept of Classics.*

Simon Lex, Dept of Anthropology, University of Copenhagen, Denmark. *February 2012 – March 2012. Working with Jeremy Bailenson, Dept of Communication.*

Krestine Mougard, Dept of Mechanical Engineering, Technical University of Denmark. *March 2012 –June 2012. Working with Larry Leifer, CDR.*

Chen Chen, Dept of Computer Science, University of Copenhagen, Denmark. *April 2012 - July 2012. Working with Andrew Ng, Dept of Computer Science.*

Nicolai Pogrebnyakov, Dept of Intntl Ecnmcs & Mngmnt, Copenhagen Business School. *May 2012 –July 2012. Hosted by Roy Pea, H-STAR.*

Nicolai Pogrebnyakov, Dept of Intntl Ecnmcs & Mngmnt, Copenhagen Business School. *May 2012 –July 2012. Hosted by Roy Pea, H-STAR.*

Jari Multisilta, Univ. of Helsinki, Cicero Learning, Finland. *June-July 2012. Hosted by Roy Pea, H-STAR.*

Heli Ruokamo, Centre for Media Pedagogy, Univ. of Lapland, Rovaniemi, Finland. *June-November 2012. Hosted by Roy Pea, H-STAR.*

## **7. International conferences and events organized/hosted by H-STAR**

- 09.07.10. Hosted Danish government ministers visit.
- 10.04.10. Hosted visit from Tallinn University of Technology, Estonia.
- 10.05.10–10.06.10. Organized and hosted CICERO Learning Workshop (with Finnish Consul)
- 11.30.10. Hosted visiting university administrators from Denmark.
- 02.07.11–02.09.11. Hosted Danish Business Innovation Workshop
- 02.11.11. Hosted Norwegian government/universities visit.
- 03.04.11. Hosted visiting group from Danish industry.
- 04.05.11. Hosted visiting group from Estonian universities.
- 04.11.11. Hosted visiting group of Danish education specialists.
- 07.11.11–07.14.11. Organized and hosted International Triple Helix Conference.
- 08.01.11. Hosted group of Danish government ministers and business leaders.
- 08.29.11–09.02.11. Hosted group of visitors from Aalborg University, Denmark.
- 10.03.11–10.05.11. Co-organized and hosted Denmark–H-STAR Research Workshop on  
Virtuality.
- 10.19.11. Hosted group of visitors from Japan.
- 10.27.11. Organized day-long Norwegian Science Week event at Stanford.
- 01.03.12. Hosted group of visiting Danish academics.
- 01.17.12–01.19.12. Co-organized H-STAR–SCOPE conference on US and Finnish Education  
systems.

- 02.24.12. Organized and hosted day-long visit of TTI/Vanguard Business Leaders group.
- 04.04.12. Hosted group of visiting academics, government officials, and business leaders from Estonia.
- 04.17.12. Hosted group of visiting researchers from Denmark.
- 05.15.12. Hosted visiting group of university leaders from Monterrey Tech, Mexico.

## **8. Community outreach**

### ***Research with local schools and teacher preparation***

H-STAR faculty and students are active in conducting research on learning, teaching, and new technologies with partnerships that take them into public schools from elementary to high school, from Redwood City and East Palo Alto to San Francisco, Palo Alto and beyond, to charter schools, as well as in after-school clubs and community centers. H-STAR faculty are also actively involved in contributing to SUSE's teacher preparation programs, and were engaged in planning and pursuing the Stanford University campus-wide "K-12 Initiative," that spawned several new School of Education Centers. Several H-STAR faculty conducted Stanford K-12 Initiative-funded projects in the past several years (Barron; Goldman; Lunsford; Pea; Schwartz; Wineburg).

## **9. Affiliated Masters and Doctoral Programs: LSTD and LDT**

The interdisciplinary doctoral program in Learning Sciences and Technology Design (LSTD) has a cohort of approximately 30 full-time students. These students are active in H-STAR Institute research activities, commonly found on the 4<sup>th</sup> floor of Wallenberg Hall, and are typically funded by H-STAR and Media X faculty research grants.

A related program, established by SUSE in 1997, is Learning Design and Technology (LDT), with an engaging project-focused curriculum that attracts 20-30 masters' students for its full-year duration. Together, the LSTD (PhD) and LDT (MA) programs provide a vital "people" contribution to the interdisciplinary research, teaching, and apprenticing activities of the H-STAR Institute. Many of the students convene in the technology and video resource enabled workspaces of Wallenberg Hall for conducting their work activities, meetings with faculty and one another, and for group analysis of video-recordings associated with their research studies.

## **10. Media X Industry Partners Program**

The Media X program is staffed by Executive Director Dr. Martha Russell. During the past six years 90 Stanford professors have submitted research proposals for roughly \$3.5M in funding for research initiatives provided through gifts from Media X industry partners. Media X revenues from membership contributions for FY 2011 and FY 2012 were \$1.407M and \$1.5M, respectively.

### ***Media X Membership***

Two new Affiliates and one new Associate Members were added in 2011. Media X members continue to be involved in seminars and meetings. Recruitment activities were held for prospective members. The total income from membership and gift contributions for FY11 was \$1.456M and in FY2012 was \$1.566M. The bulk of this money was used to run the program and support faculty research.

Media X members in FY 2011 included:

**FY 2011 Strategic Partners (\$300K per year, minimum)**

- Konica Minolta Technology USA (San Mateo, CA)

**FY 2011 Affiliate Partners (\$50K per year)**

- The Apollo Group (Phoenix, AZ)
- Philips (Eindhoven, Netherlands)
- State Farm (Bloomfield, Illinois)

**FY 2011 Associate Partners (<\$25,000 or in kind support)**

- Accel Partners (Palo Alto, CA)
- Boeing (Seattle, WA)
- BT Innovation (Palo Alto, CA)
- Connected Action (Burlingame, CA)
- FXPAL (Palo Alto, CA)
- Hewlett Packard (Palo Alto, CA)
- Innovations in Learning (Menlo Park, CA)
- Singularity University (Mountain View, CA)
- Terapac (Waterloo, Ontario)

In FY2012 Affiliate and Associate Members included:

**FY 2012 Strategic Partners (\$300K per year, minimum)**

- Konica Minolta Technology USA (San Mateo, CA)

**FY 2012 Affiliate Partners (\$50K per year)**

- The Apollo Group (Phoenix, AZ)
- Edelman (worldwide)
- Futton, Inc. (San Francisco) Nissan (Japan)
- Samsung (Korea)
- State Farm (Bloomfield, Illinois)
- Venables, Bell & Partners (San Francisco)

**FY 2012 Associate Partners (<\$25,000 or in kind support)**

- Accel Partners (Palo Alto, CA)
- ACERP (Brazil)
- Connected Action (Burlingame, CA)
- Hong Kong University of Science and Technology (Hong Kong)
- Innovations in Learning (Menlo Park, CA)
- Orange Strategy (San Francisco)
- Sábía Experience (Brazil)
- Singularity University (Mountain View, CA)

***Media X Theme Days***

Theme Days are in-depth brainstorming sessions with Stanford faculty and industry researchers from a member organization.

In FY2011, six Theme Days were held at Stanford for Media X member organizations:

- Ambient Intelligent Environments
- Intellectual Property for Publish on Demand
- Insights into Innovation
- Personalized Data-driven Services for Education
- Company and Customer-facing Informatics for Simulation and Service
- Engagement Strategies for Customers and Employees

In 2012 eleven Theme Days were held at Stanford for Media X member organizations:

- Knowledge Management
- Enabling Radical Innovation
- Productivity in Knowledge Work
- Educational Technologies of the Future

Future of Medical Technologies  
Frontiers in Digital Information Management  
Validation Research in Emerging Markets  
Assessing the Impact and potential of Mobile Technologies  
Adding Value with Privacy and Security  
Knowledge Worker Productivity  
Engagement When All Media is Social

### **Media X Visiting Scholars**

Media X hosted six Industry Visiting Scholars in FY 2011: two from Konica Minolta, Japan; three from Philips, Eindhoven, Netherlands; and one from The Apollo Group, Phoenix, US. The visits of these researchers extend the collaboration between Media X and three affiliate members.

Kenji Masaki, Konica Minolta, working with Jeremy Bailenson  
Toshiko, Konica Minolta, working with Cliff Nass  
Joris Janssen, Philips, working with Jeremy Bailenson  
Maurits Kaptein, Philips, working with Cliff Nass  
Tommi Määtä, Philips, working with Hamid Aghajan  
Tracey Eilen-Daugenti, The Apollo Group, working with Roy Pea

Individuals from these three affiliate member organizations continued visiting scholar relationships in FY2012. With the addition of two from Nissan and one from Samsung.

Ikuko Kanasawa, Konica Minolta, working with Pam Hinds  
Kishio Tamura, Konica Minolta, working with Martin Fischer  
Joris Janssen, Philips, working with Jeremy Bailenson  
Maurits Kaptein, Philips, working with Cliff Nass  
Tommi Määtä, Philips, working with Hamid Aghajan  
Tracey Wilen-Daugenti, The Apollo Group, working with Roy Pea  
Keiko Katsuragawa, Nissan, working with Cliff Nass  
Yoshitake Deguchi, Nissan, working with Cliff Nass

Media X also hosted eleven Media X Distinguished Visiting Scholars during 2011-2012, with Roy Pea as faculty host. These Scholars were active in giving presentations and seminars, contributing to proposal development and meeting with existing and potential Media X members.

Parvati Dev  
Marc Goodman  
Neil Jacobstein  
Timothy Kasbe  
Ben Lenail  
Davis Masten  
Neerja Raman  
Paul Saffo  
Marc A. Smith  
Markus Strohmaier  
Gary Wolf

### **Media X Research Themes**

During FY2011 Media X pursued two research themes: *Ambient Intelligent Environments* and *Publish on Demand*. A third theme was added in FY2012, *Knowledge Management*, and the two prior themes were continued in FY2012.

### Ambient Intelligent Environments

Three Media X visiting researchers from Philips participated in Stanford research during FY 2011 and FY2012 while they completed industrial PhDs at Eindhoven Technical University – 2 with highest honors – working with:

Wireless sensors in home and work environments

Hamid Aghajan: AIR Lab - Ambient Intelligence Research

Personalized persuasion

Cliff Nass: CHIMe Lab - Communications between Humans and Interactive Media

Remote emotion sensing and communication

Jeremy Bailenson: VHIL - Virtual Human Interaction Lab

During the period of this Media X research theme, a new journal, *Journal of Ambient Intelligent Environments*, was created, with founding editors and advisors from the organizations collaborating on this Media X theme. Papers were co-authored by Stanford researchers and doctoral students, the visiting scholars, Philips' researchers, and researchers from Eindhoven Technical University.

### Human Sciences and Technology Frontiers in Publish on Demand

Media X received generous gifts in FY2011 (\$450K) and in FY2012 (\$450K) that enabled the support of high risk research initiatives related to *Publish On Demand*, a Media X theme begun in 2005 through Media X seed funding on topics of *Online Media Content* and *Human-Machine Interaction and Sensing*.

The *Publish On Demand* research program studied questions that focused on intellectual property rights in the publish-on-demand environment. Through the *Publish On Demand* research program, Media X has awarded research activities that include participants from Computer Science, Law and Business. Interdisciplinary concept-proving projects funded through those initiatives led to the conceptualization of the Stanford Intellectual Property Exchange (SIPX) system, by the team of Mike Genesereth (Computer Science) and Roland Vogl (Stanford Law School), that then led to the establishment of CodeX, the Stanford Center for Computers and Law. SIPX is conceptualized as an online intellectual property rights clearinghouse that allows copyright owners to list their content and provides a way for consumers to acquire rights to the listed content. SIPX is especially interesting in that it supports the creation of custom contracts for licensing content. This capability was demonstrated by clearing content for eleven courses offered at Stanford University.

Four provisional patents were filed with OTL in FY2012.

The SIPX Inc. company was created, and Stanford University licensed the "S" in the SIPX name to SIPX Inc., the third organization to receive such permission (the other two are Sun Microsystems and SRI International.)

### Measuring and Increasing Productivity for Knowledge Workers

Gifts to Media X of \$125K in FY2011 and \$595K in FY2012 enabled the support of high risk research initiatives focused on *Measuring and Increasing Productivity of Knowledge Workers*. The theme was as launched in FY 2011 with a program of literature reviews conducted by faculty and students in Computer Science, Management Science & Engineering, and Communications. Four Technical Reports resulted from this first initiative on the Knowledge Management Research Theme. These papers, along with related laboratory capability overviews, were presented at a January 2011 workshop:

A Media X Request for Proposals on Measuring and Increasing Productivity for Knowledge Workers was released in April 2011. The proposals included 62 Stanford researchers from 19 departments. Seven projects were selected from 25 proposals, and work on those projects began fall 2011. Updates on the selected projects were presented at a January 2012 Workshop. A monograph and several video stories were produced. Three projects are being continued into FY2013.

### **Media X Outreach**

Media X collaborated with a number of industry groups and business-oriented international government-sponsored innovation organizations in offering half-day and one-day programs on communication technology and Innovation for their delegates. Some presentations were given at the home location of the organization (denoted by “\*”). In FY 2011 these included:

#### *Government & NGO:*

|                   |                                    |
|-------------------|------------------------------------|
| *October 5, 2010  | Norwegian IT Forum, Skei, Norway   |
| November 9, 2010  | SRI, Norwegians Delegation         |
| November 17, 2010 | Danish Media Innovation Delegation |
| July 28, 2011     | People to People                   |
| August 30, 2011   | Danish Innovation Delegation       |

#### *Industry:*

|                    |                                  |
|--------------------|----------------------------------|
| September 13, 2010 | Siemens                          |
| September 22, 2010 | Daimler                          |
| November 8, 2010   | Edelman                          |
| September 30, 2010 | Cisco                            |
| September 30, 2010 | Best Buy                         |
| October 14, 2010   | Fujitsu Learning Media           |
| November 13, 2010  | HP                               |
| November 17, 2010  | CBS Interactive                  |
| December 10, 2010  | Pearson                          |
| December 13, 2010  | Attensity                        |
| December 14, 2010  | State Farm                       |
| *January 11, 2010  | TBWA/Chiat Day                   |
| April 5, 2011      | Huawei                           |
| April 18, 2011     | State Farm                       |
| May 1, 2011        | Schlumberger Business Consulting |
| May 19, 2011       | Intuit                           |
| May 19, 2011       | Daimler                          |
| June 6, 2011       | Austrian Bankers Association     |
| June 6, 2011       | IBM                              |
| June 6, 2011       | BT                               |
| June 6, 2011       | Growth Capital Partners          |
| *June 12, 2011     | Philips, Eindhoven               |
| *June 14, 2011     | Statoil, Norway                  |
| *June 22, 2011     | Group M, Shanghai                |
| June 30, 2011      | Cap One                          |
| July 1, 2011       | Intel Capital                    |
| July 22, 2011      | Technicolor Labs                 |
| July 26, 2011      | Rianovosti                       |
| August 15, 2011    | Google                           |
| August 29, 2011    | Nissan                           |

#### *Universities:*

|                  |  |
|------------------|--|
| *October 6, 2010 | Business Institute, Oslo, Norway                                 |
| May 6, 2011      | University of Aalborg, Centre for Industrial Production, Denmark |
| *June 23, 2011   | Fudan University, Shanghai                                       |
| August 18, 2011  | Korean Women’s University  |



*Professional Societies:*

\*February 16, 2011 American College of Preventative Medicine, San Antonio

In FY 2012 Media X outreach activities included:

*Government & NGO:*

\*September 30, 2011 SITRA, Helsinki, Finland  
\*October 1, 2011 TEKES, Finland  
March 27, 2012 Danish Delegation  
March 28, 2012 Russian Innovation Delegation  
June 26, 2012 ITRI, Taiwan  
August 16, 2012 SINDI, Finland

*Industry:*

\*September 29, 2011 MindTrek, Finland  
October 7, 2011 Mitsubishi  
October 7, 2011 Cisco  
November 3, 2011 Follett  
November 7, 2011 Schlumberger  
November 15, 2011 Wells Fargo  
November 16, 2011 CapOne  
November 16, 2011 BP  
November 16, 2011 Futton  
November 21, 2011 Samsung  
January 18, 2012 Sennheiser  
February 24, 2012 TTI/Vanguard  
\*March 12, 2012 Hallmark  
April 4, 2012 BT  
April 12, 2012 C4UC  
May 3, 2012 Huawei  
May 10, 2012 Fujitsu Learning  
\*May 19, 2012 Hakuhodo  
July 3, 2012 Cisco  
July 16, 2012 Pearson  
July 31, 2012 NESTGVS  
August 6, 2012 Pepsico

*Universities:*

September 15, 2011 IMD eMBAs  
\*September 22, 2011 University of Adger – Future of the University  
\*September 30, 2011 Aalto University, Helsinki  
November 30, 2011 Tampere University of Technology  
January 30, 2012 Eindhoven Technical University  
\*March 7, 2012 Queen Mary's University  
\*March 9, 2012 Oxford University  
\*May 17, 2012 Keio University  
June 18, 2012 Tampere University of Technology, eMBA  
June 27, 2012 Aalto and EIT ICT Labs  
June 28, 2012 University of Oregon

*Professional Societies:*

January 11, 2012 Korean Principals Delegation

Follow-up activities between industry affiliates and the faculty members who attended the intimate, in-depth discussions about issues of common concern during the Focus Days have led to faculty speaking engagements, hiring graduating students, expanded Media X member relationships, and collaborative submission of proposals.

The Media X YouTube Channel was established following a graduate student-led assessment of the optimum use of social media for the membership-based programs of Media X, as the industry outreach for the HSTAR Institute.

### **Media X Workshops**

In FY2011 Media X held three special workshops to highlight Stanford research interests and explore academic-industry collaboration.

*January 14, 2011*

Technology Transfer for Silicon Valley Outposts

*July 11, 2011*

Innovation Ecosystems Summit

Organizational Systems for Innovation: Who Leads? Who Follows?

Resource Networks in Greentech: First Mover Advantages and Boundary-Spanning Activities

Analyzing and Visualizing Networks

Knowledge Transfer in Innovation Ecosystems

*August 16-18, 2011* Co-sponsored with Society for Inconsistency Robustness

Inconsistency Robustness

In FY2012, Media X held six special workshops to highlight research interests and explore academic-industry collaboration:

*October 24-28, 2011*

*Hong Kong University of Science and Technology, eMBA Program*

*February 3, 2012*

Technology Transfer for Silicon Valley Outposts

*February 8-14, 2012*

*Publishers Association, Guangdong China*

*Publishing and Media Management Workshop*

*May 9, 2012, Co-sponsored with Microsoft*

Empowering Digital Self Determination

*May 16, 2012, Co-Sponsored with University of Electro-Communications, Tokyo*

*Innovation Ecosystems for Learning Technologies and Education*

*June 23-25, 2012, Co-sponsored with Edelman*

*New Media Summit – June 2012*

### **Media X Seminars**

The Media X Seminar Series resumed in FY2012, with 18 seminars given by academic and industry researchers. Video recordings of Media X Seminars are available online for viewing by the public.

October 18 - Ikuko Kanazawa, Konica Minolta

Experiences in the Taguchi Method for Technology Innovation

October 25 - Kishio Tamura, Konica Minolta

Empowering Teamwork in the Future

November 1 – Franny Lee, Stanford Center for Legal Informatics

Transforming Educational Content with Clarity in IP

November 8 - Joris Janssen, Philips

Augmenting Empathy with Physiosocial Technology

November 15 - Susumu Fujita, Nissan

Future Thinking About Dream Cars

November 22 – Tommi Määttä, Philips

Distributed Camera Networks for Monitoring People: Data Fusion through Assessment

November 29 - Tracey Wilen-Daugenti, The Apollo Group

Society 3.0: Creating Tomorrow's Future Today

December 6 – Yoshitaka Deguchi, Nissan

WakuWaku Experience in Future Cars

April 4 – Marc Goodman, Future Crimes Institute  
 Future Crimes –Today

April 11 – Parvati Dev, Innovations in Learning, Inc.  
 I Can't Say THAT!" – Communication Skills in the Healthcare World

April 18 – Marc Smith, Connected Action Consulting  
 Charting Collections of Connections in Social Media with Maps and Measures

April 25 – Jaeyoun Cho, Samsung  
 Engineering for Human Interaction

May 2 – Timothy Kasbe, Intrexon Corporation  
 Augmenting Human Discovery at the Intersection of Biotech and Infotech

May 9 – Symposium  
 Empowering Digital Self Determination

May 16 – Melanie Swan, MS Futures Group  
 Health Futures: Participatory Medicine and Crowd Sourced Research

May 23 – Margarita Quihuis & Mark Nelson, Stanford Peace Innovation Lab  
 Changing Behavior Through Social Media

May 30 – Markus Strohmaier, Graz University of Technology  
 Extracting Semantics from Online Crowds

June 6 – Gary Wolf, Quantified Self  
 Life Uploaded

Media X continues to broaden the intellectual exchanges for the campus through funding and collaboration opportunities, as well as through seminars and Focus Days. Media X is aggressively pursuing both new partner development activities and related faculty interests.

## **11. H-STAR managed funded research projects, July 2010–July 2012**

Cliff Nass: Safety and Partially Intelligent Automobiles, Toyota: \$1,028,736 (08.01.12-07.31.15)

Roy Pea: Building a Field: Learning Analytics and Educational Data-Mining, Bill and Melinda Gates Foundation: \$275,000 (08.06.12-04.30.13)

Roy Pea: Building a Field: Learning Analytics and Educational Data-Mining, MacArthur Foundation: \$275,000 (06.01.12-05.31.13)

Dan Schwartz: Measurement Foundations for Rejoining Motivation and Cognition in Learning, Gordon and Betty Moore Foundation: \$365,825 (04.19.12-03.18.13)

Cliff Nass: Collaborative Research: Socially Assistive Robots, NSF: \$1,325,000 (04.01.12-03.31.17)

Kenji Hakuta: The Stanford ELL Leadership Network: A Collaboration of Seven California School Districts in Support of English Language Learners, S. H. Cowell Foundation: \$336,520 (01.01.12-12.31.12)

Dan Schwartz: PhET Interactive Simulations, NSF: \$450,000 (11.14.11-11.14.14)

Byron Reeves: Large-scale Energy Reductions through Sensors, Feedback, & Information Technology, California Energy Commission: \$500,000 (09.09.11-10.31.12)

Brigid Barron: EXP: Developing Citizen Scientists Through Face-to-Face and Networked Learning Opportunities, NSF: \$549,201 (09.01.11-08.31.13)

Cliff Nass: Designing technologies that mediate human social interaction: Strategies for effective cooperation and collaboration, SU/Media X: \$40,000 (06.01.11-06.30.13)

Roy Pea: The Utility of Calming Technologies in Improving Productivity, SU/Media X: \$160,000 (06.01.11-06.30.13)

Dan Schwartz: Founding the BioX Game Center for Educating and Large Scale Science, SU/BioX: \$50,000 (10.01.10-09.30.12)

Dan Schwartz: Expanding PhET Interactive Science Simulations to Grades 4-8: A Research-based Approach, NSF: \$582,045 (09.01.10-08.31.13)

Dan Schwartz: Digital Assessments for Informal and Formal Learning Pursuits, MacArthur Fdn: \$600,000 (07.01.10-06.30.13)

Kenji Hakuta: A Technology-rich Teacher Professional Development Intervention that Supports Content-based Curriculum Development for English Language Learners, US Dept of Ed: \$192,420 (03.01.10-02.28.13)

Roy Pea, Jeremy Bailenson, Brigid Barron, Shelly Goldman, Byron Reeves, Dan Schwartz: The LIFE Center: Learning in Informal and Formal Environments, NSF: \$3,243,231 (02.01.10-01.31.13)

Byron Reeves, Large-scale Energy Reductions through Sensors, Feedback, & Information Technology, US Dept of Energy: \$5,006,011 (01.14.10-08.15.13)

Byron Reeves, Serious Games and Energy Use Behavior, Precourt Institute: \$140,000 (08.01.09-12.31.12)

Dan Schwartz: Formal Analysis of Choice-Adaptive Intelligent Learning Environments (FACILE) that Support Future Learning, NSF: \$691,476 (08.01.09-01.31.13)

Roy Pea: LETSGO - Learning Ecology with Technology from Science for Global Outcome, Wallenberg Foundation: \$500,042 (09.01.08 -02.28.13)

Dan Schwartz: Cognitive and cortical restructuring in the acquisition of negative number concepts, NSF: \$1,000,000 (09.1.08-08.31.13)

Dan Schwartz: Talking and Seeing Math in Games, Wallenberg Foundation: \$269,888 (09.01.08-02.28.13)

Kenji Hakuta: The Stanford ELL Leadership Network: A Research-Based Collaboration of California School Districts to Improve the Education of English Language Learners, Cowell Fdn: \$150,000 (01.01.11-09.30.11)

Cliff Nass: The Social Medium is the Message, NSF: \$436,409 (07.15.09-06.30.12)

Cliff Nass: Social Psychology of Mobile Interaction, Nokia: \$246,325 (04.01.09-06.30.11)

Cliff Nass: Recommendation Systems for Vehicles, Nissan: \$55,000 (01.01.11-09.30.11)

Cliff Nass: Social Psychology of Mobile Interaction, Nokia: \$246,325 (04.01.09-03.31.11)

Dan Schwartz: Assisting and assessing middle school science learning in formal and informal settings, NSF: \$500,000 (1.01.07-12.31.10)

Dan Schwartz: The ideal science student: helping teachers adapt to diversity in science classrooms, NSF: \$220,000 (10.01.07-9.30.10)

Dan Schwartz: Developing 21st Century Digital Literacy, MacArthur Foundation: \$240,000 (06.01.08-09.30.11)

Roy Pea, Jeremy Bailenson, Brigid Barron, Shelly Goldman, Byron Reeves, Dan Schwartz: The LIFE Center: Learning in Informal and Formal Environments, NSF: \$6,439,654 (10.01.04-09.30.10)

## **12. Faculty and researchers supported by H-STAR**

### **12a. Faculty supported substantially by H-STAR**

The following 10 Academic Council faculty carry out research supported in a substantial way by H-STAR:

1. Bailenson, Jeremy, (Department of Communication)
2. Barron, Brigid (School of Education)
3. Blikstein, Paulo (School of Education; courtesy, Computer Science)
4. Goldman, Shelley (School of Education)
5. Hakuta, Kenji (School of Education)
6. Nass, Cliff (Department of Communication)

7. Pea, Roy (School of Education; courtesy, Computer Science)
8. Reeves, Byron (Department of Communication)
9. Schwartz, Daniel (School of Education)
10. Valdés, Guadalupe (School of Education)

### **12b. *Affiliated Stanford Faculty***

The following additional 34 Academic Council faculty have some research projects within H-STAR, or participate actively in one or more H-STAR programs. Those that have received research funding from H-STAR are marked with an asterisk.

1. Altman, Russ (School of Medicine)\*
2. Bailey, Diana (Department of Management Science and Engineering)\*
3. Berman, Russell (Department of Comparative Literature)
4. Bienenstock, Arthur (Wallenberg Research Link)
5. Carstensen, Laura (Department of Psychology)
6. Chafe, Chris (CCMRA)\*
7. Clark, Herbert (Department of Psychology)
8. Cook, Karen (Department of Sociology)
9. Cutkosky, Mark (Department of Mechanical Engineering)\*
10. El Gamal, Abbas (Department of Electrical Engineering)\*
11. Genesereth, Michael (Department of Computer Science)
12. Guibas, Leonidas (Department of Computer Science)\*
13. Hanrahan, Pat (Department of Computer Science)\*
14. Heer, Jeffrey (Computer Science)
15. Heller, Craig (Department of Biology)
16. Hinds, Pamela (Management Science and Engineering)\*
17. Iyengar, Shanto (Department of Communication)\*
18. Klemmer, Scott (Department of Computer Science)
19. Koltun, Vladen (Department of Computer Science)\*
20. Krawinkler, Helmut (School of Engineering)\*
21. Law, Kincho H. (Dept of Civil and Environmental Engineering)\*
22. Leifer, Larry (Department of Mechanical Engineering)
23. Levis, Philip (Department of Computer Science)\*
24. Levoy, Marc (Department of Computer Science)\*
25. Lewenstein, Marion (Emeritus, Department of Communication)
26. Lunsford, Andrea (Department of English)
27. Musen, Mark (School of Medicine)
28. Perry, John (Department of Philosophy)\*
29. Salisbury, Kenneth (Departments of Computer Science and Surgery)\*
30. Schnapp, Jeffrey T. (Stanford Humanities Laboratory)\*
31. Wagner, Anthony (Department of Psychology)
32. Wandell, Brian (Department of Psychology)
33. Willinsky, John (School of Education)
34. Winograd, Terry (Department of Computer Science)

### **12c. *Stanford researchers in H-STAR***

The following 24 Stanford and Stanford associated researchers (the majority of whom are senior scholars with doctoral degrees) have a significant affiliation with H-STAR (an asterisk indicates that the researcher has received funding from H-STAR, mostly through Media X):

1. Barbagli, Federico (Computer Science)\*
2. Bennetsen, Henrick (Stanford Humanities Lab)\*

3. Chen, Helen (H-STAR)
4. Chin, Doris (H-STAR)
5. Devlin, Keith (H-STAR, CSLI)
6. Fern, Veronica (H-STAR)
7. Fogg, B.J. (H-STAR)
8. Frampton, Matthew (H-STAR)
9. Fruchter, Renate (Engineering)\*
10. Go, Janet (H-STAR)\*
11. Grossman, David (Center for Design Research)\*
12. Charles H. House, Media X
13. Huang, Camillan (H-STAR)
14. Kunz, John (Civil and Environmental Engineering)\*
15. Kwong, Henry (H-STAR)
16. Levitt, Raymond (Civil and Environmental Engineering)\*
17. Martin, Caitlin (H-STAR)\*
18. Rosen, Joseph (H-STAR)\*
19. Rosenberg, Duska (Royal Holloway University, London)
20. Martha Russell, Media X
21. Van der Loos, H.F. Machiel (CDR)\*
22. Varma, Sashank (H-STAR)\*
23. Verplank, William (Computer Science and CCRMA)\*
24. Vogl, Roland (Law School)

Much of the research carried out at H-STAR is conducted under faculty guidance by doctoral level researchers, postdocs, graduate students, and academic and industrial visitors who are based in Wallenberg or Cordura Hall.