# UC Davis Grand Challenges

Executive Summaries
Oct. 2013- Sept. 2014

**Interdisciplinary Frontiers in the Humanities & Arts (IFHA)**

## Innovating the Communication of Scholarship

**Team leads:** Mario Biagioli, Jonathan Eisen, MacKenzie Smith

**Co-leads:** Anupam Chander, James Griesemer, Andrew Hargadon, Andy Jones, Colin Milburn, Madhavi Sunder

**Team vision:**

Powerful changes are affecting traditional systems of research publication, academic credit, research quality assessment, and the meaning of "publication." This program analyzes these changes and helps shape the future of scholarly communication and the way it can serve scholars and scientists across all fields and levels. It also frames the policies of administrators evaluating and funding them, and of libraries confronting new forms of scholarly communication based on new technologies of discourse delivery.

In particular, we focus on three sets of issues emblematic of these changes:
- o New Models of Scholarly Communication
- o New Misconduct and New Opportunities
- o Communicating with Data

**Goals:**
- ➢ Pursue key problems and opportunities posed by new forms of scholarly publishing through research, workshops, international conferences, lecture series, informal discussion groups, undergraduate and graduate teaching
- ➢ Build a community of scholars, establish an institutional framework, and seek funding for an Institute for Scholarly Communication to be affiliated with the UC Davis Library
- ➢ Act as a clearinghouse of both scholarly research and practical advice for UC Davis faculty and students concerning issues of scholarly publishing

**Highlights for year 1**:
- ➢ Held inaugural conference, "Publish or Perish", on February 13-14, 2014 with over thirty speakers and more than two hundred attendees from throughout the US
- ➢ Held workshop, "Publication Mismatches", in April of 2014 with twelve speakers and thirty attendees
- ➢ Held workshop, "Data Rights and Data Wrongs", on December 10, 2014 with twelve speakers and ninety attendees
- ➢ Twelve publications and thirty five presentations
- ➢ Development of graduate seminar course

**Future directions**:
- ➢ Build partnerships and collaborations with both research institutions and publishers
- ➢ Teach two undergraduate courses in the UC Davis STS Program
- ➢ Future milestones:
  - o In 2015 we plan to hold one conference, three workshops, and a speaker series
  - o Conduct original research on the evolution of scholarly communication
  - o We plan to produce top publications involving internal and external authors, including two special issues and an average of one peer-reviewed article per researcher
  - o Expand the reach of our public presentations about the ICIS project and our research output

**Team leader:** Ann Stevens

**Co-leads:** Michal Kurlaender, Victoria Smith, Jean Stratford

**Team vision:**

Advance the research frontier on rigorous evaluation of vocational education programs, or Career Technical Education (CTE), using mixed methods and multiple disciplines to analyze rich administrative data. Build future funding stream for this work and formalize connections to education policy-makers (including the California Community College Chancellor's Office) and industry partners who rely on vocational training.

**Goals:**

➢ Establish and publish best evidence to date on the labor market effects of public vocational education programs, using administrative data from California
➢ Secure funding to continue work with Community College administration and industry partners
➢ Engage qualitative researchers to supplement initial quantitative work on returns and barriers to CTE
➢ Train graduate students in responsible and appropriate use of restricted administrative data
➢ Provide research engagement opportunities for undergraduate students

**Highlights for year 1**:

➢ Initial paper completed documenting substantial returns to California CTE programs
➢ Protocol developed for qualitative work exploring ways in which administrators, advisors and students provide and secure information concerning CTE programs
➢ Partnership grant submitted to Institute of Education Sciences to continue work, including examination of how students select (and are selected into CTE programs and fields)
➢ Three related dissertations started (in Economics, Education, and Sociology) using the CTE data to study related questions

**Future directions**:

➢ Secure funding to continue work and implement randomized or experimental investigations of improving information provision
➢ Partner with California Community College Chancellor's Office (CCCCO) to better understand role of CTE programs in allowing for "skill building" in the workplace (non-degree attainers)
➢ Find and develop industry partnership to explore how connections with potential employers can strengthen outcomes for CTE programs and students

**Team leader:**  Colin Milburn

**Co-leads:** Nina Amenta, Lawrence Bogad, Gina Bloom, Cynthia Carter Ching, Carolyn de la Pena, Joseph Dumit, J. Bruce German, Caren Kaplan, Louise Kellogg, Ian Korf, Oliver Kreylos, John Marx, Michael Neff, Kriss Ravetto-Biagioli, Eric Smoodin

**Team vision:**

Development and research on smart games and playable media for public engagement with science, the humanities, and the arts.

**Goals:**

➢ Create a world-class research center for digital humanities
➢ Develop playable media platforms for research on public engagement and education
➢ Analyze the impact of games and playable media on society

**Highlights for year 1**:

➢ Creation of *Mekanimator* platform
  o *Mekanimator* is a framework that makes animating digital characters easy. Character motion and audio can be mapped onto 3D models for use in various applications, including low-cost motion capture for games, theatrical karaoke, and live remote avatar control
➢ Development of *Play the Knave* game
➢ Development of Remote Collaboration platform and implementation of *Scoring Beckett*
➢ Extensive research and publication on games, media technologies, and play in contemporary society and in historical context
➢ Twenty eight publications and thirty nine presentations

**Future directions**:

➢ Pursue future partnerships or potential industry collaborations with:
  o Stratford Shakespeare Festival (Stratford, Canada)
  o Folger Shakespeare Library (Washington, D.C.)
  o Center for Quantum Computing and Nanoscience (University of Waterloo, Canada)
  o Games Institute (University of Waterloo, Canada)
  o University of Bayreuth, Germany (American Studies program)
➢ Future milestones:
  o Expansion of *Mekanimator* platform; installation of *Play the Knave* game at Stratford Shakespeare Festival and research on public engagement/theatrical literacy
  o Expansion of Remote Collaboration platform; installation of nanoscience games and VR experiences at QuantumNano (University of Waterloo) and research on public engagements with new technologies using playable media
  o Studies of games and political awareness; games for social justice (research program and a series of student-focused game jams)

## Understanding the Long-Term Effects on Children in Economics Distress

**Team leader:** Marianne Page
**Co-leads:** Katherine Conger, Amanda Guyer, Paul Hasting, Ann Stevens, Ross Thompson

**Team vision:**

To produce a comprehensive research program that focuses on understanding the full range of impacts experienced by children whose families are impacted by economic downturns, and the mechanisms that lead to the intergenerational transmission of poverty.

**Goals:**

➢ Produce research that can contribute to the development of effective social policy
➢ Create a network of researchers on campus who are able to more fully incorporate relevant knowledge/approaches coming out of other disciplines into their own disciplinary-centered research
➢ Create a new generation of scholars who are immersed in the full range of approaches, and the intellectual richness that is associated with an interdisciplinary community

**Highlights for year 1**:

➢ Consistent with the goals outlined in our proposal, Year 1 was devoted to immersing ourselves in the range of research represented by the cluster members through monthly meetings and a two-day long workshop in March/April
➢ Selected an initial group of graduate students who participated in the interdisciplinary "Poverty and Public Policy" graduate course
➢ Two graduate students assembled a detailed document summarizing twenty two survey data sets that provide family/individual level data sufficient to meet the academic standards of all faculty (from all represented disciplines) in the cluster
➢ Produced a literature review summarizing current knowledge on the relationship between socioeconomic status and child development
➢ Developed a new research paper examining the long term labor market effects of growing up during an economic downturn

**Future directions**:

➢ Future milestones
  o Further development of integrated research ideas, with disciplinary specific publications that reflect the evolution of our shared knowledge
  o Submission of a joint grant proposal

## Managing Temporary Migrations: California, US and the World

**Team leader:** Giovanni Peri
**Co-leads:** Luis Guarnizo, Kevin Johnson, David Kyle, Philip Martin, Leticia Saucedo, J. Edward Taylor

**Team vision:**
Immigration is a multi-faceted phenomenon that will shape the next decades. Our multi-disciplinary research on causes and effects of immigration and immigration policies aims at providing understanding and tools for governance of migrants in the US and in the world.

**Goals:**
➢ Develop and promote world-class academic research on the economic, demographic, social and political determinants and effects of migration
➢ Bring scholars together in different disciplines to produce a deeper understanding and provide advice for US immigration policies
➢ Connect with the policy world and the stake-holders in California and the US immigration debate in order to provide insight and innovative proposals on immigration policies and management

**Highlights of year 1**:
➢ Important publications on impact of high skilled immigrants on US cities and on the decline of immigrant farm workers and the US agriculture. Large press coverage and policy interest was generated
➢ Established regular monthly seminars, workshops and meetings to present and integrate our research
➢ Held one important international conference (October 2013) on internationalization of unskilled labor, connecting the cluster faculty with international experts and researchers on migration
➢ Started big-data project on skilled immigration to the US and migration and climate change in Mexico
➢ Started Graduate student co-advising and faculty collaborations
➢ Extended the group to include four more faculty members
➢ Sixty three publications, fifty eight presentations and twenty one events

**Future directions**:
➢ Connect with policy makers (in the Federal and State government), with companies (in High tech and agricultural sectors), and other funders, using the conference in January 2015 as a launching opportunity.
➢ Partner with other networks of immigration research in US and Europe and with policy groups in DC (Migration Policy Institute)
➢ Future milestones
  o Organize and hold an International Conference in January 2015- foundations, high tech and agricultural businesses and policy groups will be invited
  o Systematically use individual connections to diffuse our research and attract attention of businesses and potential founders
  o Apply for one/two large NSF grant
  o Focus on the niches (high tech immigrants, farm labor migrants) and systematically pursue smaller grants, fellowships and awards

# Interdisciplinary Reappraisals to Enhance Health & Resilience in Immigrant Communities

**Team leader:** Nolan Zane
**Co-leads:** Carolina Apesoa-Verano, Robert Emmons, Paul Hastings, Wendy Ho, Lynette Hunter, Jill Joseph

**Team vision:**
To strengthen health disparities research with ethnic/racial minority, immigrant populations by integrating the perspectives of the social sciences, health sciences, and the arts.

**Goals:**
➢ Establish a highly collaborative, innovative, and productive interdisciplinary team bringing together faculty in expressive and performing arts, social sciences, and health sciences that will partner with immigrant groups in the Sacramento region. Inclusion of disciplines from all four domains is needed to adequately and effectively address the complex issue of health disparities in immigrant, minority communities.
➢ Conduct interdisciplinary projects that explore the specific biological, psychological, and spiritual effects of expressive and performance arts which may enhance healthier behaviors or lifestyles and thus help reduce health disparities.
➢ Incorporate the education and training of undergraduate, graduate, and postgraduate students into carefully structured and highly interdisciplinary team activities and projects.
➢ Develop interdisciplinary and community collaborations that will form the long-term basis for sustainable programs of research and foster social justice and public health.

**Highlights for year 1**:
➢ Implemented a pilot study involving two 8-week long intervention groups using a randomized, waitlist control group research design
➢ Successfully collaborated with our community partner, Asian Resources, Inc., to recruit and complete intervention studies
➢ Intervention groups were well-received, leading to the adoption of a weekly exercise group by Asian Resources, Inc. for their clients

**Future directions**:
➢ We will continue to work with Asian Resources, Inc. to continue our intervention studies with the immigrant populations in Sacramento area
➢ We will extend our community partnership to the Alliance for California Traditional Arts
➢ Integrate models of sustainability into our existing pilot study to ensure the maintenance of health and mental health activities for our community partners so that they can continue to provide beneficial activities for the communities they serve
➢ Future milestones
  o Integrate the Train-the-Trainer model into our existing pilot study in order to provide our community partners with the appropriate resources for continuing our intervention after the conclusion of this research

**Team leads:** Susan Verba, Sarah Perrault
**Co-leads:** Bo Feng, Suad Joseph, Kwan- Liu Ma

**Team vision:**

The UC Davis Center for Design In the Public Interest (DiPi) offers design solutions to persistent problems affecting the public; researches collaborative, democratic design processes; and shares solutions and findings via Creative Commons licensing, presentations, workshops, student mentoring, and scholarly publications.

**Goals:**

➢ Set up a project space/work hub at West Village
➢ Develop a strategic project plan and schedule for each selected pilot
➢ Recruit a diverse team of community design participants to engage in initial pilots; involve additional partners and affiliates as needed; and engage, mentor, and direct the work of student researchers
➢ Assemble an External Advisory Board; develop evaluation tools; and seek external partnerships and funding

**Highlights for year 1**:

➢ Work space in West Village has been established and staff hired
➢ Website is online via a link at dipi.ucdavis.edu (with an email account at dipi@ucdavis.edu)
➢ Recruited members for our external advisory board
➢ Began pilot projects (described below), one of which has reached the implementation stage
➢ Received two awards from the International Institute for Information Design (IIID)
➢ Educated twenty students via internships and class engagement as well as through GSR support
➢ Connected our Communicating Pain pilot project, a cooperative venture with the UC Davis Medical Center, to a senior information design capstone class, inviting and scaffolding student collaboration on the project
➢ Two invited talks at the University of Illinois at Chicago
➢ Presentations at two conferences, one at the University of Reno and one in Maine
➢ Participation and piloting one of our projects at an invitational week long design workshop
➢ Upcoming presentations at two international conferences, with publication of proceedings to follow (SIGDOC 2015 conference in Ireland and IIID VisionPlus 15 conference in the UK)

**Future directions:**

➢ Continue moving projects from exploration to implementation, and continue speaking and publishing about our work
➢ Continue building alliances within and beyond UC Davis, including adding more expertise to our external advisory board
➢ Continue our undergraduate and graduate student training initiatives, including the creation of workshops related to public interest design tools and methods
➢ Submit work to peer reviewed journals