Application for a National Endowment for the Humanities Collaborative Research Grant

The Limits of the Numerical:
Metrics and the Humanities in Higher Education

Christopher Newfield, Project Director
University of California, Santa Barbara

Laura Mandell, Project Co-Director
Texas A&M University

1. Table of Contents

2. Statement of Significance and Impact

Many analysts claim that contemporary American colleges and universities have been commercialized in ways that disadvantage those fields that have fewer direct economic impacts. The humanities disciplines are prominent in the group of majors that seem to many observers to be too far from the marketplace to support remunerative careers. Scholarship and public writing about the value of a college education covers many topics, including the overwhelming importance of STEM research, "limited learning" among undergraduates, and the need to find a "major that pays." Yet we largely overlook the quantitative metrics, measurements, and indicators that facilitate these changing views about research, teaching, and value. Where research does exist, as in sociological analysis of quantification or the anthropology of audit culture, historical and cultural perspectives are mostly absent. And yet the current debate and their underlying metrics distort the humanities disciplines and their public impacts.

Our project seeks to develop a historical and cultural theory of metrics in higher education that can account for universities' and colleges' adoption of quantitative measures and offer humanistic methods for evaluating their educational impacts. We are particularly concerned with their impact on humanities disciplines and with the ability of humanities disciplines to develop responses that grow out of our own methodologies. We will examine the origins and current operation of three areas of measurement discourse—research bibliometrics, learning outcomes assessment, and the value of college education—and investigate alternative models for improving research productivity and learning quality.

Research bibliometrics quantify scholars' productivity based on publication and citation counts. In the sciences, bibliometrics have come under fire for inadequately capturing scholarly influence, and similar problems will likely arise as bibliometrics are employed in the humanities. Because much of the advance of scholarship happens in informal, personal communication among scholars in a discipline or field, formalized, quantified bibliometrics may fundamentally alter how humanists perform research.

Learning assessment's emphasis on measurable outcomes has become central to pedagogical practice for proponents and critics alike. It presents a case study of attempts to contextualize quantitative data with qualitative information and to develop metrics from the bottom up. Yet even as faculty collaborate in the creation of learning measures, assessment's focus on outcomes threatens to marginalize humanistic pedagogical approaches that stress learning as a process rather than a product and that seek innovative means of teaching today's diverse student populations.

The value of college education has recently been the topic of heated public debate as higher tuition and debt cause students to continue to pay for their degrees long after graduation. Most defenses of the value of college, including of humanities majors, focus on quantifiable, pecuniary returns like higher salaries; they mention nonpecuniary personal, professional, and civic benefits in passing if at all. The standard framework presents a false choice between measurable educational returns and the nonmarket, indirect, and public missions that make up a high share of the contribution of humanistic study, but that are harder to quantify and therefore often invisible in policy and funding decisions.

Our project addresses three questions about each area: 1) Where do the relevant metrics come from, and by what processes has higher education adopted them? 2) How are universities using the metrics, and how are they being adapted for these uses? 3) How could these metrics be replaced or supplemented with other methods of assessment that better reflect the work of humanities disciplines? We will use a cultural materialist, mixed methods approach to answer these questions. Employing a combination of literary analysis techniques, oral history, philosophical reading, and cultural theories of the relationships among institutions, individuals, and texts will allow us to explain how metrics function not only as bureaucratic instruments but also as strategies within public narratives about the benefits of a college degree. How, we ask, are metrics shaping public understanding of the humanities disciplines and, by extension, of the future of U.S. higher education?

We are concerned that if humanities scholars shy away from the quantitative aspects of higher education policy, humanistic values will cease to be top priorities for administrators, legislators, and funders. By building a cultural theory of metrics in higher education, our project will offer humanities scholars a starting point for intervention in campus and national debates about the quantification of research, learning, and the university's mission.

3. List of Participants

Mandell, Laura
Project Co-Director
      Director, Initiative for Digital Humanities, Media, and Culture
      Professor of English, Department of English
      Texas A&M University

Mehta, Aashish
      Associate Professor of Global and International Studies
      Global and International Studies Program
      University of California, Santa Barbara

Newfield, Christopher
Project Director
      Professor of Literature and American Studies
      Department of English
      University of California, Santa Barbara

Steffen, Heather
      Postdoctoral Scholar, Department of English
      Lecturer, Writing Program
      University of California, Santa Barbara

Advisory Board

Blackwell, Alan
      Professor of Interdisciplinary Design
      The Computer Laboratory
      University of Cambridge (UK)

Majewski, John
Advisory Board Chair
      Dean of Humanities and Fine Arts
      Professor of History
      University of California, Santa Barbara

Rafols, Ismael
      Associate Faculty, Science Policy Research Unit (SPRU)
      Science and Technology Policy Analyst, Ingenio (Spanish National Research Council)
      University of Sussex (UK)

Williams, Jeffrey J.
      Professor of English and Literary and Cultural Studies
      Department of English
      Carnegie Mellon University

<center>**4. Narrative**</center>

Project Title: The Limits of the Numerical: Metrics and the Humanities in Higher Education

Substance and Context

Introduction

  Life at U.S. colleges and universities has changed enormously over the past several decades. Most of these changes have involved increases in commercialization on the one hand and the more systematic application of financial and performance metrics on the other. Businesses have moved onto campuses as proprietors of bookstores and restaurants, sponsors of research, administrative consultants, and even creators of classes and curricula. At the same time, universities have increasingly adopted quantitative management methods, include course-level expenditure tracking, research output measures, clicker scoring of student responses in lectures, online learning test programs, and return-on-investment calculations of the value of individual majors.

  Scholars have been following these changes, charting the shrinking number of tenure-track jobs, rising tuition and student debt, intense public scrutiny of higher education's payoffs, and management of faculty performance that at least partially replaces peer review (Readings 1997; Williams 2006a, 2006b; Donoghue 2008; Bousquet 2008; Lorenz 2012; Shore and Davidson 2014; Newfield 2008, 2016; Goldrick-Rab 2016). Though their studies often mention the quantitative rankings, metrics, measures, indicators, and assessments that enable universities to respond to demands for accountability, they do not generally treat quantification strategies themselves as central actors. Nor do they link institutional changes and quantification techniques to changes in the intellectual practices of the humanities disciplines. Finally, no sustained study has employed the humanities' interpretive methods and theoretical frameworks to analyze the deep impacts of the quantitative turn in higher education and academic research. This proposal seeks funding for a project that will fill this void by developing an historical and cultural theory of metrics in higher education, while also providing concrete findings about humanistic practice in three quantitatively-inflected domains.

Numerical systems now measure outcomes in all major dimensions of university life and higher education. Our project focuses on three areas in which quantitative and qualitative modes of thinking come into conflict: 1) research bibliometrics, 2) learning outcomes assessment, and 3) debates over the value of higher education. In each of these areas, qualitative analyses are being supplemented and even replaced by quantitative metrics that are regarded as objective, comparative, and external to the practices and relationships being evaluated. In the first area, faculty research productivity and performance are gauged less by peers than by bibliometrics systems relying on citation counts, impact factors, and journal rankings. In the second, the assessment of student learning increasingly hinges not on college teachers' local knowledge but on outcomes measures developed by foundations and consultants. In the third, discussions of the value of higher education for students and society are predominantly framed by economic considerations—particularly return on investment calculations as measured by personal income some years from graduation—that have progressively drawn attention away from the university's less-quantifiable humanistic purposes of self-development, knowledge of cultural and artistic traditions, and the advancement of humanity as a whole.

Numerical calculation is new neither in the humanities nor in the management of colleges and universities (Bowker and Star 2000; Strathern 2000; Humanities Indicators 2016). What is novel about the role of the numerical in twenty-first-century higher education is, first, its comparative scope: quantitative data now furnishes the basic picture of higher education in the U.S. and globally, in part by glossing over institutional heterogeneity and reducing or eliminating contextual nuance. The numerical's priority over qualitative considerations is also new. It has resurged in spite of decades of criticism of the validity of traditional quantitative metrics in standardized testing and other areas (Lehman 1999; Ravitch 2014; Kamenetz 2015). The numerical has gained new momentum through the worldwide interest in big data, where advanced data processing techniques appear to offer an objectivity not found in qualitative or interpretive methods (Kitchin 2014). The numerical has the ability to establish benchmarks, which favor measurable objectives over processes and goals that are complicated or inseparable from their operation in specific contexts (Ordorika and Lloyd,2013). In a broad cultural shift, quantitative metrics,

benchmarks, and rankings have acquired an aura of universality and inevitability that give them authority over educational governance, even when their validity is disputed (Osterloh and Frey 2010).

It is not an exaggeration to say that in twenty-first-century higher education, quantification has expanded from use under special circumstances for specific insights about complex situations to being available under all circumstances as a privileged, decisive, and objective mode of comparison and assessment. On the other hand, qualitative and interpretive analyses of learning, research, and institutional resource allocation are often framed as partial, specific, and subjective in comparison (Gates Foundation 2015). Institutional decision making requires comparison of dissimilar elements across varying contexts—whether to fund faculty lines in English versus a center in materials science, for instance—and decision makers now often assume that numerical indicators offer the fairest way to compare dissimilar disciplines and institutional goals. There is too little research asking what the tradeoffs of this shift may be—particularly regarding the intellectual and educational effects of higher education's quantitative turn on the humanities.

While discussion of the institutional impacts of the numerical has progressed in the social sciences (Power 1996; Porter 1996; De Bellis 2009; Bowker and Star 2000; Espeland and Sauder 2016; Merry 2016), it has not gotten very far in the interpretive humanities. There are important exceptions. Composition scholars have long debated the validity and methods of writing assessment (Huot and O'Neill 2009), while a subfield within rhetoric considers how to teach and understand the rhetoric of numbers (Whitin and Whitin 2008; Wolfe 2010). In the developing discipline of writing studies, quantitative methods are a frequent concern because of the field's gravitation toward empirical methods (Charney 1996). Computational (and thus often quantitative) methods are now common in digital humanities scholarship in all fields, as they are in linguistics and some areas of philosophy.

In literature, history, language, and area studies departments, however, metrics and rankings are more often a source of complaint than an object of study. One notable exception is the collection *Literary Study, Measurement, and the Sublime: Disciplinary Assessment* (2011), edited by Donna Heiland and Laura Rosenthal and published under the auspices of the Teagle Foundation. In it, a range of literary

scholars offer their experiences with learning outcomes assessment and present a case for the adoption of faculty-driven, collaborative, discipline-specific assessment throughout the humanities. The book is a valuable humanistic contribution to debates about measurement in higher education, but it is limited in its scope to literature and language departments and in its depth—it does not engage with the existing social science, rhetorical, or writing studies scholarship on quantification and audit culture.

Our project seeks to provide a basis for expanding humanities understandings of metrics, measurement, and indicators in higher education by developing a historical and cultural theory of metrics in higher education that can account for universities' and colleges' adoption of quantitative measures and offer humanistic methods for evaluating their educational and research impacts. We are particularly concerned with their impact on humanities disciplines and with the ability of humanities disciplines to develop responses that grow out of our own methodologies. In what follows, we describe how we will examine the origins and current operation of three areas of measurement discourse—research bibliometrics, learning outcomes assessment, and the value of college education—and investigate alternative models for improving research productivity and learning quality.

Broadly, we address three questions about each area: 1) How were the relevant metrics developed and adopted? 2) How have the relevant metrics affected the humanities disciplines?   3) How could these metrics be replaced or supplemented with other methods of assessment that better reflect the work of humanities disciplines?

We will develop a theory of how metrics affect the humanities and higher education by aligning our three areas to generalize about how metrics enter and behave in universities and how countermeasures succeed or fail. Employing a combination of literary analysis techniques, oral history, philosophical reading, and cultural theories of institutions will allow us to explain how metrics function as organizational instrument and as narrative and rhetorical strategies. How, we ask, do metrics change and shape the stories of aspiration, innovation, and democratization that define U.S. higher education?

Research Bibliometrics Come to the Humanities

Literary and historical studies are in general guided by a canon of major works in a given subfield. How do humanists generate canons that reflect intellectual influence and shape future research directions? Humanists do not follow the current common practice of science and engineering fields, which involves identifying researchers that are highly cited in journals with high impact factors. Our most influential works are often books rather than articles, and books have not yet been successfully incorporated in bibliometrical databases. Without formal bibliometrical data, then, how do literary and cultural scholars build their spheres of scholarship? How did they create them before databases were widely available, and how do they expand and modify them over the course of their careers? We hypothesize that humanists build what we call expert social and textual networks that form a highly developed alternative to the use of citations in bibliometrical analysis.

We will analyze humanistic bibliographic practices at a time when the quantitative methodology just mentioned, research bibliometrics, has swept most disciplines outside the arts and humanities. In bibliometrics, citation frequency is intended to be a reliable index of intellectual impact (De Bellis 2009). Citation indexes are taken as measures of the scholarly importance and productivity of individuals, departments, and institutions, allowing such indexes to be used for quality assurance and other management functions (Hersh 2005). The rankings and indicators that emerge from citation analysis help decide what research questions are important and not important, who must be read, who is central and who is marginal to an emerging field, and who should be funded and promoted and who should not.

Bibliometrical assessment rests on some legacy assumptions: it expects highly productive scholars to be few in number, and influence and originality to be concentrated (Lotka 1926; Bradford 1934; Zipf 1935; De Bellis 2009). The Pareto principle (or the law of the vital few) expresses this idea by asserting that 80 percent of effects can be traced to 20 percent of causes. In recent years, Pareto distribution has come to be associated with disruptive innovation and with entrepreneurship (Andriani and McKelvey 2009), while "normal" or Gaussian distributions reflect what Nassim Taleb called "Mediocristan," in which the typical person is mediocre, and exceptional performers suffer the "tyranny"

of the not very bright "collective" (Taleb 2007). Although most scholars and researchers are concerned with protecting originality, diversity, and minority voices (Engwall, Blockmans, and Weaire 2014), this philosophy of Pareto distribution functions as though originality will be associated with the "improbable" exceptions at the top of citation rankings. Citation distributions confirm the Matthew Effect (Merton 1968) in that they reflect cumulative advantage. The bibliometrical quantification of influence may bring with it technically constructed biases that make standard bibliometrics unable to specify research that has transformed the humanities and our understanding of culture.

The professional metrics community now rejects automated or context-free use of quantitative indicators and calls for the continuous application of professional expertise and substantive domain knowledge wherever these indicators are used (Roemer and Borchardt 2012; Cronin and Sugimoto 2014; Hicks et al. 2015; Wilsdon et al. 2015). And yet we do not know whether this reform movement will make bibliometrics useful, appropriate, or valid in the arts and humanities. This question is made more urgent by the fact that the European Union has commissioned a full-scale effort to incorporate the arts and humanities into existing bibliometric databases, called the European Network for Research Evaluation in the Humanities and Social Sciences. Advocates for humanities bibliometrics argue that they will allow the intellectual and social benefits of fields like literary study to become more visible to the general public (Benneworth, Gulbrandsen and Hazelkorn 2016). This may be true. But bibliometrical mapping and assessment have changed other fields, and they are likely to change humanistic scholarship as well. Humanities disciplines will need to do one of three things: 1) adopt wider bibliometrical standards of evaluation; 2) adapt those standards to better reflect humanistic principles; or 3) make a strong case for maintaining their current evaluative methods.

To discover and articulate how bibliometrics methods might affect humanities practices, we propose a systematic formulation of the range of current practices that humanists use to build canons of scholarly commentary. These practices are rooted in the high school and undergraduate reading habits that encourage students to enter doctoral training, are shaped by seminar bibliographies, library use, and elaborate word-of-mouth transmission practices during graduate school, and remain a combination of

local, face-to-face exchanges and distant networks during professional life. We are interested in how these systems of texts and ideas are assembled and how they evolve over the course of various types of careers. We will use case studies (or "case histories" [Mandell 2015]) to examine canon building in three subdisciplines of literary studies. Our procedure will be as follows.

First, we will conduct a comprehensive literature review of material describing and analyzing methodologies for constructing appropriate bodies of "secondary literature" in literary criticism, including discussions about practical matters like constructing reading lists for graduate students' qualifying examinations. We will focus on post-1990 materials, which follow the mainstreaming of all types of theory within literary study. This review will follow traditional bibliographical methods of assembling relevant materials. We will then read these materials, carefully documenting our assessments and soliciting community feedback via the Research Bibliometrics (RB) web site (Newfield, Steffen, and research assistant). We will also note the limitations of scope entailed by this type of qualitative engagement: our experience is that few scholars systematically track what they do not have time to read or candidly share how far they have fallen behind the publication output in their own proximate disciplines. Scholars will be invited to openly discuss the value and limitations of their reading practices via Drupal comment forms on the RB site. We will identify the major themes, practices, and trends in this commentary on methods of creating a comprehensive professional library of scholarly materials within literary criticism.

Next, we will subject the same body of material to distant reading techniques (Mandell). These will include the computational practices that digital humanities scholars have developed (topic modeling, network analysis, word frequency analysis [TF-IDF], and clustering), collectively designated by the term "distant reading" (Moretti 2013). The goal here is to identify patterns and developments in literary bibliometrical practice. We will compare the results of our initial close reading to those produced by distant reading, both for additional insight into bibliometrical practice and for better understanding of the strengths and weaknesses of close reading as such (Best and Marcus 2009; Love 2010). Again, via a forum on the RB site, specialists in the field of cultural analytics (volunteers from among members of the

Association of Digital Humanities Organizations) will be invited to address the results of our comparison in order to compile a list of best practices in bibliometrics and distant reading.

Third, we will use the practices identified in the first two stages to construct comprehensive bibliographies in our three test-case subdisciplines: Reading Methodologies; Critical University Studies, an emerging interdisciplinary field many of whose practitioners come from literary studies; and research on Eighteenth-Century British Women Writers, those participants in the beginnings of feminist thinking. This group of writers believed they had altered the fields of English literature, philosophy, and history once and for all to include women writers as plentifully as men. Research in this field reveals canonizing forces that are currently being revitalized by distant reading techniques, and so also will help us to determine how we might bring carefully researched and considered understandings to better "filter" and shape the best that is thought and known for popular consumption. A field like Critical University Studies may reflect a common pattern for emerging professional knowledge, in which such knowledge adapts to local contexts and evolves as it migrates through expert social and textual networks. Emergent knowledge generally lacks sponsors and can be dismissed, which reduces its circulation as official, visible, and countable citations. Research in STEM fields suggests that emergent knowledge does not often appear in the high-profile venues that successfully focus on maintaining their ranking and markets (Newfield and Muellerleile 2016). Emerging knowledge can therefore be undermeasured and may circulate in the manner of an artistic avant-garde or subculture (Hebdige 1979) rather than in that of a citational network.

Fourth, we will convene focus groups of 10-12 scholars in each of the three subdisciplines at the relevant professional meetings. We will attempt to make the membership of each group as diverse as possible (by type of institution, methodological preferences, gender, ethnicity, and age). We will ask each member to spend a significant amount of time prior to the meeting in reconstructing their intellectual genealogy from graduate school to the present, making it available through annotated bibliographies on the RB site. We will ask them to (a) list approximately fifty key texts that mattered most to their their formation and that guide their ongoing practice; and (b) identify the methods they used to construct this set of texts over time. Each member's citation database will be made available on the RB site for review

and discussion at the focus group. The meeting will be devoted to collective oral history and group discussion of each member's genealogical canon and methods of construction, which we will record and transcribe. We hope for significant detail about the change in critical paradigms that our participants have individually experienced and for detailed links between changing paradigms and the rise and fall of key texts in their personal and shared professional canons. We estimate the time commitment of each member to be 4-6 hours of preparatory work in their home and office, and 5 hours for the meeting, or approximately ten hours per person in total. The overall number of participants will be approximately thirty people. (We will apply for permission to conduct human subjects research at both UC Santa Barbara and Texas A&M University in summer 2017.)

The combination of these four steps will generate a significant amount of data about the *qualitative* canon-building and bibliographical practices that literary scholars have and continue to use. The differences among the three subdisciplines will allow us to generate a strong preliminary model of bibliometric practices rooted in expert social networks. The data and reactions to it will all be made public on the Research Bibliometrics web site. The goal is what we believe will be the first systematic description of existing humanistic bibliographical practices. We expect this to be of particular interest within current comparisons of close reading and computational forms of distant reading. With this improved understanding of humanities-based qualitative canon building and influence mapping in place, the humanities fields will be better able to explain the meaning and validity of their research methods to non-humanists. They will also be able, where desired, to establish robust forms of research assessment and faculty performance review that are appropriate to humanistic knowledge creation.

Learning Outcomes Assessment and the Teaching of Literature

Though the United States is spending a lot of money to send students to college, are students learning anything? This question has lurked in public debates for years (Hersh 2005, Bok 2008), but exploded into the mainstream press following the publication of Richard Arum and Josipa Roksa's *Academically Adrift: Limited Learning on College Campuses* (2010). Most reviewers interpreted the

book as saying that today's students learned half of what their parents did (Jaschik 2011). Many concluded that, given high tuition and cumulative student debt, "college wasn't worth it." A likely explanation for Arum and Roksa's bursting into prominence was their use of a numerical learning assessment tool, the Collegiate Learning Assessment (CLA), that appeared to offer an objective measure of student learning decline. America's colleges and universities, renowned for decades as the nation's engines of social mobility and innovation, now face the task of proving that their students really are learning, and proving it in recognizable quantitative terms.

Learning outcomes assessment has been of interest to scholars for decades (Huot and O'Neill 2009; O'Neill, Murphy, and Adler-Kassner 2012; Campbell 2015). It acquired national policy relevance with the reauthorization of the Higher Education Act in 1998 and was placed at the center of K-12 education by the No Child Left Behind Act (2001). By that point, it was only a matter of time before assessment because a central issue in higher education policy, and one important step in this direction was the 2006 publication of *A Test of Leadership: Charting the Future of Higher Education*, also known as the Spellings Report, which concluded that many college graduates were not mastering basic reading, writing, and critical thinking skills (U.S. Department of Education 2006). While policymakers and the media appear to expect to assess the value of university teaching on the basis of standardized tests, the most prominent assessments seem to work by establishing qualitative learning outcomes and then creating instruments that can assess these. The CLA itself has a critical thinking test that requires the evaluation of analytical writing. Many qualitative assessments are being developed by scholars, administrators, testing companies, and educational foundations in what is sometimes called the assessment movement. Because they guide influential intellectual arenas like writing assessment research and the development of assessment instruments, the assumptions and rhetoric of the assessment movement now shape pedagogical discussions at the administrative level of higher education. At the same time, "research on student learning and the culture of pedagogical innovation…has been developed almost exclusively in connection with STEM fields" (Brown 2014). This is a skewed situation that our research seeks to change.

We propose to analyze the impact of assessment rhetoric on humanities teaching. We will ask how outcomes-based approaches affect the teaching of literature. We have started with a comprehensive review of the studies, public statements (websites, white papers, and reports), and assessment tools (e.g. rubrics) produced by the assessment movement. We will create a searchable database for accessing these materials.

Second, we will close read this archive of materials, asking two questions: What explicit and implicit assumptions about learning, teaching, students, faculty, and the mission of higher education appear in this discourse? How are these foundational assumptions transmitted through the assessment movement's arguments and rhetorical strategies? We will use the results of this interpretive work to produce a definition of what we are calling "assessment rhetoric."

Third, we will use this definition to guide an exploration of where and when we find assessment rhetoric at work in discussions about the teaching of literature. To do so, we will conduct a full review of scholarship about literature pedagogy published since the Spellings Report (2006), noting authors' deployment of assessment rhetoric as well as moments when alternative pedagogical languages and ideas appear. The current consensus appears to support assessment that is specific to a discipline, such as history or English, but that does not assess mastery of content (Brooks 2011; Arum, Roksa, and Cook 2016). What does this mean in practice in literature courses? Literary scholars are intent on preserving the understanding of literary texts as sites where "meanings are so many and so subtle" that they resist reduction to takeaways of the kind that appear to be required by learning outcomes to allow comparison of different courses, approaches, departments, and universities. Our careful reading of the rhetorical and narratological practices of these assessment documents will help us understand the extent to which literary assessors are willing to follow established templates of "high impact educational practices" (Kuh 2008) or attempt systematically to reflect a distinctive complexity of literary texts and literary interpretation.

Our goal is to discover whether assessment rhetoric has become the lingua franca of higher education such that it will govern discourse about the teaching and learning of literature. Although much

assessment practice changes according to discipline (Arum, Roksa, and Cook 2016), assessment instruments like the Lumina Foundation's Degree Qualifications Profile identify skills attached to specific degree levels rather than disciplines (Lumina Foundation 2014). In the context of this ambiguity and fluidity in the current assessment terrain, we will answer the following questions: how is interpretation as a process understood in an outcomes-based discourse? How does learning outcomes assessment now shape debates about the literary canon? How are process-based pedagogies (transformative or critical pedagogies, for instance [Freire 1970; hooks 1994; Ukpokodu 2009; Giroux 1998, 2011]) that are common in the humanities affected by the imperative to produce measurable, or at least reportable, outcomes?

In order to communicate the results of this study in a way that not only contributes to scholarship on learning and assessment, but is also useful to scholar-teachers, we plan to create an online interactive dictionary of assessment and alternative pedagogies.

The Value of Higher Education

Our third focus area brings together two sets of disciplines that have historically appeared to be at odds over the purpose of higher education: the humanities and economics. These fields have helped form the poles of a cultural and policy debate over the ultimate purposes of the university. The debate is often cast as a binary contrast between liberal arts and practical majors (English versus business, for instance), or between intellectual development and vocational training. We will analyze the history that made this distinction central to public discourse on the value of higher education. On the side of economics, the development of a particular intellectual tradition—human capital theory—built the specific quantitative metric of the pecuniary "returns to education" into the single most influential indicator of the value of a university education. Our sense, to be tested and refined in the course of analysis, is that the distinction between economic and humanistic definitions of educational value is overdrawn and misleading. And yet the way to a synthesis of these historically polarized modes of valuing educational lies through an analysis of the role of quantification in these value debates.

We propose an analysis in three phases, corresponding to our three guiding questions about metrics and higher education: First, we will develop an intellectual history of the distinction between pecuniary and non-pecuniary definitions of educational value and of the normative claims it occasions. Our particular contribution will be to ask how the spread of easily calculable rates of return to education of different types, in combination with the long-term marketization of higher education, have redirected attention towards a vocational model of education. Our textual analysis to date suggests that the current orientation towards job-oriented majors was not inevitable. For example, economists initially distinguished between vocational and non-vocational education to justify spending public money on the latter, including the humanities (Friedman 1955). Later, when economists argued instead to direct public money towards vocational majors, rate-of-return analysis had intervened. We theorize that the quantification of value reversed the alignment of public money from non-vocational to vocational. This is one major example of what we expect to find, which is the numerical having independent and unexpected effects on normative statements about the value of higher education.

Still developing our intellectual history, we will study how rate-of-return metrics have been adapted and utilized by colleges and universities. We will assess whether these adaptations are consistent with the intellectual traditions that first motivated them. Where the metrics have departed from their conceptual bases, we will track their development of new philosophical justifications.

We have begun our comprehensive historical and genealogical exploration in the human capital and self-development traditions. From economics, we have been reading work from the 1950s through to the early1970s by Milton Friedman (1955), Jacob Mincer (1958), Kenneth Arrow (1962), Gary Becker (1964), Theodore Schultz (1961, 1971), and George Psacharopoulos (1973); as well as work from the 1970s and 1980s by Michael Spence (1973), Lester Thurow (1975), Joseph Stiglitz (1975), and Richard Nelson and Sidney Winter (1982); and from the 1990s and beyond by James Heckman (2006) and Claudia Goldin and Lawrence Katz (2009). Our reading so far indicates significant openness and progress in the economics profession's understanding of how education influences people's experience of the labor market and of societies' technological trajectories. And yet overlap with humanistic traditions remains

limited: although recent economics work emphasizes possible effects of education on behavioral traits, these are treated as valuable only insofar as they attract rewards in the labor market. With at least one important exception (McMahon 2009), economists continue to downplay or ignore the nonmarket, indirect, and social benefits at which humanities disciplines excel. What aspects of the humanistic analysis of educational benefits could influence economic thought and bring these traditions closer together?

To address this issue, we are reviewing a full complement of classical humanistic analyses of the modern university. This begins with work by Kant (1789), Fichte (1794), Schleiermacher (1808), and Humboldt, and continues with Ralph Waldo Emerson (1837), Charles William Eliot , William James, Booker T. Washington, W.E. B. DuBois, and John Dewey (1916). Taken as an ensemble, these texts express a theory of Western higher learning in which humanities disciplines focus on the development of consciousness, where this requires complex interactions between individual self-development and collective historical processes. The last decade has seen something of a renaissance of critiques, defenses, and reconceptualizations of the humanities. We will read these as a collaborative study of the specific non-pecuniary and social benefits of higher education and the place of humanities disciplines in these. We will read texts by Martha Nussbaum (1997, 2010), John Guillory (1993), Christopher Newfield (2003, 2008), the Modern Language Association (2009), Geoffrey Galt Harpham (2011), Helen Small (2013), the American Academy of Arts and Sciences (2013), Andrew Delbanco (2014), William Deresiewicz (2014), Fareed Zakaria (2015), Michael Bérubé and Jennifer Ruth (2015), and the Humanities Indicators Project (2016), among others. A core feature of these texts is that their articulation of the academic humanities engages self-consciously with economic change. We will study these works for their collective modeling of the functions of the humanities in higher education when their pecuniary and non-pecuniary value seem each to be in decline.

The second phase will examine how universities and their legislative backers have taken the rate of return logic on board. We know already that statistics on returns are used for marketing and that they have featured prominently in deliberations regarding choice of major and funding allocations. We will

examine how the pecuniary returns to education are incorporated into these discourses by looking at marketing materials produced by humanities departments and at proposed legislation to link federal and state funding to graduates' employment and salary outcomes. This close reading will shed light on how the predominance of pecuniary understandings of higher education's value produces particular meanings for humanities education and guides the discourse around funding decisions.

Third, our interpretive work is geared toward not only gaining greater understanding of both domains' perspectives, but to answering one last, and key, set of questions: Could the key differences between the higher education frameworks of economics and the humanities be better harmonized with the development of a common vocabulary? We hypothesize that the answer is yes, on the basis of developments in both economics and the humanities that are attempting to understand pecuniary and non-pecuniary goals in relation to one other. We plan to produce one of the few existing sustained syntheses of these competing views of the purpose of higher education, one that will offer a vocabulary that reflects the values and goals of the humanities disciplines, and would allow a wider section of the public to see the university as more than a return on a financial investment.

Conclusion

Universities around the world are subject to unprecedented social and political pressures, and are having to adapt to sometimes-contradictory demands—be better, be cheaper—at an unprecedented rate. They are increasingly held responsible for the competitiveness of the nation's knowledge economy, for the workforce readiness of the youth population, for the technologies that create new industries, and for social cohesion and political capability. As university performance has become a major economic and political issue, the humanities disciplines have come under increasing disadvantage. Although there has been much discussion of the symptoms of the problem, scholarship has generally ignored an important cause: the role of quantitative metrics in assessing and governing that performance. This study will help to correct this omission.

Our project focuses on three key areas of evaluative debate—research, teaching, and public value of the academic humanities. Major governmental and academic agencies have developed evaluative systems that are well adapted for some purposes but not for the humanities disciplines. The individual and public impacts of higher education depend in large part on the health of the humanities, and the health of the humanities depends on methods of support, evaluation and public representation that accurately reflect their distinctive procedures. Our project will articulate these appropriate methods. We plan to publish the results of our research as a book accessible to all humanities scholars and which may provide a foundation for further research and criticism of the ways quantification is reshaping humanities research and teaching. As we describe under Products and Dissemination below, we will also develop a set of open-access online resources to complement our scholarly publications. These resources will demonstrate the power of the humanities' interpretive, historical, and qualitative methods for understanding knowledge production, learning, and the value of higher education.

We understand that few humanities scholars undertook their field of research to engage the quantitative aspects of higher education policy. But these discourses are highly influential, and we would like to engage with them to ensure that the humanities' unique historical and cultural knowledge will factor into key decisions about the future of universities and colleges. By building a cultural theory of metrics in higher education and demonstrating its relevance, our project will offer humanities scholars a starting point for intervention in campus and national debates about the quantification of research, learning, and the university's mission.

History of the Project and Its Productivity

Our project is part of an international, collaborative project, The Limits of the Numerical, which focuses on the role the interpretive humanities can play in analyzing, critiquing, and determining how quantitative measures, metrics, and indicators shape three controversial areas of social policy: higher education, climate change, and public health. We have assembled this group for the sake of mobilizing diverse sites of analysis and assembling necessary interdisciplinary expertise. Our shared interest is

enabling the interpretative humanities to play a central role in arenas of public understanding now dominated by numerically-based data analytics.

Our team is examining metrics in higher education, a team at the University of Chicago is exploring numbers in climate change discourse, and a team at the University of Cambridge (UK) is investigating the epistemology of quantitative measures in public health. We are working to interpret the impacts, rhetoric, and epistemological assumptions behind such numerical instruments as bibliometrics, the 2°C global warming threshold, and the QALY, or quality-adjusted life-year that the UK's National Health Service uses to assess the cost-effectiveness of medical treatment. (Further information about the Chicago and Cambridge teams and their work may be found in Appendix 3 below.)

Our collaboration with the Chicago and Cambridge teams is guided by three common sub-questions: How has the introduction of numerical quantification into institutions, disciplines, professions, and policy arenas changed their organizational cultures, goals, and practices? What are the effects of quantification on humanistic analysis? How might the interpretive humanities retain or rebuild their intellectual effectiveness in the quantitatively-oriented policy worlds of climate science, healthcare, and higher education? While the first question is well-studied in some disciplines, the second is not, and the third is almost entirely unexamined. We are concerned that qualitative interpretation is being pushed out of major arenas of public debate on the incorrect assumption that it does not yield valid or useful knowledge, in a moment when the need for advanced interpretative assessment is more obvious than ever.

The international Limits of the Numerical project began several years ago, when James Chandler, Director of the Franke Institute for the Humanities at the University of Chicago, and Simon Goldhill, Director of the Centre for Research in the Arts, Social Sciences, and Humanities at the University of Cambridge, in consultation with Mellon Foundation officials, became interested in studying the impact of quantification on the humanities and social sciences. They felt that the intellectual impacts of quantification, supercharged by the media interest in big data, had not received sufficient attention. They invited Christopher Newfield to participate in late 2014 because of his expertise in humanistic university studies, which Chandler and Goldhill felt had been a lacuna in their original plan. Chicago and Cambridge

began their research in Fall 2015 with teams of four researchers in each location; UCSB began its work in April 2016 and now includes four researchers, three faculty and one postdoctoral scholar.

At present, the three research teams are undertaking a distinctive organizational experiment in interdisciplinary research. Our projects are developed and conducted in a collaborative manner, both within each strand and among the different strands. The entire international group meets once a year, and the postdoctoral researchers from the three teams meet monthly. This model offers the rare possibility of bringing together detailed academic research in a broad, interdisciplinary, international framework—a framework necessary to have a real impact on cultural, educational, and policy debates that span institutional, disciplinary, and national boundaries.

The products of the UCSB team's preliminary research on metrics and the humanities in higher education thus far include:

- Presentations by Newfield, Mandell, and Steffen at the Limits of the Numerical International Summit at Cambridge in July 2016. Newfield presented an overview of our team's work and outlined the effects of quantification on higher education. Mandell detailed what her experience working on various digital archive projects has taught her about the difficulties of preserving the serendipity of physical searches in online bibliographies and archives. Steffen reviewed the current state of learning outcomes assessment in the U.S.

- A presentation on "Metrics and the Audit Society: Marketization in Open Access Publishing and Humanities Analytics," at the 21st International Conference on Science and Technology Indicators in Valencia, Spain, by Newfield and co-presenter Christopher Muellerleile (University of Swansea, UK) in September 2016. In the paper, Newfield and Muellerleile examined how new numerical/digital tools, like open access and alt-metrics in bibliometrics, attempt to meld quantitative and qualitative approaches to the democratization of access to knowledge.

- An upcoming panel on The Limits of the Numerical: New Roles for Literary Study at the Modern Language Association Convention in January 2017. On the panel, Mandell will present

on "Gender and Cultural Analytics: Finding or Making Stereotypes?" and Steffen will address "The Rhetoric of Measurement against Itself" in learning assessment discourse. Our panel proposal appears below in Appendix 3.

Collaborators

Christopher Newfield, who serves as Project Director, is Professor of Literature and American Studies at the University of California, Santa Barbara. Much of his research is in Critical University Studies, which links his enduring concern with humanities teaching to the study of how higher education continues to be re-shaped by industry and other economic forces. His most recent books on this subject are *Unmaking the Public University: The Forty Year Assault on the Middle Class* (Harvard University Press, 2008), and *Ivy and Industry: Business and the Making of the American University, 1880-1980* (Duke University Press, 2003). A new book on the post-2008 struggles of public universities to rebuild their social missions, called *The Great Mistake: How We Wrecked Public Universities and How We Can Fix Them*, was published by Johns Hopkins University Press in November 2016. Newfield also writes about American intellectual and social history (*The Emerson Effect*, University of Chicago Press) and has co-edited *Mapping Multiculturalism* (University of Minnesota Press) with Avery F. Gordon. He blogs on higher education policy at *Remaking the University*, and writes for the *Huffington Post*, *Inside Higher Ed*, and the *Chronicle of Higher Education*. He teaches courses in Detective Fiction, Noir California, Contemporary U.S. Literature, Innovation Theory, and English Majoring After College

Since becoming Director of the Initiative for Digital Humanities, Media, and Culture (IDHMC) at Texas A&M University in June 2011, Project Co-Director Laura Mandell has been awarded external grants totaling $880,000, from the Mellon Foundation, the National Endowment for the Humanities, and the Social Sciences and Humanities Research Council of Canada, internal grants totaling $178,000, and has received funding from the American Society for Eighteenth-Century Studies. Her *Breaking the Book: Print Humanities in the Digital Age* (2015) was published in the Wiley Blackwell Manifesto series. "Gendering Digital Literary History: What Counts for the Digital Humanities" came out in the *New*

Companion to Digital Humanities (2016). She has launched a search and discovery tool called the Big

Data Infrastructure Visualization Application (http://www.bigdiva.org), started and finished the Early

Modern OCR Project (http://emop.tamu.edu), and created a set of classes called Programming for

Humanists and a book series called Coding for Humanists. Mandell, Professor of English at Texas A&M

University, is also Director of the Advanced Research Consortium (http://www.ar-c.org),

18thConnect.org, and General Editor of the Poetess Archive (http://www.poetessarchive.org).

Aashish Mehta is an Associate Professor in UC Santa Barbara's Department of Global Studies. A

development economist with wide-ranging interests, his primary area of expertise is the connections

between education, employment, inequality, globalization and changes in the structure of national

economies. He has previously served as an economist at the Asian Development Bank and continues to

write research reports for international organizations and to advise NGOs. Mehta has also published peer-

reviewed papers on corruption, power sector restructuring, food subsidy programs, caste-discrimination,

skin color and voting behavior, commodity price management, land management, national scientific

development, gender and support for international human rights treaties. He teaches courses on the

political economy of development and inequality.

Heather Steffen joined the project as a postdoctoral researcher in April 2016. Trained in literary

and cultural studies, she is a member of the emerging generation of Critical University Studies scholars,

and her research focuses on issues of academic labor, university history, and twentieth-century American

literature. Steffen is currently working on a book, *The Emergence of Academic Labor: Criticism and

Work in the Progressive-Era University*, and her writing has previously appeared in *Cultural Logic*, *the

minnesota review*, *The Chronicle of Higher Education*, and the forthcoming collection, *Staging Women's

Lives in Academia: Personal and Professional Life Stages in Language and Literature Workplaces*

(SUNY Press, 2017). With Jeffrey J. Williams, she is co-editor of *The Critical Pulse: Thirty-Six Credos

by Contemporary Critics* (Columbia University Press, 2012). At UCSB, where she is on leave as a

Lecturer in the Writing Program, she teaches courses on Intellectual Labor and the Work of Literature,

Fiction in the Age of Metrics, Writing and Ethics, and Writing for the Humanities.

Methods

Our methods mix traditional literary close reading with oral history and digital humanities practices, unified through a cultural materialist approach and public humanities goals. A cultural materialist approach is appropriate for this project because it allows us to understand how meanings circulate among representations (textual, narrative, rhetorical, and quantitative) and institutions; how they are affected by changes in educational policy, economics, and culture; and how they in turn influence policy, economics, and culture (R. Williams 1977). This approach allows us to go beyond simply interpreting quantitative representations by also explaining the work they do in the world, work that will impact U.S. higher education and the humanities for decades to come.

We are inspired by the call of the public humanities to develop "a more systematic way of locating public questions and problems and a more systematic way of surveying the scholarly literature," and to become "scholars willing and able to relate their disciplines to timely public issues and concerns [and] to survey scholarly literature and to interpret the discoveries in a public vein" (Quay and Veninga 1990). Our project combines humanistic scholarly methods with the creation of open access public resources that are designed to be accessible and informative for a broad range of educated users, including academics, students, university administrators, librarians, and scholars who work at foundations or for government agencies.

Each area of our research will be undertaken with methods appropriate to its content and the questions we are asking about it. To understand whether bibliometrics can capture the complex social and textual networks in which research occurs, we will collect oral histories of intellectual development during focus group sessions. We will analyze the discussions through close reading and with digital humanities techniques that map and chart such networks. To explore the broad intellectual and pedagogical reach of the learning outcomes assessment movement, we will perform an extensive rhetorical analysis of assessment materials, including rubrics, white papers, institutional documents, and scholarly articles and books. We will then organize and present our findings in an interactive, online

dictionary-style site, which will allow users to draw (literally and figuratively) connections between assessment and other pedagogical approaches and to materials for teaching and research. To build strong arguments for the value of higher education in general, and the humanities in particular, and to grasp how debates about this value impact policies and students, we are using a comparative method, reading texts from the history of humanistic and economic thinking about higher education alongside one another. We will later craft a online timeline that will graphically represent how these ways of thinking converge, diverge, and run in parallel over time that we hope will make these complex discourses accessible to a wide range of stakeholders.

The three strands of research will be combined in a book that offers a cultural theory of metrics through the case studies that we have developed during the project. We will show how quantification of our examples of humanities research, teaching, and public value rests on qualitative assumptions that are displaced as quantification proceeds (Latour and Woolgar 1987). Quantification now takes place at a time when policymakers demand simple indicators, and metrics professionals are, in contrast, insisting on the retention of context, differences, and variable qualities. Our theory—sustainable generalizations from our cases—will conceptualize the reconstruction of *qualitative* measures, measures that offer comparability without the reduction to which standard metrics are prone.

Work Plan

Our work plan is organized according to UC Santa Barbara's quarter system. The team's progress will be coordinated, monitored, and managed by Newfield and Steffen.

Spring and Summer 2017: Before our funding from the NEH would begin, the full team will attend and present at the international Limits of the Numerical project group's summit in Chicago. Newfield, Mandell, and Steffen will obtain approval for the use of human subjects in our focus group research from UCSB's and Texas A&M's institutional review boards, and we will organize participants for the Critical University Studies focus group. Steffen will complete an initial rhetorical analysis of

debates about learning assessment. Newfield, Mehta, and Steffen will compile bibliographies of humanistic and economic understandings of higher education.

Fall 2017: During our first three months of NEH support, Newfield and Steffen will begin planning the Summer 2018 Limits of the Numerical international summit and conference, which will be held at UCSB. Newfield, Mandell, and Steffen will attend the annual meeting of the American Studies Association in Chicago, during which they will convene the focus group of scholars in Critical University Studies and present initial research on bibliometrics and learning assessment. Steffen will undertake research into the history, institutional and foundational networks, and proponents of learning outcomes assessment. The working group on higher education's value (Newfield, Mehta, and Steffen) will meet regularly to read and interpret core texts in the history of humanistic and economic thought about higher education.

Winter 2018: Newfield, Mandell, and Steffen will attend the Modern Language Association's annual convention in New York, where they will convene the focus group on Reading Methodologies. In March, they will convene the Eighteenth-Century British Women Writers focus group during the annual meeting of the American Society for Eighteenth-Century Studies in Orlando. Steffen will revise the initial rhetorical analysis of learning assessment discourse based on its history and cultural context. The working group on higher education's value will complete an analysis of the terminological and conceptual differences, commonalities, and commensurability of humanistic and economic thought about higher education.

Spring 2018: During this quarter, Newfield, Mandell, Mehta, and Steffen, as well as other potential collaborators, will be in residence at the University of California Humanities Research Institute at UC Irvine. We will use our time there to begin writing up the results of our research into learning assessment and the value of higher education while we have the focus group discussions transcribed (using internal funding). Steffen, in collaboration with the others, will begin authoring entries for the "devil's dictionary" of learning assessment, while the full team will work to build and combine the timelines of thought about higher education, as well as to plan the project's websites. Lastly, we will

finalize all plans for the Summer 2018 summit at UC Santa Barbara and draft papers to present at the UCSB and Cambridge summits.

Summer 2018: We will hold the international Limits of the Numerical project group's summit at UCSB, which will also include a day of presentations and collaboration with external scholars that will be open to the public. We will attend the Limits of the Numerical project's final international conference in Cambridge. Newfield, Mandell, Mehta, and Steffen will present papers at both events.

Fall 2018: Fall begins our second year of NEH-supported work on the project, which will focus on finalizing our studies, drafting publications, and developing our websites. In Fall, our main focus will be collaboratively drafting the higher education section of the Limits of the Numerical international project's planned edited volume. Newfield and Mandell will analyze the transcripts of our focus group meetings, Steffen will begin drafting book chapters on learning assessment, and the value of higher education working group will develop their digital timeline.

Winter 2019: As a team, we will continue to work with the international Limits group toward publication of the group's edited volume. Newfield and Mandell will begin drafting intellectual genealogies and compiling archives based on our focus group findings, while Steffen makes final determinations for disseminating the "devil's dictionary" of learning assessment, and the value working group begins to draft their book chapters.

Spring 2019: The international Limits of the Numerical edited volume will be submitted for publication. As we begin to wrap up our work on higher education, we will finish drafting our book manuscript and continue to build our online resources.

Summer 2019: Work on the project concludes with the submission of our co-authored book on metrics in higher education for publication, the production of a white paper about each area for distribution to professional organizations and faculty senates, and go-live dates for each of our online resources.

Final Products and Dissemination

The results of our research will be disseminated in the following ways:

In traditional scholarly modes:

- A co-authored scholarly book that lays out our historical and cultural theory of metrics in higher education, geared toward humanities scholars, especially those in literary studies.

- A section of an edited collection jointly produced by the international Limits project group, geared toward humanities scholars.

- Conference presentations and articles on topics related to the research, primarily in academic venues, but with some sent to more general venues as well.

- White papers about each area disseminated to professional organizations and faculty senates.

Via several open-access online resources:

- A data visualization and interactive archive of scholarly sources and oral history material based on the results of our focus group discussions with scholars in three research areas: critical university studies, reading methodologies, and eighteenth-century British women writers. This would address specifically scholars in literary studies, including undergraduate and graduate students.

- A dictionary of learning assessment terms and concepts which links them to alternative pedagogical approaches, geared toward humanities professors and instructors.

- An interactive timeline of humanistic and economic thought about the value of higher education, spanning from the eighteenth century to the present, which would address a general educated audience, including students, parents, legislators, and university administrators.

CHRISTOPHER J. NEWFIELD
Vita

Professor of English   1114 E. Haley Street
University of California   Santa Barbara, CA 93103
Santa Barbara, CA 93106
cnewf@english.ucsb.edu

EDUCATION   Ph.D.   Cornell University   1988
                     M.A.   Cornell University   1984
                     B.A.   Reed College   1980

EMPLOYMENT

2001-Present: Professor of English, University of California at Santa Barbara
2008-2011: Director, UC Education Abroad Programs in Lyon, Grenoble, Bordeaux, Paris
1995-2001: Associate Professor of English, University of California at Santa Barbara
1999-2000: Visiting Associate Professor of English, Duke University
1989-1995: Assistant Professor of English, University of California at Santa Barbara
1987-1989: Assistant Professor of English, Rice University

CURRENT RESEARCH GRANTS

"Limits of the Numerical," UCSB PI, with the University of Cambridge and the University of Chicago (3 years)

EU Marie Curie ITN: Universities in the Knowledge Economy (UNIKE), Associated Partner (European Union 2013-2017, University of Aarhaus, Denmark and five partner universities in Auckland, NZ, Bristol, UK, Ljubjana, Slovenia, Lyon, France, Porto, Portugal).

UC Humanities Research Institute Multi-Campus Working Group Grant, ""The Next California: How Will E-Learning Affect Minority-Majority California"? (2011-2013)

Center for Nanotechnology in Society, "What Happened to Solar Innovation" (project grant, 2010-2014)

NSEC Center for Nanotechnology in Society, 5 years (Co-Principal Investigator, National Center for Engineering Sciences (NCES) National Science Foundation Award No. 0531184, July 2005-2010

Renewed July 2010-2015.

The Investigative Humanities (UCSB center launch 2013-14).

IMMEDIATE PAST RESIDENTIAL FELLOWSHIP

University of Cambridge, UK, Center for Research in Arts, Social Sciences, and Humanities (CRASSH), Easter Term 2011.

PUBLICATIONS

Books and Collections

The Great Mistake: How We Wrecked Public Universities, and How We Can Fix Them   (Johns Hopkins University Press, 2016)
What Happened to Solar Innovation? (film, 80 minutes).
Can Rich Countries Still Innovate? Cultural and Technical Papers on a New Innovation Model ed. With Daryl Boudreaux (in preparation)
"The Humanities and the Crisis of the Public University," co-editor of special issue of *Representations* (2011)
"Rebuilding Public Universities," special issue editor for *Academe* (November-December 2011).
"Against the Day: The Struggle for Public Education in California," co-editor, *South Atlantic Quarterly* 110:2 (2011).
Unmaking the Public University: The Forty Year Assault on the Middle Class, (Harvard University Press, 2008). Gold Winner, 2008 Book of the Year Award, ForeWord Magazine.   Paperback edition, Spring 2011.
Ivy and Industry: Business and the Making of the American University, 1880-1980 (Durham, N.C.: Duke University Press, 2003).
The Emerson Effect: Individualism and Submission in America (Chicago: University of Chicago Press, 1996).
Mapping Multiculturalism, ed. with Avery Gordon (Minneapolis: University of Minnesota Press, 1996).
After Political Correctness: The Humanities and Society in the 1990s, ed. with Ron Strickland (Boulder, CO: Westview Press, 1995).

Public Analysis (On Line)

Remaking the University blog: founder and co-editor, 400+ posts (2007-) on higher education policy and practice
Huffington Post blogger (mutiple posts on higher education policy, innovation policy)
Nanoscience and Nanosociety blog: founder, 100+ posts on nanotech and science
Innovation Group: Center For Nanotechnology in Society website. Innovation analysis.

Commissioned Reports and White Papers

Closing the Educational Divide: What is the Role of Online Higher Education? (with Jenna Joo, Colleen Lye, Michael Meranze, Xiao Hu) (Winter 2016, forthcoming)
The Cuts Report, UC University Committee on Planning and Budget, May 2008.

Current Budget Trends and The Future of the University of California, May 2006 (with Henning Bohn, Calvin Moore, and Stanton A. Glantz)

White Paper on University-Industry Relations, UC Santa Barbara, May 2002.

Faculty Diversity in the University of California: 30 Year Trends, UCSB Divisional Committee on Affirmative Action and Diversity, June, 2001

Cultural Dynamics and Financial Prospects in a Water-Treatment Start-Up Company (consultancy report, November 2000).

Handbook of Affirmative Action, UCSB Media Group, October 1995

Articles

"The Nation's Electoral Divisions Highlight Questions about the Role of Public Universities," *Inside Higher Ed*, November 4, 2016.

"New Roles for Academia? The American University and the Knowledge Economy," *Knowledge Landscapes North America*, eds. Christian Kloeckner, Simone Knewitz and Sabine Sielke (Heidelberg: Universitätsverlag, 2016), 23-43.

"Aftermath of the MOOC Wars: Can Commercial Vendors Support Creative Higher Education?" *Learning and Teaching* 9: 2 (Summer 2016): 12–41.

"Top Trends for 2016 Higher Ed: Earth 2 Edition, *Academe Blog*, January 14, 2016.

"The Humanities as Service Departments: Facing the Budget Logic," *Profession* (Modern Languages Association), December 2015.

"Are UK Universities Being Cast Academically Adrift?" *Wonkhe*, November 17, 2015.

"Professorial Anger, Then and Now," *Chronicle Review* (October 25, 2015)

"Time for a New Strategy," *Inside Higher Ed* (July 20, 2015).

"What Is New About the New American University?" *The Los Angeles Review of Books*, April 7, 2015

"Is College Still Worth It?" *The Los Angeles Review of Books*. 29 Sept. 2014

"What are the Humanities For? Rebuilding the Public University," in Gordon Hutner and Feisal G. Mohamed, eds., *A New Deal for the Humanities: Liberal Arts and the Future of Public Higher Education* (New Brunswick: Rutgers University Press, forthcoming 2015).

Christensen's Disruptive Innovation after the Lepore Critique," *AAUP Academe Blog*, June 2014

"At Parliament's Select Committee Hearing on Student Loans," *Center for Research in Arts, Humanities and Social Sciences* on line University of Cambridge (January 2014)

"Humanities Creativity in the Age of Online," *Occasion* Fall 2013

"The Higher Education Counterreformation," *Los Angeles Review of Books* (October, 2013)

"Corporate Open Source: Intellectual Property and the Struggle over Value," *Radical Philosophy* 181 (Sept/Oct 2013): 6-12.

"On 'The Academic Rat Race,'" *Teaching and Learning in the Social Sciences* (Fall 2013).

"Where Are the Savings?" *Inside Higher Ed*, June 24, 2013.

Review of Hannah Holborn Gray, *Searching for Utopia: Universities and Their Histories*, *History of Education Quarterly* 53:1 (February 2013): 107-110.

"A Transatlantic Conversation on Responsible Innovation and Responsible Governance," (multiple authors), in *Little by Little: Expansions of Nanoscience and Emerging Technologies,* ed.

Harro van Lente, Christopher Coenen, Torsten Fleischer, Kornelia Konrad, Lotte Krabbenborg, Colin Milburn, Frank Seifert, and François Thoreau (Dordrecht: AKA-Verlag/IOS Press, 2012).

"Does Solar Energy Need a New Innovation Model? The Case of Germany," in *Little by Little: Expansions of Nanoscience and Emerging Technologies,* ed. Harro van Lente, Christopher Coenen, Torsten Fleischer, Kornelia Konrad, Lotte Krabbenborg, Colin Milburn, Frank Seifert, and François Thoreau (Dordrecht: AKA-Verlag/IOS Press, 2012), pp. 135-55.

"Learning From Solyndra: Changing Paradigms in the US Innovation System," in *Nanotechnology and Development: What's In It for Emerging Countries?* Ed. Shyama V. Ramani (Cambridge University Press, 2014), pp 39-72.

"Democrats Need a Huge Push to Fix Public Higher Education," *The Chronicle of Higher Education* November 26, 2012.

'Presidential Debate: Obama Takes a Dive', *Huffington Post*, October 12, 2012.

"Romney's America Doesn't Need Public Colleges," *The Chronicle of Higher Education,* September 25, 2012.

"La dette étudiante, une bombe à retardement," *Le Monde Diplomatique*, Sep-2012

"Obama's Second Half," in *The Imaginary and its Worlds: American Literature after the Transnational Turn*, ed. Laura Bieger, Ramon Saldivar, and Johannes Voelz (New England University Presses, 2013).

"How Unequal State Support Diminishes Degree Attainment," *Chronicle of Higher Education* (April 20, 2012), p 24.

"Is Nanoscale Collaboration Meeting Nanotechnology's Social Challenge? A Call to Nano-Normalcy," *The Social Life of Nanotechnology* ed. Barbara Herr Harthorn and John Mohr (New York: Routledge, 2012)

"Rebuilding Public Universities," Introduction to special issue of *Academe* (November-December 2011).

"Can Selective Immigration Help the Innovation Crisis?" *Huffington Post*, November 20, 2012

"Paul Ryan and the Progressive Psyche," *Huffington Post*, August 16, 2012

"France's Hollande Needs a Socialist Hypothesis," *Huffington Post*. May 9, 2012.

"Apple's Attack on the Knowledge Economy," *Huffington Post*. April 30, 2012.

"Reflections on the Significance of the Public University: An Interview with Christopher Newfield," Public Intellectuals Project, MacMaster University (November 2011).

"Reinventing Public Universities: From Public Deadlock to Bootleg U," *Western Humanities Review* LXV:3 (Fall 2011): 6-24

"Devolving Public Universities: Lessons from the American Funding Model," *Radical Philosophy* 169 (September /October 2011): 36-42.

"Public Education for the Public Good," *The Chronicle of Higher Education*, 28 August 2011, Commentary section.

"The View from 2020: How Universities Came Back," *Journal of Academic Freedom* 2 (2011).

LAURA C. MANDELL
CURRICULUM VITAE

Professional Address: Department of English, Texas A&M University, MS 4227, College Station, TX, 77843-4227. 979-845-8345; 513-560-7860 (cell). mandell@tamu.edu

EMPLOYMENT:
2011 to present: Professor of English Literature and Director, Initiative for Digital Humanities, Media, and Culture, Texas A&M University
2008 to 2011: Professor, Miami University
1999 to 2008: Associate Professor, Miami University of Ohio
    2004-2011: Affiliate, Women Studies;
    2007-2011: Affiliate, Interactive Media Studies
1993 to 1999: Assistant Professor, Miami University of Ohio, Department of English.
1992-1993: Teacher (11th and 12th grades), Albuquerque Academy

OTHER APPOINTMENTS:
Director, ARC (Applied Research Consortium, http://www.ar-c.org), 2011 to present
Director, 18thConnect (http://www.18thConnect.org), 2009 to present
Technological Editor, Romantic Circles (http://www.rc.umd.edu), 2009 to 2012
Chair, MLA Committee on Information Technology, 2009 to 2011
Associate Director, NINES (http://www.nines.org), 2007 to 2012
Director, Digital Humanities, (2008 to 2010), and Director of Research Initiatives (2006 to 2008) Interactive Media Studies Program, Miami University

INTERNET RESOURCES (peer-reviewed)
General Editor, *The Poetess Archive* (http://www.poetessarchive.org) and *The Poetess Archive Journal* (http://journals.tdl.org/paj); accepted after peer review by the Bibliography of the Modern Language Association (MLA), the Networked Interface for Nineteenth-century Electronic Scholarship (NINES; http://www.nines.org)
Technical Editor, *The Collected Letters of Robert Southey* (http://www.rc.umd.edu/editions/southey_letters)

DIGITAL TOOLS:
TypeWright, a crowd-sourcing OCR correction tool: http://www.18thconnect.org/typewright/documents
BigDIVA (Big Data Infrastructure Visualization Tool), a tool for visualizing search returns from the ARC Catalogue: http://www.bigdiva.org
Narrative Teaching Tool, a tool for teaching students about the structure of narratives: http://idhmcmain.tamu.edu/projects/160elements/FullBook.html

BOOKS:
Breaking the Book: Print Humanities in the Digital Age (Wiley-Blackwell Manifestos, 2015)
Misogynous Economies: The Business of Literature in Eighteenth-Century Britain, Univ. of Kentucky Press, 1999.
 "Feeling Real: Romantic Poetry as Melancholia's Cure," book manuscript under revision

RECENT ARTICLES and CHAPTERS (single author unless otherwise noted; names in order of percentage contribution):
Laura Mandell, Elizabeth Grumbach, and Matthew Christy. "Data Preparation for Text Mining." *Digital Humanities for Literary Studies: Theories, Methods, and Practices*. Ray Siemens and James O'Sullivan, Ed. Penn State Univ. Press (forthcoming, 2016).

"Enlightenment," in Susan Broomhall, ed., *Emotions in Early Modern Europe: An Introduction* (Routledge), pp. 265-9.

Laura Mandell, Clemens Neudecker, Apostolos Antonacoupolos, Elizabeth Grumbach, Matthew Christy, Loretta Auvil, Jacob Heil, Todd Samuelson, "Navigating the Storm: IMPACT, eMOP, and Agile Steering Standards," forthcoming from *Digital Scholarship in the Humanities* [formerly *Literary and Linguistic Computing*] 31.1 (2016): http://dx.doi.org/10.1093/llc/fqv062

"Gendering Digital Literary History: What Counts for Digital Humanities," *A New Companion to Digital Humanities*, 2nd Rev. Ed. Susan Schreibman, John Unsworth, Ray Siemens. (Malden, MA: Wiley-Blackwell, 2016): 511-24.

Laura Mandell and Elizabeth Grumbach, "The Business of Digital Humanities: Capitalism and Enlightenment," *Scholarly and Research Communication* 6.4 (2015): http://src-online.ca/index.php/src/article/view/226

Ergun Akleman, Stefano Franchi, Devkan Kaleci, Laura Mandell, Takashi Yamauchi, and Derya Akleman, "A Theoretical Framework to Represent Narrative Structures for Visual Storytelling," *Proceedings of Bridges 2015: Mathematics, Music, Art, Architecture, Culture* (2015): 129-136. http://archive.bridgesmathart.org/2015/bridges2015-129.html

Anshul Gupta, Ricardo Guitierrez-Osuna, Matthew Christy, Boris Capitanu, Loretta Auvil, Liz Grumbach, Richard Furuta, and Laura Mandell, "Automatic Assessement of OCR Quality in Historical Documents," *Proceedings of the Twenty-Ninth AAAI Conference on Artificial Intelligence*, 2015 (http://www.aaai.org/ocs/index.php/AAAI/AAAI15/paper/view/9965/9458).

Review Essay on *William Blake and the Digital Humanities* and Social, Digital, Scholarly Editing Conference, *Studies in Romanticism* 53.1 (2014): 133-44.

Elizabeth Grumbach and Laura Mandell, "Meeting Scholars Where They Are: The Advanced Research Consortium (ARC) and a Social Humanities Infrastructure," *Scholarly Research and Communication* 5.4 (2014): http://src-online.ca/index.php/src/article/viewFile/189/362

"Editorial Introduction: TEI and the C[l/r]owd," with Elena Pierazzo, 6 (Dec. 2013): np. http://jtei.revues.org/841

"Digitizing the Archive: the Necessity of an Early Modern Period," *The Journal for Early Modern Cultural Studies* 13.2 (Spring 2013): 83-92.

David Birnbaum, Violeta Ilik, Laura Mandell, "The Role of XSLT in Digital Libraries, Editions, and Cultural Exhibits," in T. Aalberg et. al., eds., TPDL 2013, LNCS 8092 (Heidelberg, Germany: Springer, 2013), pp. 482-3. http://link.springer.com/chapter/10.1007%2F978-3-642-40501-3_67

"How to Read a Literary Visualization: Network Effects in the Lake School of Romantic Poetry," with Lynda Pratt, Jonathan Jekeli, Gerald Gannod, and Travis Brown, *Digital Studies / Champ Numèrique* 3.2 (2012): http://www.digitalstudies.org/ojs/index.php/digital_studies/article/view/236/304.

"Promotion and Tenure for Digital Scholarship," *Journal of Digital Humanities* 1.4 (Fall 2012): http://journalofdigitalhumanities.org/1-4/promotion-and-tenure-for-digital-scholarship-by-laura-mandell/

"Brave New World: A Look at 18thConnect," *Age of Johnson* 21 (January 2012). Print copy flawed. Web: http://earlymodernonlinebib.files.wordpress.com/2012/10/mandell-fixed-final-oct-2012.pdf

"Evaluating Digital Scholarship," with Stephen Olsen, Susan Schreibman, *Profession 2011* (123-135). Also available online: http://www.mlajournals.org/toc/prof/2011/1

"Non-Consuming Relevance: the Grub Street Project," *The Shape of Things*, ed. Jerome McGann (Rice Univ. Press, 2010), and online: http://shapeofthings.org/papers/

"Histories of Print, Histories of Emotion," Introduction to a special issue, "Technologies of Emotion," ed. Laura Mandell, *The Eighteenth Century: Theory and Interpretation* 50.2-3 (2010).

"Special Issue: 'Scholarly Editing in the Twenty-First Century' – A Conclusion," *Literature Compass* 7.2 (2010): 120-133.

WORK IN PROGRESS
"Disciplining the Real: John Haslam, Johanna Southcott, and the Emergence of Modern Disciplines"
   (under revision for *Eighteenth Century Studies*)
 "XSLT for Humanists," book manuscript.

EDITED BOOKS:
Editor, *The Castle of Otranto and The Man of Feeling: A Longman Cultural Edition* (Boston: Longman,
   2006).

EDITED WEB RESOURCES:
Digital Humanities <http://www.muohio.edu/technologyandhumanities>, 22 August 2003: the
   bibliographies, course modules complete with assignments, and teaching instructions were
   written by me; they have been published by ELA (the Ohio Learning Network's *Electronic-
   Learning Athenaeum* <http://cscc.edu/oln/>
Anna Barbauld's Prose Works <http://www.muohio.edu/womenpoets/barbauld> (2004)
The Bijou <http://www.muohio.edu/anthologies/bijou> (2003)
Romantic Anthologies <http://www.muohio.edu/anthologies> (2001)
Romantic Chronology (co-editor with Alan Liu) <http://english.ucsb.edu:591/rchrono/default.htm>
   (1999) – retired.

BIOGRAPHY, CRITICAL INTRODUCTION, BIBLIOGRAPHY:
"Media X: A Report on the Digital Humanities from MLA 2012," inquire: journal of comparative
   literature 2.1 (January 2012), accessed 2 May 2012, <http://inquire.streetmag.org/articles/62>
Susannah Hawkins, Lady Margaret Maclean Clephane Compton (Marques of Northampton), Mary
   Panton, in *Scottish Women Poets of the Romantic Period*, Stephen Behrendt and Nancy
   Kushigian, ed. (Reston, VA: Alexander Street Press, 2001); http://www.alexanderstreetpress.com
Bibliography of Mary Leapor, *c18 Bibliographies On-Line*, gen. ed. Jack Lynch
   http://www.c18.rutgers.edu/biblio/ leapor.html

EDITING
Co-editor with Quinn Dombrowski, Programming for Humanists book series, Texas A&M University
   Press: http://programming.forhumanists.org
Editor, *PAJ* Vol. 3: https://journals.tdl.org/paj/index.php/paj/issue/view/10/showToc (2014).
Co-editor, Special Issue, *Journal of the TEI*, Issue 6, 2013.
Editor, Special Issue of *PAJ*: "Visualizing the Archive," December 2010: http://paj.muohio.edu
Editor, Special Issue of *The Eighteenth Century: Theory and Interpretation*: "Technologies of Emotion:
   The Psychic Life of Print Production, 1750-1830," 50.2-3 (2010).
General Editor, *The Poetess Archive Journal* (http://paj.muohio.edu)
Editor, inaugural issue of *The Poetess Archive Journal* (April, 2007)
General Editor, Romantic Pedagogy Commons (http://www.rc.umd.edu/pedagogies/commons)
Editor, Special Issue, Romantic Pedagogy Commons, "Innovations," *Romantic Pedagogy Commons*
   (January 2005): http://www.rc.umd.edu/pedagogies/commons/innovations/
Editor, Special Issue, "The Transatlantic Poetess," *Romanticism on the Net* 29-30 (February 2003):
   <http://www.ron.umontreal.ca/>
Co-Editor, with Michael Eberle-Sinatra, Special Issue, "Romanticism and Contemporary Culture," *Praxis*
   (Winter 2002): <http://www.rc.umd.edu/praxis/contemporary>
Co-Editor, with Michael Gamer, Special Issue "On Romanticism, the Canon, and the Web," *Romanticism
   on the Net* 10 (May 1998)
Editor, Special Issue "Romantic Anthologies," *Romanticism on the Net 7* (August, 1997), http://www-
   sul.stanford.edu/mirrors/romnet/articles.html

RECENT BOOK REVIEWS
Rev. of *Debates in Digital Humanities*, ed. Matthew K. Gold, in *Information and Culture: A Journal of History*, with Matthew Davis, Tess Habbestad, Jacob Heil, Shawn Moore, Laura Perrings, and Katayoun Torabi. 03/19/2013.
http://www.infoculturejournal.org/book_reviews/idhmc_gold_DebatesDH.
Rev. of *Bernard Mandeville's "A Modest Defence of Publick Stews": Prostitution and Its Discontents in Early Georgian England*, ed. Irwin Primer, in *The Scriblerian* 63.2 (2011): 246-7.

RECENT GRANTS, AWARDS, FELLOWSHIPS, AND SCHOLARSHIPS:
Co-PI, "Reading First Books: Multilingual, Early Modern Optical Character Recognition for Primeros Libros," with Dr. Sergio Romero, University of Texas at Austin, NEH Implementation Grant, awarded 2015; our sub-award contract for $26,301
PI, "Building a Global Research Community: ASECS," ASECS, Fall 2015-Spring 2016, $31,523
Co-PI, "The Trace of Theory," with Geoffrey Rockwell (PI), Matthew Wilkens, Stéfan Sinclair, Susan Brown, HathiTrust Advanced Collaborative Support, awarded 2015: 120 hours support from the HathiTrust Research Center.
Advisory Board Member, 7 Sisters Portal Project, Bryn Mawr and Vassar (lead schools), 2014 to present
Participant, NEH Summer Institute Grant with the Folger Library, awarded 2014
Co-Applicant in NovelTM (http://www.novel-tm.ca/): "Text Mining the Novel: Establishing the Foundations of a New Discipline," SSHRC Partnership Grant awarded March 2014: our portion is $120,000 for six years.
"ARC: Research and Student Engagement in the Digital Humanities," with Maura Ives, Amy Earhart, College of Liberal Arts Strategic Development Grant for $67,858, awarded May 23, 2013.
"OCR'ing Early Modern Text," with Richard Furuta and Ricardo Gutierrez-Osuna, Mellon Foundation Grant for $734,000 awarded September 26, 2012 for October 1, 2012 to May 1, 2015. Please see http://emop.tamu.edu for the project; the grant narrative itself, written by Laura Mandell, as well as the midterm and final reports, are available here: http://emop.tamu.edu/about#grant.
"Humanities Visualization Space," with Stephen Caffey (Art History), Philip Galanter (Visualization), Patrick Burkart (Communication), Tier One Program (TOP) Activity 2 Grant, Texas A&M, $110,000, 2012-2014.
"Assessment in the Humanities: A National Symposium," with Cecilia Shore and Paul Anderson, $9,000, awarded by the Teagle Foundation, December 2010
"18thConnect and Open-Access Full-Text," Mellon Officer's Grant for $41,000 awarded July 14, 2010.
NINES Fellow, University of Virginia, March 2010.
NCSA (National Center for Supercomputing Applications / I-CHASS (Illinois Center for Computing in the Humanities, Arts, and Science), 200,000 hours of supercomputer time for 18thConnect for OCR development, 2009-2010. Announced 29 June 2009.
http://www.ncsa.illinois.edu/News/09/0625NCSAICHASS.html

RECENT PAPERS AND SEMINARS
"Big Data and Fairness in Digital Humanities," presentation at closed meeting, "The Limits of the Numerical," Cambridge, England, 19 July 2016
"ARC as Feminist Infrastructure," about the Advanced Research Consortium, *DH2016*, panel: "Creating Feminist Infrastructure in the Digital Humanities," Krakow, Poland, 14 July 2016
"Using Keywords to Find Literary Theoretical Terms," *DH2016*, panel: The Trace of Theory: Extracting Subsets from Large Collections, Krakow, Poland, 14 July 2016
"Visualizing Gender Complexity," 3DH Meeting, Hamburg Univ., 9 June 2016:
https://lecture2go.uni-hamburg.de/veranstaltungen/-/v/19498
"Gender and Big Data: Finding or Making Stereotypes, 2.0," keynote at "Beyond Control+F: Text Mining Across the Disciplines," Univ. of Michigan, 1 Feb. 2016,
http://www.lib.umich.edu/textmining2016.

"Gender and Big Data: Finding or Making Stereotypes, 1.0," invited presentation for the eHumanities Group annual lecture, Royal Netherlands Academy of Arts and Sciences, 10 December 2015, http://www.ehumanities.nl/ehg-annual-lecture-by-laura-mandell-texas-am-university/.

"After the Scholarly Monograph," Invited Lecture, Université de Montreal, 2 December 2015.

"Whither the Scholarly Monograph?" Invited Lecture for the New Directions in Publishing Series. Brown University. 2 October 2015. Video available here: https://www.youtube.com/watch?v=NUmrXEfaGkg&feature=youtu.be

"New Modes of Scholarly Research: How Libraries Can Help," Invited Lecture for the Fall 2015 Dean's Research Lectures Series, University of Saskatchewan Libraries, 16 September 2015. http://library.usask.ca/ceblip/news/2015/dr.-laura-mandell-sept.-16-for-the-deans-research-lecture.php ; Video available: http://idhmc.tamu.edu/image-store/ARCandLibraries.html

"The Dark Side of Scale: Precision, Poetry, and Gender," Invited presentation for the Scale and Value Conference, *Modern Language Quarterly*, Washington Univ., 16 May 2015.

"BigDIVA: Search as Research," ARC Meeting Keynote, University of Toronto-Scarborough, 24 April 2015 (available here: https://www.youtube.com/watch?v=Hy4ySAQ23J4&feature=youtu.be).

"The eMOP Project: Partnering with Proprietors," and "Whither the Scholarly Monograph?" Maynooth University, European Science Foundation event, "Downstream from the Digital Humanities," by Invitation, 4-6 March, 2015.

"Big Data and the Humanities" presentation and "Scaling Up: Search as Research" keynote, as Mellon Visiting Professor in the Humanities, Univ. of Rochester, by Invitation, 19 February 2015.

"ARC's Partnerships with Proprietors: Pitfalls and Possibilities," Meeting of the Implementing New Knowledge Environments project, Whistler, CA, 27 January 2015

"Digital Editions 2.0: Lessons Learned from Donne and Cervantes," MLA 2015, Vancouver

"The Challenge of Big Data: Retooling the Humanities," Plenary for the Annual Meeting of the Council of Colleges of Arts and Sciences, San Antonio, TX, by Invitation, 6 November 2014

"eMOP so far," joint meeting of the TEI and Chicago Digital Humanities and Computer Science (DHCS) Colloquium, 23 October 2014 (available here: http://emop.tamu.edu/sites/all/themes/bluemasters/files/chicago14.pdf)

"Imminent Demise, or Potential Rejuvenation: the Future of the Scholarly Monograph," Plenary for the Association of Research Libraries Fall Forum, Washington, DC, by Invitation, 9 October 2014.

"Big Data and the Humanities: What Does a Digital Humanities Center Do?" The Liberal Arts Program, Texas A&M Univ.-Qatar, 29 September 2014.

"Visualizing Humanities Data, Big and Small," Plenary for the Digital Humanities Congress, University of Sheffield, by Invitation, 5 September 2014

EDUCATION:

Ph.D. in English, Cornell University, August 1992.

M.A. in English, Cornell University, January 1991.

B.A. (summa cum laude with Distinction) in English/French, University of New Mexico, Albuquerque, New Mexico, May 1986.

Cours de Civilisation Française, Sorbonne, Cours d'Été, Degré Supérieur B, July 1979.

TEACHING EXPERIENCE:

Programming 4 Humanists (http://www.programming4HUManists.org) Spring 2014, Fall 2014, Spring 2015, Fall 2015

XSLT course http://unixgen.muohio.edu/~chat/xslt offered at the Digital Humanities Observatory, Dublin, Ireland, 13-20 July 2009 http://www.dho.ie/ss2009 and 27 June-2 July 2010 http://www.dho.ie/ss2010; offered to faculty at Texas A&M University, 2011-2012; offered at Univ. of South Carolina, June 2013.

Host, curriculum planner, and instructor: NINES Summer Workshop at Miami University, Summer 2008
http://wiki.lib.muohio.edu/literature/index.php/NINES_Summer_Workshop

Digital Media courses (see http://www.muohio.edu/englishtech to see online materials for individual courses)
Narrative and Digital Technology, Texas A&M Univ., Fall 2013
Topics in Digital Humanities: Visualizing Knowledge (Virtual Lit Design 489/689), Texas A&M Univ.,
        Fall 2012, Spring 2013, Spring 2014, Fall 2014 (This course was approved as ENGL 304/604 in
        Spring 2014)
Honors Writing and Cultures Seminar: Humanities and Digital Technology, Miami Univ., Fall 2006
Honors Writing and Cultures Seminar: Image, Miami Univ., Fall 2007, Spring 2007
The Culture of Information: Living in a Digital World, Miami Univ., Fall 2004, Fall 2002, Fall 2001
Narrative and Digital Media, Miami Univ., Fall 2008, Fall 2007, Spring 2006, Fall 2006
Humanities and Technology, Miami Univ., Fall and Spring, 2003; Spring 2007
Culture of Information, Honors Course, Miami Univ., Fall 2004
New Technologies, New Worlds, Miami Univ., Spring 2006
Technoromanticism (graduate), Miami Univ., Fall 2004

        Traditional Courses**:**
"Psychoanalytic Writing," Co-taught with Dr. Jacob Lindy, Cincinnati Psychoanalytic Institute, Spring
        2008
"Postmodern Freud," Co-taught with Dr. Jacob Lindy, CPI, Fall 2002
Graduate Seminar: "Transatlantic Romanticism," Miami Univ., Spring 2007
Graduate Seminar: "Poetess Poetics," Miami Univ., Spring 2002
Graduate Seminar: "Artistic, Popular, Revolutionary? Canonizing Romantic Poetry," Miami
        Univ., Fall 1999
Graduate Seminar / Miami Summer Institute: "The Politics of Affect" (Transatlantic / Literature) with
        Lori Merish, Summer 1998 (Guests: Cora Kaplan, Michael Warner, Julie Ellison)
Graduate Seminar: "Sublime Prospects: Romantic Poetry," Miami Univ., Fall, 1997.
Graduate Seminar, "Rethinking Literary History: The Eighteenth-Century Novel," Miami University,
        Spring 1996. See: http://www.muohio.edu/~mandellc/novelcl.htm
Graduate Seminar, "Theories and their Histories," Miami Univ., Fall 2002, Fall 1996, Fall 1994.
Other Graduate Seminars: 605, History of the Profession; 606, Academic Publishing
British Women Writers Digitized (Topics in Digital Humanities), Spring 2009
Eighteenth-Century British Literature: The Cult of Sensibility, Fall 1999, Miami Univ.
The Early Romantic Era, Miami Univ., Spring 2006
        (http://www.users.muohio.edu/mandellc/eng339/339aSyllSpring2006.htm), Fall 2003
        (http://www.users.muohio.edu/mandellc/eng339/339SyllFall2003.htm), Fall 2001
The Early Romantic Period, Miami Univ., Fall 1997 (, Fall 1996, Fall 1995, Fall 1994, Fall, 1993. For a
        course homepage including handouts and syllabi, see:
        http://www.muohio.edu/~mandellc/eng441/ and eng441b/
The Later Romantic Era, Miami Univ., Fall 2008, Spring 2008, Spring 2007, Spring 2004
        (http://www.users.muohio.edu/mandellc/eng342/342SyllSpring2004.htm), Spring 2003, Spring
        2002
The Sublime, The Beautiful, and the Picturesque in Eighteenth-Century England, Miami Univ., Spring
        1998. A course using the Miami MOO: http://moo.muohio.edu (log in as guest, leaving password
        blank, then go to Strawberry Hill, Student Country Houses)
Introduction to Literary and Cultural Studies, ENG298, for English majors, Miami University, Spring,
        2000.
Writing about Literature, Texas A&M University, Spring 2014, Fall 2015
Survey of British Literature, literature of Great Britain to 1800, Spring 2015, Spring 2016

PROFESSIONAL ACTIVITIES
Consultant, CLIR Microgrant, Co-PIs: Charlotte Nunnes, and Philip Partner, 2015.
Editorial Board, *Frontiers in Digital Humanities: Big Data*, 2015-present
       (http://journal.frontiersin.org/journal/digital-humanities/section/big-data)
centerNet International Executive Council, 2014-present
SSHRC Doctoral Competition, Chair 2014, Committee Member 2015
Peer Reviewer, ACLS Digital Innovation Fellowships, 2014-15
Consultant, NEH/DFG Genetic Editions Grant, 2014-2015
Executive Committee, MLA, Div. on Restoration and Eighteenth-Century English Literature, 2014-
       present
Executive Committee, MLA, Comparative Literary and Cultural Studies Eighteenth Century, 2010-2014
TEI-C Board of Directors (elected), 2011 to 2013 (http://www.tei-c.org/About/board.xml)
NITLE Digital Humanities Council (appointed), 2011 to 2013
       (http://blogs.nitle.org/2011/11/01/announcing-the-nitle-digital-humanities-council/)
Advisory Board, NASSR (North American Society for Romantic Studies), 2011-2013
Co-Convener, Co-PI, NEH Summer Institute: Evaluating Digital Scholarship (sponsored by NINES at the
       University of Virginia), 2011, 2012
Architectures of the Book Editorial Board, 2011 to 2013 (http://inke.ischool.utoronto.ca/archbook/)
TAPoR Advisory Committee, 2011 to present (http://taporware.ualberta.ca/)
Editorial Board, *Eighteenth-Century Studies*, 2010-2013
Information Technology Committee, MLA, 2008 to 2011 (http://www.mla.org/comm_id); Chair, 2009-
       2011
International Editorial Board, *Digital Studies / Le champ numérique*
       http://www.digitalstudies.org/ojs/index.php/digital_studies/about/displayMembership/4
19: An Interdisciplinary Journal (Board)
Hosted the NINES Summer Conference, Miami University (22-29 July 2008)
       http://wiki.lib.muohio.edu/literature/index.php/NINES0708
NASSR Liaison to NINES, 2007 to present
Advisory Board, *Digital Dickens* (2007 to 2009)
Editor, Romantic Pedagogy Commons (2006 to 2008) http://www.rc.umd.edu/pedagogies/commons
Editorial Board, Romanticism, *Blackwell's Literature Compass* (2007 to 2011) http://www.literature-
       compass.com
Steering Committee, NINES-9S (Networked Interface for Nineteenth-century Electronic Scholarship)
       http://www.nines.org, 2003-2008, then Executive Council 2008 to present
Editorial Board, Romanticism / NINES, 2004 to present
Editorial Board, *British Women Romantic Poets, 1789-1832*, UC Davis
       <http://www.lib.ucdavis.edu/BWRP/>
Editorial Board, *Romanticism on the Net* <http://www.rc.umontreal.ca> 1998 to present
Editorial Board, *Pedagogy*, Winter 2001 (Vol. 1, issue 1) to 2005
Anthologies and Miscellanies, a web site for research on anthologies, co-authored with Rita Raley.
       <http://www.english.ucsb.edu/faculty/rraley/research/anthologies/>
The Anthologies Page, Romantic Circles, co-editor with Harriet Kramer Linkin and Rita Raley.
       <http://www.rc.umd.edu/reference/anthologies/anthologies.html>
Romantic Chronology, compiler and co-editor: <http://english.ucsb.edu:591/rchrono/default.htm>
Editor for *Update: New Romantic Canons in the Same Old Classroom*, a newsletter. Published in paper
       form, August 1995 to 1997 http://www.muohio.edu/update/

SERVICE TO TEXAS A&M UNIVERSITY
Member, Search Committee (Digital Humanities, Media, and Culture, 2012-2014).

Executive Council, College of Liberal Arts, 2012 to present.
Director, IDHMC, 2011 to present
Member, TAMU Press FAC Committee, 2014 to present

SERVICE TO MIAMI UNIVERSITY
Chair, Search Committee (Romanticism), 2009-2010
Chair, Computers, Research, and Pedagogy Committee, 2003 to 2008
Member, Department of English Graduate Committee, 1993 to 2000, 2008 to 2010.
Member, Department of English Undergraduate Studies Committee, 2001 to 2007
Member, Department of English Literature Program Committee, 2004 to 2009
Chair, Search Committee (Eighteenth-Century British Literature), 2003-2004
Member, Search Committee (Creative Writing), 2004-2005
Member, Search Committee (Medieval, Early Modern), 2006-2011
Member, IT Services Strategic Planning Committee, 2007 to 2010
Member, Committee for Enhancing Teaching Excellence, CAS, 2002-2005
Member, Graduate Council of the Graduate School, 2005-2008 Chair, Humanities and Fine Arts
        Subcommittee
Member, University Senate, 2005 to 2007

AASHISH MEHTA

1 December 2016

Contact Information

Global and International Studies Program
2111 Social Sciences and Media Studies Building
University of California-Santa Barbara
Santa Barbara, CA 93106
Email: mehta@global.ucsb.edu

Education

University of Wisconsin-Madison
Ph.D. - Agricultural and Applied Economics (2004)
Master's Certificate – Energy Analysis and Policy (2003)
M.Sc. – Economics (2000)

Oberlin College
B.A. – High Honors in Economics (1997)

Employment

University of California-Santa Barbara
Associate Professor, Global & International Studies, July 2014-Present
Assistant Professor, Global & International Studies, July 2014- June 2014

Asian Development Bank (Manila, The Philippines)
Economist: Economics and Research Department, November 2005-June 2007
Economist: East & Central Asia Department, Energy Division, July 2004-November 2005

Publications

Journal Articles

1. When development is not enough: Structural Change, Conflict and Gendered Insecurity (with Alison Brysk), *Global Society* (forthcoming).

2. Labor Regulations, Employment and Wages: Evidence from India's Apparel Sector (with Rana Hasan, Nidhi Kapoor and Asha Sundaram), *Asian Economic Policy Review* (Forthcoming)

3. Is only fair lovely in Indian politics? Consequences of skin color in a survey experiment in Delhi (with Amit Ahuja and Susan Ostermann). *Journal of Race, Ethnicity and Politics* (2016)

4. Deindustrialization? A Global Perspective (with Jesus Felipe), *Economics Letters* (2016).

5. Research Diversification and Impact: The case of National Nanoscience Development (with Patrick Herron, Cong Cao and Timothy Lenoir) *Scientometrics* (2016)

6. Comment on Jan Nederveen Pieterse's "Rethinking Modernity – add context and stir", *Sociopedia* (2015)

7. Pilferage from opaque food subsidy programs: theory and evidence (with Shikha Jha). *Food Policy* (2014)

8. Do rights at home boost rights abroad? Sexual equality and humanitarian foreign policy (with Alison Brysk) *Journal of Peace Research* (2014)

9. Self-targeted food subsidies and voice: Evidence from the Philippines (with Shikha Jha and Pilipinas Quising) *Food Policy* (2013).

10. Does industry affiliation influence wages? Evidence from Indonesia and the Asian Financial Crisis (with Wei Sun) *World Development* (2013).

11. Where have all the educated workers gone? Services and wage inequality in three Asian economies (with Jesus Felipe, Pilipinas Quising and Sheila Camingue). *Metroeconomica* (2013)

12. Corruption, Food Subsidies and Opacity: Evidence from the Philippines (with Shikha Jha), *Economics Letters* (2012)

13. Globalization and De-Globalization in Nanotechnology Research: The role of China (with Patrick Herron, Yasuyuki Motoyama, Richard Appelbaum and Tim Lenoir). *Scientometrics* (2012).

14. Economic Liberalization and Rising College Premiums in Mexico: A Reinterpretation (with Belinda Acuna Mohr). *World Development* (2012)

15. The effects of trade and services liberalization on wage inequality in India (with Rana Hasan) – *International Review of Economics and Finance* (2012)

16. Overeducation in Developing Economies: How can we test for it and what does it mean? (with Jesus Felipe, Pilipinas Quising and Sheila Camingue) – *Economics of Education Review* (2011)

17. Incomplete Property Rights, Exposure to Markets, and the Provision of Ecosystem Services in China (with Michael T. Bennett and Jintao Xu) – *China Economic Review* (2011).

18. Why Do Diplomas Pay? An Expanded Mincerian Framework Applied to Mexico (with Hector J. Villarreal). *Applied Economics.* (December 2008)

Book Chapters and Reports:

1. Asia's Economic Transformation: Where to, How and How fast? (with Jesus Felipe (lead), Roehl Briohnes, Douglas Brooks and Hubertus Verspagen). In *Key Indicators for Asia and the Pacific 2013*. Asian Development Bank (2013)

2. Inclusiveness through Food Security: The Case of the Philippines National Food Authority (with Shikha Jha), in Juzhong Zhuang (ed.) *Inequality and Inclusive Growth in Asia: Measurement, Policy Issues and Country Studies*. Anthem Press (2010).

   - Previously published as: Effectiveness of Public Spending: The Case of Rice Subsidies in the Philippines (with Shikha Jha). Asian Development Bank, Economics and Research Department Working Paper 138. 2008.

3. Production Function (with Jesus Felipe) – International Encyclopedia of the Social Sciences – 2nd Edition. (2008)

4. Power Sourcing Report: Initial Trends in the Philippines Power Market (with A. Terway, S. Gupta, N. Beronnila, and C.L. Torregosa) Sector Study for the Asian Development Bank's Energy Sector Coordinating Committee. 2007.

Invited online articles

1. How Serious are India's Manufacturing Skill Gaps? , Ideas for India (2015)
2. The Manufacturing Conundrum, (with Jesus Felipe and Changyong Rhee), World Bank Jobs and Development Website (2015)

3. [Five ways to lessen inequality as demand for labor softens worldwide](#), Huffington Post (2014).
4. [Strawberries, Chocolate and Skill Gaps](#), World Bank Jobs and Development Website (2014).
5. [Why Global students should study economics](#). Global-e, the E-journal of the Global Studies Consortium (2013)

Working Papers

1. [Manufacturing matters, but it's the jobs that count](#) (with Jesus Felipe and Changyong Rhee, 2014). Updates Asian Development Bank, Economics Working Paper Series 420.

2. [Education and the Journey to the Core: Path-dependence or Leap-frogging?](#) (with Jesus Felipe, 2014). Asian Development Bank, Economics Working Paper Series 395.

3. [Gendered Employment Trends and the Female College Boom](#) (with Vedant Koppera, 2014).

Other Work in Progress:

1. Labor regulations and India's stunted garment sector: What exactly are the connections? (with Rana Hasan, Nidhi Kapoor and Asha Sundaram)

2. Is work deglobalizing? (with Liming Chen, Jesus Felipe and Andrew Kam).

3. Trade liberalization and inequality as if Businessmen existed (with Andrew Dawson and Asha Sundaram)

4. Does the US Nanotechnology sector suffer a skills gap? (with Stacey Frederick and Rachel Parker)

5. What does growth do to everyday corruption? Exit, empowerment and voice in India's public services (with Amit Ahuja).

6. The many meanings of "skill gaps": Evidence from India's manufacturing sector (with Deboshree Ghosh and Arpita Patnaik)

7. Overschooled workers: Errors of identification and other conceptual problems.

Referee Reports

Journal articles: Applied Economics, Asia Pacific Education Review, Asia Pacific World, China Economic Review, Economic Journal, Economics of Education Review, Economies, Education Economics, Environment and Development, European Review of Agricultural Economics, Food Security, Industrial and Labor Relations Review, International Review of Economics and Finance, IZA Journal of Labor and Development, Journal of Labor Research, Journal of Peace Research, Journal of Public Economics, Metroeconomica, South African Journal of Economics, Structural Change and Economic Dynamics, World Development.

Books/proposals: Springer, University of California Press.

Consultancies/Appointments

Consultant – Skills for equitable development – Asian Development Bank (January – July 2015).

Study Team Leader – Skills and Manufacturing Jobs – Indian Council for Research on International Economic Relations (July 2014-Present)

Consultant – Education and Structural Transformation – Asian Development Bank (September 2012-October 2014)

Research Associate – Broom Center for Demography, UCSB (September 2012-Present)

Senior Collaborator – Center for Nanotechnology and Society, UCSB (July 2010-Present).

Consultant - Social Safety Nets – Asian Development Bank. (November 2008-March 2009)

Statistician – The Shop Consulting, Madison, Wisconsin (June-August 2004)

Recent Presentations

1. What does growth do to everyday corruption? Exit, empowerment and voice in India's public services (with Amit Ahuja, UCSB, Political-Economy & Development Hub, 2016)

2. Manufacturing matters… but it's the jobs that count (Midwest International Economic Development Conference, Minneapolois, 2016).

3. Is work deglobalizing? Theory & Evidence (Structural and Historical Root of Inequality, UCSB, 2016)

4. The STEM skills gap cacophony: Why industry bodies and social scientists observe the same labor market and reach totally different conclusions. (Center for Nanotechnology in Society, UCSB, 2015)

5. Firms and skills (Asian Development Bank, the Philippines, 2015)

6. Combatting Inequality in a World of Soft Labor Demand (Panel Presentation, Pacific Council for International Policy, Malibu, CA, 2014).

7. Education, Skills and International Competitiveness in an Era of Soft Labor Demand (Invited talk, World Bank, Washington, D.C., 2014)

8. Manufacturing Skill gaps in the Indian and Global Contexts (Invited Talk, Indian Council for Research on International Economic Relations, New Delhi, 2014)

9. Globalization, College Booms and Wage Inequality: Why everywhere, why now? (UCSB Global Studies Conference, 2014)

10. The Employment Effects of Nanotechnology: Informed speculation, going beyond the R&D sectors (Sustainable Nanotechnology Organization Conference, Santa Barbara, CA, 2013).

11. Education and Flexible Industrial Development (Industry Studies Association, Kansas City, MO, 2013)

12. Education, Export Diversification and Path-Dependent Development (Midwest International Economic Development Conference, Madison, WI, 2013).

13. Education and export diversification (Asian Development Bank, the Philippines, 2013).

14. Competing at home or competing abroad? Globalization and conflict at the university gates – (Invited talk, Monterey Institute for International Studies, 2013)

15. Schooling and the journey to the core: What does education do for export diversification? (UCSB Global Studies Conference, 2013)

16. Education, Export Diversification and Path-Dependent Development (Invited talk, UC-Riverside, Department of Economics, 2012).

17. Overeducation in Developing Economies: How can we test for it, and what does it mean? – invited talk (UC-Davis, Department of Agricultural and Resource Economics, 2012).

18. The scientific influence of nations: Quantity, impact and the role of international collaboration in Nanotechnology. (S-NET conference, Twente, The Netherlands, 2012)

19. Education & Structural Transformation in Asia (Invited talk, Asian Development Bank, The Philippines, 2012).

20. Polarizing wages in liberalizing developing economies: Trade, technology or Class Dynamics? (North American Global Studies Association Conference, Victoria, Canada, 2012)

21. Globalization & Deglobalization of nanotechnology research: The role of China (UCSB Global Studies Conference, 2012)

22. Food security reforms and participation: A Philippines case study (UCSB Global Studies Conference, 2012)

23. Food subsidy reforms in the Philippines - Indira Gandhi Institute for Development Research (Mumbai, India, 2010)

24. Rising college premiums in Mexico: How important is trade? - Midwest International Economic Development Conference. (Minneapolis, Minnesota, 2010)

25. Trends in Employment Composition and Returns to Schooling - Midwest International Economic Development Conference. (Madison, Wisconsin, 2008)

26. Education and Structural change in Three Asian Economies - Conference: The institutional and social dynamics of growth and distribution. (Lucca, Italy, 2008)

27. Responding to the Coffee Crisis: Lessons from Price Dynamics - International Food Policy Research Institute (Washington D.C., 2007)

28. Education and Structural change in Four Asian Economies - Eighth annual forum of the Global Development Network (Beijing, China, 2007)

Conferences Organized

Structural and Historical roots of Economic Inequality: A Global Perspectives – UCSB, 2015

First Annual Meeting of the CAREC Members' Electricity Regulators Forum – Beijing, 2005

Grants and Awards

Does the US Nanotechnology Sector Suffer a Skill Gap? – Center for Nanotechnology and Society (2014-15, $75,000)

How interconnected are global labor markets? – Social Science Research Grant Program (2013-14, $8,000)

Mapping the Global Race for National Security Technologies - Institute on Global Conflict and Cooperation (Co-grantee with Luciano Kay, 2013-14, $11,000)

Instructional Development Grant for Global 197 - UCSB Instructional Improvement Grant (2013-14; $944)

Emerging Employment Opportunities in the Global South: Implications for Employment and Education -Hellman Family Faculty Fellowship (2010-2012, $18,000)

Structural transformation and inequality in developing countries – Faculty Career Development Award (2010-2011, $8,000)

Instructional Development Grant for Global Studies 1 and 2 – UCSB Instructional Improvement Grant (Co-grantee with Esther Lezra, 2008-2009; $10,844)

Establishment of the CAREC (Central Asia Regional Economic Cooperation) Member's Electricity Regulators' Forum – Public Private Infrastructure Advisory Facility (2005-2007; $280,000) and Asian Development Bank (2005-2007; $500,000)

HEATHER M. STEFFEN

Writing Program and Department of English	520 Chapala St., Apt. A
University of California, Santa Barbara	Santa Barbara, CA 93101
Santa Barbara, CA 93106	216-268-9940
hsteffen@writing.ucsb.edu	heather.steffen@gmail.com

EDUCATION

Ph.D. Literary and Cultural Studies, Carnegie Mellon University, 2015
Dissertation "Academic Labor in an Age of Change: Criticism of the U.S. University, 1890-1930"
M.A. English (Literary and Cultural Studies), Carnegie Mellon University, 2004
B.A. English (University Honors, *magna cum laude*), Bowling Green State University, 2003

ACADEMIC POSITIONS

Postdoctoral Scholar Department of English, University of California, Santa Barbara. April 2016-present. Project: The Limits of the Numerical. PI: Christopher Newfield.

Lecturer Writing Program, University of California, Santa Barbara. 2015-present.

Special Instructor First-Year Writing Program, Department of English, Carnegie Mellon University. 2013-2014.

PUBLICATIONS

Co-Edited Volume *The Critical Pulse: Thirty-Six Credos by Contemporary Critics*. With Jeffrey J. Williams. New York: Columbia UP, 2012.

Articles "Student Internships and the Privilege to Work." *Culture and Crisis*. Ed. Joseph Ramsey. Spec. issue of *Cultural Logic* (2010): clogic.eserver.org.
- Reprinted in *Works and Days* 59/60 (Spring/Fall 2012): 379-93.
- Excerpted as "Internships and the Privilege of Working to Work" in *The Boston Occupier* (Sept. 2012): 10.

"Pack Consciousness." *the minnesota review* n.s. 71-72 (Winter/Spring 2009): 248-53.
- Reprinted in *The Critical Pulse*. Ed. Williams and Steffen.

Book Chapter "A Job that Gets Old Fast: Age Studies, Academic Labor Criticism, and the Graduate Employee." *Staging Women's Lives in Academia: Personal and Professional Life Stages in Language and Literature Workplaces*. Ed. Nan Bauer-Maglin and Michelle Massé. New York: SUNY P, 2017.

Encyclopedia Entry "Point of View / Focalization." *Blackwell Encyclopedia of Literary and Cultural Theory*. Gen. ed. Michael Ryan. Vol. ed. Gregory Castle. Vol. 1. Malden: Blackwell, 2011.

Book Reviews	Review of *More Unequal: Aspects of Class in the United States*, ed. Michael D. Yates (Monthly Review P, 2007). *Socialism and Democracy* 23.1 (March 2009): 175-78.
	Review of *Office Hours: Activism and Change in the Academy* by Cary Nelson and Stephen Watt. *Journal of the Midwest Modern Language Association* 38.1 (Spring 2005): 143-46.
Interviews	"Vegan Feminist: An Interview with Carol J. Adams." *The Feral Issue*. Ed. Heather Steffen. Spec. issue of *the minnesota review* n.s. 73-74 (Fall 2009/Spring 2010): 109-31.
	"Google Book Search: An Interview with Ben Bunnell." *the minnesota review* n.s. 69 (Fall 2007): 65-70.
	"Who's Extremist?: An Interview with Noam Chomsky." *the minnesota review* n.s. 68 (Spring 2007): 55-65.
Policy Document	*Improving Institutional Circumstances for Graduate Students in Languages and Literatures: Recommendations for Best Practices and Evaluative Questions*. (Co-author with Atia Sattar for the Committee on the Status of Graduate Students in the Profession.) New York: Modern Language Association, 2013.
Opinion	"How to Fail on the Academic Job Market." *Inside Higher Ed*. Forthcoming.
	"How to Radicalize Graduate Students." *Academe: The Magazine of the American Association of University Professors* 97.4 (July-Aug. 2011): 44-47.
	"Intellectual Proletarians in the Twentieth Century." *Chronicle of Higher Education* 28 Nov. 2010: B10-B11.
	"Graduate Humanities Education: What Should Be Done?" Forum contributor. *Chronicle of Higher Education* 4 April 2010: B15-B18.
In Progress	Book Project: *The Emergence of Academic Labor: Criticism and Work in the Progressive-Era University*. Under submission.
	Article: "Beyond Proletarianization: Imagining Academic Labor in the Modern American University." Under submission.

FELLOWSHIPS, GRANTS, & AWARDS

2016-2017	Arnhold Collaborative Research Grant for "Developing the Thinking Self: The Impact of Reflection on Metacognitive Gain during the Senior Year" (with Chris Newfield), Department of English, UCSB
Winter 2017	Professional Equity Project Grant, Conference on College Composition and Communication
Winter 2017	Non-Senate Faculty Professional Development Grant, UCSB
Winter 2016	Non-Senate Faculty Professional Development Grant, UCSB

Spring 2015	Graduate Student Service Award Nominee, Carnegie Mellon University
Spring 2014	Dissertation Writing Group Grant, Carnegie Mellon University
2012-2013	American Dissertation Fellowship, American Association of University Women
Spring 2013	Dissertation Writing Group Grant, Carnegie Mellon University
2004-2013	Literary and Cultural Studies Graduate Fellowship, Carnegie Mellon University
Fall 2012	Dissertation Writing Group Grant, Carnegie Mellon University
2012	Pauline B. Adamson Award for Excellence in Writing: First Prize in Theoretical and Research-Based Articles for Professional Journals, Carnegie Mellon University
2011	Annette Kolodny Award for an Outstanding Presentation at the MLA Convention, Women's Caucus for the Modern Languages
2011	Everett Helm Visiting Fellowship, Lilly Library, Indiana University
2010	Pauline B. Adamson Award for Excellence in Writing: First Prize in Scholarly Journal Writing, Carnegie Mellon University
2008	Graduate Student Assembly Conference Grant, Carnegie Mellon University
2003-2004	Raymond Williams Cultural Studies Fellowship, Carnegie Mellon University
1999-2003	University Professors' Scholarship, Bowling Green State University

RECENT PRESENTATIONS & CONFERENCE PARTICIPATION

Papers Presented

"The Rhetoric of Measurement against Itself." Modern Language Association Convention. Philadelphia, PA. January 5-8, 2017.

"Structural-Adjustment Philanthropy as Threat to Shared Governance." Modern Language Association Convention. Austin, TX. January 7-10, 2016.

"Five Thoughts on the Prospective Student as Resource of Hope." Doctoral Studies in a Posttenure Age Roundtable. Modern Language Association Convention. Austin, TX. January 7-10, 2016.

"Situation Normal: Crisis as Constitutive of Academic Professional Identity." Modern Language Association Convention. Vancouver, BC. January 8-11, 2015.

"Promise and Pessimism: The Modern American University in Two Early Academic Novels." Modern Language Association Convention. Vancouver, BC. January 8-11, 2015.

"'I Try Not to Prevent Them Teaching Themselves': Higher Education and the Modern in *Grey Towers*." Modernist Studies Association Conference. Pittsburgh, PA. November 6-9, 2014.

"Time to Degree and the Impossibility of Failure." Modern Language Association Convention. Chicago, IL. January 9-12, 2014.

"James McKeen Cattell's 'True Democracy of Science' and the Origins of Shared Governance in America." American Association of University Professors Annual Conference on the State of Higher Education. Washington, DC. June 12-14, 2013.

"Positioning the Professoriate: The Early-Twentieth-Century Faculty Salary Debate." Countering Contingency: Teaching, Scholarship, and Creativity in the Age of the Adjunct. Pittsburgh, PA. April 5-7, 2013.

"Academic Labor in an Age of Change." Philadelphia Branch of the American Association of University Women. Philadelphia, PA. April 17, 2013.

"Marking Time to Degree: Age Talk and the Grad School Decade." Modern Language Association. Seattle, WA. January 5-8, 2012.

"Critical University Studies: An Historical Perspective." Modern Language Association Convention. Los Angeles, CA. January 6-9, 2011.

"Organizing Intellectual Proletarians: Lessons from the Progressive-Era University." American Studies Association Meeting. San Antonio, TX. November 18-21, 2010.

Panels Organized and Chaired

"Bad Philanthropy." Modern Language Association. Austin, TX. January 7-10, 2016. Organizer.

"Fictions of the Modern University, 1910-1945." Modernist Studies Association. Pittsburgh, PA. November 6-9, 2014. Organizer.

"Time to Degree: Is a Faster Ph.D. a Better Ph.D.?" Modern Language Association. Chicago, IL. January 9-12, 2014. Organizer.

"Graduate Student Perspectives on Reforming Doctoral Study." Modern Language Association. Chicago, IL. January 9-12, 2014. Organizer and chair.

"Any 'Volunteers'?: Graduate Student Service Work." Modern Language Association. Seattle, WA. January 5-8, 2012. Organizer and chair.

"Critical University Studies." Modern Language Association. Los Angeles, CA. January 6-9, 2011. Co-organizer and chair.

"Critical Credos." Modern Language Association. Philadelphia, PA. December 27-30, 2009. Organizer and chair.

"*the minnesota review*: Revaluations." Cultural Studies Association Annual Meeting. New York, NY. May 22-24, 2008. Organizer and chair.

"Teaching the University." Rethinking the University: Labor, Knowledge, Value. Minneapolis, MN. April 11-13, 2008. Organizer and chair.

Public Talks

"New Forms of Work and the Future of Labor." Next System Teach-In. University of California, Santa Barbara. April 26-28, 2016.

"Mitigating Circumstances: Teaching Bryan Stevenson's *Just Mercy*." UCSB Reads Panel, Santa Barbara Public Library. Santa Barbara, CA. April 11, 2016.

TEACHING EXPERIENCE

Writing Program, University of California, Santa Barbara

Courses

Academic Writing (Writing 2), Fall 2015, Winter 2016, Fall 2016
Writing and Ethics (Writing 105WE), Winter and Spring 2016
Writing for the Humanities (Writing 109HU), Fall 2015

Mentoring

Faculty Mentor, Raab Writing Fellows Chelsea Brandwein and Erika Carlos for All Worked Up: A Project about Student Labor, 2016-17

Department of English, Carnegie Mellon University

Teaching Awards

Dietrich College of Humanities and Social Sciences Graduate Student Teaching Award, Carnegie Mellon University, 2011
Department of English Graduate Student Teaching Award, Carnegie Mellon University, 2011

-

Literature Courses	20th-Century American Bestselling Novels (English 235), Fall 2010 Introduction to Literary Theory and Criticism (English 370), Fall 2008 Survey of American Literature: Colonial to the Present (English 251), Fall 2007
Interp-retation and Argument (English 101)	What Should the University Be in the 21st Century?, 2012-2014 What Does It Mean to Be a Millennial Student?, 2010-2012 The Corporate University Debate, 2008-2010 Resistance and Activism: Social Change and Cultural Production, 2007 Cultural Resistance: Representation for the Hell of It?, 2005-2007 Media, Culture, Politics, 2004-2005

PROFESSIONAL ACTIVITIES

Service to the Profession	Delegate Assembly Mid-Atlantic Regional Delegate, Modern Language Association, 2013-2016 Committee on the Status of Graduate Students in the Profession, Modern Language Association, 2010-2013 Conference Organizer, Countering Contingency: Teaching, Scholarship, and Creativity in the Age of the Adjunct (Academic Workers Association of the United Steelworkers, Pittsburgh, PA, April 5-7, 2013), 2012-2013 Delegate Assembly Special Interest Delegate, Modern Language Association, 2008-2011 Managing Editor, *the minnesota review*, 2006-2010
UCSB	Write on Site Faculty Writing Group Co-Coordinator, 2016-present Dream Scholar Faculty Mentor, Undocumented Student Services, 2016-present Digital Media and Technology Committee Member, Writing Program, 2016-present Writing 105 Course Committee Member, Writing Program, 2015-present Writing 109 Course Committee Member, Writing Program, 2015-present Steward, UAW Local 5810, Postdoctoral Scholars Union, 2016-present
Carnegie Mellon University	Creator and Administrator, GradSource: An Online Graduate Student Resource Center, 2009-2014 English Graduate Student Teaching Award Committee, 2012 Organizer, Invitations to Engage: A Celebration of Literary and Cultural Studies Doctoral Student Research (Poster Session and Reception), 2012 Dietrich College of Humanities and Social Sciences College Council, 2011-2012 Steering Committee, Literary and Cultural Studies 25th Anniversary Celebration Conference, 2012 Literary and Cultural Studies Colloquium Series Steering Committee, 2006-2010 Graduate Student Assembly Representative, 2008-2009 Department of English Graduate Committee Member, 2007-2008 Graduate Representative to the Literary and Cultural Studies Program Faculty, 2006-2007
Admin-istrative Experience	Assessment Team Coordinator, First-Year English Placement Exam, First-Year Writing Program, Department of English, Carnegie Mellon University, 2007-2010

Appendix 2: Bibliography

American Academy of Arts and Sciences. *Humanities Indicators*. Last modified 2016. http://www.humanitiesindicators.org/.

American Academy of Arts and Sciences Commission on the Humanities and Social Sciences. 2013. *The Heart of the Matter: The Humanities and Social Sciences for a Vibrant, Competitive, Secure Nation*. Cambridge, MA: American Academy of Arts and Sciences.

Andriani, Pierpaolo, and Bill McKelvey. 2009. "From Gaussian to Paretian Thinking: Causes and Implications of Power Laws in Organizations." *Organization Science* 20 (6): 1053–1071.

Arrow, Kenneth J. 1962. "The Economic Implications of Learning by Doing." *The Review of Economic Studies* 29 (3): 155-73.

Arum, Richard, and Josipa Roksa. 2010. *Academically Adrift: Limited Learning on College Campuses*. Chicago: University of Chicago Press.

Arum, Richard, Josipa Roksa, and Amanda Cook. 2016. *Improving Quality in American Higher Education: Learning Outcomes and Assessments for the 21st Century*. San Francisco: Jossey-Bass.

Becker, Gary. 1964. *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education*. New York: Columbia University Press.

Benneworth, Paul, Magnus Gulbrandsen, and Ellen Hazelkorn, eds. 2016. *The Impact and Future of Arts and Humanities Research*. New York: Palgrave MacMillan.

Bérubé, Michael, and Jennifer Ruth. 2015. *The Humanities, Higher Education, and Academic Freedom: Three Necessary Arguments*. New York: Palgrave MacMillan.

Best, Stephen, and Sharon Marcus. 2009. "Surface Reading: An Introduction." *Representations* 108 (1): 1-21.

Bok, Derek. 2008. *Our Underachieving Colleges: A Candid Look at How Much Students Learn and Why They Should Be Learning More*. Princeton: Princeton University Press.

Bousquet, Marc. 2008. *How the University Works: Higher Education and the Low-Wage Nation*. New York: NYU Press.

Bowker, Geoffrey C., and Susan Leigh Star. 2000. *Sorting Things Out: Classification and Its Consequences*. Cambridge, MA: MIT Press.

Bradford, Samuel C. 1934. "Sources of Information on Specific Subjects." *Engineering* 137 (3550): 85-86.

Brooks, Rachelle L. 2011. "Making the Case for Discipline-Based Assessment." In *Literary Study, Measurement, and the Sublime: Disciplinary Assessment*, edited by Donna Heiland and Laura Rosenthal, 47-57. New York: Teagle Foundation.

Brown, Laura. 2014. "New Approaches to Pedagogy in Literature." Paper delivered at the University of California, Los Angeles, May.

Brown, Peter C., Henry L. Roediger, III, and Mark A. McDaniel. 2014. *Make It Stick: The Science of Successful Learning*. Cambridge, MA: Belknap Press.

Campbell, Corbin M. 2015. "Serving a Different Master: Assessing College Educational Quality for the Public." In *Higher Education: Handbook of Theory and Research*, Vol. 30, edited by M. B. Paulsen. No location available: Springer International.

Charney, Davida. 1996. "Empiricism Is Not a Four-Letter Word." *CCC* 47 (4): 567-93.

Cronin, Blaise, and Cassidy R. Sugimoto, eds. 2014. *Beyond Bibliometrics: Harnessing Multidimensional Indicators of Scholarly Impact*. Cambridge, MA: MIT Press.

De Bellis, Nicola. 2009. *Bibliometrics and Citation Analysis: From the Science Citation Index to Cybermetrics*. Lanham, MD: Scarecrow Press.

Delbanco, Andrew. 2012. *College: What It Is, What It Was, Is, and Should Be*. Princeton: Princeton University Press.

Deresiewicz, William. 2014. *Excellent Sheep: The Miseducation of the American Elite and the Way to a Meaningful Life*. New York: Free Press.

Dewey, John. 1916. *Democracy and Education: An Introduction to the Philosophy of Education*. New York: MacMillan.

Donoghue, Frank. 2008. *The Last Professors: The Corporate University and the Fate of the Humanities*. New York: Fordham University Press.

Emerson, Ralph Waldo. 1837. "The American Scholar." In *Digital Emerson: A Collective Archive*. http://digitalemerson.wsulibs.wsu.edu/exhibits/show/text/the-american-scholar.

Engwall, Lars, Wim Blockmans, and Denis Weaire. 2014. "Bibliometrics: Issues and Context." In *Bibliometrics: Use and Abuse in the Review of Research Performance*, edited by Lars Engwall, Wim Blockmans, and Denis Weaire. London: Portland Press.

Espeland, Wendy Nelson, and Michael Sauder. 2016. *Engines of Anxiety: Academic Rankings, Reputation, and Accountability*. New York: Russell Sage Foundation.

Fichte, Johann Gottlieb. 1794/1966. "Einige Vorlesungen über di Bestimmung des Gelehrten." In *Gesamtausgabe der Bayerischen Akademie der Wissenschaften*, edited by R. Lauth and H. Jacob. Stuttgart-Bad Canstatt: Frommann-Holzboorg.

Freire, Paolo. 1970. *Pedagogy of the Oppressed*. Trans. Myra Bergman Ramos. New York: Seabury Press.

Friedman, Milton. 1955. "The Role of Government in Education." In *Economics and the Public Interest*, edited by R. A. Solo. New Brunswick, NJ: Rutgers University Press.

Gates Foundation. 2015. *Postsecondary Success Advocacy Priorities*. Seattle: Gates Foundation.

Giroux, Henry. 2011. *On Critical Pedagogy*. New York: Bloomsbury Academic.

———. 1988. *Teachers as Intellectuals: Toward a Critical Pedagogy of Learning*. Westport, CT: Bergen and Garvey Press.

Goldin, Claudia, and Lawrence F. Katz. 2009. *The Race between Education and Technology*. Cambridge, MA: Harvard University Press.

Goldrick-Rab, Sara. 2016. *Paying the Price: College Costs, Financial Aid, and the Betrayal of the American Dream*. Chicago: University of Chicago Press.

Harpham, Geoffrey Galt. 2011. *The Humanities and the Dream of America*. Chicago: University of Chicago Press.

Hebdige, Dick. 1979. *Subculture: The Meaning of Style*. New York: Routledge.

Heckman, James J., Jora Stixrud, and Sergio Urzua. 2006. "The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior." National Bureau of Economic Research.

Heiland, Donna, and Laura Rosenthal. 2011. *Literary Study, Measurement, and the Sublime: Disciplinary Assessment*. New York: Teagle Foundation.

Hersh, Richard H. 2005. "What Does College Teach?" *The Atlantic*, November. http://www.theatlantic.com/magazine/archive/2005/11/what-does-college-teach/304306/.

Hicks, Diana, Paul Wouters, Ludo Waltman, Sarah de Rijcke, and Ismael Rafols. 2015. "Bibliometrics: The Leiden Manifesto for Research Metrics." *Nature* 520: 429–431.

hooks, bell. 1994. *Teaching to Transgress: Education as the Practice of Freedom*. New York: Routledge.

Huot, Brian, and Peggy O'Neill. 2009. *Assessing Writing: A Critical Sourcebook*. Boston: Bedford/St. Martin's.

Jaschik, Scott. 2011. "Academically Adrift." *Inside Higher Ed*, January 18. http://www.insidehighered.com/news/2011/01/18/study_finds_large_numbers_of_college_students_don_t_learn_much.

Jefferson, Thomas. 1818/1984. "Report of the Commissioners for the University of Virginia." In *Thomas Jefferson: Writings*, edited by Merrill D. Peterson. New York: Literary Classics of the United States.

Kamenetz, Anya. 2015. *The Test: Why Our Schools Are Obsessed with Standardized Testing—But You Don't Have to Be*. New York: Public Affairs.

Kant, Immanuel. 1789/1979. *The Conflict of the Faculties (Der Streit der Fakultäten)*. Trans. Mary J. Gregor. Lincoln: University of Nebraska Press.

Kerr, Clark. 1963. *The Uses of the University*. Cambridge: Harvard University Press.

Kitchin, Rob. 2014. *The Data Revolution: Big Data, Open Data, Data Infrastructures, and Their Consequences*. London: Sage.

Kuh, George D. 2008. *High-Impact Practices: What They Are, Who Has Access to Them, and Why They Matter*. Washington, DC: Association of American Colleges and Universities.

Latour, Bruno, and Steve Woolgar. 1987. *Laboratory Life: The Construction of Scientific Facts*. Princeton: Princeton University Press.

Lehman, Nicholas. 1999. *The Big Test: The Secret History of the American Meritocracy*. New York: Farrar, and Giroux.

Lorenz, Chris. 2012. "If You're So Smart, Why Are You under Surveillance? Universities, Neoliberalism and New Public Management." *Critical Inquiry* 38 (3): 599-629.

Lotka, Alfred J. 1926. "Statistics: The Frequency Distribution of Scientific Productivity." *Journal of the Washington Academy of Sciences* 16 (12): 317-25.

Love, Heather. 2010. "Close but Not Deep: Literary Ethics and the Descriptive Turn." *New Literary History* 41: 371-91.

Lumina Foundation. 2014. *The Degree Qualifications Profile*. Indianapolis: Lumina Foundation.

Mandell, Laura. 2015. *Breaking the Book: Print Humanities in the Digital Age*. Wiley-Blackwell Manifestos Series. New York: Wiley-Blackwell.

———. 2016. "Gendering Digital Literary History: What Counts for Digital Humanities." In *The Companion to Digital Humanities*, 2nd ed., edited by Susan Schreibman, Ray Siemens, John Unsworth. New York: Wiley Blackwell.

Marope, P. T. M., P. J. Wells, and E. Hazelkorn, eds. 2013. *Rankings and Accountability in Higher Education: Uses and Misuses*. New York: UNESCO Publishing.

McMahon, Walter W. 2009. *Higher Learning, Greater Good: The Private and Social Benefits of Higher Education*. Baltimore: Johns Hopkins University Press.

Merry, Sally Engle. 2016. *The Seductions of Quantification: Measuring Human Rights, Gender Violence, and Sex Trafficking*. Chicago: University of Chicago Press.

Merton, Robert K. 1968. "The Matthew Effect in Science." *Science* 159 (3810): 56-63.

Mincer, Jacob. 1958. "Investment in Human Capital and Personal Income Distribution." *The Journal of Political Economy* 66(4): 281-302.

Modern Language Association. 2009. *Report to the Teagle Foundation on the Undergraduate Major in Language and Literature*. New York: Modern Language Association. https://www.mla.org/Resources/Research/Surveys-Reports-and-Other-Documents/Teaching-Enrollments-and-Programs/MLA-Report-to-the-Teagle-Foundation-on-the-Undergraduate-Major-in-Language-and-Literature.

Moretti, Franco. 2013. *Distant Reading*. London: Verso.

Nelson, Richard R., and Sidney G. Winter. 1982. *An Evolutionary Theory of Economic Change*. Cambrdige, MA: Harvard University Press.

Newfield, Christopher. 2003. *Ivy and Industry: Business and the Making of the American University, 1880-1980*. Durham: Duke University Press.

———. 2008. *Unmaking the Public University: The Forty-Year Assault on the Middle Class*. Cambridge, MA: Harvard University Press.

———. 2014. "Is College Still Worth It?" *Los Angeles Review of Books* (29 September).

———. 2016. *The Great Mistake: How We Wrecked Public Universities and How We Can Fix Them*. Baltimore: Johns Hopkins University Press.

Newfield, Christopher, and Christopher Muellerleile. 2016. "Metrics and the Audit Society: Marketization in Open Access Publishing and Humanities Analytics." Presentation at the 21st International Conference on Science and Technology Indicators, Valencia, Spain.

Newman, John Henry. 1960. *The Idea of a University*. Edited by Martin J. Svaglic. Notre Dame, IN: University of Notre Dame Press.

Nussbaum, Martha C. 1997. *Cultivating Humanity: A Classical Defense of Reform in Liberal Education*. Cambridge, MA: Harvard University Press.

———. 2010. *Not For Profit: Why Democracy Needs the Humanities*. Princeton: Princeton University Press.

O'Neill, Peggy, Sandy Murphy, and Linda Adler-Kassner. 2012. "The Politics of Research and Assessment in Writing." In *International Advances in Writing Research*, edited by Charles Bazerman, et al. WAC Clearinghouse. http://wac.colostate.edu/books/wrab2011/.

Ordorika, Imanol, and Marion Lloyd. 2013. "A Decade of International University Rankings: A Critical Perspective from Latin America." In *Rankings and Accountability in Higher Education: Uses and Misuses*, edited by P. T. M. Marope, P. J. Wells, and E. Hazelkorn, 209-31. New York: UNESCO Publishing.

Osterloh, Margit, and Bruno S. Frey. 2010. "Academic Rankings and Research Governance." Working Paper No 482. Zurich: Institute for Empirical Research in Economics, University of Zurich: 1-29.

Porter, Theodore M. 1996. *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life*. Princeton: Princeton University Press.

Power, Michael. 1997. *The Audit Society: Rituals of Verification*. Oxford: Oxford University Press.

Psacharopoulos, George. 1973. *Returns to Education: An International Comparison*. Amsterdam: Elsevier.

Quay, James, and James Veninga. 1990. "Making Connections: The Humanities, Culture and Community." National Taskforce on Humanities and Public Scholarship. American Council of Learned Societies, Occasional Paper No. 11. http://archives.acls.org/op/op11quay.htm.

Ravitch, Diane. 2013. *Reign of Error: The Hoax of the Privatization Movement and the Danger to America's Public Schools*. New York: Vintage.

Readings, Bill. 1997. *The University in Ruins*. Cambridge, MA: Harvard University Press.

Roemer, Robin Chin, and Rachel Borchardt. 2012. "From Bibliometrics to Altmetrics: A Changing Scholarly Landscape." *College & Research Library News* 73 (10): 596-600.

Schleiermacher, Daniel Friedrich. 1808/1998. *Gelegentliche Gedanken über Universitäten in deutschem Sinn*: *Nebst einem Anhang über eine neu zu errichtende*. In *Kritische Gesamtgabe*, edited by D. Schmidt. Berlin: De Gruyter.

Schmidt, Alexander. 2013. "Self-Cultivation (*Bildung*) and Sociability between Mankind and the Nation: Fichte and Schleiermacher on Higher Education." In *Ideas of Education: Philosophy and Politics from Plato to Dewey*, edited by Elizabeth Frazer and Christopher Brooke. London: Routledge.

Schultz, Theodore W. 1961. "Investment in Human Capital." *The American Economic Review* 51(1): 1-17.

———. 1971. *Capital: The Role of Education and of Research*. New York: Free Press.

Shore, Cris, and Miri Davidson. 2014. "Beyond Collusion and Resistance: Academic–Management Relations within the Neoliberal University." *Teaching and Learning* 7 (1): 12-28.

Small, Helen. 2013. *The Value of the Humanities*. Oxford: Oxford University Press.

Spence, Michael. 1973. "Job Market Signaling." *The Quarterly Journal of Economics* 87 (3): 355-74.

Stiglitz, Joseph E. 1975. "The Theory of 'Screening,' Education, and the Distribution of Income." *The American Economic Review* 65 (3): 283-300.

Strathern, Marilyn, ed. 2000. *Audit Cultures: Anthropological Studies in Accountability, Ethics and the Academy*. London: Routledge.

Taleb, Nassim Nicholas. 2007. *The Black Swan: The Impact of the Highly Improbable*. New York: Random House.

Thurow, Lester. 1975. *Generating Inequality*. New York: Basic Books.

Ukpokodu, Omiunota. 2009. "The Practice of Transformative Pedagogy." *Journal on Excellence in College Learning* 20 (2): 43-67.

U.S. Department of Education. 2006. *A Test of Leadership: Charting the Future of U.S. Higher Education*. Washington, DC: U.S. Department of Education.

Whitin, Phyllis, and David J. Whitin. 2008. "Learning to Read the Numbers: A Critical Orientation toward Statistics." *Language Arts* 85 (6): 432-41.

Williams, Jeffrey J. "The Pedagogy of Debt." 2006. *College Literature* 33 (4): 155-69.

———. "The Post-Welfare State University." 2006. *American Literary History* 18 (1): 190-216.

Williams, Raymond. 1977. *Marxism and Literature*. London: Oxford University Press.

Wilsdon, James, et al. 2015. *The Metric Tide: Report of the Independent Review of the Role of Metrics in Research Assessment and Management*. London: Higher Education Funding Council for England.

Wolfe, Joanna. 2010. "Rhetorical Numbers: A Case for Quantitative Writing in the Composition Classroom." *CCC* 61 (3): 434-57.

Zakaria, Fareed. 2015. *In Defense of a Liberal Education*. New York: Norton.

Zipf, George K. 1935. *The Psycho-Biology of Language: An Introduction to Dynamic Philology*. London: Routledge.

Appendix 3: Supplementary Documents

Work Plan Chart

Our work plan is organized according to UC Santa Barbara's quarter system.

Time Period	All Collaborators	Research Bibliometrics	Learning Outcomes Assessment	Value of Higher Education
2017 Spring/ Summer	Attend and present at Chicago Limits of the Numerical Summit.	Obtain IRB approval for human subjects research at UCSB and TAMU. Organize CUS group.	Initial rhetorical analysis of debates about LOA.	Compile bibliographies of hum and econ on value of higher ed.
2017 Fall	Begin planning UCSB Limits Summit. Presentations at ASA.	Attend ASA in Chicago to convene CUS group. Organize Reading and 18C groups.	Research history and networks of LOA.	Collaborative reading and analysis.
2018 Winter	Planning UCSB Limits Summit. Presentations at MLA.	Attend MLA in New York to convene Reading group (Jan.). Attend ASECS in Orlando to convene 18C group (March).	Revise initial rhetorical analysis based on history and network analysis.	Comparison of terms, concepts, commensurability of hum and econ ideas.
2018 Spring	In residence at UCHRI at UC Irvine. Begin writing up results. Finalize UCSB Summit plans.	Transcription of focus group discussions.	Begin writing dictionary of LOA and creating online archive.	Begin constructing online timelines.
2018 Summer	Host UCSB Limits of the Numerical Summit. Attend Cambridge project wrap-up meeting.	Preparation and presentation of Summit papers.	Preparation and presentation of Summit papers.	Preparation and presentation of Summit papers.
2018 Fall	Draft higher ed section of Limits of the Numerical collection.	Analyze focus group transcripts.	Draft book chapters on LOA.	Complete online timeline.
2019 Winter	Continue work on Limits of the Numerical collection.	Draft intellectual genealogies and compile archives of three subdisciplines.	Continue work on book chapters. Develop dictionary and online.	Draft book chapters on value of higher ed.
2019 Spring	Submit Limits collection for publication.	Draft book chapters on bibliometrics. Develop online archive.	Finish book chapters and online resources.	Finish book chapters.
2019 Summer	Submit metrics and higher ed book for publication.	Write and disseminate white paper.	Write and disseminate white paper.	Write and disseminate white paper.

The Limits of the Numerical: New Roles for Literary Study
>Panel accepted for the Modern Language Association Convention
>January 5-8, 2017
>Philadelphia, PA
>Panelists: Christopher Newfield (chair), Laura Mandell, Heather Steffen, and Frank Pasquale

This panel aims to clarify forms of humanistic study that can use quantitative analysis without cognitive loss. While numerical analysis has been prominent for centuries, in recent years it has started to address traditional humanities issues in systematic, fundamental, and influential ways. Quantitative approaches to history, psychology, linguistics, reading, and interpretation have drawn public attention away from more familiar qualitative approaches: journalists and policymakers are now consulting data analytics providers rather than literary critics about such matters as how best to stage Shakesepeare for modern audiences. The panelists will assess the current state of the art in quantitative analysis of literary and cultural issues, and suggest not only how to critique the numerical but how to reconstruct effective hybrid methodologies.

The stakes are very large, both for the future of the humanities in universities and for large scale societal problem-solving. The health of the academic humanities is to a great extent dependent on these fields' ability to renew their status as sources of public knowledge. Helen Small has recently summarized the traditional strengths of the humanties as intepretative, methodologically pluralistic, unverifiable in the scientific sense, suspicious of proceduralism, and oriented towards the "medium of expression, "role of the perceiver," and "specificity of the individual response." Each of these core features will be defined as secondary, subjective, or non-cognitive if key quantitative approaches are not modified.

Laura Mandell's paper broaches this issue in the context of the digital humanities. In "Gender and Cultural Analytics: Finding or Making Stereotypes?" she analyzes the effects of quantitative techniques in "cultural analytics": clustering, word frequency analysis, feature extraction, named entity recognition, topic modeling, stylometrics, machine learning, etc. Focusing on Matthew Jockers' recent study, *Macroanalysis*, she argues that Jockers's methodology builds gender bias into his outputs. Comparing primarily nineteenth-century novels "based on the similarity of their computed stylistic and thematic distances from each other," he finds distinct stylistic gender differences when visualizing results. These gender differences have been taken by the media, without apparent objection from Jockers, as grounds on which to generalize about women's writing as a whole, universally, throughout time. Mandell traces this misunderstanding to the "objective illusion" in which Jockers' quantitative analyses participate, despite any and all good intentions of cultural analysts as a whole. The terms "male" and "female" writing—endemic to the fields of Stylometrics and discourse analysis—are sometimes used uncritically, without being theorized. Numbers are abstractions, as of course are words, images, but numbers are more frequently used in a way that suppresses the materialities that they represent. While this abstraction provides the insights at which quantitative analysis excels, the failure to re-contextualize the resulting metrics creates errors about causality and relationship. In the Jockers case, some users have wrongly concluded that female writing differs because it comes from female bodies. Dr. Jockers is a talented programmer and rigorous data analyst who strives constantly to eliminate bias from his own work. But by carefully re-examining quantitative analyses of women's writing in comparison with men's, Mandell show that only the theory of "gender as an analytic category" that has been developed by feminist historians, sociologists, and literary theorists can compensate for the bias introduced into numerical calculations through the very act of abstracting a simple binary opposition from a very complicated, culturally embedded materiality.

Next, Heather Steffen discusses "The Rhetoric of Measurement Against Itself." She starts by noting that universities are now fully enmeshed in what Michael Power dubbed the audit society. She frames her discussion by identifying five key "audit effects," paying special attention to the interaction of

"individualizing" and "governance" effects that encourage scholars to conform research outputs to the kinds of metrics favored by administrative and external reviewing bodies. While science and technology fields have long habituated themselves to this kind of audit discipline, it is less familiar in the humanities, and potentially more destructive. Steffen uses her position in a Writing Program to analyze how student learning assessments of writing have been adapted from preexisting assessment mechanisms. She does this in the context of prominent existing quantitative assessment instruments. She will report preliminary results from a comparison of the premium ed-tech provider edX's programmed assessment techniques with two other methods: the qualitative assessments provided by the Collegiate Learning Assessment, and efforts to regularize the evaluation of writing in the local program context. She will suggest that composition theory offers practices of qualitative assessment from which MOOC-style assessment programmers can learn.

Frank Pasquale's paper is entitled, "Beyond the False Certainties of Impact Factors, Altmetrics, and Download Counts: Qualitative & Narrative Accounts of Scholarship". Over the past two decades, scholars have expressed enormous dissatisfaction with the metricization of their fields. They have criticized the discipline, standardization, and hierarchy implicit in citation-centered ranking systems as a damaging form of academic capitalism. Accumulating the ersatz currency of reputational quantifications threatens to overwhelm the real purpose of research--just as financialization has all too often undermined the productive functions of the economy. This paper presents traditional modes of assessment (including tenure letters and festschrift tributes) as an alternative form of evaluation. It also considers how these narratives might be adapted for mid-career assessments of the depth and breadth of scholarly contributions. Drawing from the interpretive social science of Charles Taylor, the paper advances narrative and qualitative modes of evaluation to replace (or at least complement) quantification-driven metrics now ascendant in the academy.

In his comment, Christopher Newfield discusses the papers and their implications for better combinations of qualitative and quantitative approaches. Digital Humanities scholars have pioneered the most important of these within literary studies, and Newfield notes how the insights of the panel can extend that work into public debates now shaped by quantitative methods.

The Limits of the Numerical Chicago and Cambridge Teams

The University of Chicago team examines the relation between qualitative and quantitative methods in scientists' and policymakers' efforts to address the general public on climate change. In public outreach, scientists retain quantitative findings, but embed them in narratives and affective strategies derived from literature and humanistic study (e.g. Archer 2009). The Chicago team asks what rhetorical work numbers do for the general public, how recent political controversies over alleged data distortion have affected climate change debates, and whether qualitative analysis makes distinctive analytical contributions that climate scientists should take into account. The team is led by University of Chicago Professor of English James Chandler and Professor of History Dipesh Chakrabarty. Its postdoctoral scholars are political scientist Elizabeth Chatterjee and philosopher of science Gregory Lusk. Chicago will host the summer 2017 project group summit. Their research is fully funded by the Mellon Foundation ($500,000).

The University of Cambridge team asks how the numerical affects policy systems by investigating a key indicator in the British National Health Service (the QALY) and research and development paths for new pharmaceutical drugs. The UK has led the world in tying allocation of limited healthcare resources to the interpretation of quantitative economic models. The National Institute for Health and Care Excellence (NICE) assesses interventions in terms of quality-adjusted life-years (QALYs): if an intervention remains within their threshold £20,000-£30,000 per QALY, they will typically fund it, while more expensive interventions must be deliberated and may be rejected for NHS coverage based on cost. The Cambridge team is focusing on the history of attempts to quantify the human value of health treatments and well-being, as well as their epistemological and political underpinnings. They are led by Anna Alexandrova, Senior Lecturer in the Philosophy of Science, and Stephen John, Hatton Lecturer in the Philosophy of Public Policy, both from the Cambridge Department of History and Philosophy of Science. Cambridge postdoctoral researchers Gabriele Badano, a political philosopher and bioethicist, and Trenholme Junghans, an anthropologist of healthcare systems, make up the team, which is funded by the Independent Social Research Foundation (UK) and the Newton Fund (UK). The Cambridge team hosted a conference on The Uses and Abuses of Quantification in Healthcare, which the entire Limits project group attended during the final two days of our summit in Cambridge in July 2016.

Statement of History of Grants

2013-15   Multi-Campus Working Group Grant. University of California Humanities Research Institute. "The Next California: How Will E-Learning Affect Minority-Majority California?"

2015-17   "The Limits of the Numerical in Global Higher Education" Grant. Council on Research, University of California, Santa Barbara. $6,400.

2016-18   Division of Humanities and Fine Arts Seed Funding. University of California, Santa Barbara. $70,000.

2016-17   Arnhold Collaborative Research Grant. Department of English, University of California, Santa Barbara. Christopher Newfield and Heather Steffen, Co-Principal Investigators. For our study, "Developing the Thinking Self: The Impact of Reflective Writing on Metacognitive Gain during the Senior Year." $14,000.

Spring 2018   Residential Group Grant. University of California Humanities Research Institute. Amount to be determined.