

Doctoral Colloquium

iConference
 Schools

2010



FEBRUARY 3-6 • UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Doctoral Colloquium Participants

Jeanette deRichemond

School of Communication, Information, and Library Studies, Rutgers University

My research focus is the assessment of “enough” information to make a decision, in particular a medical decision determining the diagnosis of a patient. “Enough” is an important question in both information science with implications for the development of information retrieval systems, and in medicine with potential for increasing the efficient and effective use of health information.

The medical arena provides an excellent ground for the study of “enough” as the specific actions taken to achieve “enough” are specifically documented in patient records, and “enough,” the equivalent to a diagnosis in this study, is clearly delineated in patient records.

Before changing careers to become a medical information specialist, I spent more than 20 years as a medical writer. During that time, I learned a great deal about the healthcare system and the practice of medicine. As a Ph.D. candidate at Rutgers University, I continue to pursue my passion for medical information in research that I hope will make a meaningful contribution.

Currently I am investigating the possibility of using data from a medical school's clinical data repository in my research. The information required to reach each decision can also be clearly defined in medicine. These elements, which are necessary in studying the assessment of “enough,” are recorded in a patient chart. I will also conduct qualitative research in which I will gather a group of working physicians in a specialty such as cardiology.

I will present them with a case study of a patient along with a set of materials (patient history, reports of diagnostic tests, articles from medical journals, copies of recent medical journals, etc.) related to this patient as well as Internet access. Study participants will be asked to classify and evaluate each item in the portfolio, and to select and determine what will be “enough” information to develop a diagnosis. I will also interview these physicians, following an interview protocol, to obtain more information on their process assessing what is enough information to diagnose the patient.

Elke Greifender

Berlin School of Library and Information Science at Humboldt-Universität zu Berlin

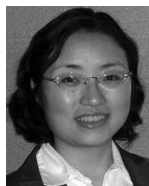
I started my LIS education in 2002. When I began, the German education system differed considerably from the U.S. system: it offered a five-year program that required two concentrations. As a result I have the equivalent of two U.S. master's degrees, one in LIS and one in French. Within the LIS program, students had to take research classes comparable to coursework in U.S. Ph.D. programs. In effect completing the LIS “Magister” was like reaching ABD status. The magister-program ended with a written thesis that had the scope of

a small Ph.D. For my thesis I analyzed the implementation of online help systems in German university OPACs. The thesis was published as a paper monograph and is also online accessible in open access on E-LIS and in our institutional repository, where the pdf has been accessed about 1750 times in the last two years (according to online statistics).

I also won the VFI-Förderpreis for my work. This is the prize for the best magister/master's thesis in information science in Austria, Switzerland and Germany.

In addition to my thesis, I have published more than 15 articles including ones in peer-reviewed journals. I currently teach at the Berlin School of Library and Information Science, where I have a regular faculty position (i.e. I am not a teaching assistant). I have given talks at diverse conferences including the German Library Association, Bobcats, and the IFLA conference. I have given workshops on user interviewing and online help systems. The National Library of Austria is paying me to give a workshop there in 2010.

Two years ago, I started working on my Ph.D. project in user research. I started studying users of digital libraries and discovered common patterns: online users differ considerably from local users—they always need a 24/7 service, they need multiple access possibilities and they are multi-local. A literature review revealed a second phenomenon: currently, most of our online user research is purely applied research, where an institution evaluates its own digital library and its users—mostly with quantitative methods. More basic research in online user research is rare. My research goals address this lack: doing basic research on the methods used in and for online user research. This includes the following questions: which methods can we use online and how can we use them? Do these methods produce data that is “purposeful” in the sense that the results answer the questions asked? What technology is necessary to implement, for example, an online focus group? What ethical limitations might restrict mouse tracking? I hope my work will contribute to online user research and that it offers an impulse for changing from quantitative approaches to more in-depth exploratory qualitative studies.



Xiao Hu

Graduate School of Library and Information Science, University of Illinois

My research interests include Information Retrieval (IR), Text/Web Mining, Digital Libraries and Web Sciences.

The ultimate goal of my research is to realize the promised impact of IR technologies on people's lives. Specifically, I work towards the goal from three directions. First, using music, arguably the universal language of mankind as the domain, I attempt to exploit the values of information

objects from a holistic point of view, by integrating technologies in multimedia processing, text analysis and machine learning. Second, I take advantage of today's large amount of user generated data on the Web to study users' needs and interactions with information, by applying text mining and natural language processing techniques. Third, I build application software systems based on my research findings, turning potentials into reality. In the near future, I will further my research in these directions by focusing on the following areas:

Optimizing Multimedia, Multi-modal Integration

Information objects should be presented to and interacted with users as complete beings, with their entire intrinsic characteristic as well as their connections with other information objects. My Ph.D. thesis aims to improve the state-of-the-art in automatic music mood classification by integrating lyric text analysis, audio processing and machine learning techniques in an optimized way. In the future, I plan to propose a general framework for selecting features in multiple modals and optimizing their combinations.

Understanding Users by Analyzing User-generated Information

User-generated metadata can complement professional metadata with users' perspectives. I have been studying two new music metadata types from user inputted tags and labels: music mood and music usage. I derived a set of music mood categories from social tags, and compared it to theoretical models in psychology which were developed in artificial laboratory settings. Besides, I have applied text mining techniques to classifying and analyzing users' reviews on music and other humanities objects. In the future, I plan to investigate how users' blogs and the music they listen to can interact with each other.

Evaluation and Application

IR is an empirical science, and development of IR needs to be evaluated both in laboratory settings and in real-life applications. I have been working on the evaluation of music mood classification systems since 2007. During the process I found that some important evaluation parameters are often taken as granted without rigorous justification. I plan to find out whether different choices on these parameters would cause (significantly) different results and explore possible reasons. I found it rewarding to build end-user oriented systems that apply my research findings. User interactions with the systems can reveal new problems that will help advance my research. *Moody* is a mood-based music recommendation system prototype developed from my Ph.D. thesis. In the future, I plan to extend *Moody* to include and interact with user profiles established by data mining on users' data such as playlists, tags and blogs.

Kerk Kee

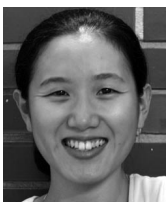
School of Information, University of Texas, Austin



My first motivation for participating in the iConference Doctoral Student Colloquium is to learn from senior faculty and fellow graduate colleagues about their philosophies, methodologies, and approaches to doing research at the intersection of people, information, and

technology. Although my home discipline is communication, my doctoral dissertation topic of “cyberinfrastructure” is inherently information-based and multidisciplinary. As a result, I had actively looked for opportunities to interact with scholars outside of my home discipline and engage in interdisciplinary dialogues, including attending doctoral colloquia organized by the *Association for Internet Researchers* and the *Organizational Communication and Information Systems Division of the Academy of Management*. I believe my engagement with the iSchool community at iConference 2010 will further expand the interdisciplinarity of my research.

Furthermore, my dissertation topic of “cyberinfrastructure” is an emerging topic, and the leading group of cyberinfrastructure scholars comes from the iSchool community. They include scholars from the iSchools at the University of Michigan, Ann Arbor, the University of California at Irvine, the University of California, Los Angeles, the University of Illinois, Urbana-Champaign, and the University of Pittsburgh, just to name a few. Although these schools do not represent the entire iSchool community, I believe their scholarship suggests that the iSchool community is an important place for me to further explore my dissertation topic of cyberinfrastructure. When I saw that one of the submission categories is ‘Information infrastructure development in the home, in organizations, in communities, in society, globally,’ I knew that this conference would allow me to learn about latest research and scholarship on information infrastructure, and to network with others interested in information infrastructure.



Kyungwon Koh

School of Library & Information Studies, Florida State University

My research area includes human information behavior in the digital age, the era of Web 2.0 and participatory culture, and particularly focuses on the youth population. I am

interested in how our diverse and globally connected digital society has transformed the relationship between information, young people, and technology. Recent studies in various disciplines suggest that today’s young people think, learn, socialize, shape identity, and seek information differently since they are immersed in digital media culture. A number of studies, however, are

based on weak empirical and theoretical foundations. They fail to provide evidence, explain why the changes happen, or display specific impact. Therefore, my long-term research goals include identifying changing information behavior, explaining interactions between digital society, information, and people, and exploring the impact of new information behavior on people’s lives and society.

My current dissertation study will lay the foundation for my future research by identifying key characteristics of contemporary youth information behavior and creating a theoretical framework or model. I am applying and further developing the theory of Radical Change, which explains that the characteristics of the digital society—Interactivity, Connectivity, and Access—influence both information resources and people’s behavior. Also, my study suggests a new holistic perspective for observing information behavior of youth—a complex process of interplay between young people’s cognitive status, identity/value negotiation, and social interaction. My dissertation study is funded by a FSU dissertation research grant and its preliminary findings have been selected for presentation in several conferences, including the juried research panel, *New Minds New Approaches*, sponsored by LRRT (The Library Research Round Table) at the ALA 2009 annual conference, and the poster sessions at the 2009 ASIS&T Annual Meeting and 2009, 2010 ALISE conferences. My co-authored article, *Radical Change Theory, Youth Information Behavior, and School Libraries* was published in a peer-reviewed, special issue of *Library Trends* in September 2009.

Besides my dissertation study, I designed and am currently conducting a study about graduate students’ online collaborative learning in the Web 2.0 era, receiving the 2010 ALISE (Association for Library and Information Science Education) research grant. I also have been involved in research projects on assessing students’ 21st century skills in video game environments and school library transformation and students’ reading. In addition, I have an international background since I received my bachelor’s degree, majoring in Library and Information Science and including teacher-librarian training courses, and worked as an intern and a student teacher librarian in South Korea, which will add diversity to the iField.

I intend to contribute to the field with my long-term research agenda, which seeks to understand the relationship between society, people, and technology, and the impact of their interaction. My current dissertation study is significant because my future work will build upon the model resulting from it, and I believe participating in the 2010 iConference doctoral student colloquium would be an excellent opportunity to communicate with other iField doctoral students and scholars.



Peyina Lin

Information School, University of Washington

My research lies in the area of social computing and social structure. I am particularly interested in the socio-technical and structural dimensions of

human-human and human-computer interactions which may be facilitated by a set of tools that emulate, compliment, extend, and add value to interactions beyond those typically carried out face-to-face. With “socio-technical and structural”, I acknowledge the forces that people are born into, beyond cognition’s control, such as social categories, network characteristics of a person’s social affiliations, and opportunities to which people are predisposed (e.g., being born into a family of multilinguals puts a child at an advantage on opportunities requiring multilingualism). When mediated by social computing tools (e.g., Facebook, twitter), these social structures create *information spaces-and-structures* around users, and open up questions about the effects that social computing tools have on social structure and vice versa, social structure on uses of social computing. For example, my professional status may determine the network that follows me on twitter; but my creative use of twitter may alter my popularity. In short, my research aims at evaluating the socio-technical patterns surrounding the information spaces-and-structures around users of social computing. By using structural investigations of users’ information spaces, design implications can be based on networking effects that jointly affect people linked by technology, rather than only on personal attributes like perceptions or use-experience.

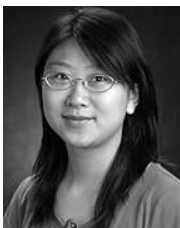
My dissertation examines the potential for social computing applications to bridge interactions across distant social groups in high schools by: 1) investigating whether uses of social computing reproduce the interrelationships between the social structures in high school and students’ extracurricular participation; and 2) exploring the patterns and dynamics of high school students’ social interactions. Specifically, does a high school student’s social group affect the student’s choice of extracurricular action? And, how do social computing applications such as Facebook facilitate or create barriers for social interaction? I am motivated by evidence that civically active high school students are more likely to be civically active adults; yet, students are predisposed to extracurricular opportunities based on social-structural factors such as prior experience and popularity. Social computing applications create awareness between friends’ friends. Thus, my work analyzes features and functions of diverse social computing applications; and grounded on empirical data, explores opportunities to socialize students differently and enable participation from students of diverse backgrounds. Adopting an

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interdisciplinary and mixed methods approach, I evaluate:

- (a) the interrelationships between the status of school-based social groups and students' choice of civic activities;
- (b) the overlap between friendships and civic participation;
- (c) how social computing tools affect the patterns observed in (a) and (b);
- (d) the validity of theories used; and
- (e) design directions

While supporting social interactions, social computing applications raise concerns about privacy, confidentiality, and the perpetuation of cohesion between similar people at the cost of division between the dissimilar. Future research directions aim at addressing such issues at the intersection of 3 strands: interaction patterns and social structure, information structure and use-behavior, and applying constructivist approaches to the design and evaluation of technologies.



Chang Liu

School of Communication and Information, Rutgers University

I am interested in the design and evaluation of systems that support interactive information retrieval, especially personalization in information retrieval systems to improve the ability of people to find

information they need. My research explores how interaction of factors, such as the nature of his or her tasks, individual characteristics and other contextual variables can influence users' search behavior and usefulness judgment. Specifically, I am interested in identifying users' representation of information goals, such as their query terms, query reformulation types and query strategies, and how it is related to the search tasks they are working on, and how it varies during the searching process.

I am now a graduate research assistant for the IMLS funded project PooDLE (the Personalization of the Digital Library Experience). During the research in this project, I found that contextual factors and individual differences are very important in influencing users searching process, and by observing users' search behaviors, such as dwell time and click through, we can learn and predict document usefulness for relevance feedback.

During my research, I focused on users' querying behaviors in different types of tasks. Learned from the server query log analysis, we created an algorithm to identify different types of query reformulation and use it in the identification of query reformulation types in interactive user studies. The drawback of query analysis on the server side is that it lacks the contextual information about information goals and it is difficult to

identify search boundaries. In my current study, I focused on query strategies and query reformulation types in task-driven experiment, and how they are influenced by task type. In my future research, I will take into account the usefulness judgment with query reformulation, and what is their relationship in different types of tasks, in order to provide implicit feedback information for the system.



Jingjing Liu

School of Communication and Information, Rutgers University

The general goal of my research is to help people locate their desired information effectively and enjoyably. This goal has been developed along my post-baccalaureate experience in

information science related areas. I used to work as a librarian in Deloitte, Touche, & Thomatsu (DTT) Beijing office, assisting consultant professionals to locate tax rules and regulations for their customers. I provided them the right information quickly and saved their time and efforts from having to spend hours and hours looking for it. With a need to learn more advanced knowledge on how to better help people find information, I started my journey for a master's in library and information science in the United States. After that, I decided to pursue a doctorate, researching to answer the general question which had been always in my mind: how can we design online information systems that can enhance people's search experience?

Among the whole range of different approaches to this general question, my research basically falls into the following three areas, which have different foci but are somehow intertwined.

1. Users' (online) information seeking behaviors.

In order to design systems that can help users, we must firstly understand users and their behaviors. Such behaviors can be the time spent in querying or reading documents, the features of documents that they view, use, and save, etc. These observable behaviors can be examined in various circumstances for certain hypotheses. For example, users may behave differently in different searching systems, with different search tasks, when users have different levels of topic knowledge, etc. There are many other factors that can be examined in future research, such as users' cognitive features, temporal, spacial, cultural and also social factors, to name a few.

2. Human computer interaction.

Interface is an important part of an online system and has been found to play an important role in affecting user's search experience. Systems that have similar collections can provide very different user experience and satisfactory degrees because of their different interface design. My future research will design and evaluate interfaces or interface features that can enhance people's overall

experience in online systems, both effectively and enjoyably.

3. Personalization of information retrieval.

This is the area of my dissertation research. This area covers many aspects that are potentially helpful in providing information about users regarding their information need in addition to what their queries convey. My dissertation looks at several factors that may be significant in telling what documents are useful for specific users: user task stage, task type, topic knowledge, and desktop information. Other factors to be addressed in future research include users' cognitive and affective features (emotions, motivations, etc.), as well as the interaction of such features with user tasks, knowledge, and so on.

Now that I have finished data analysis of my dissertation research and am writing the dissertation. My past, current, and future research has been and will be achieving novel findings on users' information interaction with online systems, which eventually help make users' search more effective and pleasurable.

Lauren Mandel

School of Library & Information Studies, Florida State University

Research Interests: Public Library Facility Evaluation & Wayfinding; and Library as Place

My primary research interest is public library facility evaluation, with a specific emphasis on evaluating facilities for their ease of wayfinding. This interest stems from my experience working as a public librarian, where I saw users struggle to navigate the physical library facility as they sought information and resources. Wayfinding is a concept that comes from architecture and environmental psychology, and it describes human ability to navigate through the built environment. Libraries are complex, built structures in which people must wayfind to locate the information they seek. Understanding human wayfinding behavior from this context can be used to improve the ease of wayfinding in library facilities, thereby facilitating user information seeking.

Research Stream #1—Wayfinding in Public Libraries, an Evaluation Tool for Facility Redesign.

I completed a research project in which I conducted unobtrusive observation in a medium-sized public library to establish a beginning picture of patron wayfinding behavior in this specific facility. This project is serving as the pilot study for my dissertation, which will be a more in-depth research project utilizing a mixed method design that consists of replicating the original unobtrusive observation and adding in-depth interviews. The ultimate aim is to produce a set of recommended modifications to the facility to improve the patrons' level of satisfaction with the library facility's wayfinding ease. Additional recommendations will focus on ways the library can use information about library user wayfinding behavior to market library materials and services, such as targeting high-traffic areas of the library

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for marketing efforts and display. These will be important contributions to this library, and further research exploring the wider applicability of these findings will be an important contribution to the wider field of library design.

Research Stream # 2—The Public Library Facility as Place

Public libraries are imbued with meaning by the librarians who work in them, the patrons who utilize them, and the communities who surround them. I am interested in understanding the impact of architecture on the feeling of the library as place, particularly from a semiotic perspective. By this I mean, how can semiotics be used to understand what are the meanings within the architectural features of a library that impact the feeling of the library as place? And, how can this information inform the design of public library facilities that more strongly evoke the feeling of a library as place?

I would like to explore this after I complete my dissertation and begin my faculty career. I would like to apply this stream not only to my research, but also to my teaching, as I feel that understanding meaning in general and the meaning of the library as place are important concepts for LIS education.

Matt Mayernik

Graduate School of Information and Education Studies, University of California, Los Angeles

Over the course of the past four years as a student in the UCLA Information Studies program, I have undertaken or been involved with a number of research projects, including studies of scholarly communication, cataloging, and scientific data practices. I am currently enrolled in the UCLA Ph.D. program because I am interested in pursuing research at the nexus of these topics, specifically, how scientific information and data can be organized in digital libraries and repositories to optimize information access and knowledge discovery for different communities.

My educational background is in the field of engineering. I graduated from the California Institute of Technology (Caltech) in 2003 with a degree in engineering and applied science, where my focus was electrical engineering and applied physics. I completed the UCLA M.L.I.S. program in June 2007, submitting a thesis entitled "Bibliographic Relationships and FRBR in online catalog collocation." I enrolled in the UCLA Ph.D. program in information studies in the fall of 2008 following a year as a post-master's student in the same department.

My primary research interest is the organization of scientific research data. This interest stems from my involvement as a graduate student researcher since 2006 in Prof. Christine Borgman's study of the scientific data practices in the Center for Embedded Networked Sensing (CENS), a UCLA-based National Science Foundation Science and Technology Center. Our studies are focusing on the use, management, and sharing of data in CENS in order to identify and address key challenges in facilitating technologies and work

practices for dealing with scientific data. This is a wide open research area. The National Science Foundation is investing heavily in the nascent "cyberinfrastructure," an information infrastructure being developed to enable new types of science through the use of high-performance computing, distributed data systems, and virtual organizations. Studies of scientific data practices are becoming more important as digital data gathering techniques mature. Data digital libraries and repositories require the development and integration of standards (metadata and technical), data organization schemes, digital preservation techniques, and user-friendly interfaces, all of which are affected by the social milieu in which they exist. In my dissertation work, I am focusing on the metadata practices of data creators in the large science and technology collaborative environment of CENS. This study stems from my interest in organization schemes for scientific data, as well as my interest in the developing professionalization of data management work (and lack thereof in many situations).

My interests in the organization of information extend beyond scientific information and data. The organization of information within libraries, in particular cataloging work, will be significantly impacted by the release of the Resource Description and Access (RDA) next generation cataloging rules. The widespread adoption of the new rules is far from certain, and the changes to library organizations and cataloging practice that result from adoption will be important research topics. I see myself as a member of the researcher community in these areas, and I am confident I can contribute to the further development of that community.

Shannon Oltmann

School of Library and Information Science, Indiana University, Bloomington

My research interests lie at the intersection of information access and information policy. This involves questions of intellectual freedom, censorship, privacy, and information ethics in various institutions, from the federal government to public and academic libraries. My research focuses on the ways in which information policies mediate access to information.

Throughout my doctoral studies, I have had several opportunities to investigate different instances of information suppression and restriction. For example, I have studied the Children's Internet Protection Act, which mandates Internet filters in public schools and public libraries that receive certain government funding; the Freedom of Information Act; access restriction guidelines in special libraries; information delivered through public libraries e-reference; and laws controlling the information delivered in sex education classes in public high schools. Each of these projects led to a presentation or a published paper. In each study, I examined the information policies—federal, state, and local laws, regulations, and procedures—that regulated the information accessible to others. I seek to uncover how and why people and institutions attempt to restrict

information. Though people frequently think of censorship only in connection with libraries, I perceive censorship occurring in many contexts.

For my dissertation, I will look at the use and misuse of science information in the federal agency. Many agencies rely on science to formulate public policy; while scientific information is sometimes used as a basis for policy, sometimes the science is suppressed, altered, or ignored. I will conduct comparative case studies of such instances, seeking to uncover the how and why of information restriction. I will examine how agencies' information behaviors mediate access to information. Most agencies have rules, guidelines, and informal, though established, procedures which describe how scientific information should be received and evaluated; these information policies are designed to regulate agencies' behavior with respect to scientific information.

I plan to continue studying how access to information is mediated through policy, through individual and institutional actions. In my career, I will examine censorship from many different angles, in varying contexts. For example, far more work remains to be done with respect to censorship in libraries; most of the relevant literature lacks theoretical depth, conceptual clarity, and methodological rigor. With an extensive background in social informatics, I pay particular attention to the unexpected consequences of information policies and of using technology to implement them. Technology can both constrain access and enable increased access to information. Recent examples include the political unrest in Burma (where the flow of information nearly ceased) and Iran (where new technology created and sustained momentum and solidarity). Over the long term, I hope to develop model(s) of censorship that describe how and why information restriction is likely to be attempted and to be successful. These relationships between information, technology, and people deserve more scrutiny and elucidation.

Cameron Tuai

School of Library and Information Science, Indiana University, Bloomington

My research interests involve understanding staff behavior in organizations whose primary product or competitive advantage lies in the production of information. As a librarian and a student of management, two observations draw me to this area.

The first is the rapid growth in both the presence and import of bundling or selling of information within the modern marketplace. The second is a shift in the competitive landscape of information organizations. Over the past 20 years, established information organizations have relied upon their expertise in developing, deploying, and managing information and communication technologies (ICTs) to create barriers to entry and to maintain competitive advantage. This situation is changing with the growing perception of ICTs as commodities (DeSanctis, 2003). I believe that the next area of competitive advantage for information

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organizations lies in the organization's capacity to foster staff behaviors that produce optimal usage of ICTs in acquiring, organizing, and disseminating information. My research in this area contributes to both information studies (IS) and organizational studies by (a) developing the models and methods for examining these types behavior within these organizations; (b) identifying the patterned variations that differentiate these information organizations from other types; and (c) bringing critical attention to an overlooked area of growing socio-economic importance.

My theoretical approach draws from both information studies and organizational theory. Orlikowski and Barley (2001) suggest that each approach offers certain advantages. Information studies provides tools for understanding how technology, as both a social and physical artifact, affects the relationship between staff behavior, ICTs, and information production processes. Organizational theory provides the

broader framework for discovering regularities, general principles, and causal relationships. Methodologically, organizational theories afford me the predictive capabilities associated with a rationalistic and quantitative research, while information studies provides the benefits of rich description associated with humanistic and qualitative approach. This combination opens a number of exciting research options, including those associated with the areas of social and organizational informatics.

In my dissertation I use structural contingency theory to study integrated library and technology services points. These units are typically established to facilitate knowledge creation through the integration of services, resources, and staff (Bailey & Tierney, 2008, pp. 2-3); and success requires a high level of behavioral integration. Structural contingency theory posits that horizontal structures best support this level of integration. However, although the literature describes

the presence of these horizontal structures, there is little evidence that these services actually exist. Explaining the presence of the expected structures, yet the absence the actual service, presents an interesting problem. My research examines whether a finer-grained analysis can resolve the apparent paradox. In the future I hope to build upon my findings and apply Information Studies concepts to examine other aspects of the differences between expectation and reality within information organizations. emphasis to become a comprehensive science education center for North Carolina.