# Consumer Health Informatics

INF 385N (G)/INF350G(UG)

**Unique number: 27500(G)/27419(UG)**

Spring 2016

Yan Zhang

School of Information

University of Texas at Austin

Class time: Wednesday 3:00-6:00PM

Classroom: UTA 1.212

Course URL: canvas.utexas.edu

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## 1. Course description

The concept of consumer health informatics, health behavior theories, health information seeking and information retrieval, various forms of consumer health systems, and the design and evaluation of such systems

## 2. Course objectives

### Upon successful completion of this course, a student will be able to:

1. Understand major theoretical perspectives to health behavior
2. Understand several widely-used health information seeking models
3. Examine health information seeking and information retrieval in the broader context of health behavior
4. Design effective consumer-oriented interventions for various purposes, including patient education, self-management, behavior change, and decision-making
5. Critically evaluate web-based consumer health information systems and applications
6. Analyze the social and ethical issues related to computerized healthcare information delivery.

## 3. Texts

Required readings will be available in Canvas: <http://canvas.utexas.edu>

## Recommended Texts:

Glanz, K., Rimer, B.K., & Viswanath, K. (2008). Health Behavior and Health Education: Theory, Research, and Practice. Jossey-bass (4th Ed.) [eBook full text online thorough the library at EBSCOhost]

Hayes, B.M., & Aspray, W. (2010). *Health Informatics: A Patient-Centered Approach to Diabetes*. Cambridge, Massachusetts, the MIT Press.

## 4. Policies

### 4.1 Policies concerning assignments

* Assignments must be submitted by midnight (11:59PM) on the due date.
* In fairness to students who turn in assignments on time, all late papers will be penalized by lowering the earned grade one grade level (e.g., from A- to B+; from B to B-) for each day that the assignment is late.
* No assignment submitted more than one week after the due date will be accepted.
* These penalties will not apply to students who know in advance that they will be submitting an assignment late, and let me know in advance. “In advance” means up until 24 hours before the class session in which the assignment is due.

### 4.2 Policies on class attendance and participation

* Reading assignments must be done before class so that you can meaningfully participate in class discussions.
* You must participate in class discussions. In-class discussions and activities play an important role in this class. Extensive participation in class discussion will be an essential element of your learning success on the subject of understanding and serving users. Active involvement in learning increases what is remembered, how well it is assimilated, and how the learning is used in new situations. Class participation will be graded as part of your final grade.
* Attending each class is highly recommended. If you know in advance that you must miss a class, let me know in advance (up until 24 hours before the class session).
* If you miss a class session, unexpectedly, get in contact with me or the TA ASAP.

UT honor code applies in this class. Academic dishonesty, such as plagiarism, cheating, or academic fraud, will not be tolerated in this class. Please refer to the UT General Information Bulletin, Appendix C, Sections 11-304 and 11-802 for more information.

The instructor is happy to provide all appropriate accommodations for qualified students with documented disabilities. The University’s Office of the Dean of Students at 471.6259, 471.4641 YYT, can provide further information and referrals as necessary.

The instructor reserves the right to make revisions or amendments to the syllabus as the semester progresses (to improve the class or to respond to unexpected events). Changes will be notified to students through Canvas and/or direct email messages.

## 5. Grading

### Grading scale

In the School of Information, the following guidelines are used in grading:

|  |  |  |
| --- | --- | --- |
| A | 4.00 | Excellent. High degree of mastery of the course material. |
| A- | 3.67 | Very good. |
| B+ | 3.33 | More than satisfactory. |
| B | 3.00 | Satisfactory. Work consistent with academic expectations of graduate students. |
| B- | 2.67 | Less than satisfactory. |
| C+ | 2.33 | Unsatisfactory. May indicate the instructor's reservations about the student's ability to meet the iSchool’s academic requirements. |
| C | 2.00 | Unsatisfactory. Indicates the instructor's reservations about the student's ability to meet the iSchool’s academic requirements. |
| C- | 1.67 | Unsatisfactory. Indicates the instructor's strong reservations about the student's ability to meet the iSchool’s academic requirements. Any course with a grade lower than C cannot be counted toward a student’s degree. |
| D | 1.00 | Unacceptable. Indicates the instructor's very strong reservations about the student's ability to meet the iSchool’s academic requirements and to earn a graduate degree. Any course with a grade lower than C cannot be counted toward a student’s degree. |
| F | 0.00 | Failing. |

Semester grades will be computed as follows:

A = 94-100; A- = 90-93
B+ = 87-89; B = 84-86; B- = 80-83
C+ = 77-79; C = 74-76; C- = 70-73
D+ = 67-69; D = 60-66
F = anything below 59

### Grading rubric for presentations in the class

For all your presentations in this class (topic presentations and final project presentations), you are encouraged to use Powerpoint or some other presentation program (such as Open Office or Lotus Symphony). The grading rubric for the presentation is listed below (Note: This [rubric](http://www.ncsu.edu/midlink/rub.pres.html) was developed by [Information Technology Evaluation Services, NC Department of Public Instruction](http://www.ncpublicschools.org/). However, it was slightly modified for our purposes.)

|  |
| --- |
| **Organization**  |
| Unacceptable | Audience cannot understand presentation because there is no sequence of information |
| Acceptable | Audience has difficulty following presentation because presenter jumps around |
| Good | Presenter presents information in logical sequence which audience can follow |
| Excellent | Presenter presents information in logical, interesting sequence which audience can follow |
| **Subject Knowledge** |
| Unacceptable | Presenter does not have grasp of information; presenter cannot answer questions about subject |
| Acceptable | Presenter is uncomfortable with information and is able to answer only rudimentary questions |
| Good | Presenter is at ease with expected answers to all questions, but fails to elaborate |
| Excellent | Presenter demonstrates full knowledge (more than required) by answering all class questions with explanations and elaboration  |
| **Graphics** |
| Unacceptable | Presenter uses superfluous graphics or no graphics |
| Acceptable | Presenter occasionally uses graphics that rarely support text and presentation |
| Good | Presenter's graphics relate to text and presentation |
| Excellent | Presenter's graphics explain and reinforce screen text and presentation |
| **Spelling & Grammar** |
| Unacceptable | Presenter's presentation has more than one misspelling and more than one grammatical error |
| Acceptable | Presentation has exactly one misspelling and/or exactly one grammatical error, which a spell- or grammar checker would catch |
| Good | Presentation has exactly one misspelling and exactly one grammatical error, which a spell- or grammar checker would not catch |
| Excellent | Presentation has no misspellings or grammatical errors |
| **Eye Contact** |
| Unacceptable | Presenter reads all of report with no eye contact |
| Acceptable | Presenter occasionally makes eye contact, but still reads most of report |
| Good | Presenter maintains eye contact most of the time but frequently returns to notes |
| Excellent | Presenter maintains eye contact with audience, seldom returning to notes  |
| **Elocution** |
| Unacceptable | Presenter mumbles, incorrectly pronounces terms, and speaks too quietly for audience in the back of room to hear |
| Acceptable | Presenter's voice is low. Presenter incorrectly pronounces terms. Audience members have difficulty hearing presentation. |
| Good | Presenter's voice is clear. Presenter pronounces most words correctly. Most audience members can hear presentation. |
| Excellent | Presenter uses a clear voice and correct, precise pronunciation of terms so that all audience members can hear presentation. |

## 6. Assignments

### 6.1 Overview

This is an overview of the assignments for this course:

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Assignment** | **Due date** | **Points** |
| 1 | Attending class  |  | 5 |
| 2 | Participating in class discussions |  | 15 |
| 3 | Show and tell | Various dates | 15 |
| 4 | Project  |  |  |
|  | Project proposal  | February 10 | 5 |
| 1st check of project progress (report in-progress) | March 9 | 5 |
| 2nd check of project progress (report in-progress) | April 13 | 5 |
| Final report | May 6 | 35 |
| Final presentation | May 4 | 15 |
|  |  |  | **100** |

### 6.2 Requirements for each assignment

1. ***Attending class***

Students are required to physically attend each class and arrive at each class promptly. Class attendance will be graded as part of your final grade. If you know in advance that you must miss a class, let me know in advance (up until 24 hours before the class session). If you miss a class session, unexpectedly, get in contact with me ASAP.

1. ***Participating in class discussions***

Before each class, students are required to prepare one question, either about the readings or inspired by the readings, and post it to Canvas (<http://canvas.utexas.edu>) by 2:00PM on each Tuesday. I will select a subset of the questions for class discussion. You should also feel free to take advantage of the communication and discussion functions provided by Canvas to initiate discussion topics, express your opinions on certain topics, or share interesting readings concerning the subject of this class.

***3. Show and tell***

Each student will make one show-and-tell over the semester. In the show-and-tell, you will select one consumer health system or application and present it to the class. The presentation could include, but not limited to, the following information:

* + Who created this system or application?
	+ For what reasons (conceptual model of the system)?
	+ What does this system or application do?
	+ How does this system work? (a demo)
	+ Are there similar systems?
	+ Evaluate the system

The systems that you present could be from, but not limited to, the following categories:

* Consumer health information retrieval systems
* Patient information and education systems
* Personal health records
* Patient portals
* Social media and online communities
* Mobile applications
* Serious games
* Others… (discuss with the instructor)

The instructor is available for discussion about the show-and-tell. Each show-and-tell lasts about 10 minutes, including a brief Q&A session (1-2 minutes) at the end of the presentation. The sessions will be evaluated based on the grading rubric for presentations (section 5.2).

***4. Final project***

The final project could be:

* A systematic review of existing literature on a particular topic of interest (e.g., how one’s locus of control is related to one’s information seeking behavior, and consumers’ information seeking behavior using smartphones). You will perform the following activities to complete a systematic review:
	+ Propose a research topic
		- State your research topic;
		- Create a search query that can effectively represent your topic;
		- Select major databases that covers your topic;
	+ Conduct searches in the databases that you selected, download search results, and store them in a reference management tool (e.g., Endnote, Zotero);
	+ Filter search results based on your inclusion and exclusion criteria and identify relevant articles;
	+ Analyze the articles and report the analysis. The final report is expected to be a regular research paper. Thus, it should include the following sections:
		- * Abstract
			* Introduction
			* Literature review
			* Research methods
			* Results
			* Discussion
			* Conclusion
	+ Present your research. You will present your final project in class. The presentation should be about 20 minutes long, with 5 additional minutes for Q&A. The grading criteria for this presentation are listed in section 5.2.
* A design project that consists of the following parts:
	+ Propose a system that you are going to design (e.g., an iPad-based app on diabetes management for young adults, a web-based information and education system for breast cancer patients, an educational tool that helps educate patients on evaluating the quality of online health information);
	+ Conduct a review of existing similar systems (define your own rubrics in ways that would support your design decisions);
	+ Conduct a review of existing theories and theoretical constructs that can help inform your design;
	+ Create a proposal outlining your design framework, major component should include goals, theoretical foundation, and system functionalities.
	+ Present your research in the class. You will present your final project in class. The presentation should be about 20 minutes long, with 5 additional minutes for Q&A. The grading criteria for this presentation are listed in section 5.2.
* Others, discuss with the instructor

Students can work on this project as a group or independently.

## 7. Schedule & Readings

### 7.1 Schedule

|  |  |  |
| --- | --- | --- |
|  | **Date** | **Subjects** |
| 1 | Jan. 20 | Introduction |
| 2 | Jan. 27 | What is CHI? |
| 3 | Feb. 3 | Health behavior at the individual level |
| 4 | Feb. 10 | Health behavior at the interpersonal level***Due: Project proposal*** |
| 5 | Feb. 17 | Consumer health information sources, information needs, and eHealth literacy***Due: Literature review*** |
| 6 | Feb. 24 | Consumer health information seeking |
| 7 | Mar. 2 |  Consumer health information retrieval |
| 8 | Mar. 9 |  Design consumer health systems: Theory-guided and user-centered approach***Due: first check of project progress (report in-progress)*** |
| 9 | Mar.16 | \*\* Spring break \*\* |
| 10 | Mar. 23 | \*\*Conference\*\* |
| 11 | Mar. 30 | Personal health records & patient portals |
| 12 | Apr. 6 | Social media and patient expertise |
| 13 | Apr. 13 | Mobile health (mHealth)***Due: second check of project progress (report in-progress)*** |
| 14 | Apr. 20 | Serious games |
| 15 | Apr. 27 | Evaluate consumer health systems |
| 16 | May 4 | ***Final presentation*** |
|  | May 6 | ***Due: Final report*** |

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### 7.2 Readings

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| --- |
| 1. January 20 **Introduction to the course and get acquainted*** Get to know the instructor
* Get to know each other
* Familiarize course structure and assignments
 |
| 2. January 27 **What is CHI?** **Readings**Eysenbach, G. (2000). Consumer health informatics. *BMJ, 320* (7251), 1713-1716. Available at: <http://www.bmj.com/content/320/7251/1713.full> Lewise, D., Chang, B.L. & Friedman, C.P. (2005). Consumer health informatics. In Lewise, et al. (Eds.). *Consumer Health Informatics: Informing Consumers and Improving Health Care* (pp.1-7). Springer. [Lewise, Chapter 1]Anderson, R. M., & Funnell, M. M. (2005). Patient empowerment: reflections on the challenge of fostering the adoption of a new paradigm. *Patient Education and Counseling, 57*(2), 153-157. Anderson, R. M., & Funnell, M. M. (2010). Patient Empowerment: Myths and Misconceptions. Patient Education and Counseling, 79(3), 277-282. Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2879465/>Hayes, B., & Aspray, W. (2010). The informatics of diabetes: A research agenda for the socially and institutionally sensitive use of information technology to improve health care. In B. Hayes, & W. Aspray (Eds.). *Health Informatics: A Patient-Centered Approach to Diabetes* (pp. 3-81). The MIT Press. [Read P.31-49: Section 3 Information problems associated with a new diagnosis of diabetes]Chaudhry, B., Wang, J., Wu, S., Maglione, M., Mojica, W., Roth, E., . . . Shekelle, P. G. (2006). Systematic review: impact of health information technology on quality, efficiency, and costs of medical care. Annals of Internal Medicine, 144(10), 742-752.   |
| 3. Feb. 3 **Health behavior at the individual level** **Readings** Patterson, R. (2001). The new focus: Integrating behavioral science into disease management. In R. Patterson (Eds.). Changing Patient Behavior: Improving Outcomes in Health and Disease Management (pp. 1-20). CA: Jossey-Bass. Champion, V.L., & Skinner, C.S. (2008). Chapter 3. The health belief model. In K. Glanz, B.K. Rimer, & K. Viswanath (Eds,). Health Behavior and Health Education: Theory, Research, and Practice (pp.45-65). Jossey-bass. Montano, D.E., & Kasprzyk, D. (2008). Chapter 4. Theory of reasoned action, theory of planed behavior, and the integrated behavioral model. In K. Glanz, B.K. Rimer, & K. Viswanath (Eds,). Health Behavior and Health Education: Theory, Research, and Practice (pp.67-96). Jossey-bass. Prochaska, J.O., Redding, C.A., & Evers, K.E. (2008). Chapter 5. The transtheoretical model and stages of change. In K. Glanz, B.K. Rimer, & K. Viswanath (Eds,). Health Behavior and Health Education: Theory, Research, and Practice (pp.97-121). Jossey-bass.  |
| 4. February 10 **Health behavior at the interpersonal level** **Readings** McAlister, A.L., Perry, C.L., & Parcel, G.S. (2008). Chap. 8. How individuals, environments, and health behaviors interact: Social cognitive theory. In K. Glanz, B.K. Rimer, & K. Viswanath (Eds,). Health Behavior and Health Education: Theory, Research, and Practice (pp.189-210). Jossey-bass. Heaney, C.A., & Israel, B. A. (2008). Chap. 9. Social networks and social support. In K. Glanz, B.K. Rimer, & K. Viswanath (Eds,). Health Behavior and Health Education: Theory, Research, and Practice (pp.45-65). Jossey-bass. Glanz, K., & Schwartz, M. (2008). Chapter 10. Stress, coping, and health behavior. In K. Glanz, B.K. Rimer, & K. Viswanath (Eds,). Health Behavior and Health Education: Theory, Research, and Practice (pp.211-236). Jossey-bass. Street, R.L., & Epstein, R.M. (2008). Chapter 11. Key interpersonal functions and health outcomes: Lessons from theory and research on clinician-patient communication. In K. Glanz, B.K. Rimer, & K. Viswanath (Eds,). Health Behavior and Health Education: Theory, Research, and Practice (pp.237-269). Jossey-bass.  |
| 5. February 17 **Consumer health information sources, information needs, and eHealth literacy*****Due: Literature review*****Readings** Review the websites: * NLM: <http://www.nlm.nih.gov>
* National Network of Libraries of Medicine, NLM: <http://nnlm.gov>; Consumer health information resources (multiple languages) <http://nnlm.gov/outreach/consumer/multi.html>
* MedlinePlus: <http://www.nlm.nih.gov/medlineplus/>
* NIH Senior: <http://nihseniorhealth.gov/>

van der Molen, B. (1999). Relating information needs to the cancer experience: 1. Information as a key coping strategy. European journal of cancer care, 8(4), 238-244.Rutten, L. J. F., Arora, N. K., Bakos, A. D., Aziz, N., & Rowland, J. (2005). Information needs and sources of information among cancer patients: a systematic review of research (1980–2003). Patient Education and Counseling, 57(3), 250-261.Doolittle, G.C., & Spaulding, A. (2005). Online cancer services: Types of services offered and associated health outcomes. Journal of Medical Internet Research, 7(3), e35. Accessed at: http://www.jmir.org/2005/3/e35/Gustafson, D. H., Hawkins, R. P., Boberg, E. W., McTavish, F., Owens, B., Wise, M., . . . Pingree, S. (2002). CHESS: 10 years of research and development in consumer health informatics for broad populations, including the underserved. *International Journal of Medical Informatics, 65*(3), 169-177. Warren, E., Footman, K., Tinelli, M., McKee, M., & Knai, C. (2014). Do cancer-specific websites meet patient's information needs? Patient Education and Counseling, 95(1), 126-136.Norman, C. D., & Skinner, H. A. (2006). eHealth literacy: Essential skills for consumer health in a networked world. Journal of Medical Internet Research, 8(2). Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1550701/?report=printable> **Recommended readings:**Squiers, L., Finney Rutten, L. J., Treiman, K., Bright, M. A., & Hesse, B. (2005). Cancer patients' information needs across the cancer care continuum: evidence from the cancer information service. Journal of Health Communication, 10 Suppl 1, 15-34.Ventura, F., Ohlén, J., & Koinberg, I. (2013). An integrative review of supportive e-health programs in cancer care. European journal of oncology nursing: the official journal of European Oncology Nursing Society, 17(4), 498-507. Greyson, D. L., & Johnson, J. L. (2015). The role of information in health behavior: A scoping study and discussion of major public health models. Journal of the Association for Information Science and Technology, (online early view). doi: 10.1002/asi.23392Klasnja, P., Civan-Hartzler, A., Unruh, K.T., & Pratt, W. (2010). Blowing in the wind : Unanchored patient information work during cancer care. In the *Proceedings of CHI 2010*, 193-202.  |
| 6. February 24 **Consumer Health information seeking behavior**  **Readings** Lenz, E. (1984). Information seeking: A component of client decisions and health behavior. *Advances in Nursing Science,* *6*(3), 59-71.Johnson, J.D., & Meischke, H. (1993). A comprehensive model of cancer-related information seeking applied to magazines. *Human Communication Research, 19*(3), 343-367. Morahan-Martin, J.M. (2004). How Internet users find, evaluate, and use online health information: A cross-cultural review. *Cyberpsychology and Behavior, 7*, 497-510. Case, D.O., Andrews, J.E., Johnson, J.D., & Allard, S.L. (2005). Avoiding verses seeking: the relationship of information seeking to avoidance, blunting, coping, dissonance, and related concepts. Journal of the Medical Library Association, 93(3). Available at: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1175801>. Lambert, S.D., Loiselle, C.G., & Macdonald, M.E. (2009). An in-depth exploration of information-seeking behavior among individuals with cancer. Part 1: Understanding differential patterns of active information seeking. *Cancer Nursing, 32*(1), 11-23. Lambert, S.D., Loiselle, C.G., & Macdonald, M.E. (2009). An in-depth exploration of information-seeking behavior among individuals with cancer. Part 2: Understanding patterns of information disinterest and avoidance. *Cancer Nursing, 32*(1), 26-36. Miller, S. (1995). Monitoring versus blunting styles of coping with cancer influence the information patients want and need about their disease. *Cancer*, *76*(2), 167-177.**Recommended readings**Zhang, Y. (2010). Contextualizing consumer health information searching: an analysis of questions in a social Q&A community. In the *Proceedings of the 1st ACM International Health Informatics Symposium*, Arlington, VA, 210-219.Mayer, D.K., Terrin, N.C., Kreps, G.L., Menon, U., McCance, K., Parsons, S.K., & Mooney K.H. (2007). Cancer survivors information seeking behaviors: A comparison of survivors who do and do not seek information about cancer. *Patient Education and Counseling, 65*, 342-350. Anker, A. E., Reinhart, A. M., & Feeley, T. H. (2011). Health information seeking: a review of measures and methods. Patient Education and Counseling, 82(3), 346-354. |
| 7. March 2 **Consumer health information retrieval****[*Show and Tell: Health information and education websites or apps*]****Readings** Eysenbach, G., & Kohler, C. (2002). How do consumers search for and appraise health information on the world wide web? Qualitative study using focus groups, usability tests, and in-depth interviews. BMJ, 324(7337), 573-577.Keselman, A., Browne, A.C., & Kaufman, D.R. (2008). Consumer health information seeking as hypothesis testing. *Journal of the American Medical Informatics Association, 15*(4), 484-495. White, R. W., & Horvitz, E. (2009). Cyberchondria: Studies of the escalation of medical concerns in Web search. ACM Transactions on Information Systems (TOIS), 27(4), Article No. 23.White, R. W., & Horvitz, E. (2014). From health search to healthcare: explorations of intention and utilization via query logs and user surveys. Journal of the American Medical Informatics Association: JAMIA, 21(1), 49-55.Zeng, Q.T., Crowell, J., Plovnick, R.M., Kim, E., Ngo, L., and Dibble, E. (2006). Assisting consumer health information retrieval with query recommendations. *Journal of American Medical Informatics Association, 13*, 80-90.  |
| 8. March 9 **Design consumer health systems: Theory-guided and user-centered approach**Keselman, A., Logan, R., Smith, C.A., Leroy, G., & Zeng-Treitler, Q. (2008). Developing informatics tools and strategies for consumer-centered health communication. *Journal of the American Medical Informatics Association, 15*(4), 473-483. Civan-Hartzler, A., McDonald, D.W., Powell, C., Skeels, M.M., Mukai, M., & Pratt, W. (2010). Bringing the field into focus: User-centered design of a patient expertise locator. In the *Proceedings of CHI 2010*, 1675-1684. Khan, D.U., Siek, K.A., Meyers, J., Haverhals, L.M., Cali, S., & Ross, S.E. (2010). Designing a personal health application for older adults to manage medications. In *Proceedings of the IHI2010*, 849-858. Toscos, T., & Connelly, K. (2010). Using behavior change theory to understand and guide technological interventions. In B. Hayes, & W. Aspray (Eds.). Health Informatics: A Patient-Centered Approach to Diabetes (pp. 295-326). The MIT Press.Vorderstrasse, A., Shaw, R. J., Blascovich, J., & Johnson, C. M. (2014). A theoretical framework for a virtual diabetes self-management community intervention. Western Journal Of Nursing Research, 36(9), 1222-1237.**Recommended readings**Johnson, C., Feinglos, M., Pereira, K., Hassell, N., Blascovich, J., Nicollerat, J., . . . Vorderstrasse, A. (2014). Feasibility and preliminary effects of a virtual environment for adults with type 2 diabetes: pilot study. JMIR research protocols, 3(2). doi: 10.2196/resprot.3045Street, R. L. (2003). Mediated consumer-provider communication in cancer care: the empowering potential of new technologies. Patient Education and Counseling, 50(1), 99-104.Valdez, R. S., Holden, R. J., Novak, L. L., & Veinot, T. C. (2014). Transforming consumer health informatics through a patient work framework: connecting patients to context. Journal of the American Medical Informatics Association: JAMIA. doi: 10.1136/amiajnl-2014-002826  |
| 9. March 16 \*\*Spring break\* |
| 10. March 23 \*\*Conference\*\* |
| 11. March 30 **Personal health records & Patient portals****[*Show and Tell*]****Readings** Kim, M. I., & Johnson, K. B. (2002). Personal health records: Evaluation of functionality and utility. *Journal of the American Medical Informatics Association, 9*(2), 171-180.Ueckert, F., Goerz, M., Ataian, M., Tessmann, S., & Prokosch, H.U. (2003). Empowerment of patients and communication with health care professionals through an electronic health record. *International Journal of Medical Informatics, 70*, 99-108.Ancker, J. S., Barrón, Y., Rockoff, M. L., Hauser, D., Pichardo, M., Szerencsy, A., & Calman, N. (2011). Use of an electronic patient portal among disadvantaged populations. Journal of General Internal Medicine, 26(10), 1117-1123.Sarkar, U., Karter, A. J., Liu, J. Y., Adler, N. E., Nguyen, R., López, A., & Schillinger, D. (2010). The Literacy Divide: Health Literacy and the Use of an Internet-Based Patient Portal in an Integrated Health System—Results from the Diabetes Study of Northern California (DISTANCE). Journal of Health Communication, 15(sup2), 183-196.Otte-Trojel, T., de Bont, A., Rundall, T. G., & van de Klundert, J. (2014). How outcomes are achieved through patient portals: a realist review. Journal of the American Medical Informatics Association: JAMIA, 21(4), 751-757.**Recommended readings**Huba, N., & Zhang, Y. (2012). Designing patient-centered personal health records (PHRs): Healthcare professionals’ perspective on patient generated data. Journal of Medical Systems, 36(6), 3893-3905.Marchionini, G., Rimer, B.K., & Wildemuth, B. (2007). Evidence base for personal health record usability - final report to the national cancer institute. Technical report. The University of North Carolina at Chapel Hill. Accessed at: <http://www.ils.unc.edu/phr/files/final%20report%20010307.pdf> Beard, L., Schein, R., Morra, D., Wilson, K., & Keelan, J. (2012). The challenges in making electronic health records accessible to patients. Journal of the American Medical Informatics Association: JAMIA, 19(1), 116-120. |
| 12. April 6 **Social media and patient expertise****[*Show and Tell*]****Readings** Frost, J., & Massagli, M. (2008). Social use of personal health information within PatientsLikeMe, an online patient community: What can happen when patients have access to one another’s data. *Journal of Medical Internet Research, 10*(3). Accessed at: <http://www.jmir.org/2008/3/e15/> Hawn, C. (2009). Take two aspirin and tweet me in the morning: How Twitter, Facebook, and other social media are reshaping health care. *Health Affairs, 28*(2), 361-368.Preece, J. (1998). Empathic communities: researching out across the web. *Interactions, March + April*, 32-43. Eysenbach, G., Powell, J., Englesakis, M., Rizo, C., & Stern, A. (2004). Health related virtual communities and electronic support groups: Systematic review of the effects of online peer to peer interactions. BMJ, 328(7449). Accessed at: <http://www.bmj.com/content/328/7449/1166.full.pdf> Hartzler, A., & Pratt, W. (2011). Managing the personal side of health: how patient expertise differs from the expertise of clinicians. Journal of Medical Internet Research, 13(3). doi: 10.2196/jmir.1728. Accessed at: <http://www.jmir.org/2011/3/e62/> **Recommended reading**De Choudhury, M., Morris, M. R., & White, R. W. (2014). Seeking and Sharing Health Information Online: Comparing Search Engines and Social Media. In Proceedings of CHI 2014, 1365-1375.  |
| 13. April 13 **Mobile health (mHealth)** **[*Show and Tell*]****Readings** Klasnja, P., & Pratt, W. (2012). Healthcare in the pocket: Mapping the space of mobile-phone health interventions. Journal of Biomedical Informatics. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3272165/Fiordelli, M., Diviani, N., & Schulz, P. J. (2013). Mapping mHealth research: A decade of evolution. Journal of Medical Internet Research, 15(5). Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3668610/> Mynatt, E.D., Abowd, G.D., Mamykina, L., & Kientz, J.A. (2010). Understanding the potential of ubiquitous computing for chronic disease management. In B. Hayes, & W. Aspray (Eds.). *Health Informatics: A Patient-Centered Approach to Diabetes* (pp. 85-106). The MIT Press.Mamykina, L., & Mynatt, E.D. (2010). An iterative discovery approach in designing ubicomp technologies that assist individuals in managing diabetes. In B. Hayes, & W. Aspray (Eds.). *Health Informatics: A Patient-Centered Approach to Diabetes* (pp. 107-128). The MIT Press.Pandey, A., Hasan, S., Dubey, D., & Sarangi, S. (2013). Smartphone Apps as a Source of Cancer Information: Changing Trends in Health Information-Seeking Behavior. Journal of Cancer Education, 28(1), 138-142.**Recommended readings**(A related paper) Morris, M., Lundell, J., & Dishman, E. (2004). Catalyzing social interaction with ubiquitous computing: A needs assessment of elders coping with cognitive decline. In the Proceedings of the CHI 2004, 1151-1154. Orwat, C., Graefe, A., & Faulwasser, T. (2008). Towards pervasive computing in health care – A literature review. BMC Medical Informatics and Decision Making, 8(26). Accessed at: <http://www.biomedcentral.com/content/pdf/1472-6947-8-26.pdf> Barton, A. J. (2012). The regulation of mobile health applications. BMC Medicine, 10(1). Available at: <http://www.biomedcentral.com/1741-7015/10/46>.Mosa, A. S. M., Yoo, I., & Sheets, L. (2012). A Systematic Review of Healthcare Applications for Smartphones. BMC Medical Informatics and Decision Making, 12(1). Available at: <http://www.biomedcentral.com/1472-6947/12/67/?referrer=Baker>  |
| 14. April 20 **Games for health & Privacy****[*Show and Tell*]****Readings** Skiba, D. (2008). Games for health. Nursing Education Perspectives, 29(4), 230-232.Read J.L. (2011). Interactive games to promote behavior change in prevention and treatment. Journal of American Medical Association, 305(16), 1704-1705. Harris, L., DeShazo, J., & Pratt, W. (2010). Diabetes and obesity: Can videogames help? In B. Hayes, & W. Aspray (Eds.). *Health Informatics: A Patient-Centered Approach to Diabetes* (pp. 131-149). The MIT Press. Piper, A. M., O’Brien, E., Morris, M. R., & Winograd, T. (2006). SIDES: A cooperative tabletop computer game for social skills development. In *Proceedings of CSCW’06*, 1-9. Rindfleisch, T. (1997). Privacy, information technology, and health care. *Communications of the ACM 40*(8), 93-100.Williams, J. (2010). Social networking applications in health care: Threats to the privacy and security of health information. In the *Proceedings of SEHC’10*, 39-49. Trotter, F., & Ublman, D. (2011). A Guide for IT Staff in Health Care: Meaningful Use and Beyond. O’Reilly. Chapter 12: HIPPA: The far-reaching healthcare regulation.  |
| 15. April 27 **Evaluate consumer health systems**Gustafson, D. H., Hawkins, R., Boberg, E., Pingree, S., Serlin, R. E., Graziano, F., & Chan, C. L. (1999). Impact of a patient-centered, computer-based health information/support system. American Journal of Preventive Medicine, 16(1), 1-9.Pingree, S., Hawkins, R., Baker, T., duBenske, L., Roberts, L. J., & Gustafson, D. H. (2010). The value of theory for enhancing and understanding e-health interventions. American Journal of Preventive Medicine, 38(1), 103-109.Kushniruk, A. (2002). Evaluation in the design of health information systems : Application of approaches emerging from usability engineering. *Computers in Biology and Medicine, 32*, 141-149. Or, C. K. L., & Karsh, B.-T. (2009). A systematic review of patient acceptance of consumer health information technology. Journal of the American Medical Informatics Association: JAMIA, 16(4), 550-560.Robinson, T. N., Patrick, K., Eng, T. R., & Gustafson, D. (1998). An evidence-based approach to interactive health communication: a challenge to medicine in the information age. Science Panel on Interactive Communication and Health. JAMA, 280(14), 1264-1269. [Note: An evaluation template at the end of the paper]**Recommended readings**LeRouge, C., & Wickramasinghe, N. (2013). A review of user-centered design for diabetes-related consumer health informatics technologies. Journal of Diabetes Science and Technology, 7(4), 1039-1056. |
| 16. May 4 **Student presentation**  |
| May 6  ***Due: Final report***  |