



**Mobilizing Computable Biomedical Knowledge (MCBK) Training
Online Pilot Class
December 15, 2021 to January 6, 2022
Funded by IMLS Grant RE-250159-OLS-21
Dr. Deborah Swain, Project Director**

Instructors and Speakers Information

Program Director: Dr. Deborah Swain (dswain@nccu.edu)

Co-Program Director: Dr. Christopher Cunningham (chris.cunningham@nccu.edu)

Resource Materials

Research: All classes will be recorded to provide data for analysis and Open Educational Resource (OER) development in 2022 to sustain the MCBK training.

Articles, documents, posters, video links, *and* slides posted on the class website. See <https://www.nccu.edu/mcbk-home> and "Class Materials: Articles, Posters, Slides" page.

1. MCBK Manifesto
2. ICKM2020 Friedman slides
3. *LHS* Article (invited early reading): <https://doi.org/10.1002/lrh2.10244>
4. Author instructions – *Learning Health Systems* (LHS) journal
5. Background articles on MCBK and Trust (for December 22)
 - a. Do You Trust the Medical Profession? A growing distrust could be dangerous to public health and safety. NY Times. Jan. 2018. See: <https://www.nytimes.com/2018/01/23/upshot/do-you-trust-the-medical-profession.html>
 - b. Building and maintaining trust in clinical decision support: Recommendations from the Patient-Centered CDS Learning Network. Dec. 2019. See: <https://onlinelibrary.wiley.com/share/JMBHDCYUQ6IU7Q9P92CF?target=10.1002/lrh2.10208>

- c. Poster: Examining the Theories of “Knowledge Commons” and Applications in Learning Health Systems. MCBK Conference 2019. See: https://medicine.umich.edu/sites/default/files/content/downloads/Poster%20Combined_0.pdf (scroll to poster #14)
 - d. **(optional)** Hess, Charlotte and Ostrom, Elinor, "A Framework for Analyzing the Knowledge Commons : a chapter from Understanding Knowledge as a Commons: from Theory to Practice." (2005). Libraries' and Librarians' Publications. 21. See: <https://surface.syr.edu/cgi/viewcontent.cgi?article=1020&context=sul>
6. “Coded Bias” video (MIT): via YouTube at: https://www.youtube.com/watch?v=xu6rwo_Y1vQ.
 7. 5 background articles on Bias and Algorithmic Justice (highest to lowest priority):
 - a. Hemphill C. Responsible AI: leveraging data and technology to counteract bias. STAT. Aug. 2021. See: <https://www.statnews.com/2021/08/06/leverage-responsible-ai-counteract-bias-health-care/>.
 - b. Christensen D et al. Medical algorithms are failing communities of color. Health Affairs Blog. Sept. 9, 2021. See: <https://www.healthaffairs.org/doi/10.1377/hblog20210903.976632/full/>.
 - c. Panch T et al. Artificial intelligence and algorithmic bias: implications for health systems. Journal of Global Health. 9(2) Dec. 2019. See: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6875681/pdf/jogh-09-020318.pdf>.
 - d. McCradden MD et al. Ethical limitations of algorithmic fairness solutions in health care machine learning. The Lancet: Digital Health. May 2021. See: [https://www.thelancet.com/journals/landig/article/PIIS2589-7500\(20\)30065-0/fulltext](https://www.thelancet.com/journals/landig/article/PIIS2589-7500(20)30065-0/fulltext).
 - e. Obermeyer Z, et al. Dissecting racial bias in an algorithm used to manage the health of populations. Science. 366(6464):447-53 Oct. 25, 2019. See: <https://www.science.org/doi/10.1126/science.aax2342>.
 8. [Article on Publication Access Through Tiered Interaction & Exploration (PATTIE).]
 - a. [Background on New Tools for entrepreneurs]
 9. AHRQ Poster: https://drive.google.com/file/d/1ASTW2Rx-zUctDq8qJm5_rK_9H7HTAft/view. (or poster authored by Dr. Krautscheid and Ed Lomatan, #10 from this list: <https://mobilizecbk.med.umich.edu/news-events/annual-meetings/2021-meeting>.)
 10. Systematic Reviewing, PRISMA, PICO, and scoping reviews:
 - a. https://www.youtube.com/watch?v=IHVO4FC2_Is
 - b. <https://guides.mclibrary.duke.edu/sysreview/types>
 - c. <http://www.prisma-statement.org/>
 - d. <http://www.prisma-statement.org/PRISMAStatement/Checklist>
 - e. <http://www.prisma-statement.org/PRISMAStatement/FlowDiagram>
 - f. <http://www.prisma-statement.org/Extensions/ScopingReviews>

11. Also from Dec. 28: Chung, et al., Journal of Hand Surgery, 2006: col. 31a
12. Posters and articles from Gabe Rios (for teams or partners from Dec. 30):

a. Posters from MCBK meeting:

Poster #6: Leveraging CBK to Support Learning Health Systems and Their Efforts to Realize the Quintuple Aim, Jerome A. Osheroff

[see models and the “patient journey illustrating desired future state”]

https://docs.google.com/presentation/d/1Q1F-8ZyzAvGAJ001HFgrH20V64mQTYBr96Ozmo3dzNE/edit#slide=id.ge4a18bb09e_0_289

Poster #10: AHRQ CEPI Evidence Discovery and Retrieval (CEDAR), Peter W. Krautscheid [CEDAR is a system that provides unified search of multiple AHRQ Center for Evidence and Practice Improvement (CEPI) repositories]

https://drive.google.com/file/d/1ASTW2Rx-zUctDq8qJm5_rK_9H7HTAft/view

Poster #12: A public repository to mobilize computable biomedical knowledge artifacts, Güneş Kuru [a repository where users can create and maintain CBKs via web-browser interface; API supports automation]

https://docs.google.com/presentation/d/1_2gR72PWX_fmGaRIs9DXN7NQcDBo673v1cjtYsxybM/edit#slide=id.ge289e3db1a_0_43

Poster #15: Towards Providing Clinical Context for a Diabetes Risk-Prediction Use Case via User-centered Explainability, Shruthi Chari [real-world example of how CBK is used]

https://docs.google.com/presentation/d/168AbbvGpQtp1PiWhwzVX5cpQcbWLuD4gBN7MQLrZZ0A/edit#slide=id.ge3f6e9ca0a_30_0

Poster #21: A FHIR Framework to Ignite Biomedical Knowledge Management, Muhammad Afzal [FHIR-based KMS may increase mobilization of CBK with many smaller units for finding the precise data for predicting benefits and harms regarding a health care decision]

<https://www.dropbox.com/s/mvu4w9dk0q5tgrw/MCBK-Poster.pdf?dl=0>

b. Papers from *LHS* journal:

The University of Alabama at Birmingham COVID-19 Collaborative Outcomes Research Enterprise: Developing an institutional learning health system in response to the global pandemic, Jami L. Anderson, Rebecca A. Reamey, Emily B. Levitan, Irfan M. Asif, Monica S. Aswani, Faith E. Fletcher, Allyson G. Hall, Kierstin C. Kennedy, Dustin Long, David Redden, Alia Tunagur ... <https://onlinelibrary.wiley.com/doi/full/10.1002/lrh2.10292>

Developing real-world evidence from real-world data: Transforming raw data into analytical datasets

Lisa Bastarache, Jeffrey S. Brown, James J. Cimino, David A. Dorr, Peter J. Embi, Philip R.O. Payne, Adam B. Wilcox, Mark G. Weiner
<https://onlinelibrary.wiley.com/doi/full/10.1002/lrh2.10293>

13. [Resources from Chris Shaffer]
14. [Resources from Rachel Richesson]
15. Observational Health Data Sciences & Informatics (OHDSI) slides from Juan Bando (12-4-20)
16. [NLM information]