**Categories, Knowledge, and the Practice of Medicine**

**Prof. Bennett Holman**



**Course Description:** Medical ethics became a topic of discourse in the 1970’s, prompted in part by a number of severe ethical violations in medical research. More recently, philosophers have brought philosophical tools to other areas of medical science. First, there has been a growing discourse on the metaphysics of medicine. Metaphysics is an attempt to understand the basic concepts of medicine, such as “What is disease?”. Sometimes the question is framed generally, other times it may be more specific, such as “Is extreme sadness a disease (e.g. depression)?”. Traditional topics in philosophy of science have found expression and drawn examples from medicine as well, for example debates about causality, mechanisms, modeling, and clinical judgment are central to some aspects of medical research.

On the other hand major movements in medicine, like evidence-based medicine tend to reject a reliance on theory. The question of how and when we know something blends concerns in epistemology and philosophy of science. Finally, more recently, some philosophers have suggested that we need to know about the contexts where knowledge is produced and how they are affected by entities like pharmaceutical companies which have a financial interest in medical research. For these questions a newly forming philosophical area of social epistemology is emerging.

This class will serve as a survey of philosophical issues in medicine and provide students of medicine a survey of the foundational issue in their discipline. We will close by looking at major new trends in medicine as trends in medicine (translational medicine, personalized medicine) and how new technology like Artificial intelligence might address the problems we identify earlier in the course.

Below is thematic guide to the semester, reading assignments can be found at the end of the syllabus.

**Part I**

**Week 1: Medicine- Art or Science**

Is medicine a body of knowledge or a skilled practice. If it is a science, what obligation does a doctor have to take to form true beliefs? If it is a practice, what obligation does a doctor have to relieve suffering? Finally, is this this division a false dichotomy?

**Week 2: Health and Disease**

Perhaps the most fundamental question of medicine concerns its basic concepts: health and illness. Most centrally we might ask, is there an objective (fact-of-the-matter) description about what constitutes health and illness or are these value-laden concepts that will naturally invoke human aims and interests.

**Week 3: Specific Diseases**

Beyond our basic concepts, medicine employs specific concepts, especially in its nosology. In this lecture we look at examples of contested categories. We will explore what makes something a disease and what is at stake by labeling someone as sick

**Week 4: Disease Mongering**

Who gets classified as sick has a significant impact on who gets treated and how big that category is has a significant impact on the profits of drug makers. In this week we examine how financial pressures of medicine impact disease categorization

**Week 5:**

Students turn in their first paper and we review and discuss the topics covered in Part I

**Part II**

**Week 6: Knowing More Than We Can Tell and Reasoning from Cases: Practical Knowledge and Medical Care.**

Practicing physicians are immersed in clinical practice have daily experience with the illness and its treatment. This far different manner of knowing than is captured by the medical experiment. This lecture explores contrasting views about the reliability of medical experience and the limits of clinical knowledge.

**Week 7: Evidence-Based Medicine, RCTs and the Hierarchy of Evidence**

Evidence-Based Medicine (EBM) has become the dominant force in medical epistemology. It argues that clinical judgment is unreliable and that we should base decisions on large-scale experiments. In this lecture we examine what EBM is, how it grounds claims of medical knowledge

**Week 8:**

Midterm week. There is no mid-term for this course, there is no class this week

**Week 9: Causation and Causal Mechanisms**

Critics of EBM have claimed that EBM fails to include any information about causal mechanisms. This lecture considers the merits of causal models in understanding and treating illness. We explore how causation can be established and consider what evidential weight it carries when attempting to understand health, illness, and treatments.

**Week 10: Paper #2**

Students turn in their second paper and we review and discuss the topics covered in Part II

**Part III**

**Week 11: Medical Knowledge in a Social World**

In contrast to an epistemological focus on an isolated knower confronting a fixed set of evidence, social epistemology attempts to make room both for the social practices that promote knowledge and those that obscure it. In this week we look at how the larger context of medical research (especially the financial considerations of pharmaceutical companies) affect the knowledge that gets produced.

**Week 12: Translational Medicine**

A number of new movement has arisen in medicine. In this week we look at the movement to make sure that new scientific developments are “translated” into therapeutic advancement. We will ask to what extent this “new” movement truly represents something novel.

**Week 13: Personalized Medicine**

New technologies promise to “personalize” medicine by creating medical treatments that are targeted directly at the recipient. In this week we explore how such developments challenge dominant methods of establishing efficacy.

**Week 14: Artificial Intelligence**

Major advancements in machine learning have been occurring and will almost inevitably shape the face of medicine. In this week we look at why adopting the use of such technology may be desirable, feasible, and solve many of the issues identified in previous weeks

**Requirements:**

**Attendance & Grading:** Attendance will be taken in accordance with Yonsei Policy: missing 1/3 of all classes, regardless of having legitimate, official excuses, is to result in an F grade. Being more than twenty minutes late will be counted as an absence. You will be allowed six absences (excused/unexcused). Long days count as two classes. (Hence, you`re allowed two weeks of absences).

There are 100 available points.

**1.** **Active and informed participation (25%)**: Students are expected to come to class prepared and ready to engage in an informed discussion of the material. Students are expected to actively participate in classroom discussions. Participation includes asking questions, raising objections, offering defenses, commenting on the significance of a point, clarifying an argument or a claim, and drawing out the connections between an issue from our current discussion and issues raised in our other readings.

**2. Topic papers (75%):** Over the course of the class students will write 3 papers (950-1450 words—roughly 3-4 pages), papers will lose 5 points for every 100 words (or any portion thereof) over the limit. If you are under the limit, please take this as sign you have not given due consideration to the course material. The papers will be spread out over the class. The prompts are focused on clarifying the topic and understanding the arguments covered in the reading. Students should make reference to (**and cite!**) the material, but should express the ideas in their own words (i.e. no long block quotes). Citations should be MLA style. The purpose of these papers is to learn to digest and understand philosophic arguments (i.e. these are not research papers). Accordingly, students **should not** use outside resources to answer questions. Evidence of outside research will be considered cause to reduce a grade, or in extreme cases lose all credit. Students may confer with each other, but all writing should be done independently. Significant overlap in student papers is academic dishonesty (see below).

**4.** **Extensions:** The due dates for each assignment are posted on the syllabus above. Students will have a ten minute grace period after which point the assignment will be considered late. Generally, no changes will be made to the dates listed. Exceptions will be handled on a case by case basis and will not, in any circumstances, be altered without supporting documentation. The penalty for turning in an assignment late will be 1/3 grade deduction per day (or any portion thereof). It is the student’s responsibility to ensure that the paper they submit is the correct paper. If the wrong paper is uploaded to the drop box it will be treated as if no paper had been turned in and late penalties will accrue accordingly.

**5. Academic Integrity:** Plagiarism, cheating, etc. will not be tolerated and the University policy on Academic Honesty will be followed strictly. Students who have any questions or uncertainty whatsoever about this policy are responsible for meeting individually with the instructor to discuss the policy. Anyone found violating this policy will receive an D for the course and will be reported to the appropriate University officials. I am extremely firm on this matter.

**6. Disabilities**: It is the student's responsibility to notify the instructor in advance of the need for accommodation of a University verified disability. I will gladly provide the required accommodations.

**7. Preferred names and gender pronouns:** I would like to make every effort to create a safe space. If you have a preferred name or gender pronoun that is not reflected in the roster, please let me know.

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| Week | Topic | Readings |
| **Part I- The “Metaphysics” of Medicine: The Basic Concepts of Medicine** | | |
| 1  March 4th | Medicine: Art or Science | ❖ Francis Peabody, “The Care of the Patient” Peabody, F. W. (2015/1927). The care of the patient. *Jama*, *313*(18), 1868-1868.  ❖ Munson, R. (1981). Why medicine cannot be a science. *Journal of Medicine and Philosophy*, *6*(2), 183-208. |
| 2  March 11th | Basic Concepts:  Health and Disease | Cooper, R., 2002. “Disease,” Studies in the History and Philosophy of Biology & the Biomedical Sciences, 33: 263–282.  Alexandrova, A. (2012). Well-being as an object of science. *Philosophy of Science*, *79*(5), 678-689. |
| 3  March 18th | The effects of disease categories on people, the effects of people on disease categories. | ❖ Hacking, I. (2007, April). Kinds of people: Moving targets. In *Proceedings-British Academy* (Vol. 151, p. 285-318).  ❖ Kukla, R. (2017) “Infertility as a Medical and as a Social Category” *Synthese* |
| 4  March 25th | Disease Mongering | ❖ Fishman, J. (2004). Manufacturing desire: The commodification of female sexual dysfunction. Social Studies of Science, 34, 187–218.  ❖ González‐Moreno, M., Saborido, C., & Teira, D. (2015). Disease‐mongering through clinical trials. *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences*, 51, 11–18. |
| 5  April 1st | **Paper 1 due**  **Monday** | ❖ **No Reading this week** |
| **Part II The “Epistemology” of Medicine: Understanding Evidence** | | |
| 6  April 8th | Clinical Intuition | ❖ Charlton, B. G., & Walston, F. (1998). Individual case studies in clinical research. *Journal of evaluation in clinical practice*, *4*(2), 147-155.  ❖ Braude, H. (Forthcoming), Clinical intuition In *Routledge Companion to Philosophy of Medicine* |
| 7  April 15th | Evidence-based Medicine | ❖ Sackett, David L., William MC Rosenberg, JA Muir Gray, R. Brian Haynes, and W. Scott Richardson. "Evidence based medicine: what it is and what it isn't." (1996): 71-72.  ❖ Howick, J. “Philosophy of Evidence-Based Medicine.” (Selections) |
| 8  April 22nd | Mid-term no class |  |
| 9  April 29th | Causal Mechanisms | ❖ Stegenga (2011) Is meta-analysis the platinum standard?  ❖ Parkkinen et. al. (2018). “Evaluating Evidence of Mechanisms in Medicine (Selections)  ❖ |
| 10  May 6th | **Paper 2 due Wednesday** | ❖ **No class May 6th**  ❖ **No Reading this week** |
| **Part III: Beyond evidence-based medicine?** | | |
| 11  May 13th | The Commercialization of Medical Knowledge | ❖ Holman, B. (2017), Philosophers on Drugs, *Synthese*  ❖ Sismondo, S. (2017). Hegemony of knowledge and pharmaceutical industry strategy. In D. Ho (Ed.), Philosophical issues in pharmaceutics (pp. 47–63). Dordrecht: Springer. |
| 12  May 20th | Translational medicine | ❖ Solomon (2017) “What is Translational medicine” From: *Making Medical Knowledge*  ❖ Robinson, M. (2018). Financializing epistemic norms in contemporary biomedical innovation. Synthese. |
| 13  May 27th | Personalized Medicine | ❖ Tonelli, M. R., & Shirts, B. H. (2017). Knowledge for precision medicine: mechanistic reasoning and methodological pluralism. *Jama*, *318*(17), 1649-1650.  ❖ Tonelli, M. R. (2018). Clinical judgement in precision medicine. *Journal of evaluation in clinical practice*, *24*(3), 646-648.  ❖ Teira (2016). Testing Oncological Treatments in  the Era of Personalized Medicine  ❖ Solomon, “A Developing, Untidy, Methodological Pluralism” (Chapter 9 of *Making Medical Knowledge*) |
| 14  June 3rd | Artificial Intelligence and medicine | ❖ Bishop, M. A., & Trout, J. D. (2002). 50 years of successful predictive modeling should be enough: lessons for philosophy of science. *Philosophy of Science*, *69*(S3), S197-S208.  ❖ Holman (unpublished) Dr. Watson will see you shortly: The impending automation of medicine |
| Final | **Paper 3 due Saturday, June 15th** |  |
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