

# Introduction to Global Medicine: Bioscience, Technologies, Disparities, Strategies

HST.934[J]/STS.449[J]  
Spring 2016  
Mondays 4:15-6:15 pm  
TMEC 128

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Office hours: Mondays: 6:15-6:45 pm, TMEC 128

## Course description:

This subject provides an exploration of basic themes in social medicine via a specific examination of issues in global medicine. The course takes as its challenge to understand new paradigms for global health that focus on providing complex medical services to treat complicated health conditions (e.g. multi-drug resistant TB, HIV/AIDS, and mental health problems) in low resource settings. Special attention is given to the development of new technologies or adapting existing technologies in ways that enable new solutions to global health problems, as well as overcoming barriers to translation of medical technologies for use in settings of great need. The course addresses classic themes of social inequalities and health disparities, and issues such as patenting and the development and delivery of pharmaceuticals or other biotechnologies in international context. Learning occurs through lectures, small-group discussion, and a final research project. Presentations by experts involved in global health, basic or clinical research with a global reach, or medical humanitarian activities provide empirical case studies for analysis.

## Course structure:

Each class will typically be structured in two parts:

**Part 1:** In most sessions the first portion of class will open with a brief review of the previous week's lecture materials then students will discuss the readings for the current session's topic in small groups. **Each group will be expected to generate questions for the guest lecturer and the whole group discussion.**

**Part 2:** Guest speakers will present case studies in the second hour of class and open discussion to the whole group for questions and answers.

## Course requirements:

In addition to active participation in class discussions, students will form teams of 2-3 students to complete a final research paper from a topic chosen in consultation with the instructors. In the final class, each team will present the research and highlight each member's contribution and findings. Each team member will write a separate final paper (approximately 4000 words, not including notes and bibliography) on his or her contribution to the overall research project.

**Course materials:**

All readings can be found under the “Pages” tab on the Canvas website here: <http://canvas.hms.harvard.edu>. Biographies for guest lecturers are also available via the “Pages” tab in Canvas.

**THIS COURSE HAS A NO ELECTRONICS POLICY. Please refrain from using devices, etc., unless you are making a presentation.**

**Sessions**

**2/1/16: Introducing Bioethics and Social Medicine into Global Health Delivery**

Readings:

David A. Napier, et al., “Culture and Health,” *The Lancet*, 384, no. 9954 (2014): 1607–1639.

Seth M. Holmes, Jeremy A. Greene, and Scott D. Stonington, “Locating Global Health in Social Medicine,” *Global Public Health* 9, no.5 (2014): 475-480.

Recommended:

Paul Farmer, et al., “Introduction: A Biosocial Approach to Global Health,” in *Reimagining Global Health: An Introduction*, Paul Farmer, Jim Yong Kim, Arthur Kleinman, and Matthew Basilio, editors (Berkeley: University of California Press, 2013), pp. 1-14.

Bridget Hanna and Arthur Kleinman, “Unpacking Global Health: Theory and Critique,” in *Reimagining Global Health: An Introduction*, Paul Farmer, Jim Yong Kim, Arthur Kleinman, and Matthew Basilio, editors (Berkeley: University of California Press, 2013), pp. 15-32.

**2/8/16: Biomedical Ethics**

**Guest speaker: Robert Truog, “Rationing at the Bedside: Lessons from ECMO”**

Readings:

Charles E. Rosenberg, “Meaning, Policies, and Medicine: On the Bioethical Enterprise and History,” *Daedalus* 128, no. 4 (Fall 1999): 27-46.

Patricia Marshall and Barbara Koenig, “Accounting for Culture in a Globalized Bioethics,” *Journal of Law, Medicine & Ethics* 32 (2004): 252-266.

Recommended:

Atwood D. Gaines and Eric T. Juengst, “Origin Myths in Bioethics: Constructing Sources, Motives and Reason in Bioethic(s),” *Culture, Medicine and Psychiatry* 32 (2008): 303-327.

**2/15/16: No class. Presidents Day.**

**Assignment #1 -- due 2/15/16 by 11:59 pm: Students upload to the “Assignments” tab within Canvas a one-page, single-spaced Word document regarding the composition of preliminary research teams and proposed final paper topics.**

**2/22/16: Health Economics in the United States**

**Guest speaker: Lawrence Summers, “Larry Summers on Global Health”**

Readings:

Dean T. Jamison, et al., “Global health 2035: a world converging within a generation,” *The Lancet* 382 (December 7, 2013): 1898-1995.

“Global security and pandemic risk,” Larry Summers Blog Entry (1/13/2016): <http://larrysummers.com/2016/01/13/global-health-risk-framework/>, last accessed 2/3/16.

“Pandemic bonds have potential to be win-win-win,” Larry Summers Blog Entry (10/13/2015): <http://larrysummers.com/2015/10/13/pandemic-emergency-financing-has-the-potential-to-be-a-win-win-win/>, last accessed 2/3/16.

Timothy S. Jost, “A Critical Year for The Affordable Care Act,” *Health Affairs* 35, no. 1 (January 2016): 8-11.

Andrea Louise Campbell, “Down the Insurance Rabbit Hole,” *The New York Times* (April 4, 2012): [http://www.nytimes.com/2012/04/05/opinion/down-the-insurance-rabbit-hole.html?\\_r=0](http://www.nytimes.com/2012/04/05/opinion/down-the-insurance-rabbit-hole.html?_r=0).

Sarah Horton, et al., “Critical Anthropology of Global Health Takes a Stand” Statement: A Critical Medical Anthropological Approach to the U.S.’s Affordable Care Act,” *Medical Anthropological Quarterly* 28, no.1 (2014): 1-22.

Recommended:

Jonathan Gruber (with HP Newquist), *Health Care Reform: What It Is, Why It’s Necessary, How It Works* (New York: Hill and Wang, 2011).

**2/29/16: Schizophrenia and the Challenges of Global Mental Health**

**Guest speaker: David Henderson, “Schizophrenia and Global Psychiatry Training”**

Readings:

David C. Henderson, et al., “Pathophysiological Mechanisms of Increased Cardiometabolic Risk in People with Schizophrenia and Other Severe Mental Illnesses,” *Lancet Psychiatry* 2 (May 2015): 452-64.

Pamela Y. Collins, et al., “Grand Challenges in Global Mental Health,” *Nature* 475 (7 July 2011): 27-30.

Erica Caple James, "Haiti, Insecurity, and the Politics of Asylum," *Medical Anthropology Quarterly* 25, no. 3 (2011): 357-376.

Michael M.J. Fischer, "The BAC Consultation on Neuroscience and Ethics, An Anthropologist's Perspective," *Innovation* 11, no. 2 (2013): 2-5.

Recommended:

Alex Cohen, Vikram Patel, and Harry Minas, "A Brief History of Global Mental Health," in *Global Mental Health: Principles and Practice*, Vikram Patel, Harry Minas, Alex Cohen, and Martin J. Prince, editors (Oxford: Oxford University Press, 2014), pp. 3-26.

Pamela Y. Collins, et al., "Research Priorities, Capacity and Networks in Global Mental Health," in *Global Mental Health: Principles and Practice*, Vikram Patel, Harry Minas, Alex Cohen, and Martin J. Prince, editors (Oxford: Oxford University Press, 2014), pp. 425-449.

**3/7/16: Global Health Delivery in Resource-Limited Settings**

**Guest speaker: Paul Farmer, "Failure to Collide: Ebola and Modern Medicine"**

Readings:

Indi Trehan, et al., "Moving Towards a More Aggressive and Comprehensive Model of Care for Children with Ebola," *The Journal of Pediatrics*, [article in press] (2015): 1-6.

G. Marshall Lyon, et al., "Clinical Care of Two Patients with Ebola Virus Disease in the United States," *New England Journal of Medicine* 371, no. 25 (2016): 2402-9. [Atlanta].

Paul Farmer, "Diary: Ebola," *London Review of Books* 36, no. 20 (2014): 38-9.

Paul Farmer, "The Caregivers' Disease," *London Review of Books* 37, no. 10 (2015): 25-8.

**3/14/16: CRISPR-Cas 9 and the Ethics of Human Gene Editing**

**Guest speaker: George Church, "New Technologies for Low-Cost Global Medicine: Sequencing, Food and CRISPR-Gene-Drives"**

Readings:

Kevin M. Esvelt, Andrea L. Smidler, Flaminia Catterucia, and George M. Church, "Concerning RNA-Guided Gene Drives for the Alteration of Wild Populations," *eLife* 3, no. 1 (2014): 1-21.

David Baltimore, et al., "A Prudent Path forward for Genomic Engineering and Germline Gene Modification," *Science* 348, no. 6230 (03 Apr 2015): 36-38.

"Genetic Engineering: Time to Think Carefully: An International Summit Discusses the Use of Gene Editing," *The Economist*, (December 5, 2015):

<http://www.economist.com/news/science-and-technology/21679434-international-summit-discusses-use-gene-editing-time-think-carefully>.

Niklaus H. Evitt, Shamik Mascharak, and Russ B. Altman, “Human Germline CRISPR-Cas Modification: Toward a Regulatory Framework,” *The American Journal of Bioethics* 15, no. 12 (2015): 25–29.

The National Academies of Sciences, Engineering, and Medicine “On Human Gene Editing: International Summit Statement,” (December 3, 2015):  
<http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=12032015a>

**3/21/16: No class. Spring vacation.**

**3/28/16: Global Clinical Trials in Oncology**

**Guest speaker: Annette Schmid, “Global Clinical Trials - a CRO perspective”**

Readings:

Hyungsoon Im, et al., “Digital diffraction analysis enables low-cost molecular diagnostics on a smartphone,” *PNAS* 112, no. 18 (May 2015): 5613-5618.

Adriana Petryna, “Ethical Variability: Drug Development and Globalizing Clinical Trials,” *American Ethnologist* 32, no. 2 (May 2005): 183-197.

S. Lochlann Jain, “The Mortality Effect: Counting the Dead in the Cancer Trial,” *Public Culture* 22, no. 1 (2010): 89-117.

Kaushik Sunder Rajan, “Experimental Values: Indian Clinical Trials and Surplus Health,” *New Left Review* 45 (May | June 2007): 67-88.

Recommended:

E.J. Gordon and C.K. Daugherty, “‘Hitting You Over the Head’: Oncologists’ Disclosure of Prognosis to Advanced Cancer Patients,” *Bioethics* 17, no. 2 (Apr. 2003): 142-168.

João Biehl and Adriana Petryna, “Bodies of Rights and Therapeutic Markets,” *Social Research* 78, no. 2 (2011): 359-386.

Kaushik Sunder Rajan, “Property, Rights, and the Constitution of Contemporary Indian Biomedicine: Notes from the Gleevec Case,” *Social Research: An International Quarterly* 78, no. 3 (2011): 975-998.

Joseph Dumit, *Drugs for Life: How Pharmaceutical Companies Define Our Health* (Durham, N.C.: Duke University Press, 2012).

**4/4/16: Global Health Interventions: HIV/AIDS, Food Insecurity, and Qualitative Research Methods**

**Guest speaker: David Bangsberg, “Adherence to HIV Treatment and Prevention”**

Readings:

Elvin H. Geng, et al., “Retention in Care Among HIV-Infected Patients in Resource-Limited Settings: Emerging Insights and New Directions,” *Current HIV/AIDS Reports* 7, no. 4 (2010 November): 234–244.

Norma C. Ware, et al., “Explaining Adherence Success in Sub-Saharan Africa: An Ethnographic Study,” *PLoS Medicine* 6, no. 1 (January 2009): 39-47.

Norma C. Ware, et al., “What’s Love Got to Do With It? Explaining Adherence to Oral Antiretroviral Pre-exposure Prophylaxis (PrEP) for HIV Serodiscordant Couples,” *Journal of Acquired Immune Deficiency Syndromes* 59, no. 5 (2012 April 15): 463-468.

Recommended:

Sheri D Weiser, et al., “Conceptual Framework for Understanding the Bidirectional Links between Food Insecurity and HIV/AIDS,” *The American Journal of Clinical Nutrition* 94 (2011 suppl.): 1729S–39S.

Sheri D. Weiser, et al., “Food Insecurity as a Barrier to Sustained Antiretroviral Therapy Adherence in Uganda,” *PLoS ONE* 5, no. 4 (April 2010): 1-8.

Jessica E. Haberer, et al., “Real-Time Adherence Monitoring for HIV Antiretroviral Therapy,” *AIDS and Behavior* 14 (2010): 1340–1346.

Julie Livingston, “The Next Epidemic: Pain and the Politics of Relief in Botswana’s Cancer Ward,” in *When People Come First: Critical Studies in Global Health*, João Biehl and Adriana Petryna, editors (Princeton: Princeton University Press, 2013), pp. 182-206.

**4/11/16: Global Mental Health, Clinical Trials, and Qualitative Research Methods**

**Guest speaker: Christina Borba, “Conducting Global Mental Health Research: The Case of Ethiopia and Liberia”**

Readings:

Christina P.C. Borba, et al., “A Day in the Life of Women With a Serious Mental Illness: A Qualitative Investigation,” *Women’s Health Issues* 21, no. 4 (2011): 286-292.

Christina P.C. Borba, et al., “A Mental Health Needs Assessment of Children and Adolescents in Post-Conflict Liberia: Results from a Quantitative Key-Informant Survey,” *International Journal of Culture and Mental Health* 9, no.1 (2016): 56-70.

Christina P.C. Borba. Et al., “A placebo-controlled trial of folate with B12 in patients with schizophrenia with residual symptoms in Ethiopia using a sequential parallel comparison design,” *British Journal of Medicine and Medical Research* 4, no. 23 (2014): 4090-4104.

Gregory L. Fricchione, et al., “Capacity building in global mental health: Professional training,” *Harvard Review of Psychiatry* 20, no. 1 (2012): 47-57.

Zeina Chemali, et al., “Making Strides in Women’s Mental Health Care Delivery in Rural Ethiopia: Demographics of a Female Outpatient Psychiatric Cohort at Jimma University Specialized Hospital (2006–2008),” *International Journal of Women’s Health* 5 (2013): 413-419.

**4/18/16: Class cancelled – Patriot’s Day**

**4/25/16: Zika**

**Guest speakers: Irene Bosch and Paulo Verardi**

Readings:

Felice J. Freyer, “At UConn, a Brazilian emigre searches for a way to stop Zika,” *The Boston Globe* (February 17, 2016):

<https://www.bostonglobe.com/metro/2016/02/16/uconn-lab-brazilian-emigre-searches-for-way-stop-zika/kewwyOos6Oyya7J8RSfWPJ/story.html>.

Stacey Resnikoff, “Confronting Zika,” MIT Institute for Medical Engineering and Science (February 18, 2016): <http://imes.mit.edu/confronting-zika/>, last accessed 4/13/16.

Debora Diniz, “The Zika Virus and Brazilian Women’s Right to Choose,” *The New York Times* (February 8, 2016): [http://www.nytimes.com/2016/02/08/opinion/the-zika-virus-and-brazilian-womens-right-to-choose.html?\\_r=0](http://www.nytimes.com/2016/02/08/opinion/the-zika-virus-and-brazilian-womens-right-to-choose.html?_r=0).

“MIT Researchers Race to Develop Zika Diagnostics and Vaccine,” *MIT Spectrum* (February 24, 2016): <https://spectrum.mit.edu/continuum/mit-researchers-race-to-develop-zika-diagnostics-and-vaccine/>.

Recommended:

Tanya Lewis, “Zika Linked to Another Neurological Disorder,” *The Scientist* (April 12, 2016): <http://www.the-scientist.com/?articles.view/articleNo/45803/title/Zika-Linked-to-Another-Neurological-Disorder/>.

Abigail Klein Leichman, “Israeli virologist hunting for clues to Zika outbreak,” *Israel 21c* (January 28, 2016): <http://www.israel21c.org/israeli-virologist-hunting-for-clues-to-zika-outbreak/>.

Donald G. McNeil, Jr., “Puerto Rico Braces for Its Own Zika Epidemic,” *The New York Times* (March 19, 2016): [http://www.nytimes.com/2016/03/20/health/zika-virus-puerto-rico.html?\\_r=0](http://www.nytimes.com/2016/03/20/health/zika-virus-puerto-rico.html?_r=0).

Donald G. McNeil, Jr., “5 Reasons to Think the Zika Virus Causes Microcephaly,” *The New York Times* (April 1, 2016): <http://www.nytimes.com/interactive/2016/04/01/health/02zika-microcephaly.html>.

Donald G. McNeil, Jr., “Obama Administration to Transfer Ebola Funds to Zika Fight,” *The New York Times* (April 6, 2016): <http://www.nytimes.com/2016/04/07/health/zika-virus-budget-ebola.html?action=click&contentCollection=Health&region=Footer&module=WhatsNext&version=WhatsNext&contentID=WhatsNext&moduleDetail=undefined&pgtype=Multi-media>.

“Dynamic Aviation and Senecio Win BIRD Foundation Grant,” Virginia Israel Advisory Board (October 2015): <http://www.viab.org/#!9-2015-dynamic-aviation---senecio/u6hnk>, last accessed 4/19/16.

**5/2/16: Student Presentations**

**5/9/16: Student Presentations and Course Conclusion**

**5/15/16: Assignment #2 -- Final papers due 5/15/16 at 11:59 pm**

Students upload to the “Assignments” tab within Canvas a Word document (~ 4000 words, not including notes and bibliography) on his or her contribution to the overall research project.