

MH/HS 919: Global Disease Eradication: Smallpox, Malaria, AIDS
(Graduate Seminar)

Autumn 2013, Mondays 2-4 PM, MSC 1406 (1300 University Avenue)
Prof. Dayle B. DeLancey

COURSE INSTRUCTOR:

Prof. Dayle B. DeLancey, Ph.D.

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MSC 1426 (1300 Univ. Ave.)

Office Hours: Friday 8:45 AM – 11:45 AM at Aldo's Café at 330 North Orchard Street and by appointment

Home & Mobile Telephone Numbers: Distributed in class.

COURSE DESCRIPTION:

As of 2013, humankind has succeeded in the global eradication of only two diseases - **smallpox** (1979) and **rinderpest** (2011). Yet the **World Health Organization** (WHO) and the **Carter Center International Task Force for Disease Eradication** have targeted six other diseases for eradication with variable success, redoubling their efforts to eradicate two while ultimately abandoning campaigns to eradicate four others. What are the historical antecedents of 20th and 21st century campaigns to eradicate infectious diseases in global host populations? Why are certain diseases considered “eradicable” and how has that concept changed over time? What determines the success or failure of an eradication campaign and how has history shaped these factors? How do global eradication attempts differ from more familiar efforts to control or eliminate diseases like HIV/AIDS within smaller populations - and what is the historical significance of such distinctions? This graduate seminar addresses these questions, placing global infectious disease eradication efforts into a wider context that encompasses several centuries of history. The seminar focuses upon three very different diseases that illuminate wider historical dilemmas and other disease contexts: **smallpox** (the global eradication “success story” that prefigured the eradication of **rinderpest** and shaped the view that **polio** and **guinea worm** disease were suited for global eradication campaigns), **malaria** (an eradication “failure” whose abandoned eradication campaign parallels those of **hookworm**, **yaws**, and **yellow fever**), and **HIV/AIDS** (a global scourge for which control or elimination seem more prudent than eradication).

Required Books (available via departmental reserve MSC 1135, M-F 7:45 AM to 4:30 PM and for purchase at Amazon.com):

Espinosa, Mariola. *Epidemic Invasions: Yellow Fever and the Limits of Cuban Independence, 1878-1930*. Chicago: University of Chicago Press, 2009.

Foege, William H. *House on Fire: The Fight to Eradicate Smallpox*. Berkeley and Los Angeles: University of California Press, 2011.

Henderson, D. A. *Smallpox: The Death of a Disease – The Inside Story of Eradicating a Worldwide Killer*. Amherst, NY: Prometheus, 2009.

Muraskin, William. *Polio Eradication and Its Discontents: A Historians' Journey Through an International Public Health (Un)Civil War*. New Delhi, India: Orient Black Swan, 2012.

Murray, Rowena. *Writing for Academic Journals*. Maidenhead, UK: Open University Press, 2005.

Packard, Randall. *The Making of a Tropical Disease: A Short History of Malaria*. Baltimore, MD: Johns Hopkins University Press, 2007.

Stepan, Nancy Leys. *Eradication: Ridding the World of Disease Forever?* Ithaca, NY: Cornell University Press, 2011. [Amazon's Kindle Edition — which several of you have mentioned downloading — is published by Reaktion Press.]

All other readings are available in the Learn@UW e-Reader.

COURSE REQUIREMENTS:

- 30%: Class Participation
- 20%: Literature Review for Final Paper (3,000 words on secondary sources):
Due – November 25, 2013
- 10%: Final Presentation (10-12 minutes on topic of final paper):
Due – December 9, 2013
- 40%: Final Paper (6,000 words using primary and secondary sources):
Due – December 21, 2013

In addition, your final paper abstract is due in class on October 28, 2013.

COURSE SCHEDULE:

1. September 9 Introductory Meeting
2. September 16 Eradication Overview
3. September 23 Hookworm
4. September 30 **Research Meeting with Mrs. Micaela Sullivan-Fowler,
Head of Special Collections, Ebling Library 2320**
5. October 7 Yellow Fever
6. October 14 Malaria
7. October 21 Smallpox
8. October 28 Yaws
Final paper abstract due in class.
9. November 4 Polio

10. November 11 Guinea Worm
11. November 18 Rinderpest
12. November 25 HIV/AIDS
Literature Review for final paper due in class.
13. December 2 Toward the Endgame and Beyond
14. December 9 Final Paper Presentations
- !!! December 21, 2013:
Final Paper due as a PDF file uploaded to course Dropbox at Learn@UW !!!

SEE NEXT PAGE FOR REFERENCE SHEET WITH DEFINITIONS.

REFERENCE — DISEASE ERADICATION AS A U.S. PRACTITIONER DEFINES IT:

From page 63 of **Hopkins, Donald R.** “Disease Eradication.” *New England Journal of Medicine* 368(2013): 54-63, as follows:

DEFINITIONS

Eradication

- Zero disease globally as a result of deliberate efforts
- Control measures no longer needed

Elimination

- Zero disease in a defined geographic area as a result of deliberate efforts
- Control measures needed to prevent reestablishment of transmission

Criteria for Assessing the Eradicability of a Disease

- Scientific feasibility
- Epidemiologic susceptibility (e.g., no nonhuman reservoir, ease of spread, naturally induced immunity, ease of diagnosis)
- Effective, practical intervention available (e.g., vaccine, curative treatment)
- Demonstrated feasibility of elimination (e.g., documented elimination from island or other geographic unit)
- Political will and popular support
- Perceived burden of the disease (e.g., extent, deaths, other effects; relevance to rich and poor countries)
- Expected cost of eradication
- Synergy of eradication efforts with other interventions (e.g., potential for added benefits or savings)
- Need for eradication rather than control

COURSE READING ASSIGNMENTS:

1. September 9 — Introductory Meeting

2. September 16 — Eradication Overview

Stepan, Nancy Leys. *Eradication: Ridding the World of Disease Forever?* Ithaca, NY: Cornell University Press, 2011. [Amazon's Kindle Edition — which several of you have mentioned downloading — is published by Reaktion Press.]

3. September 23 — Hookworm

Review relevant sections in Stepan's *Eradication*, then read:

Palmer, Steven. "Migrant Clinics and Hookworm Science: Peripheral Origins of International Health, 1840–1920." *Bulletin of the History of Medicine* 83.4(2009): 676–709.

Bleakley, Hoyt. "Disease and Development: Evidence from Hookworm Eradication in the American South." *Quarterly Journal of Economics* 122.1 (2007): 73–117.

Birn, Anne-Emanuelle. "A Revolution in Rural Health? The Struggle over Local Health Units in Mexico, 1928–1940." *Journal of the History of Medicine and Allied Sciences*. 53.1(1998): 43–76.

Palmer, Steven. "Toward Responsibility in International Health: Deaths Following Treatment in Rockefeller Hookworm Campaigns." *Medical History* 54.2(2010): 149–70.

Further Reading to Investigate on Your Own:

Brannstrom, Christian. "Polluted Soil, Polluted Souls: The Rockefeller Hookworm Eradication Campaign in São Paulo, Brazil, 1917–1926." *Historical Geography* 25(1997): 25–45.

Ettling, John. *The Germ of Laziness: Rockefeller Philanthropy and Public Health in the New South*. Cambridge, MA: Harvard University Press, 1981.

Farley, John. *To Cast Out Disease: A History of the International Health Division of the Rockefeller Foundation, 1913–1951*. New York: Oxford University Press, 2004.

4. September 30 — Research consultation with Mrs. Micaela Sullivan-Fowler (Head of Special Collections, Ebling Library.)

***We will meet in Ebling Library Room 2320, HSLC, 750 Highland Avenue from 2-4 PM.
(Via public transit, take the 80 bus to the Health Sciences Learning Center stop.)***

5. October 7 — Yellow Fever

Review relevant sections in Stepan's *Eradication*, then read:

Espinosa, Mariola. *Epidemic Invasions: Yellow Fever and the Limits of Cuban Independence, 1878-1930*. Chicago: University of Chicago Press, 2009.

Stepan, Nancy. "The Interplay between Socio- Economic Factors and Medical Science: Yellow Fever Research, Cuba, and the United States." *Social Studies of Science* 8.4(1978): 397-423.

Further Reading to Investigate on Your Own:

Humphries, Margaret. *Yellow Fever and the South*. New Brunswick, N.J., Rutgers University Press, 1992.

Yekutieli, Perez "Lessons from the Big Eradication Campaigns." *World Health Forum* 2.4(1981): 465-90.

6. October 14 — Malaria

Review relevant sections in Stepan's *Eradication*, then read:

Packard, Randall. *The Making of a Tropical Disease: A Short History of Malaria*. Baltimore, MD: Johns Hopkins University Press, 2007.

Roberts, Leslie and Martin Enserink. "Did They Really Say... Eradication?" *Science*. 318.5856(2007): 1544-1545.

Baker, Timothy D. "Malaria Eradication in India: A Failure?" *Science* 319(2008): 1616.

Smith, D. L. et al. "A Sticky Situation: The Unexpected Stability of Malaria Elimination." *Philosophical Transactions of the Royal Society B, Biological Sciences* 368 (2013): 20120145. <http://dx.doi.org/10.1098/rstb.2012.0145>

Further Reading to Investigate on Your Own:

Carter, Eric D. "'God Bless General Perón': DDT and the Endgame of Malaria Eradication in Argentina in the 1940s." *Journal of the History of Medicine and Allied Sciences* 64.1(2009): 78-122.

Shore, Bill. *The Imaginations of Unreasonable Men: Inspiration, Vision, and Purpose in the Quest to End Malaria*. New York: Public Affairs/Perseus, 2010.

Stapleton, Darwin H. "Lessons of History? Anti- Malaria Strategies of the International Health Board and the Rockefeller Foundation from the 1920s to the Era of DDT." *Public Health Reports* 119.2(2004): 206-15.

7. October 21 — Smallpox

Review relevant sections in Stepan's *Eradication*, then read:

Henderson, D. A. *Smallpox: The Death of a Disease – The Inside Story of Eradicating a Worldwide Killer*. Amherst, NY: Prometheus, 2009.

Foege, William H. *House on Fire: The Fight to Eradicate Smallpox*. Berkeley and Los Angeles: University of California Press, 2011.

Further Reading to Investigate on Your Own:

Glynn, Ian and Jennifer Glynn. *The Life and Death of Smallpox*. Cambridge: Cambridge University Press, 2004.

Haygarth, John. *A Sketch of a Plan to Exterminate the Casual Small-pox: From Great Britain; and to Introduce General Inoculation*. 1792; London: J. Johnson, 1793.

Shuttleton, David B. *Smallpox and the Literary Imagination, 1660-1820*. Cambridge: Cambridge University Press, 2007.

8. October 28 — Yaws

Final paper abstract due in class.

Review relevant sections in Stepan's *Eradication*, then read:

Soper, Fred L. *Yaws: Its Eradication in the Americas* (1955; Washington, DC: Pan American Sanitary Bureau and World Health Organization, 1956).
<http://profiles.nlm.nih.gov/VV/B/B/D/H>

Guimaraes, F. Nery. "Yaws in Brazil." *Bulletin of the World Health Organization*. 8(1953): 225-237.

Hopkins, Donald R. "After Smallpox Eradication: Yaws?" *American Journal of Tropical Medicine and Hygiene* 25.6(1976): 860-65.

Hopkins, Donald R. "Yaws in the Americas, 1950- 1975." *The Journal of Infectious Diseases* 136.4(1977): 548-55.

Walker, Stephen L. and Roderick J. Hay. "Yaws – A Review of the Last 50 Years." *International Journal of Dermatology* 39.4(2000): 258-60.

Rinaldi, Andrea. "Yaws: A Second (and Maybe Last?) Chance for Eradication." *PLOS Neglected Tropical Diseases* 2.8(2008): e275. doi:10.1371/journal.pntd.0001837

Rinaldi, Andrea. "Yaws Eradication: Facing Old Problems, Raising New Hopes." *PLOS Neglected Tropical Diseases* 6.11(2012): e1837. doi:10.1371/journal.pntd.0001837

Further Reading to Investigate on Your Own:

Hotez, Peter J. *Forgotten People, Forgotten Diseases: The Neglected Tropical Diseases and Their Impact on Global Health and Development*. Washington, DC: ASM Press, 2008.

9. November 4 — Polio

Muraskin, William. *Polio Eradication and Its Discontents: A Historians' Journey Through an International Public Health (Un)Civil War*. New Delhi, India: Orient Black Swan, 2012.

Greenough, Paul. "Intimidation, Coercion and Resistance in the Final Stages of the South Asian Smallpox Eradication Campaign, 1973-1975," *Social Science and Medicine* 41.5(1995): 633-645.

Jegade, Ayodele Samuel. "What Led to the Nigerian Boycott of the Polio Vaccination Campaign?" *PLOS Med* 4.3(2007): e73. doi:10.1371/journal.pmed.0040073

Callaway, Ewen. "Polio's Moving Target: Finding and Vaccinating Nigerian Nomads May Be One of the Last Obstacles to the Eradication of Polio." *Nature* 496(2013): 290-292. doi:10.1038/496290a

Grassly, N. C. "The Final Stages of the Global Eradication of Poliomyelitis." *Philosophical Transactions of the Royal Society, B* 368(2013): 20120140. <http://dx.doi.org/10.1098/rstb.2012.0140>

Further Reading to Investigate on Your Own:

Renne, Elisha P. "Polio in Nigeria." *History Compass* 10.7(2012): 496-511.

Yahya, Maryam. "Polio Vaccines—'No Thank You!': Barriers to Polio Eradication in Northern Nigeria." *African Affairs* 106.423(2007): 185-204.

10. November 11 — Guinea Worm

Review relevant sections in Stepan's *Eradication*, then read:

Barry, Michele. "The Tail End of Guinea Worm — Global Eradication without a Drug or a Vaccine." *New England Journal of Medicine* 356.25(2007): 2561-2564.

Breman, Joel G. and Isao Arita. "The Certification of Smallpox Eradication and Implications for Guinea Worm, Poliomyelitis, and Other Diseases: Confirming and Maintaining a Negative." *Vaccine* 29.supp 4(2011): D41-D48.

Richards, Frank O., Ernesto Ruiz-Tiben, and Donald R. Hopkins. "Dracunculiasis Eradication and the Legacy of the Smallpox Campaign: What's New and Innovative? What's Old and Principled?" *Vaccine* 29.supp 4(2011): D86-D90.

Hopkins, Donald R. "Perspectives from the Dracunculiasis Eradication Programme." *Bulletin of the World Health Organization* 76.suppl. 2(1998): 38-41.

Cairncross, Sandy, Ralph Muller and Nevio Zagaria. "Dracunculiasis (Guinea Worm Disease) and the Eradication Initiative." *Clinical Microbiology Reviews* 15.2 (2002): 223–46.

Ruiz-Tiben, Ernesto and Donald R. Hopkins. "Dracunculiasis (Guinea Worm Disease) Eradication." *Advances in Parasitology* 61(2006): 275–309.

Cairncross, Sandy, Ahmed Tayeh and Andrew Seidu Korkor. "Why is Dracunculiasis Eradication Taking So Long?" *Trends in Parasitology* 28.6(2012): 225–230.

Callahan, Kelly, et al. "Contributions of the Guinea Worm Disease Eradication Campaign toward Achievement of the Millennium Development Goals." *PLoS Neglected Tropical Diseases* 7.5(2013): e2160. doi:10.1371/journal.pntd.0002160

Hopkins, Donald R., et al. "Dracunculiasis Eradication: And Now, South Sudan." *American Journal of Tropical Medicine and Hygiene* 89.1(2013): 5-10.

Further Reading to Investigate on Your Own:

Hotez, Peter J. *Forgotten People, Forgotten Diseases: The Neglected Tropical Diseases and Their Impact on Global Health and Development*. Washington, DC: ASM Press, 2008.

11. November 18 — Rinderpest

Roeder P., J. Mariner and R. Kock. "Rinderpest: The Veterinary Perspective on Eradication." *Philosophical Transactions of the Royal Society B* 368(2013): 20120139.
<http://dx.doi.org/10.1098/rstb.2012.0139>

Hünninger, Dominik. "Policing Epizootics: Legislation and Administration during Outbreaks of Cattle Plague in Eighteenth-century Northern Germany as Continuous Crisis Management." In Karen Brown and Daniel Gilfoyle, Eds. *Healing the Herds: Disease, Livestock Economies, and the Globalization of Veterinary Medicine*. Athens: Ohio University Press, 2010, pp. 76-91.

Doeppers, Daniel F. "Fighting Rinderpest in the Philippines, 1886-1941." In Karen Brown and Daniel Gilfoyle, Eds. *Healing the Herds: Disease, Livestock Economies, and the Globalization of Veterinary Medicine*. Athens: Ohio University Press, 2010, pp. 108-128.

African Union — Interafrican Bureau for Animal Resources (AU-IBAR), *The Eradication of Rinderpest from Africa: A Great Milestone*. Nairobi, Kenya: AU-IBAR, 2011.

Further Reading to Investigate on Your Own:

Spinage, Clive A. *Cattle Plague: A History*. New York: Kluwer/Plenum Publishers, 2003.

12. November 25 — HIV/AIDS

Literature review for final paper due in class.

Chung, Annise and Murray R. Berkowitz. "Comparison of Smallpox vs. HIV/AIDS Eradication Strategies." *Journal of AIDS and Clinical Research*. (2013): <http://dx.doi.org/10.4172/2155-6113.S6-003>

Kazanjan, Powel. "The AIDS Pandemic in Historical Perspective." *Journal of the History of Medicine and Allied Sciences* (2012) doi: 10.1093/jhmas/jrs061 First published online: October 22, 2012.

Heller, Jacob. "HIV/AIDS Vaccine Research: Science and Ethics Confront the Narrative." *The Vaccine Narrative* Nashville, TN: Vanderbilt University Press, 2008. Pp. 112-141.

Highleyman, Liz. "HIV Eradication: Time to Talk about a Cure." *BETA* Winter/Spring(2011): 13-27.

Marsden, Matthew D. and Jerome A. Zack. "HIV/AIDS Eradication." *Bioorganic & Medicinal Chemistry Letters* 23(2013): 4003-4010.

Further Reading to Investigate on Your Own:

Cohen, Jon. *Shots in the Dark: The Wayward Search for an AIDS Vaccine*. New York: W. W. Norton and Company, 2001.

Harden, Victoria A. *AIDS at 30: A History*. Dulles, VA: Potomac Books, 2012.

13. December 2 — Toward the Endgame and Beyond

Klepac P., et al. "Towards the Endgame and Beyond: Complexities and Challenges for the Elimination of Infectious Diseases." *Philosophical Transactions of the Royal Society, B* 368(2013): 20120137. <http://dx.doi.org/10.1098/rstb.2012.0137>

Hopkins, Donald R. "Disease Eradication." *New England Journal of Medicine* 368(2013): 54-63.

Hopkins, Donald R. "The Allure of Eradication." *Global Health Magazine*. 3(2009): 14-17.

Aylward, B., et al. "When Is a Disease Eradicable? 100 Years of Lessons Learned." *American Journal of Public Health* 90.10(2000): 1515-1520.

Fairchild, Amy, et al. "The Exodus of Public Health: What History Can Tell Us About the Future." *American Journal of Public Health* 100.1: (2010): 54-63.

Brown, Theodore M., Marcos Cueto, and Elizabeth Fee. "The World Health Organization and the Transition from 'International' to 'Global' Public Health." *American Journal of Public Health* 96.1: (2006): 62-72.

Attaran, Amir. "An Immeasurable Crisis? A Criticism of the Millennium Development Goals and Why They Cannot Be Measured." *PLoS Medicine* 2.10(2005): e318, doi:10.1371/journal.pmed. 0020318.

Birn, Anne-Emannuelle. "Gates's Grandest Challenge: Transcending Technology as Public Health Ideology." *The Lancet* 366.9484(2005): 514–19.

Further Reading to Investigate on Your Own:

Centers for Disease Control and Prevention. *Global Disease Elimination and Eradication as Public Health Strategies*. Special Issue, *Morbidity and Mortality Weekly Report* 48.Suppl (1998). [Available online.]

World Health Organization. *Working for Health: An Introduction to the World Health Organization*. WHO Press: Geneva, Switzerland, 2007. [Available online.]

14. December 9 — Final Paper Presentations

December 21, 2013: Final Papers due in Learn@UW Dropbox by 11:59:59 PM.

