Evolutionary medicine is the emerging perspective that seeks to understand contemporary human health and disease in light of the evolutionary history of our species; evolutionary public health is the application of this perspective at the community- or societal-scale. This seminar is intended as a forum in which to explore current research that either explicitly employs this paradigm or is conducive to such analyses, across a broad range of topics. Because our goal will be to address a variety of topics, participants will select the specific readings to be covered with advice from the instructor. Each participant is to choose one topic or area, select appropriate readings, and lead the discussion with assistance from the instructor. Although the course does not include a formal writing assignment, participants are encouraged to look for opportunities to develop potentially publishable papers; the field of evolutionary medicine presents unique affordances in this regard, as the existing biomedical literature is voluminous, yet only a tiny fraction of this information has been employed to explore evolutionary questions.

In preparation for the first week’s meeting, please read the following overview papers (although there is some overlap among them, it is incomplete, hence it is well worth reading all three):


At the first meeting, we will sort out the topics to be covered and the schedule. Accordingly, please bring to the first meeting a prioritized list of topics that you would be interested in exploring – remember, you will play a central role in that week’s discussion, hence the topics should be metaphorically akin to the pericardium, i.e., near and dear to your heart (feeble attempt at medical humor). To aid you in this regard, in addition to topics mentioned in the above three papers, below are some resources; these are simply intended to provide a starting point – you are free to choose topics not included herein.

General resources
http://evmedreview.com/ -- blog / clearinghouse; compiles abstracts of recent ev med publications, etc.
http://emph.oxfordjournals.org/content/current -- *Evolution, Medicine, & Public Health* a prominent, relatively new exclusively ev med / ev public health journal
http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1752-4571 -- Evolutionary Applications publishes many ev med papers

Topics addressed in the 2014 Anthro 220 Ev Med seminar (I am conceivably willing to revisit these if seminar participants wish to do so)
Sexually-transmitted disease
Addiction, alcohol, psychoactive substance abuse
Cancer
Myopia
Post-fertile lifespan / menopause
Inflammation, infection, and cardiovascular disease
Life History Theory & cancer; & early stress; & sex diffs; & timing of puberty
Hygiene Hypothesis
Fever / brinksmanship
Dental occlusion & breastfeeding, diet
Mental illness / low mood / elusiveness of happiness
Menstruation
Timing of birth as function of fetal energy needs

Lists of possible topics
Presumably reflecting the ardor of some proponents of ev med, the Wikipedia page on the subject is fairly good, with many topics listed: http://en.wikipedia.org/wiki/Evolutionary_medicine

Randy Nesse’s topic suggestions:
Hypertension
Coronary heart disease
Asthma
Inflammatory bowel disease
Schizophrenia
Depression
Obsessive-compulsive disorder
Pre-eclampsia
Erythroblastosis fetalis
Osteoarthritis
Rheumatoid arthritis
Lupus
Acute myelocytic leukemia
Gout
Precocious puberty
Marfan’s syndrome
Muscular dystrophy
Cystic fibrosis
Hemophilia
Acne
Psoriasis
osteoporosis
Peptic ulcers
Hemochromatosis
Wilson’s disease
Specific allergies
Breast cancer
Tuberculosis
Alzheimer’s disease
HIV/AIDS
Hepatitis
West Nile virus
Opportunistic nosocomial infections
Sleeping sickness
Dengue hemorrhagic fever
Panic attacks
Multiple sclerosis
Huntington’s chorea
Prion diseases (CJD, mad cow)
Joe Alcock’s topic suggestions:
Migraines
Blood Clots
Iron Deficiency
Meningitis
Fear/Anxiety
Hypertension
Pelvis Shape
Rheumatoid Arthritis
Cholesterol
Scoliosis
Diabetes Type I
Haemophilus
Alzheimers
Helicobacter pylori
Selfish Mitochondria
Sleep Apnea
Hypertension
Sickle Cell Anemia
Diet and Depression
Adrenaline
Hallucination/Dreams
Blind Spot
Mosquito Vectors
Anorexia
Allergies and Immune System
Cholera and Cystic Fibrosis
Leticia Avilés’ topic suggestions:
Antibiotic resistance
Virulence and transmissibility (mode and rate).
Emerging diseases (SARS, ebola, etc.).
Flu epidemics and vaccine development. OR: Where do flu strains come from?.
Puzzling genetic diseases: Huntington's chorea, cystic fibrosis, Tay-Sachs, etc.
Interaction between infectious and genetic diseases.
Inbreeding and drift in human populations.
Are human ABO blood types adaptive?
Contrasting evolutionary theories of senescence (mutation accumulation vs. antagonistic pleiotropy).
Can we eliminate aging?
Why menopause? Theories and controversies.
Design compromises: in childbirth, eating and breathing, walking upright, etc.
Obesity/diabetes and the "thrifty" genotype hypothesis.
Myopia.
Lactose intolerance.
The "hygiene" and other hypotheses to explain increasing incidence of allergies and asthma.
Hygiene and autoimmune disorders (insulin-dependent diabetes, rheumatoid arthritis, lupus).
Evolution of anticancer mechanisms.
Parallels with other transitions between levels of organization.
Menstrual cycling and breast cancer.
Vitamin D, sun, and cancer.
Genetic conflicts of pregnancy
Testing evolutionary hypothesis of mental disorders (anxiety, depression, schizophrenia, bipolar disorder, etc.)
Positive psychology and the happiness hypothesis.