**Presentation**

As an upper division biology student, I think it’s important to become comfortable communicating with other scientists both orally and in writing. For this class, you can either give a presentation on a topic of your choosing (suggestions below) or read and review a popular-style parasitology book (see book review).

Suggestions for your talk: decide on a topic, read peer reviewed articles on the subject, prepare a PowerPoint presentation, practice (enlist the help of your group members), and evaluate. Make sure you give yourself plenty of time to do a quality job—I can almost guarantee you can’t do this the night before.

I have listed 21 possible topic choices for your talk. The references that follow include one or two papers that address each of the topics. You may find these to be helpful starting points in your literature search.

1. The leading hypothesis to explain the evolution of sexual reproduction is the disease-resistance hypothesis. How has this hypothesis been tested by Curtis Lively and others?
2. Worm therapy for autoimmune diseases?

 3 Can parasites affect mental agility and the ability to learn?

4. Can parasites decrease an animal’s ability to avoid predation?

1. Can parasites influence the production of hormones/change behavior in vertebrates?
2. Can parasites make you less sexually attractive?
3. Can vertebrates be parasites?
4. Economic parasitology: is there a cost to worm control? food-borne parasites?
5. Forensic entomology.
6. Molecular parasitology.
7. Harmonious parasites.
8. Herbal medicines and parasites: a case of co-evolution?
9. Modulation of the host immune system by parasites.
10. How can parasites survive when engulfed by macrophages?
11. Novel and bizarre parasites.
12. Parasites, charlatans and misinformation.
13. The role of parasites in generating evolutionary change and novelty.
14. Control of Neglected Tropical Diseases.
15. Why didn’t Columbus take any diseases back to the Old World?
16. *Wolbachia*: Applications to Human Health.
17. Global Climate Change and Infectious Diseases

 **References:**

Adamo, S.A. 2012. Parasites: Evolution’s neurobiologists *Journal of Exp. Bio.* **216**:3-10.
Anderson, P. 1994. Prokaryotes at the gate. *Discover* (August) **15**:45-50.

Anonymous. 1993. Breakthroughs: Sexing the shrimp. *Discover* (April) **14**:14.

Anonymous. 1993. Medicine-1993: A rash of epidemics. *Discover* (January) **14**:86-87.

Adams, A.M. 1993. Establishing jurisdiction through forensic parasitology. *Journal of Parasitology* **79**:459-460.

Bell, G. 1982. The Masterpiece of Nature: The Evolution and Genetics of Sexuality. University of California Press, Berkeley

Bermudes, D. & K.A. Joiner. 1993. The role of parasites in generating evolutionary novelty. *Parasitology Today* **9**:458-463.

Bian *et* al. 2013. Wolbachia Invades Anopheles stephensi populations and induces refractoriness to Plasmodium infection. *Science* **340**:748-751.

Bocanegra, T.S. & F.B. Vasey. 1993. Musculoskeletal syndromes in parasitic diseases. *Rheumatic Disease Clinics of North America* **19**:505-513.

Conn, D.B. 1994. Cestode infections of mammary glands and female reproductive organs: potential for vertical transmission? *Journal of the Helminthological Society of Washington* **61**:162-168.

Desowitz, R.S. 1977. Harmonious parasites. *Natural History* (October) **86**:34-38.

Diamond, J. 1992. The arrow of disease. *Discover* (October) **13**:64-73.

Donelson, J.E. & A.B. Fulton. 1989. The pushy ways of a parasite. *Nature* **342**:615-616.

Ewald, P.W. 1994. On Darwin, snow and deadly diseases. *Natural History* (June) **103**:42-45.

Fausto-Sterling, A. 1993. Is nature really red in tooth and claw? *Discover* (April) **14**:24-27.
Feasey, *et* al. 2010. Neglected tropical diseases. *Br. Med Bulletin* ***93(1)****:179-200.*

Giannini, S.H. 1992. Effects of ultraviolet B irradiation on cutaneous leishmaniasis. *Parasitology Today* **8**:44-48.

Gibbons, A. 1992. Researchers fret over neglect of 600 million patients. *Science* **256**:1135.

Glausiusz, J. 1994. Parasites and bug spit. *Discover* (August) **15**:21.

Gutin, J.C. 1992. Sex: Why bother? *Discover* (Special Issue) **13**:32-39.

Guyatt, H. 2000. Do intestinal nematodes affect productivity in adulthood? *Parasitology Today* **16**:153-158.

Guyatt, H.L. & D. Evans. 1992. Economic considerations for helminth control. *Parasitology Today* **8**:397-402.

Hart, S. 1995. When *Wolbachia* invades, insect sex lives get a new spin. *Bioscience* **45**:4-6.

Hotez, P.J. *C* 2007. Control of neglected tropical diseases. *N Engl J Med.* **357**:1018-1027.

Howard, J.C. 1991. Disease and evolution. *Nature* **352**:565-567.

Huffman, M.A. 2001. Self-medicative behavior in the African great apes: an evolutionary perspective into the origins of human traditional medicine. *Bioscience* **51**:651-661.

Hurst, G. & M. Majerus. 1994. Feminist bacteria and ladybird beetles. *Natural History* (June) **103**:32-34.

Issac, J., M.G. Deepu, P. Sathyan and Vargheese, G. 2011, The use of insects in forensic investigations: An overview on the scope of forensic entomology. *J. Forensic Dent. Sci*. **3(2)**: 89–91

Jabr, F. 2010. For the Good of the Gut: Can Parasitic Worms Treat Autoimmune Diseases? *Scientific American* (December).

Jaenike, J. 1994. Behind-the-scenes role of parasites. *Natural History* (June) **103**:46-48.

Kavaliers, M. & D.D. Colwell. 1995. Decreased predator avoidance in parasitized mice: neuro-modulatory correlates. *Parasitology* **111**:257-263.

Kavaliers, M. & D.D. Colwell. 1995. Discrimination by female mice between the odours of parasitized and non-parasitized males. *Proceedings of the Royal Society of London* B **261**:31-35.

Kavaliers, M. & D.D. Colwell. 1995. Exposure to stable flies reduces spatial learning in mice: involvement of endogenous opioid systems. *Medical and Veterinary Entomology* **9**:300-3.

Kavaliers, M. & D.D. Colwell. 1995. Odours of parasitized males induce aversive responses in female mice. *Animal Behavior* **50**:1161-1169.

Kavaliers, M. & D.D. Colwell. 1995. Reduced spatial learning in mice infected with the nematode, *Heligmosomoides polygyrus*. *Parasitology* **110**:591-597.

Knight, K. 2013. How pernicious parasites turn victims into zombies. *Journal Exp Biol* **216**:i-iv.

Knutson, R.M. 1999. Fearsome fauna: a field guide to the creatures that live *in* you. W.H. Freeman & Co., NY.

Line, L. 1994. Curse of the cowbird. *National Wildlife* (December/January):40-45.

Lively, C.M. 2010. A review of Red Queen models for the persistence of obligate sexual reproduction. *Journal of Heredity* **101**:S13-S20.

Lyons, G.T. 1994. Vertical transmission of nematodes: emphasis on *Uncinaria lucasi* in northern fur seals and *Strongyloides westeri* in equids. *Journal of the Helminthological Society of Washington* **61**:169-178.

Lythgoe, K. A. & Read, A. F. 1998. Catching the Red Queen? The advice of the rose. *Trends Ecol. Evol.* **13**: 473-474.

# Margolis, L. 1993. Parasitism: The Diversity and Ecology of Animal Parasites. *Journal of Parasitology* 79.

McNeill, W.H. 1976. Plagues and peoples. Anchor Books, Doubleday, NY.

Morris, S.C. 1995. A new phylum from the lobster’s lips. *Nature* **378**:661-662.

Najarian, H.H. 1976. Sex lives of animals without backbones. Schribner’s Sons, NY.

Nokes, C. & D.A.P. Bundy. 1994. Does helminth infection affect mental processing and educational achievement? *Parasitology Today* **10**:14-18.

Radetsky, P. 1993. Of parasites and pollens. *Discover* (September) **14**:54-62.

Rennie, J. 1992. Trends in parasitology: Living together. *Scientific American* **266**:121-133.

Ricciuti, E.R. 1973. Vampire catfish: the Candiru. *In*, Killers of the Seas, Walker & Co., NY. pp. 97-102.

Sarkar, S. 1992. Sex, disease, and evolution—variations on a theme from J.B.S. Haldane. *BioScience* **42**:448-454.

Schantz, P.M. 1994. Of worms, dogs, and human hosts: Continuing challenges for veterinarians in prevention of human disease. *Journal of the American Veterinary Medical Association* **204**:1023-1028.

Schulz, W. 1993. Parasite studies yield new insights into microbial marine food web. *Smithsonian Institution Research Reports* **73**:3.

Sharifi, E. 1984. Parasitic origins of nitrogen-mixing *Rhizobium*-legume symbioses: A review of the evidence. *BioSystems* **16**:269-289.

Shoop, W.L. 1994. Vertical transmission in the Trematoda. *Journal of the Helminthological Society of Washington* **61**:153-161.

Shuman, E.K. 2010. Global Climate Change and Infectious Diseases. *N Engl J Med.* **362**:1061-1063.

Smith, J.M. 1994. Bacteria break the antibiotic bank. *Natural History* (June) 103:39-40.

Spielman, A. & M. D. Antonio. 2001. Mosquito: A natural history of our most persistent and deadly foe. Hyperion, NY.

Van Valen, L. 1973. A new evolutionary law. *Evol.Theory* **1**:1-30.

Werren, J. 1994. Genetic invasion of the insect body snatchers. *Natural History (June)* **103**:36-38.

Zimmer, C. 1995. Hypersea invasion. *Discover* (October) **16**:76-87.

Zimmer, C. 2000. Attack and counterattack: The never-ending story of hosts and parasites. *Natural History* **109**:44-50.

Zimmer, C. 2000. Do parasites rule the world? *Discover* (August) **21**:78-85.

••••••••••

Also see: 24 June 1994 issue of *Science*, Vol. 264, devoted to Parasitology.

# Presentation (rubric for presenters)

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_

Criteria

 Poor Excellent

There was a reference page

that includes several recent

primary literature citations 1 2 3 4 5

The talk is organized in a clear

fashion with ideas that flow in a

logical sequence 1 2 3 4 5

There is an adequate discussion

of the topic. 1 2 3 4 5

Quality of visual aids 1 2 3 4 5

The talk is concise (15-20 minutes) 1 2 3 4 5

Comments