Course Approval Form

For instructions: *http://registrar.gmu.edu/facultystaff/catalog-revisions/course/*

Action Requested: (definitions available at website above)
[X] Create NEW [ ] Inactivate
[ ] Modify (check all that apply below)

[ ] Title [ ] Credits [ ] Repeat Status [ ] Schedule Type [ ] Prereq/coreq [ ] Restrictions [ ] Grade Mode [ ] Other: _____

Course Level: [X] Undergraduate [ ] Graduate

College/School: College of Science **Department:** Environmental Science and Policy
Submitted by: Esther Peters **Ext:** 3-3462 **Email:** epeters2@gmu.edu

Subject Code: EVPP **Number:** 560
(Do not list multiple codes or numbers. Each course proposal must have a separate form.)

Effective Term: [ ] Fall [X] Spring [ ] Summer *Year* 2018

Title: Current _____
Banner (30 characters max w/ spaces) _____
New Infectious Diseases of Wildlife

Fulfills Mason Core Req? (undergrad only)
[ ] Currently fulfills requirement
[ ] Submission in progress

Credits: (check one) [3] Fixed → [ ] Variable → [ ] Lec + Lab/Rct→ _____ to 0 or

Repeat Status: (check one) [X] Not Repeatable (NR) [ ] Repeatable within degree (RD) → [ ] Repeatable within term (RT) → Max credits allowed: (required for RT/RD status only) 3

Grade Mode: (check one) [X] Regular (A, B, C, etc.) [ ] Satisfactory/No Credit [ ] Special (A, B C, etc. +IP)

Schedule Type: (check one) LEC can include LAB or RCT if linked sections will be offered
[X] Lecture (LEC) [ ] Lab (LAB) [ ] Recitation (RCT) [ ] Internship (INT) [ ] Independent Study (IND) [ ] Seminar (SEM) [ ] Studio (STU) [ ] Activity (ACT) [ ] Research (RSC) [ ] Student Teaching (STC) [ ] Thesis (THS-798/799) [ ] Dissertation (DIS-998/999)

Prerequisite(s) (NOTE: hard-coding requires separate Prereq Checking form; see above website): Courses on evolution, ecology, zoology, and conservation biology or permission of the instructor.

Corequisite(s):

Restrictions Enforced by System: Major, College, Degree, Program, etc. Include Code(s).

Equivalencies (check only as applicable):
[X] YES, course is 100% equivalent to BIOL 560
[ ] YES, course renumbered to or replaces _____

Catalog Copy (Consult University Catalog for models)

Description (No more than 60 words, use verb phrases and present tense)	**Notes** (List additional information for the course)
During this course, infectious diseases of wildlife will be examined with emphasis on causes and mechanisms, pathobiology, ecology and epidemiology and population significance. We will explore methods of diagnosis, control, prevention and outbreak investigation as they apply to management and conservation of wildlife populations. Also, diseases crossing species barriers will be examined.	Course will co-meet with BIOL 460/EVPP 460. Graduate students in this course will be graded according to a different rubric than the undergraduate students.
Indicate number of contact hours: Hours of Lecture or Seminar per week: 3	Hours of Lab or Studio:
When Offered: (check all that apply) [ ] Fall [ ] Summer [3] Spring	

A[redacted]

College/School Approval Date

ny other units, the originating department must circulate this proposal for review by
n. Failure to do so will delay action on this proposal.

	Unit Approver's Signature	Date

Undergraduate / Graduate Council Approval

UGC or GC Council Member Provost's Office UGC or GC Approval Date

Form revised 11/10/2016

Course Proposal Submitted to the College of Science Curriculum Committee (COSCC)

The form above is processed by the Office of the University Registrar. This second page is for the COSCC's reference. Please complete the applicable portions of this page to clearly communicate what the form above is requesting.

FOR ALL COURSES (required)
Course Number and Title: EVPP 560 Infectious Diseases of Wildlife

Date of Departmental Approval:

FOR INACTIVATED/REINSTATED COURSES (required if inactivating/reinstating a course)

- Reason for Inactivating/Reinstating:

FOR MODIFIED COURSES (required if modifying a course)

- Summary of the Modification:
- Text before Modification (title, repeat status, catalog description, etc.):
- Text after Modification (title, repeat status, catalog description, etc.):
- Reason for the Modification:

FOR NEW COURSES (required if creating a new course)

- Reason for the New Course: The importance of wildlife diseases has increased in recent years due to globalization, habitat loss and fragmentation, the illegal trade and other human activities. More state and federal agencies and organizations are required to understand the wildlife-domestic animal-human interface in relation to infectious agents, biosecurity and potential zoonotic diseases. This course provides the framework for undergraduate students from Biology, Environmental Science and Policy, Public Health, Pre-med, Pre-vet, Nursing, Global Health and other majors, to understand the fundamental principles of infectious wildlife diseases and their interactions with conservation of species and ecosystems, impacts to domestic animal health and public health.
- Relationship to Existing Programs: N/A
- Relationship to Existing Courses: Equivalent to BIOL 560 (already approved by COSCC; complements EVPP427/527 and BIOL 435/507
- Semester of Initial Offering: Spring 2018
- Proposed Instructors: Alonso Aguirre
- Insert Tentative Syllabus Below

INFECTIOUS DISEASES OF WILDLIFE
EVPP 460-00X (CRN____)
BIOL 460-00X (CRN____)
EVPP 560-00X (CRN____)
BIOL 560-00X (CRN____)

3 Credit Hours

GEORGE MASON UNIVERSITY
Spring Semester 2017
Lecture: Thursdays 4:30–7:10 p.m.
[Building], Room [number]

Instructor:	Prof. A. Alonso Aguirre
Office:	3003 David J. King Hall MSN: MSN: 5F2, Fairfax
Office Hours:	Thursdays 2:00-4:00 pm or BY APPOINTMENT (send email request)
Phone:	703.993.7590
Cell:	304.200.0145
Email:	aaguirr3@gmu.edu

Prerequisite(s):	*Undergraduate students*: EVPP 301 OR BIOL308 and 60 credit hours; or Instructor's permission. *Graduate Students*: Courses on Evolution, Ecology, Zoology and Conservation Biology or Instructor's permission.

Sign up for Mason Alert (e.g., weather closings, emergencies) at **https://alert.gmu.edu**

Syllabus

Course Description

The importance of wildlife diseases has increased in recent years due to globalization, habitat loss and fragmentation, the illegal trade and other human activities. More state and federal agencies and organizations are required to understand the wildlife-domestic animal-human interface in relation to infectious agents, biosecurity and potential zoonotic diseases. This course provides the framework for undergraduate students from Biology, Environmental Science and Policy, Public Health, Pre-med, Pre-vet, Nursing, Global Health and other majors, to understand the fundamental principles of infectious wildlife diseases and their interactions with conservation of species and ecosystems, impacts to domestic animal health and public health. A basic understanding of these relationships in order to interact knowledgeably with both human and veterinary health professionals will be provided.

The course is not designed as a comprehensive survey of wildlife diseases. We will focus on the epidemiology of viruses, bacteria, fungi, protozoa and parasites that illustrate concepts important to the ecological and evolutionary strategies of the agent and its relationship to its hosts and the environment. Geographic distribution of selected infectious agents will be global but with

emphasis on diseases that occur in North America. Affected animal species include amphibians, reptiles, birds, and mammals both aquatic and terrestrial.

Course Objectives and Student Learning Outcomes

During this course, infectious diseases of wildlife will be examined with emphasis on causes and mechanisms, pathobiology, ecology and epidemiology and population significance. We will explore methods of diagnosis, control, prevention and outbreak investigation as they apply to management and conservation of wildlife populations. Also, diseases crossing species barriers will be examined. Students will participate in individual and team assignments to be able to:

1. Identify important infectious diseases of wildlife, including diseases transmissible between humans, domestic animals, and wildlife.
2. Understand the evolution of pathogens and their hosts linked to environmental conditions.
3. Understand the proximate mechanisms of pathogenesis in wildlife diseases.
4. Describe the epidemiological principles and models of disease spread in wildlife populations.
5. Describe primary methods of diagnosis, prevention and control of wildlife diseases.
6. Outline a wildlife disease outbreak investigation
7. Integrate wildlife diseases into principles of wildlife management, conservation, veterinary care and public health.

Course Expectations

Each session will combine lectures, class exercises, on occasion guest speakers, and student discussion. As with any cross-listed course offering, ***this will not be an easy course***. The successful student **must read assignments, study supporting materials, and prepare assignments outside of class**. Self-directed study skills are important. Students need to organize material logically and communicate well orally and in writing.

Class Preparation

"He who hesitates is lost...." Reading, research, and assignments are detailed on the following class outlines. Any concerns about keeping up with assignments should be discussed with Prof. Aguirre. More students are juggling work, research, internships, shadowing, and families. Please note "Although many students must work to meet living expenses, employment must not take priority over academic responsibilities. Students employed more than 20 hours a week are strongly urged not to attempt a full-time academic load. Students employed more than 40 hours a week should attempt no more than 6 credits per semester. Students who fail to observe these guidelines may expect no special consideration for academic problems arising from the pressures of employment.." (University catalog, section AP.1.2. Academic Load, see: http://catalog.gmu.edu/content.php?catoid=27&navoid=5365#attendance). Please consider your responsibilities and interests and plan accordingly to protect your health and GPA!

Class Participation

Students should come to class ready to participate in all activities (assignments completed prior to class). They should behave in a mature and professional manner and abide by the George Mason University honor code. **Please turn off cell phones or pagers before class begins.**

Absenteeism should be limited to illness or emergencies, or discuss concerns with the instructor. Students should notify the instructor before class if they must miss a class. **Multiple missed classes will affect student grades.** PowerPoint TEXTS will be posted so you have the highlights of each lecture. However, you need to make every effort to attend. Students should contact classmates to obtain lecture notes and assignments, if necessary as quizzes and exams will be based also from readings from the books and other materials.

Students may record the lectures (sound), but may not take photographs or videos. Instead, they should take notes, which will help them study for the exams. If using electronic devices (such as laptops, notebooks, tablets), please be respectful of your peers and your instructor and do not engage in activities that are unrelated to class. Such disruptions show a lack of professionalism and can affect your grade.

If you are a student with a disability and you need academic accommodations, please notify the instructor and contact the Office of Disability Services (ODS) at 993-2474. All academic accommodations must be arranged through the ODS.

E-mail Communications

Prof. Aguirre will send e-mail messages only to your GMU e-mail account. Students must use their Mason email —"MASONLIVE" account—to receive important University information, including messages related to this class. See http://masonlive.gmu.edu for more information. Please be sure you check it often and keep your mailbox from getting "over quota" (filled up so you won't get any)! If you are not getting messages (e.g., masonlive issues), please give an alternate e-mail address.

WHAT THE COURSE CANNOT DO:

A single semester course in infectious diseases of wildlife cannot impart diagnostic skills or research capacity. Work that requires diagnostics or research tools must involve trained diagnosticians/ researchers, for diagnostics usually veterinary pathologists with wildlife experience and consultation from experienced wildlife biologists. This by no means limits wildlife disease work to individuals with diagnostic training. Wildlife diagnostics is only one part of wildlife disease work and may or may not be necessary in all research projects. In fact, the best wildlife disease work is generally done by transdisciplinary teams that include wildlife biologists, population biologists, ecologists, epidemiologists, veterinarians, public health experts, pathologists, toxicologists, microbiologists, parasitologists, modelers, sociologists, anthropologists and others! We hope to emphasize that with examples for discussion.

Course Assignments

Definitions of Terms

Each student is expected to identify 100 common terms in infectious diseases of wildlife and submit them ***written by hand***. This is a way to expose you to common terminology used in infectious disease of wildlife hoping that you may remember some of these definitions while writing them.

Written Commentaries

In addition to reading and studying the textbook, other books, and journal papers, undergraduate students will prepare **one written assignment** and graduate students **two written assignments** of 400 words not including references drafted as a commentary, comparing, contrasting, or critiquing a technical or popular article recently published (2015 onward) on an infectious disease of wildlife (i.e. West Nile virus infection in alligators, mycoplasmosis in finches, epizootic hemorrhagic disease of deer), in the style of *Letters to Science* http://www.sciencemag.org/site/collections/online/eletters/guidelines.xhtml

Identify ***specific*** issues/critiques you have with **an article of your choice from a refereed journal or popular magazine**. This can be something that you found problematic, interesting, ridiculous, missing, etc. and then compare and support your arguments with other sources in the literature. You are **encouraged** to search articles from all sources. Use Web of Science or other journal databases to do additional literature searches.

Make your critiques **explicit and clear**, e.g.: "I find three main critiques in the way this argument was presented." … paragraph 1, 2, 3. Preferable to critique is a piece of **primary** literature, popular magazine or even TV news report, and ***not a review paper or chapter***.

Do not spend too many words describing the intro, methods, conclusions, etc. of the article or report that you are critiquing. Try to give a very **brief** overview of the important points or methods and spend the rest of your paper giving **your own** "two-cents"! A good idea is to end with what you think needs to be done in the future based on your critique. **Don't be repetitive** with your points, you only have up to 400 words, therefore be concise and clear. Make every word count (this may be one of the big challenges of the assignments and will train you for real manuscript writing with editor-imposed word limits).

Proofread: Review your spelling and grammar before handing your work in! Avoid run-on or ambiguous sentences.

Each paper should be neatly prepared and proofread, especially checking for consistency, completeness, and correctness (Help: The Writing Center, OWL/On-line Writing Lab). Many online grammar resources are available now. This book might help when writing:

Ross-Larson, B. 1996. *Edit Yourself: A Manual for Everyone Who Works With Words.* W.W. Norton & Co., New York, NY.

All statements of fact in your paper need to be referenced to some authority. You can of course get access to that material electronically, BUT the use of web sites as a primary source of information is discouraged. You should be using primary literature (e.g. peer reviewed journal

articles) and reports for your authority. Limit web citation to no more than about 25% of the total. Full references (all authors names) should be provided in the Literature Cited section of your paper. As for citation style – use *Letters to Science*, but include all authors in the Literature Cited portion of the paper. Footnotes are reserved for limited explanatory material only. In the body of the text use numbers with an alphabetized Literature Cited section.

Use **proper reference structure**, author-year e.g., "AbuBakar *et al* (2011) isolated Nipah virus from pigs" or numbered reference (if you want to save words), e.g. "Nipah virus was isolated from pigs [1]".

References:

1. AbuBakar S, L-Y Chang, ARM Ali, SH Sharifah, K Yusoff, and Z Zamrod. 2004. Isolation and molecular identification of Nipah virus from pigs. Emerging Infectious Diseases 10:2228-2230.

Please use Word (either .doc or .docx files only) and email your paper to me at the due date.

Research Paper

Not for Undergrads! Each graduate student will be expected to write a research paper on an infectious disease of wildlife agreed upon by the instructor and student. The paper shall be a minimum of 6 double spaced typed pages containing the history, science, human dimensions, and management implications of the topic. Grading of the paper will be judged on content, form, and relevancy to the course subject. Further details of the paper will be covered at the time of assignment. Use the *Journal of Wildlife Diseases* guidelines for length and style of the research papers.

PowerPoint Presentation

Not for Undergrads! Graduate students are required to give a final 15-min presentation (including 2-3 min Q&A) via PowerPoint slides on a *contemporary* issue/topic relevant to *Infectious Diseases of Wildlife*. These presentations are worth *10% of your grade*. The issues/topics (*but not the contents*) for the presentations are not limited to those covered in class. Choose your favorite infectious disease of wildlife from a newspaper, magazine article, or scientific journal article. In your presentation, provide a brief background of the problem; describe the impacts of this disease to wildlife, domestic animals, humans and ecosystems and concerns from an economic, cultural, environmental, and/or epidemiological perspective. Management implications may include discussion of mechanisms of control, prevention measures and proactive intervention to reduce impacts of the pathogen.

Presentations will be **15-minutes total** (including 2-3 minutes for questions).

The slide presentation "rule of thumb" is 1 slide per minute so plan accordingly.
Your 1st slide should be a title slide with your name and title of the talk. Next should be an introduction & overview to the infectious disease followed by more specifics. Next you should discuss the implications and management issues related to the ecology of the pathogen-host-environment. Finally, you should provide conclusions in which the main points are highlighted. Presentations will be graded on the clarity of the presentation, the professionalism of the slides,

the content of the material presented, and your ability to answer questions posed by classmates and instructor. Each topic below will get a score ranging from **1** (poor), **2** (good), **3** (very good) **4** (excellent)

Literature Review- Scope of information gathering

Scientific knowledge- How accurate is the information presented

Management Implications- all presentations should address *at least* 3 of the following areas:

a) Effects of an infectious disease in wildlife species and populations, and their impact on domestic animal and human health
b) Economic perspectives
c) Cultural perspectives
d) Socioeconomic perspectives
e) Environmental policy angle
f) Perspectives from both the development, agriculture and conservation
g) Solutions to the problems outlined

Conclusions-Conclusions are sound and supported by data

Slides-Slides are well organized, logical, and easy to read and to interpret

Style-Delivery is clear, audible, with proper elocution and eye contact with audience

Time-Speaker adheres strictly to time limit.

Grading Criteria

The total grade received for this course will be based on the following assignments and assessments:

Activity	EVPP490/BIOL460 % Contribution to Total Grade	EVPP505 % Contribution to Total Grade
Definitions of Terms	10%	5%
Class participation	5%	5%
Extra readings	-	5%
Two written commentaries	10% (one only)	10% (5% each)
Research paper	-	20%
Four surprise quizzes (5 given)	40% (10% each)	20% (5% each)
Mid-term Exam	35%	25%
PowerPoint presentation	-	10%
TOTAL	**100%**	**100%**

The final grade for undergraduate students will be based on this scale: A = 100–93%, A- = 92-90%, B+ = 89-86%, B=85-83, B- = 82-80%, C = 79–70%, D = 69–60%, F < 59%. **A CURVE WILL NOT BE APPLIED.**

The final grade for graduate students will be based on this scale: A= 100–90%, B= 89-80, C = 79–70%, D= 69–60%, F < 59%. **A CURVE WILL NOT BE APPLIED.**

Academic Integrity

GMU is an Honor Code university; please see the University Catalog for a full description of the code and the honor committee process. The principle of academic integrity is taken very seriously and violations are treated gravely. What does academic integrity mean in this course? Essentially this: when you are responsible for a task, you will perform that task. When you rely on someone else's work in an aspect of the performance of that task, you will give full credit in the proper, accepted form. Another aspect of academic integrity is the free play of ideas. Vigorous discussion and debate are encouraged in this course, with the firm expectation that all aspects of the class will be conducted with civility and respect for differing ideas, perspectives, and traditions. When in doubt (of any kind) please ask for guidance and clarification. Students are expected to complete the work on their own or as a team, depending on the assignment.

All exams will be completed by individuals in the classroom or as a team outside the classroom (those registered for the course).

Unless otherwise noted, these assessments will be taken without the use of study aids, memoranda, textbooks, other books, data, or other information available.

It is important to note that materials produced for this course, particularly for the research paper, require creativity in organization and presentation, but that the information presented within the paper or other product must be properly acknowledged as to its source. Statements of a general nature or that synthesize information from several sources need not be attributed to a specific source; however, statements of specific details or direct quotations ("between quotation marks") from books, journals, newspaper or other media articles, Internet web pages, or other authorities must be identified with the name of the author and year in the text and the full citation provided in a literature cited section at the end of the paper. The instructor will provide the format for citations.

Other Useful Campus Resources

WRITING CENTER: A114 Robinson Hall; 703-993-1200; http://writingcenter.gmu.edu

UNIVERSITY LIBRARIES: "Ask a Librarian" http://library.gmu.edu/mudge/IM/IMRef.html

COUNSELING AND PSYCHOLOGICAL SERVICES (CAPS): 703-993-2380; http://caps.gmu.edu

LEARNING SERVICES: 703-993-2999; http://caps.gmu.edu/learningservices/; offer many good study skills workshops!

ACADEMIC COUNSELING PROGRAM: 703-993-2380:
http://caps.gmu.edu/learningservices/academiccounseling.php

UNIVERSITY POLICIES
The University Catalog, http://catalog.gmu.edu, is the central resource for university policies affecting student, faculty, and staff conduct in university academic affairs. Other policies are available at http://universitypolicy.gmu.edu/. All members of the university community are responsible for knowing and following established policies.

Course Schedule*

Week	***Date***	***Topic***
1	01/26	Introduction to the course. General concepts and definitions
		The One Health approach to infectious diseases of wildlife
2	02/2	Globalization & the wildlife trade
		Forensic technics: CSI for wildlife
3	02/9	Mechanical & chemical immobilization
		Stress and capture myopathy
4	02/16	Infectious disease dynamics: Pathogens
		Infectious disease dynamics: Hosts
5	02/23	Infectious disease dynamics: Basics of Ecology & Epidemiology
		Infectious disease dynamics: Vaccination & Control Mechanisms
6	03/2	***Definitions of Terms Due***
		Infectious disease dynamics: Emergence & Global Health
7		
	03/9	***Midterm Exam***
8		
	03/16	**Spring Break**
9		
	03/23	Viral diseases of wildlife including prions
10		
	03/30	Vectorborne diseases of wildlife
11		***Written Commentary 1 due***
	04/6	Bacterial diseases of wildlife
12		
	04/13	Fungal diseases of wildlife
13		
	04/20	Parasitic diseases of wildlife
14		***Written Commentary 2 due***
	04/27	Wildlife disease surveillance; disease control operations; euthanasia
15	05/3	***Research Paper due***
		Final PPT Presentations

*In additon papers read by undergraduates; all graduate students will require to read **two other refereed papers** listed below that need to be discussed in class.

Required Textbooks: None

Required Readings (Undergraduate required readings are in bold):

Week 1:

Aguirre, A.A., V.R. Beasley, T. Augspurger, W.H. Benson, J. Whaley and N. Basu. 2016. One Health—Transdisciplinary opportunities for SETAC leadership in integrating and improving the health of people, animals, and the environment. Environmental Toxicology and Chemistry 35:2383-2391.

Buttke, D.E., D.J. Decker, and M.A. Wild. 2015. The role of one health in wildlife conservation: a challenge and opportunity. Journal of Wildlife Diseases 51:1-8.

Stephen C. 2014. Toward a modernized definition of wildlife health. Journal of Wildlife Diseases 50:427-430.

Stephen, C. 2017. Wildlife Health 2.0: Bridging the knowledge-to-action gap. Journal of Widlife Diseases 53:1-4.

Week 2:

Aguirre, A. A. and G. M. Tabor. 2008. Global factors driving emerging infectious diseases: Impact on wildlife populations. Animal Biodiversity and Emerging Diseases: Annals of the New York Academy of Sciences 1149:1-3.

Gomez, A. and A. A. Aguirre. 2008. Infectious diseases and the illegal wildlife trade. Animal Biodiversity and Emerging Diseases: Annals of the New York Academy of Sciences 1149:16-19.

Ogden, R., N. Dawnay and R. McEwing. 2009. Wildlife DNA forensics – bridging the gap between conservation genetics and law enforcement. Endangered Species Research doi: 10.3354/esr00144

Wasser, S.K., L. Brown, C. Mailand, S. Modol, W. Clark, C. Laurie, and B.S. Weir. 2015. Genetic assignment of large seizures of elephant ivory reveals Africa's major poaching hotspots. Science 10.1126/science.aaa2457.

Week 3:

Arnemo, J.M., Ahlqvist, P., Andersen, R., Berntsen, F., Ericsson, G., Odden, J., Brunberg, S., Segerström, P. and Swenson, J.E. 2006. Risk of capture-related mortality in large free-ranging mammals: experiences from Scandinavia. – Wildlife Biology 12:109-113.

Cunningham, A.A. 1996. Disease risks of wildlife translocations. Conservation Biology 10: 349-353.

Dickens, M.J., D.J. Delehanty, and L.M. Romero. 2010. Stress: An inevitable component of animal translocation. Biological Conservation 143:1329-1341.

Osofsky, S.A. and K.J. Hirsch. 2000. Chemical restraint of endangered mammals for conservation purposes: a practical primer. Oryx 34(1):27-33.

Blumstein, D.T. et al. 2015. The evolution of capture myopathy in hooved mammals: a model for human stress cardiomyopathy? Evolution, Medicine and Public Health pp. 195-203.

Spraker, T. 1993. Stress and capture myopathy in artiodactyls *In* M.E. Fowler (ed.), Zoo & Wildlife Medicine: Current Therapy 3, pp. 481-488. W.B. Saunders Company, Philadelphia, Pennsylvania.

Week 4:

Hanisch, S.L., S.J. Riley, and M.P. Nelson. 2012. Promoting wildlife health or fighting wildlife disease: Insights from history, philosophy, and science. Wildlife Society Bulletin 36:477-482.

Holdo, R.M., A.R.E. Sinclair, A.P. Dobson, K.L. Metzger, B.M. Bolker, M.E. Ritchie, and R.D. Holt. 2009. A disease-mediated trophic cascade in the Serengeti and its implications for ecosystem C. PLoS Biology 7(9): e1000210. doi: 10.1371/journal.pbio.1000210

Tompikns, D.M., S. Carver, M.E. Jones, M. Krkošek, and L.F. Skerrat. 2015. Emerging infectious diseases of wildlife: a critical perspective. Trends in Parasitology 31:149-159.

Viana, M., R. Mancy, R. Biek, S. Cleaveland, P.C. Cross, J.O. Lloyd-Smith, and D.T. Haydon. 2014. Assembling evidence for identifying reservoirs of infection. Trends in Ecology & Evolution 29(5):270–279.

Week 5:

Belsare, A.V., A.T. Vanak, and M.E. Gompper. 2014. Epidemiology of viral pathogens of free-ranging dogs and Indian foxes in a human-dominated landscape in central India. Transboundary and Emerging Diseases 61(S1):78-86.

Brearley, G., J. Rhodes, A. Bradley, G. Baxter, L. Seabook, D. Lunney, Y. Liu, and C. McAlpine. 2012. Wildlife disease prevalence in human-modified landscapes. Biological Reviews doi: 10.1111/brv.12009.

Tompikns, D.M., A.M. Dunn, M.J. Smith and S. Telfer. 2011. Wildlife diseases: from individuals to ecosystems. Journal of Animal Ecology 80:19-38.

Walton, L. G. Marion, R.S. Davidson, P.C.L. White, L.A. Smith, A. Lesley, D. Gavier-Widen, L. Yon, D. Hannant, and M.R. Hutchings. 2016. The ecology of wildlife disease surveillance: demographic and prevalence fluctuations undermine surveillance. Journal of Applied Ecology 53(5):1460-1469.

Week 6:

Bienen, L., and G. Tabor. 2006. Applying an ecosystem approach to brucellosis control: can an old conflict between wildlife and agriculture be successfully managed? Front Ecol Env 4(6):319–327.

Chauvenet, A.L.M., S.M. Durant, R. Hilborn, and N. Pettorelli. 2011. Unintended consequences of conservation actions: managing disease in complex ecosystems. PLoS ONE 6(12): e28671. doi:10.1371/journal.pone.0028671

Uehlinger F.D., A.C. Johnston, T.K. Bollinger and C.L. Waldner. 2016. Systematic review of management strategies to control chronic wasting disease in wild deer populations in North America BMC Veterinary Research 12:173. DOI 10.1186/s12917-016-0804-7.

Woodhams, D.C., J. Bosch, C.J. Briggs, S. Cashins, L.R. Davis, A. Lauer, E. Muths, R. Puschendorf, B.R. Schmidt, B. Sheafor, and J. Voyles. 2011. Mitigating amphibian disease: strategies to maintain wild populations and control chytridiomycosis. Frontiers in Zoology 8:8.

Week 7: MIDTERM EXAM

Week 8: SPRING BREAK

Week 9:

Clayton, B.A., L.F. Wang, and G.A. Marsh. 2012. Henipaviruses: an updated review focusing on the Pteropid reservoir and features of transmission. Zoonoses and Public Health 60:69-83.

Mähl, P., F. Cliquet, A.-L. Guiot, E. Niin, E. Fournials, N. Saint-Jean, M. Aubert, C.E. Rupprecht and S. Gueguen. 2014. Twenty-year experience of the oral rabies vaccine SAG2 in wildlife: a global review. Veterinary Research 44:77.

Roeder, P., J. Mariner, and R. Kock. 2013. Rinderpest: the veterinary perspective on eradication. Phil Trans R Soc B 368:20120139.

Wallace RM, Gilbert A, Slate D, Chipman R, Singh A, et al. 2014. Right place, wrong species: A 20-year review of rabies virus cross species transmission among terrestrial mammals in the United States. PLoS ONE 9(10): e107539. doi:10.1371/journal.pone.0107539

Week 10:

Duscher, G.G., M. Leschnik, H.-P. Fuehrer, and A. Joachim. 2015. Wildlife reservoirs for vector-borne canine, feline, and zoonotic infections in Austria. International Journal for Parasitology: Parasites and Wildlife 4:88-96.

Marra, P. et al. 2004. West Nile virus and wildlife. BioScience 54:393-402.

Magori, K. and J.M. Drake. 2013. The population dynamics of vector-borne diseases. Nature Education Knowledge 4(4):14 http://www.nature.com/scitable/knowledge/library/the-population-dynamics-of-vector-borne-diseases-102042523

Samuel, M.D., B.L. Woodworth, C.T. Atkinson, P.J. Hart, and D. LaPointe. 2015. Avian malaria in Hawaiian forest birds: infection and population impacts across species and elevations. Ecosphere 6 (6):104-121.

Week 11:

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