



Leptospirosis Modeling NIMBioS Working Group September 15-18, 2015

Monday, September 14

After lunch Hike

Attending: Suzanne Lenhart, Andrea Previtali, Jorge Velasco-Hernandez, Rudy Hartskeerl, Cristina Schneider, Matteo Convertino

Tuesday, September 15

8:15-9:00 Breakfast at NIMBioS

9:00-10:00 Review of report of previous meeting, plan of work for current meeting and logistics.

REPORT OF CURRENT MODELING AND EMPIRICAL STUDIES

10:00-10:30 "Pathogen persistence, predominance, and quantification of infection source in a multi-host model" by Jorge Velasco-Hernandez and Elizabeth Santiago

10:30-11:00 "Eco-epidemiology of leptospirosis in a multi-host system in rural and urban gradient" by Claudia Munoz-Zanzi

11:00-11:15 Break

11:15-12:15 Open discussion

12:15-1:15 Lunch at NIMBioS

1:15-1:45 "Evaluation of effectiveness of chemoprophylaxis" by Jorge Velasco-Hernandez and Laurel Ohm

1:45-2:15 "Current use of chemoprophylaxis to reduce impact of disease" by Cristina Schneider

2:15-2:30 Break

2:30-3:15 "Portfolio decision design for leptospirosis interventions" by Matteo Convertino

3:15-5:00 Open discussion

Wednesday, September 16

8:00-9:00 Breakfast at NIMBioS

9:00-9:30 "Eco-epidemiological modeling" by Suzanne O'Regan

9:30-10:15 "Patterns of leptospirosis cases, development of an early warning system" by Matteo Convertino

10:15-10:30 Break

10:30-11:00 "Leptospirosis outbreaks, global temporal and spatial distribution" by Claudia Munoz-Zanzi, Vincent Herbreteau, Sergey Berg

11:00-12:00 Open discussion

- 12:00-1:00 Lunch
- 1:00-1:30 “Optimal early detection of leptospirosis cases” by Suzanne Lenhart, Jorge Velasco-Hernandez, and Zhilan Feng
- 1:30-2:00 “Plans for literature reviews on our modeling topics” by Andrea Previtali
- 2:00-3:00 Logistics for sharing parameters/assumptions and references across modeling groups
- 3:00-3:15 Break
- 3:15-5:00 Work by Groups
- 5:00-5:30 Open discussion

Thursday, September 17

- 8:00-9:00 Breakfast at NIMBioS
- 9:00-9:30 “An agent based model of leptospirosis transmission in an urban setting” by Meghan Mason, Claudia Munoz-Zanzi, Matt Gompper
- 9:30-10:00 “*Leptospira* in the environment” by Rudy Hartskeerl
- 10:00-11:00 Work in groups
- 11:00-11:15 Break
- 11:15-12:00 Work in groups
- 12:00-1:00 Lunch at NIMBioS
- 1:00-2:00 Open discussion
- 2:00-4:00 Work by Groups
- 4:00-5:00 Open discussion
- 5:00- ? Discussion on proposal ideas, study design, data collection instruments, etc.

Friday, September 18

- 8:00-9:00 Breakfast at NIMBioS
- 9:00-10:30 Open discussion: Last updates from work by groups, data needs, gaps, new models/papers
- 10:30-10:45 Break
- 10:45-12:00 Conclusions, homework, and planning of next meeting.
- 12:00-1:00 Lunch at NIMBioS

Participants

	Name	Institution	Expertise	Email
1	Jorge Velasco-Hernandez, PhD	Institute of Mathematics, Universidad Nacional Autonoma de Mexico	PhD in Mathematics	jx.velasco@im.unam.mx
2	Matteo Convertino, PhD	Assistant Professor; Division of Environmental Health, University of Minnesota	PhD Civil and Environmental Engineering; numerical modeling of natural phenomena, fractals and spatial-temporal stochastic processes, complex networks.	matteoc@umn.edu
3	Matthew Gompper	Professor. Department of Fisheries and Wildlife Sciences, University of Missouri	PhD in Ecology; disease ecology, behavioral, population, and conservation ecology, conservation biology, dog/mammalian disease ecology	gompper@missouri.edu
4	Suzanne Lenhart, PhD	Mathematics, University of Tennessee	PhD Mathematics; partial differential equations, optimal control, population and environmental models, disease models	lenhart@math.utk.edu
5	Zhilan Feng, PhD *	Professor, Department of Mathematics, Purdue University	PhD in Applied Mathematics. Differential equations and dynamical systems, mathematical biology.	fengz@purdue.edu
6	Claudia Munoz-Zanzi, DVM, PhD	Associate Professor, Division of Epidemiology, University of Minnesota	PhD in Epidemiology; Epidemiology of infectious diseases, vet med, public health	munozzan@umn.edu
7	Rudy Hartskeerl, PhD	Royal Tropical Institute, Biomedical Research, Netherlands	PhD in Molecular Microbiology, leptospirosis diagnosis, animal models	r.hartskeerl@kit.nl
8	Andrea Previtali	Research Scientist. Universidad Nacional del Litoral, Santa Fe, Argentina	PhD Biological Sciences; ecology, modeling	andrea.previtali@gmail.com
9	Cristina Schneider, DVM, PhD	Advisor, Human and Animal Health Interface, IHR/ Alert and Response and Epidemic Diseases, HSD/PAHO-Washington	PhD in Epidemiology; zoonosis, epidemiology, outbreak response	schneidc@paho.org
10	Vincent Herbreteau, PhD *	Research Scientist, Espace-Dev, Institut de Recherche pour le Developpement (IRD), France	PhD in Health Geography, MS in Engineering; leptospirosis researcher, geographer, leptospirosis community ecology, health ecology.	vincent.herbreteau@ird.fr
11	Alejandro de la Pena-Moctezuma, DVM, MS, PhD *	Center for Training, Research, and Extension in Animal Production, College of Veterinary Medicine, Universidad Nacional Autónoma de México	PhD in Molecular Biology; leptospirosis research, pathogenesis, animals models, veterinary medicine.	delapema@unam.mx

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