



Leptospirosis Modeling NIMBioS Working Group November 1-4, 2016

Tuesday, November 1

8:00-9:00 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

10:00-11:00 Parameter work, gaps.

11:00-11:15 Break

11:15-12:15 Open discussion

12:15-1:30 Lunch at NIMBioS

1:30-2:30 Chemoprophylaxis model by Jorge and Zhilan

2:30-3:30 Early detection of leptospirosis cases by Ibrahimh

3:30-3:45 Break

3:45-4:45 Multi-host, multi-strain system by Elizabeth

4:45-5:00 Open discussion

5:00- NIMBioS Reception

Wednesday, November 2

8:00-9:00 Breakfast at NIMBioS

9:00-10:00 Dog and rodent agent-based model by Claudia/Meghan

10:00-10:30 Work by modeling groups

10:30-10:45 Break

10:45-11:30 Work by modeling groups

11:30-12:00 Open discussion

12:00-1:00 Lunch

1:00-3:00 Design of research studies to answer knowledge/parameter gaps by Claudia

3:00-3:15 Break

3:15-5:00 New forecasting model with real-time environmental data, patterns of unique cases and variance/mean relationship; environmental niches and pathogen suitability models by Matteo (via Skype)

5:00-5:30 Open discussion

Thursday, November 3

8:00-9:00 Breakfast at NIMBioS

9:00-10:00 Work in groups/manuscript writing time

10:00-10:30 Work in groups/ manuscript writing time

10:30-10:45 Break
10:45-12:00 Work in groups
12:00-1:00 Lunch at NIMBioS
1:00-3:00 Environmental model by Suzanne O.
3:00-3:15 Break (picture)
3:15-5:00 Discussion on new research and paper ideas.

Friday, November 4

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, plan and timeline to finish all projects, new funding.
12:00-1:00 Lunch at NIMBioS

Participants

| | Name | Institution | Expertise | Email |
|----|-------------------------|--|--|----------------------------|
| 1 | Jorge Velasco-Hernandez | Institute of Mathematics, Universidad Nacional Autonoma de Mexico | PhD in Mathematics | jx.velasco@im.unam.mx |
| 2 | Matthew Gompper | Professor, Department of Fisheries and Wildlife Sciences, University of Missouri | PhD in Ecology; disease ecology, behavioral, population, and conversation ecology, conservation biology, dog/mammalian disease ecology | gompper@missouri.edu |
| 3 | Suzanne Lenhart, PhD | Mathematics, University of Tennessee | PhD Mathematics; partial differential equations, optimal control, population and environmental models, disease models | lenhart@math.utk.edu |
| 4 | Zhilan Feng, PhD | Professor, Department of Mathematics, Purdue University | PhD in Applied Mathematics. Differential equations and dynamical systems, mathematical biology. | fengz@purdue.edu |
| 5 | Claudia Munoz-Zanzi | Associate Professor, Division of Epidemiology, University of Minnesota | PhD in Epidemiology; Epidemiology of infectious diseases, vet med, public health | munozzan@umn.edu |
| 6 | Rudy Hartskeerl | Royal Tropical Institute, Biomedical Research, Netherlands | PhD in Molecular Microbiology, leptospirosis diagnosis, animal models | r.hartskeerl@kit.nl |
| 7 | Andrea Previtali | Research Scientist, Universidad Nacional del Litoral, Santa Fe, Argentina | PhD Biological Sciences; ecology, modeling | andrea.previtali@gmail.com |
| 8 | Cristina Schneider | 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 |
| 9 | Elizabeth Santiago | Institute of Mathematics, Universidad Nacional Autonoma de Mexico | PhD Computer Science | eliza.stgo@gmail.com |
| 10 | Suzanne O'Regan | NIMBioS | PhD Mathematics | s.m.oregan@gmail.com |
| 11 | Ibrahim Halil Aslan | U of T | Mathematics | asibrahimhalil@gmail.com |

Additional participants

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| 12 | Ben G. Fitzpatrick | Professor, Loyola Marymount University | PhD Mathematics | ben.fitzpatrick@lmu.edu |
| 13 | Meghan Mason | PhD student, U of Minnesota | PhD Epidemiology | Maso0299@umn.edu |
| 14 | David Baca | Post-doc. Math Institute, UNAM, Mexico | PhD Mathematics | dbc270582@gmail.com |
| 15 | Vincent Herbreteau* | 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 |
| 16 | Alejandro de la Pena-Moctezuma | 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 |
| 17 | Matteo Convertino, * | 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 |

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