



Evaluation Data Report

Investigative Workshop: *Mathematical Modeling of Wildlife and Virus Zoonoses*

Nov 8-10, 2010

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Wildlife Zoonoses Workshop Evaluation Data Report

Background

Introduction

This report contains evaluation data for a NIMBioS Investigative Workshop entitled “*Mathematical Modeling of Wildlife and Virus Zoonoses*” (Zoonoses workshop), which took place at NIMBioS November 8-10, 2010. NIMBioS Investigative Workshops are relatively large (30-40 participants), focus on a broader topic or a set of related topics than Working Groups, attempt to summarize/synthesize the state of the art and identify future directions, and have potential for leading to one or more future Working Groups. Participants may include post-docs and graduate students with less experience in the particular topic than those participating in Working Groups.

The Zoonoses workshop comprised 45 participants, including co-organizers Colleen B. Jonsson (Professor of Microbiology and Director of the Center for Predictive Medicine, University of Louisville, Louisville, Kentucky); Linda J. S. Allen (Professor of Mathematics, Department of Mathematics and Statistics, Texas Tech University, Lubbock, Texas); and Pauline van den Driessche (Professor Emeritus, Department of Mathematics and Statistics, University of Victoria).

Workshop Background

The focus of the workshop was to define, discuss, and develop approaches to collaboratively address critical gaps that remain in mathematical modeling of the ecology and natural history of zoonotic viruses, how they are maintained in their reservoirs, the processes and mechanisms that lead to transmission, host switching, and molecular events that lead to transfer and adaptation to a new host and post-transfer adaptation. Importantly, modeling efforts are essential to the discovery of new ecological paradigms and true understanding of the nature of episodic zoonotic epidemics or outbreaks such as those caused by RNA viruses, Ebola virus, SARS CoV, Nipah virus, and Machupo virus.

By bringing together experts in mathematical models in conjunction with those engaged in experimental analyses of emerging viruses, the workshop sought to provide a venue to build collaborative efforts to integrate approaches that would result in the interpretation of ecological trends in the spread of zoonotic diseases, provide greater understanding of underlying causes of outbreaks, and provide guidelines for their control and prevention.

Evaluation Design

Evaluation Questions

The evaluation of the workshop was both formative and summative in nature, in that the data collected from respondents was intended to both gain feedback from respondents about the quality of the current workshop and also to inform future similar meetings. The evaluation framework was guided by Kirkpatrick's Four Levels of Evaluation model for training and learning programs (Kirkpatrick, 1994¹). Several questions constituted the foundation for the evaluation:

1. Were participants satisfied with the workshop overall?
2. Did the meeting meet participant expectations?
3. Do participants feel the workshop made adequate progress toward its stated goals?
4. Do participants feel they gained knowledge about the main issues related to the research problem?
5. Do participants feel they gained a better understanding of the research across disciplines related to the workshop's research problem?
6. What impact do participants feel the workshop will have on their future research?
7. Were participants satisfied with the accommodations offered by NIMBioS?
8. What changes in accommodations, group format, and/or content would participants like to see at future similar meetings?

Evaluation Procedures

An electronic survey aligned to the evaluation questions was designed by the NIMBioS Evaluation Coordinator with input from the NIMBioS Director and Deputy Director. The final instrument was hosted online via the University of Tennessee's secure online survey host mrlInterview. Links to the survey were sent to 39 registered workshop participants on November 15, 2010 (co-organizers and NIMBioS affiliates were not included in the evaluation). Reminder emails were sent to non-responding participants on November 22 and 29, 2010. By December 7, 2010, 35 of the participants had given their feedback, for a response rate of 90%.

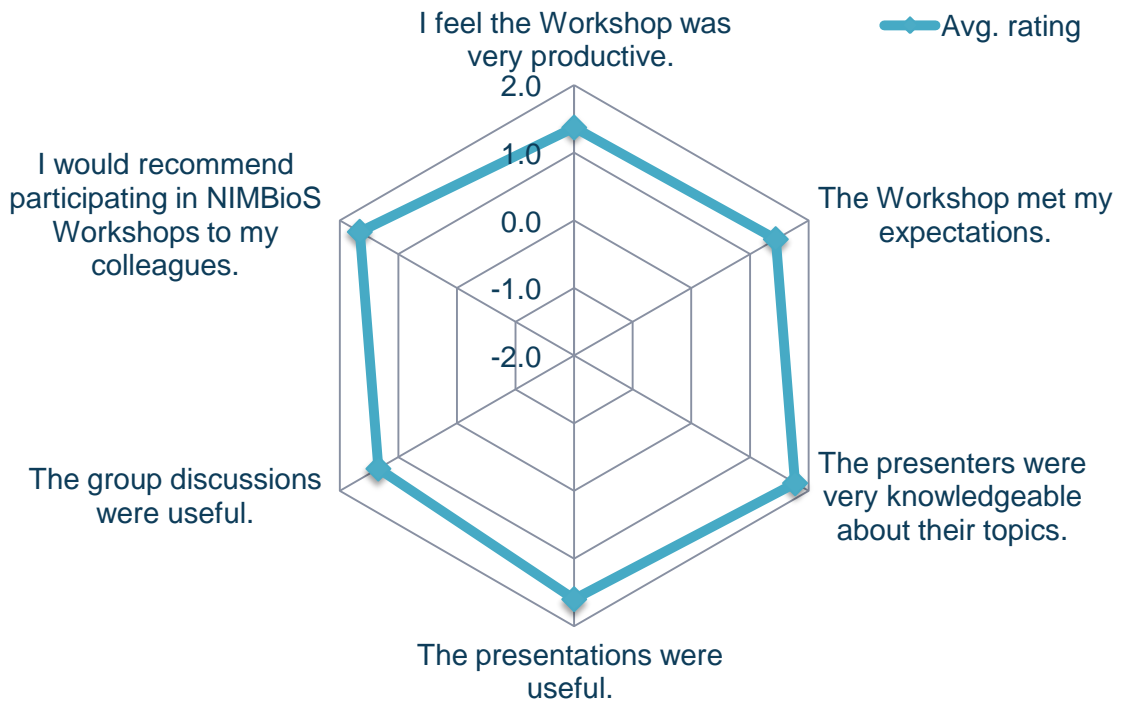
¹ From Kirkpatrick, D.L. (1994). *Evaluating Training Programs: The Four Levels*. San Francisco, CA: Berrett-Koehler.

Evaluation Findings

Respondent Satisfaction

Overall Satisfaction

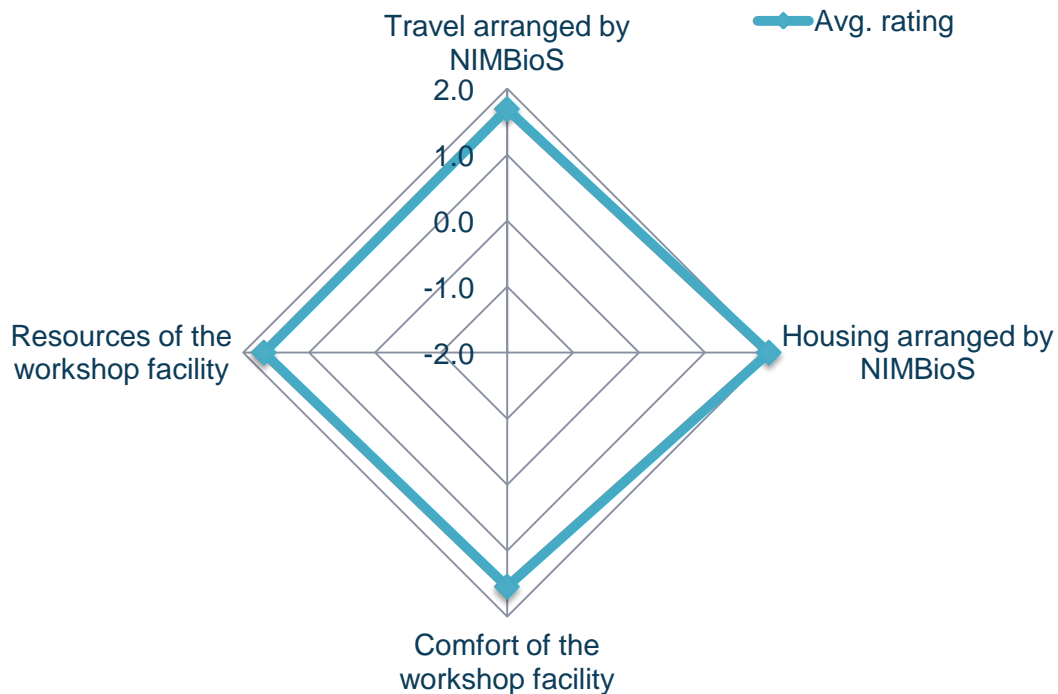
Figure 1. Respondent satisfaction with various aspects of the workshop



Scored on a 5-point Likert scale from -2 to 2 for “strongly disagree” to “strongly agree”

Satisfaction with Accommodations

Figure 2. Respondent satisfaction with accommodations



Scored on a 5-point Likert scale from -2 to 2 for “very dissatisfied” to “very satisfied”

Respondent Comments about Accommodations

Please indicate any changes NIMBioS can make to improve the resources and/or accommodations available to workshop participants: (n=5)

The return trip in the van was nice, with all the money spent, I certainly felt guilty on the \$30 taxi one way. An "incoming" travel time sheet might help/force people to coordinate travel to NIMBioS.

It would be nice to start a tad later in the day to accommodate adjustment for those used to the PST time zone.

Larger lecture room and projecting higher on the screen

Physically, the facility was comfortable, but we were kept in the big room for too long at a stretch. I think it would have helped if there were more natural light

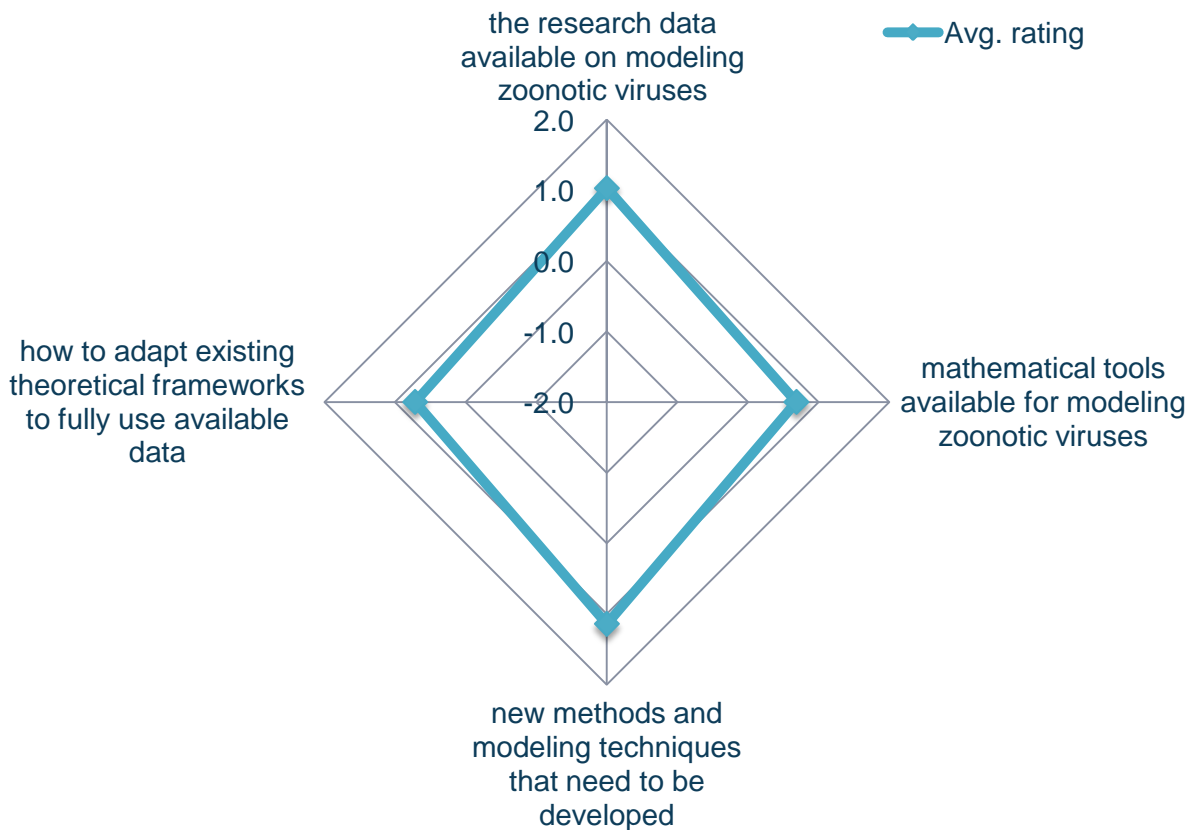
Very little, if any at all. I have traveled to numerous research institutes and even more numerous conferences and workshops, worldwide, and your arrangements are the most desirable ones I have encountered: very nice accommodation, (utterly short) walking distance to the institute, very pleasant environment.

Workshop Content and Format

Respondent Learning

Figure 3. Respondent satisfaction with various aspects of the workshop

As a result of attending this workshop, I have a better understanding of:



Scored on a 5-point Likert scale from -2 to 2 for “strongly disagree” to “strongly agree”

Respondent Comments about Learning

Do you feel that participating in the workshop helped you better understand the research going on in disciplines other than your own regarding zoonotic viruses? (n=13)

I thought the breakout sessions and breaks provided a great atmosphere for personal interactions with experts from other disciplines.

I was not one of the mathematicians in the group, so I was already aware of some applications to modeling from a previous NIMBioS workshop I attended and I don't feel that this one added much to my knowledge since I am not a modeler.

It was really helpful.

I felt that the level of discussion was lower than I expected, and I felt the organizers did a poor job of organizing the workshop and making the goals of the workshop clear. Additionally, it often appeared that the organizers of this particular workshop were at odds with one another, and were very passive-aggressive in dealing with everyone, all under the guise of being touchy-feely and nice. Organizers should organize, and not apologize for it! Also, it wasn't clear going in what the purpose of a workshop was.

I particularly appreciated the chance to hear from people doing empirical work on quasispecies and molecular epidemiology of zoonoses. The combination of modeling and empirical talks was very good.

In particular, the workshop made me think more about within-host processes and quasispecies.

Again, my unfamiliarity with the modeling discipline had me concerned, but I feel I have a much better "feel" for what is involved.

Absolutely! I am enriched!

There was a real attempt to have speakers from a wide spectrum of backgrounds - from the theoretical modeler, through the field worker to the lab experimentalist.

This allows me to better understand what is generic and what is specific in the zoonoses I am interested in.

This is very clear. Virus emergence is a highly interdisciplinary field of science, and it is very difficult (not to say impossible) to keep updated on the progress of the different relevant areas. A workshop is particularly useful to deal with interdisciplinary topics. To me this workshop was highly illuminating regarding the complexity of the problem we face, and on what would be needed in terms of mathematical modeling, an area which is far from my field of expertise.

The presentations from virologists were particularly helpful.

I don't have experience in modeling and at this workshop I gained a greater insight on modeling including networking with experts in modeling issues

Workshop Format

Figure 4. Effectiveness of workshop format



Respondent Comments about Format

The format would have been more effective if: (n=5)

The entire "goal" of the workshop seemed nebulous and was difficult to determine. In the smaller groups, I was never quite sure what we were trying to achieve.

If it had goals.

There were fewer talks, particularly in the second day.

The group discussions were more structured.

Again...I just think that the group leaders should have been better prepared to guide discussion.

Poster Session

Figure 6. Poster session attendance

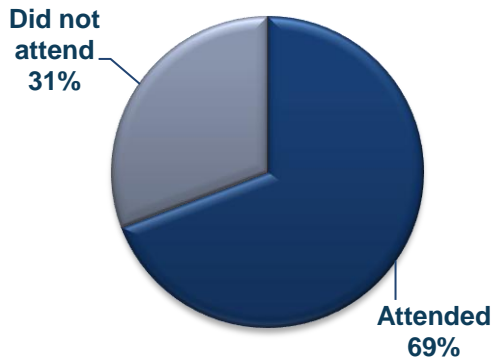
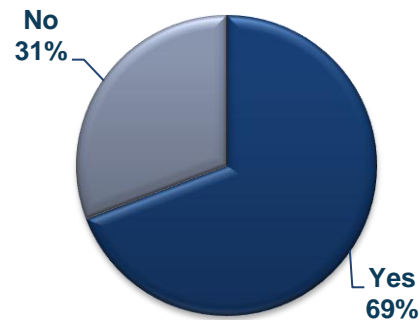


Figure 5. Did attending poster session enhance workshop experience (attendees only)?



Respondent Comments about Poster Session

Do you feel the poster session enhanced your experience at the workshop? (n=23)

The space was not conducive to the session. I thought much of the posters were too focused in scope than the direction of the conference.

It was interesting to see what other people have worked on. Mainly posters on mathematical models - would have been good to see some posters that were less mathematical but described experiments/ data analysis.

The posters were varied and of good quality, so they added to the diversity of the meeting.

Provided a variety of content.

Discussion started going around the posters presented

Some very good posters with some very good research and ideas.

It gave an opportunity for broader participation, and allowed us to hear about the work of many of the talented attendees who weren't able to speak. I saw at least one poster that will change the way I think about some important problems in the future.

There were several posters new to me and got some mathematical ideas for future work.

Mostly, it was useful to have the chance to interact informally with NIMBIOS participants.

It was helpful to see the questions that are currently being worked on and having people from a diverse range of knowledge to offer advice for future directions.

My time at this session was taken up to a large extent with organizational issues for the meeting. It was also quite difficult to concentrate on the posters following a full day of talks and discussion essentially all in the same room.

More detailed discussions on focused topics with young researchers

The session gave an opportunity to discuss work in more detail with the participants, in front of the relevant data

Good place to talk informally and to see the work of others.

I don't feel like it enhanced my experience, but I do think that it allowed students and other trainees and opportunity to get feedback on their research from diverse scientists.

It allowed more interaction with poster presenters, typically "more junior" participants

I had a chance to ask questions to the poster presenters who explained to me more information on modeling.

The poster session was useful for several reasons - , I got to see some of the work by participants that didn't present at the workshop, I got to ask several of the presenters some follow-up questions that there wasn't time for after their presentations., I got to interact with several participants that weren't in my discussion group.

It is always important to get one on one contact for presenters with people at different levels. I talked to quite a few people about my research. I think this is a networking opportunity that is very important.

It is an opportunity to discuss with the author closely than in a regular talk; besides many young people do present posters and talking to them is always productive

Given there is so much packed into a short period of time it is easy to get information overload. It may help to have each poster presenter give a 5 minute overview. Then have people wander around.

I presented a poster and got useful feedback and also had good discussions about future research possibilities. I also enjoyed talking to other participants about their posters.

The poster session gave us some time to talk with the researchers about their particular models.

Please use this space for any suggestions for improving future poster sessions at NIMBioS: (n=15)

I would like to be notified with new program/workshop at NIMBioS.

I recommend adopting a virtual poster session, perhaps even projecting posters with a 5-10 minute Skype chat for interested participants to cycle through the audience.

Should give more priority to explain each poster.

One nice idea from the 'Ecology and Evolution of Infectious Diseases' meetings is to give each poster presenter 60 seconds in front of the group to plug their poster. This doesn't take long, makes sure everyone knows what posters will be presented, and is typically a lot of fun as well.

May little less food!

It may be beneficial to some to have a round table meeting about the posters so that people can discuss them collectively.

Put posters up at the start of the meeting, ideally not using up whiteboard space.

Posters available earlier

If possible, maintain the posters throughout the entire duration of the workshop. If I remember correctly, some posters were not in place when the workshop started. Forgive me if I am mistaken.

My struggle with whether this was a productive workshop is based on a lack of understanding of what was to be produced. There was a lot of fun intellectual discussion, reconnection with folks I don't get to see often, and good will. But I don't know that anything was really produced that was that novel. I think greater organization and direction for the working groups would have been useful with a more complete understanding of what we were being tasked to produce.

I would suggest having a 5-minutes oral presentation for each of the posters.

I think the current system is good and don't need improvement

It would be nice to have a best poster award.

As one of the non-modeling participants it would have been useful to have a short overview of modeling terminology and types models prior to the talks. I spent a lot of time trying to figure out the different terminology. One thing that could have been useful is to organize much smaller groups of 4 people (2

biologists and 2 modelers) based on very specific areas. Biologists ask 'these' type of questions and modeler models 'those' same type of questions. Making sure it is people that have not worked together already. It would have helped me understand what types of models are applicable to my research and by talking to someone one on one or two on two would have allowed me to ask more detailed questions about the process. This would not be place of the larger discussion groups but just one couple hour part of the workshop involved in this exchange.

There were still some tables and some chairs around the posters in the hallway. It would have been better if these had been moved out of the way to give clear access for small groups looking at the poster.

Respondent Comments about Most Useful Aspects of Workshop

What do you feel was the most useful aspect of the workshop? (n=30)

The workgroup discussions. They were more effective at reaching understanding and commonality.

The group discussions

Getting to know people with similar interests but different backgrounds.

The discussion sessions.

Meeting in person

The diversity of backgrounds.

Bringing together a diverse group of experts and leaders in three related lines of research that often do not meet face to face, and allowing people like myself to observe and interact.

Seeing examples of how modeling can be applied to biological research

Big names in different fields together is something that help integrate and develop research areas.

Getting to know the community of researchers and the roadblocks they're facing in their research

Meeting one or two peers who I had not met before.

The presentations were very informative and interesting.

I particularly enjoyed the juxtaposition of modelers and empirical researchers, and the combination of academic and government scientists (and modelers and vets) was very interesting. The structure of the program, with formal talks, panel

discussion, and free-form discussion, was very effective, though a bit more unstructured time for participants to chat about ideas might have been valuable.

Group discussion.

Meeting other people in the field

Just the exposure to the techniques and methodology.

Bridging the gap in understanding between mathematical modeling and basic research in the area of viral zoonoses.

Meeting colleagues who would like to use mathematical models to understand the emergence of diseases.

Contact with experts of different disciplines and the lively and active discussions.

The diverse backgrounds of the participants

The presentation and informal discussions around lunch/dinner and poster sessions.

Talks and working group session

The talks were very very informative in presenting particularly aspects of the problems. Although obviously given by specialists, they went a long way towards bridging gaps between disciplinary cultures.

The exchange of ideas between mathematical modeling and experimental research trying to combine both approaches in future common ideas.

Presentations and group discussions

Having modelers from different backgrounds and virologists from different backgrounds all in the same room.

Breaking the workshop into three parts made a lot of sense.

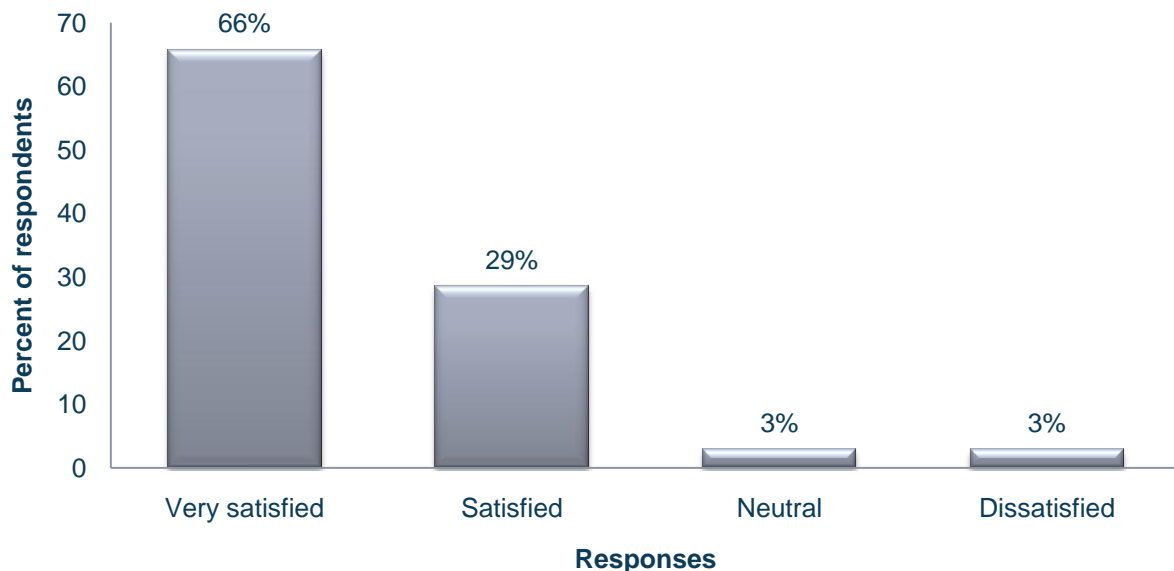
Interaction in a multidisciplinary group

The collaborations that came out of it. Getting to know the status of the field and knowing what questions scientists feel are most important.

Meeting people with different backgrounds

Communication

Figure 7. How satisfied were you with the opportunities provided during workshop presentations and discussions to ask questions and/or make comments?



Respondent Comments about Communication

Please indicate any suggestions you have for facilitating communication among participants during the workshop: (n=5)

Smaller groups, more defined goals for groups

Perhaps incorporating presentations/speakers that are more familiar with the biologic fields, and how they established collaborative projects with the math groups.

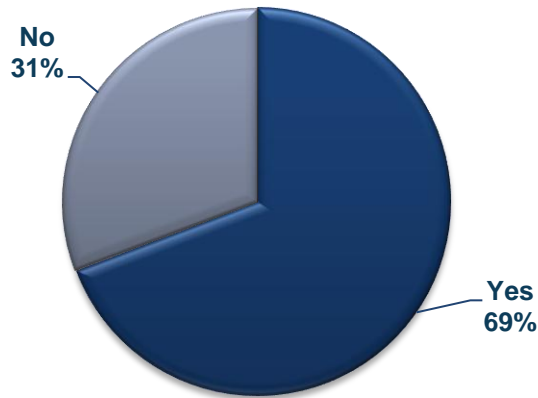
I thought the Wiggio site worked well.

This last workshop was very good in communication. The leader made a very good use of Wiggio and many participants uploaded papers and materials. Promote, enhance this

I think that if specific goals for breakout groups had been better planned, then they would have been more effective.

Progress Toward Goals

Figure 8. Do you feel the workshop made adequate progress toward finding a common language across disciplines for research on the workshop's topic?



Respondent Comments about Goals

Do you feel the workshop made adequate progress toward finding a common language across disciplines for research on the workshop's topic? (n=15)

I think we often misuse a common language, the workshop clarified what, for example, "model" means to each field. It helped identify wants and needs across the disciplines.

It seems as though the population was very heavy with mathematicians and fewer biologists and the populations should be more equal.

This is a big task, and regrettably I don't think it was cracked in these few days (though progress was made!)

This still needs work - there was a tendency to use the vernacular of the modeling systems, not so much in the presentations, but more in the discussions.

More time would be required to make adequate progress.

A significant progress was made. However, I am not sure if the achieved progress will be enough. Communication across disciplines is a big problem. We just have to keep talking after the workshop.

It was quite interdisciplinary and the last day general discussion was understandable by everyone attending the workshop.

From the questions I was asked after my talk, I had the impression that several of the attendants were not previously aware of the impact that quasispecies dynamics and rapid viral evolution can have in the process of a viral emergence. Thus, from this observation, and also from what I learned at the workshop, I would say that a common language has not been achieved yet, but that awareness of different aspects of the problem we face was highly improved. I hope that a common language may be possible at a later stage.

I'm not sure why, but this workshop did not have the same problems finding a common language as many of the other workshops I've attended with a similarly diverse set of participants.

It's not clear to me that this was done. Many of the presentation were very interesting, but it was not clear that we "made progress finding a common language".

I really don't think it was clear that that was the main goal.

The progress was commendable and the outcome formed a basis for future work to be done in the respective areas. It was a worth initiative.

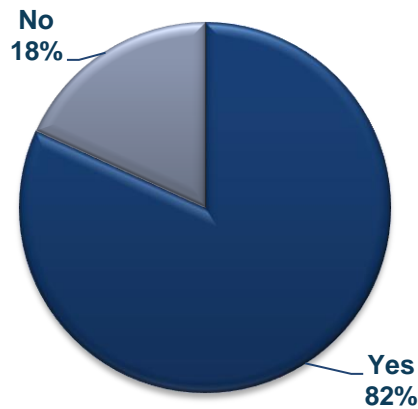
The mixture of modelers, mathematicians and biologist willing to collaborate is a rare mixture but common at NIMBioS. This mixture contributes substantially to cross disciplinary work and communication

There is still so much to be done and I believe a working group would be a good next step.

I didn't find that there was much of a language barrier here.

Impact on Future Research Plans

Figure 9. Do you feel that the exchange of ideas that took place during the workshop will influence your future research?



Do you feel that the exchange of ideas that took place during the workshop will influence your future research? (n=10)

My research is defined by where I work.

Understanding how other disciplines work in the same field gave me a clearer idea of the possibilities and limitations provided by different fields, influencing possible future research.

Many topics were very close to things I've been thinking about recently. Discussions placed value in these ideas and others and suggested closely related extensions or parallels in related fields.

I got some very good ideas on how Ecosystem Ecology and Disease Ecology should be integrated, and it underlined the relevance of the work we do

I would be open to, and give consideration to a potential incorporation of modeling into a proposal.

To some extent. Research on laboratory cell culture models is not easy to accommodate to problems on viral emergence that, in my view, would require animal models to be of significance. I do not have the funding to engage in animal experiments related to viral emergences although I am sure that several important ideas could be tested my combining host-range variations (adaptation of virus to new host species) with deep-sequencing analyses, as discussed in the workshop. I would need to collaborate with others and to have some funding to engage in this type of exciting project.

Some of the topics were things I am already planning to do, so discussing with others was helpful and helped me realize that I am working on important problems.

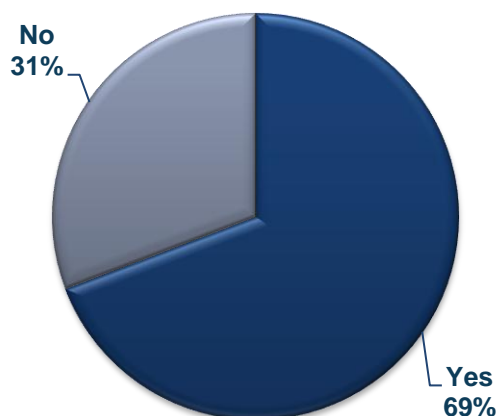
I am thinking of adding some modeling work to my PhD proposal

I learned about some exciting areas of research that I did not know about before this workshop, for example the quasispecies work. I find the experimental work that was presented fascinating and am quite intrigued and would not mind working on mathematical aspects if I can find collaborators.

Zoonoses are very interesting and present theoretical problems that are unique to them. Besides zoonoses are the origin of important human infectious diseases, Dengue in particular.

Impact on Future Collaborations

Figure 10. Did you develop plans for collaborative research with other workshop participants?



Did you develop plans for collaborative research with other workshop participants? (n=15)

There have been some ideas from the workgroup that might lead to collaboration.

We have had some contact regarding furthering the work we began at the workshop. However, we did not develop a clear question/problem to consider, which may make it harder to continue the work.

Lots of good ideas and willingness. Will have to see where it leads.

There is a strong possibility (more towards the "yes" than the "possibly") that at least one, of a number of projects discussed, should emerge.

Future collaboration was discussed, possible RAPIDD working group

There are interesting possibilities for specific research, e.g. related to the control of zoonoses that undergo amplifying cascades, and also some more general intentions to collaborate with some of the people I met.

Several ambiguous lines of potential research emerged. Further discussion is necessary to refine the research threads and identify particular questions to address.

Some of the participants requested further information on quasispecies and this may be the beginning of collaborations between my group (experimentalist) and other groups, mainly on mathematical modeling. However, specific collaborations have not been implemented yet.

Our group came up with a concrete research project that could be pursued, though it is unclear whether anyone would be up for taking the lead on the project.

I think some very interest problems were discussed and I hope that this develops, but I haven't had time to pursue them yet nor have I heard from others. I hope this develops.

Depending where my research efforts lead me in investigating zoonotic diseases, I will feel justified in at least contacting relevant workshop participants

I am working on wildlife diseases surveillance. It happened that the presenter from Netherlands is looking for the output of part of my work to use for modeling work. We agreed to communicate and share information on this area in future. Incidentally I was connected to some colleagues who had been doing research and who are doing research on cheater and anthrax in wildlife in my country. I was also introduced to some disease modeling activities in Southern Africa and intent to participate in future.

Members of our breakout session decided to continue working on some of the problems discussed in the future. I hope that this will indeed happen.

We are continuing our discussions via email, have three projects on their way

Follow-up for a collaborative project on chagas disease.

Suggestions for Future workshops

What would you change about the workshop? (n=22)

More focused discussion. The discussion wandered from the topic and a lot of time was spent on tangents.

Possibly introduce some (broad) questions to be answered. The workshop was very interesting, but very broad and so it was hard (in the time available) to pin down specific questions to address. Narrowing the area to be considered may have provided more focus early on in the group discussions, allowing us to move forwards in the time available.

Try and make the discussion groups more focused (although this is very difficult).

The only improvement would be an extra day or so, with a little more 'time off', to think and interact in small groups.

Viral zoonoses are a huge topic and it just seemed to be too big to come up with anything concrete to work on during the smaller group sessions.

Better if it were held in the summer so that people are bit free from work unlike in long semesters.

I would have somewhat less presentations and more time for discussion or even working groups

Have a clear purpose for conducting the workshop -- i.e. what is the goal? Is a workshop tutorial, organizational for future collaboration, etc. , Allow us out of the room at some point in the day. It felt like math biology jail at times. While provided meals were nice, spending 8+ hours trapped together in a warm stuffy room is not ideal.

I think the discussion groups were a bit big to allow everyone's opinions to be heard (especially group 1), so perhaps it could have been pre-emptively split into a few smaller groups. It might also have helped to spur discussion if a few attendees had been encouraged to bring 'case study' data sets and questions to focus discussion, since in the absence of specific systems there's a tendency for discussion to focus on over-arching questions that are well-recognized and hard to tackle in a few days!

I would suggest a little more advance communication amongst participants regarding questions they would like to address in the breakout sessions so that there might be the opportunity to develop more specific plans of action following the workshop.

It seemed that the attendees were weighted toward the modeling experts, or perhaps that's just because they were the most vocal. I did not get the impression that there were many of us that were unfamiliar with the process; thus it was difficult to enter into discussion.

A one day longer workshop might be helpful. We just warmed up and it was over.

Have longer to work in groups on a problem/developing ideas for future research collaborations

I felt the workshop was poorly moderated. Particularly because the days were so long, it is important to keep to the schedule and allow people the full time for scheduled breaks. I also think it would have been really nice to have some outdoor-time built into the workshop's schedule. Especially in the absence of this type of activity, I recommend giving people the fully scheduled breaks and encouraging them to go outside during breaks. With the windows of the room covered (and no clocks that I could see), it felt like we were in a timeless void. I think creativity and productivity would have been enhanced by some sunlight and fresh air!

I wouldn't change much, but I could have appreciated more mathematical and/or theory presentations. Their seemed to be a bias toward empirical work, which is good, but I would like to learn more about theory.

I think more effort needs to be channeled at finding a common language among different disciplines. I think some of the presentations used a lot of jargon and it was hard to understand for people outside those areas. , I think the group discussions need to be more structured or focused. Perhaps providing specific questions to each group would be more effective.

Improved organization, mission statement, and expectations of an end product

Provide time and support e.g. transport for visitors to explore and do some shopping in the town

The room is not well suited for such a large number of participants. I sat at the back and could not see the lower part of most presentations very well. Also, there are columns in the room that are right in front of some of the seats and I had to keep moving my chair in order to be able to watch the presentation.

Perhaps, particularly in the zoonoses workshop I think the number of modelers and mathematicians could have been a little bigger.

More time in the evenings to go out to dinner with participants. Having discussions scheduled late into evening is too much after long days.

The discussion breakout groups I was in could have been more focused.

Appendix A

List of Participants

Participants

Last name	First name	Institution
Agusto	Folashade	University of Tennessee Knoxville
*Allen	Linda	Utrecht University
Bélair	Jacques	Université de Montréal
Blumberg	Seth	University of California Los Angeles
Bokil	Vrushali	Oregon State University
Brown	Vicki	University of Michigan Ann Arbor
Chu	Yong-Kyu	University of Louisville
Chung	Dong Hoon	University of Louisville
Del Valle	Sara	Los Alamos National Laboratory
Domingo	Esteban	Spanish Research Council
Farnsworth	Matt	United States Department of Agriculture
Flietstra	Timothy	Centers for Disease Control and Prevention
Funk	Sebastian	Zoological Society of London
Heesterbeek	Hans	Faculty of Veterinary Medicine
Hosseini	Parviez	EcoHealth Alliance (formerly Wildlife Trust)
Hyman	James (Mac)	Tulane University
Ingersoll	Thomas	University of California Berkeley
Ivanek-Miojevic	Renata	Texas A&M University College Station
*Jonsson	Colleen	University of Louisville
Joshi	Hem	Xavier University
Kennedy	Melissa	University of Tennessee Knoxville
Klein	Sabra	Johns Hopkins University
Langlais	Michel	Victor Segalen Bordeaux 2 University

Lavery	Sean	University of Utah
Lenhart	Suzanne	University of Tennessee Knoxville
Lewis	Chelsea	Texas Tech University
Lloyd-Smith	James	University of California Los Angeles
Magori	Krisztian	University of Georgia Athens
Magwedere	Kudakwashe	University of Stellenbosch
Miller	Joel	Harvard University
Mills	James	Centers for Disease Control and Prevention
Moore	Sean	National Center for Atmospheric Research
New	John	University of Tennessee Knoxville
Osnas	Erik	Princeton University
Owen	Jennifer	Michigan State University
Perales	Celia	Centro de Biología Molecular Severo Ochoa
Pulliam	Juliet	National Institutes of Health
Ramunigari	Naveen	University of Texas El Paso
Shriner	Susan	United States Department of Agriculture
Souza	Marcy	University of Tennessee Knoxville
Tracht	Samantha	Capital University
*van den Driessche	Pauline	Pacific Institute of Mathematics
Velasco-Hernandez	Jorge	Programa de Matemáticas Aplicadas y Computación
Vidurupola	Sukhitha	Texas Tech University
White	Jane	University of Bath

* **Organizer**

Appendix B

Wildlife Zoonoses Workshop Evaluation Survey

Wildlife Zoonoses workshop Survey

Thank you for taking a moment to complete this survey. Your responses will be used to improve the workshops hosted by the National Institute for Mathematical and Biological Synthesis. Information supplied on the survey will be confidential, and results will be reported only in the aggregate.

Poster Session Evaluation

Did you attend the evening poster session for the workshop?

Yes

No->go to workshop evaluation

Do you feel the poster session enhanced your experience at the workshop?

Yes

No

Comments:

Please use this space for any suggestions for improving future poster sessions at NIMBioS:

Workshop Evaluation

Please check the appropriate box to indicate your level of agreement with the following statements about this workshop: (Very satisfied, Satisfied, Neutral, Dissatisfied, Very dissatisfied)

I feel the workshop was very productive.

The workshop met my expectations.

The presenters were very knowledgeable about their topics.

The presentations were useful.

The group discussions were useful

I would recommend participating in NIMBioS workshops to my colleagues.

Please check the appropriate box to indicate your level of agreement with the following statements. As a result of participating in this workshop, I have a better understanding of: (Strongly agree, Agree, Neutral, Disagree, Strongly disagree)

The research data available on modeling zoonotic viruses

Mathematical tools available for modeling zoonotic viruses

New methods and modeling techniques that need to be developed

How to adapt existing theoretical frameworks to fully use available data

Do you feel participating in the workshop helped you better understand the research going on in disciplines other than your own regarding Wildlife Zoonoses?

Yes

No

Comments:

Do you feel the workshop made adequate progress toward finding a common language across disciplines for research on the workshop's topic?

Yes

No

Comments:

Do you feel that the exchange of ideas that took place during the workshop will influence your future research?

Yes

No

Comments:

Did you develop unanticipated plans for collaborative research with other workshop participants?

Yes

No

Comments:

What do you feel was the most useful aspect of the workshop?

What would you have changed about the workshop?

How do you feel about the format of the workshop?

This was a very effective format for achieving our goals

This was not a very effective format for achieving our goals ->

The workshop format would have been more effective if:

Please indicate your level of satisfaction with the workshop accommodations:
(Very satisfied, Satisfied, Neutral, Dissatisfied, Very dissatisfied, Not applicable)

Travel arranged by NIMBioS

Housing arranged by NIMBioS

Comfort of the facility in which the workshop took place

Resources of the facility in which the workshop took place

Please indicate any changes NIMBioS can make to improve the resources and/or accommodations available to workshop participants:

Communications Evaluation

NIMBioS is currently exploring innovative avenues for communication among its workshop participants. Your responses to the following questions will allow us to better understand the communication needs of our scientific communities.

How satisfied were you with the opportunities provided during workshop presentations and discussions to ask questions and/or make comments?

- Very satisfied
- Satisfied
- Neutral
- Dissatisfied
- Very Dissatisfied

Please indicate any suggestions you have for facilitating communication among participants during the workshop: