Tutorial

Network Modeling

EVALUATION SUMMARY REPORT

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Figure 1. Please check the appropriate box to indicate your level of agreement with the following statements about this tutorial:
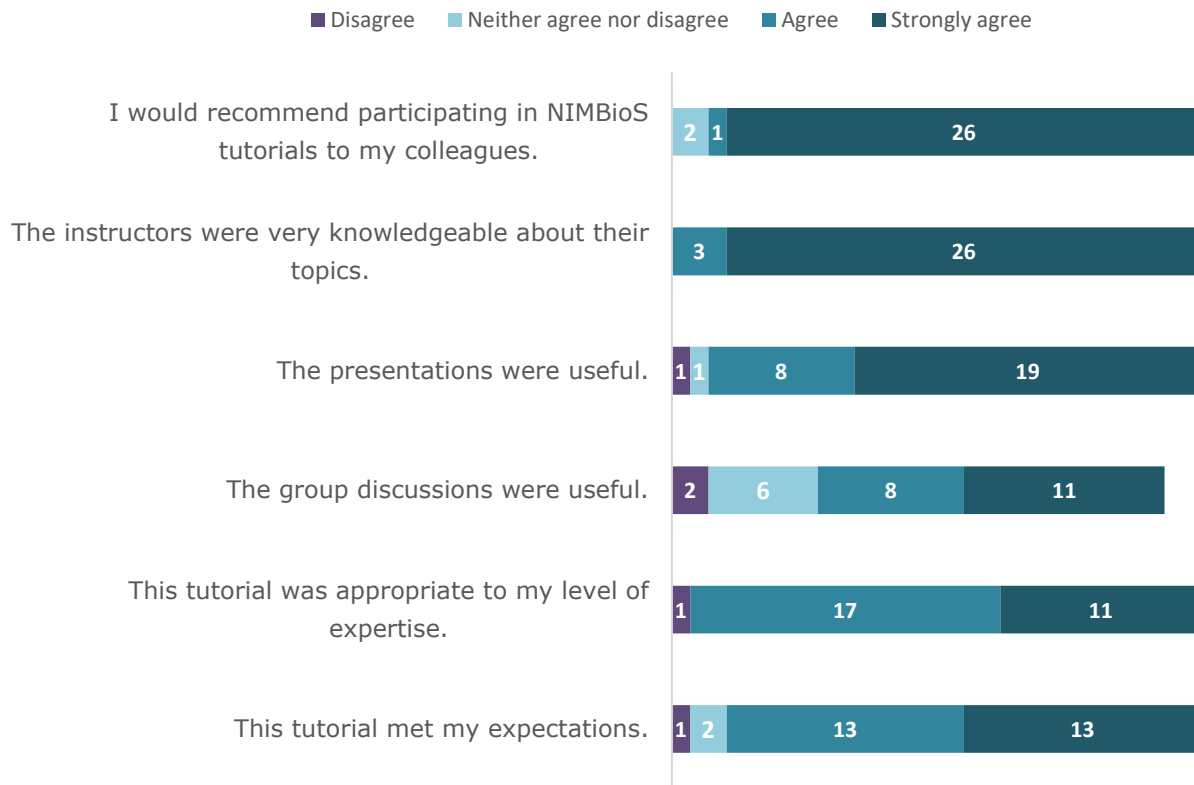

Legend: ■ Disagree ■ Neither agree nor disagree ■ Agree ■ Strongly agree

- I would recommend participating in NIMBioS tutorials to my colleagues. — 2, 1, 26
- The instructors were very knowledgeable about their topics. — 3, 26
- The presentations were useful. — 1, 1, 8, 19
- The group discussions were useful. — 2, 6, 8, 11
- This tutorial was appropriate to my level of expertise. — 1, 17, 11
- This tutorial met my expectations. — 1, 2, 13, 13

Figure 2. As a result of participating in this tutorial, I have a better understanding of:

Legend: ■ Disagree ■ Neither agree nor disagree ■ Agree ■ Strongly agree

- Complex Networks — 3, 13, 13
- Main ideas and methods in network science — 4, 13, 12
- Conceptual aspects and real-world applications of network science — 1, 12, 16
- How to incorporate network analysis into my own research — 2, 5, 17, 5
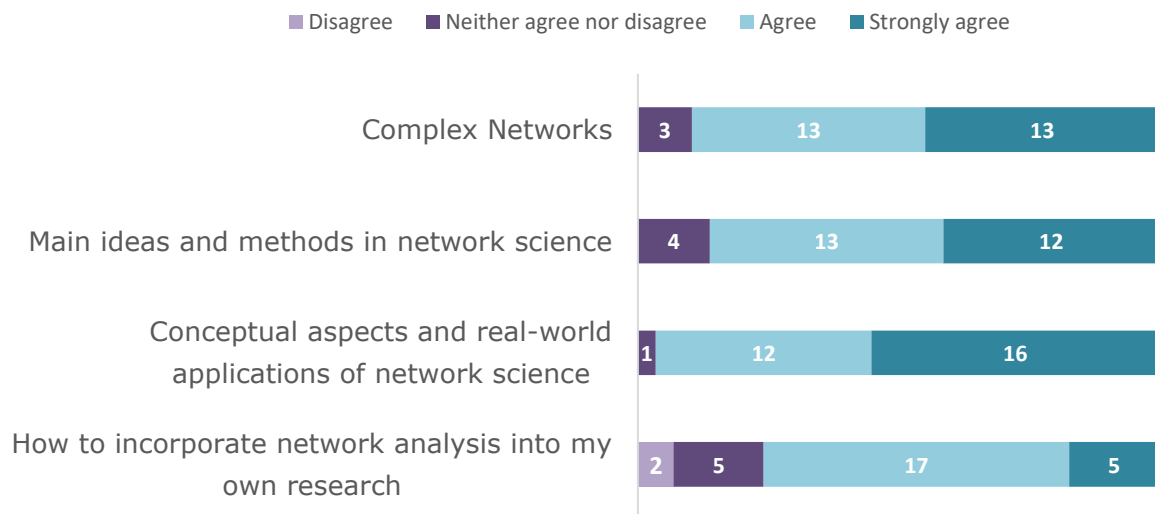
Figure 3. Please indicate your level of satisfaction with the tutorial accommodations:

Legend: Very dissatisfied | Dissatisfied | Neutral | Satisfied | Very satisfied

- Resources of the facility in which the tutorial took place: 1, 1, 26
- Comfort of the facility in which the tutorial took place: 1, 1, 26
- Housing arranged by NIMBioS: 1, 1, 1, 19
- Travel arranged by NIMBioS: 1, 3, 2, 14
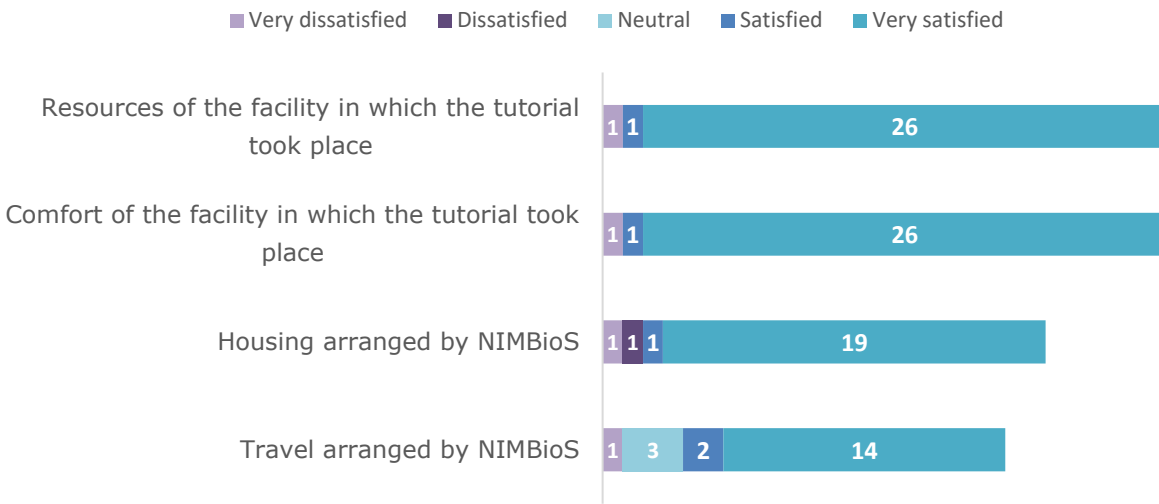
Comments:

The free Wi-Fi at the hotel was virtually unusable. The connection dropped every couple of minutes, but even when it was working it was excruciatingly slow. It looks like the hotel does this on purpose to upsell the "premium" internet. I hope NIMBioS negotiates access to a usable Wi-Fi for its guests with the hotel in the future.

Accommodations were great.

I think my only minor comment was that our cab driver from Lightning Taxi was very, very unfriendly and did not even say hello to us or made eye contact. I felt like she did not want to be there.

The hotel was excellent in terms of the quality and location. I also felt very welcomed by all of the team. The organizers made a great job helping us to settle and enjoy the experience.

I appreciate all of the effort put into organizing flights and ensuring a comfortable stay at the hotel. That was just great. Thanks to Jennifer and all people who did all the hard work. Keep it up.

Very comfortable and nicely within walking distance.

Absolutely fantastic; would not change a thing. Thank you for treating us with so much hospitality.

28 out of 29

attendees felt this was a very effective format for achieving their goals.

8 out of **29**

attendees were satisfied or very satisfied
with the opportunities provided during
the tutorial presentations and discussions
to ask questions and/or make comments.

The tutorial format would have been more effective if:

It were more practical and if we used our time together to work through problems and examples rather than just listen to lectures.

How do you feel about the amount of content offered during the tutorial?

Amount of content was just right	25
Too much for the allotted time	3
Too little for the allotted time	1
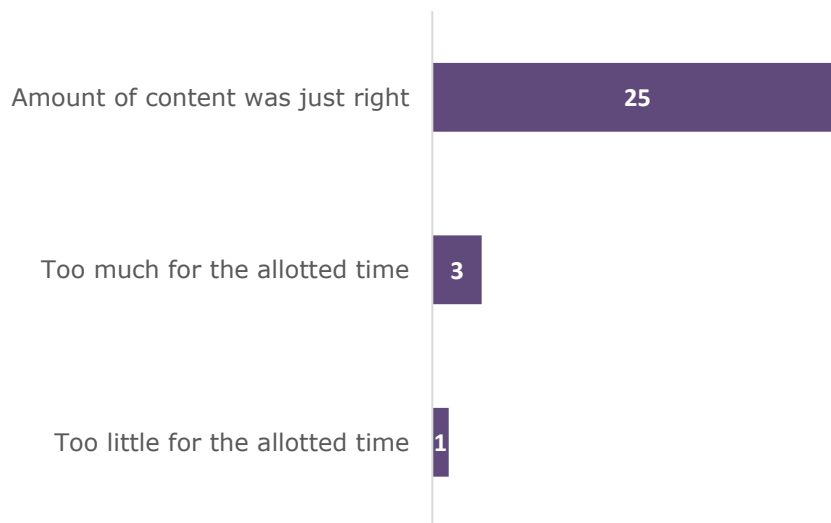
What topics would you have liked to have covered in this tutorial if given more time?

More hands on

I think a more detailed discussion of dynamic networks could have been useful.

Various aspects of the software. Also it's difficult to follow what the TA is doing on the A/V and doing similar things on your own laptop. He was a bit too fast. Difficult to see things at the back of the auditorium.

N/A - perfect amount of content for the time

More programming experiences. Deeper dive on actual data.

More examples and explanation with intuition on different network metrics, and how they could be used to analyze network for different purposes

Dynamic network model code examples.

I think that it would have been nice to work on our own networks and to understand some of the difficulties, such as missing data.

I would prefer for the hands-on programming activities to be replicated analyses (e.g., I would have liked to go through code from a published study). Overall, I thought the course was too heavy on theory. I would have preferred more emphasis on the application of network analysis to real world problems.

Data collection to build a network

How to build adjacency matrix from scratch?

More in-depth on the math - Lazaros went pretty fast, it would have been nice to be able to really dig into those topics. Also, more coding would have been good.

Determining the best methods to apply to my own research questions.

How to collect data to create an actual network

Underlying mathematics behind networks and network theory.

It would be great if we could work more on coding of some real problems.

I thought this was going to be more of a practical, hands-on course, and that I would leave knowing how to create networks with my own data. Unfortunately, there was very little time dedicated to practical aspects of network building, and those tutorials were not very useful. It would have been great to have started with a complex dataset, learned how to turn it into a functional matrix, and learned to code network analyses with that. I think that could have been a useful way to also illustrate the more complex theoretical points the lecturers raised. It would have been great to have spent this time together doing more hands-on work rather than just listening to lectures. It would have also been helpful to have suggested readings and example datasets and more code provided.

More applications into biological models

The topics and presenters were wonderful, but I would have liked to have had more hands-on practice from data to analysis so I could have left with more practical skills.

I would have liked more current examples of applications.

Dynamic Networks

Link analysis, network optimization

I understand the basics of network analysis and I get how they can be used, but I'm still having trouble going from one to the other.

More coding/applications

Dynamic network modeling

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

Network distributions

All lectures were excellent, and I learned a great deal of useful information.

A flavor of what types of software are available.

I thought the dynamic networks were the most useful.

Contextualization of frequently reported metrics within a theoretical framework

The introduction of the networks basics, lots of examples of networks used in different research fields, which give a nice big picture of network.

Overview of methods used in different fields.

Lectures and computer work

 I really enjoyed the presentations on resilience in networks, dynamic networks and percolation. I really wish that we would have more time to work on these issues.

Applications using Networkx and other packages are really interesting.

Nina Fefferman's lectures were the most useful. Her presentations were also the most understandable.

The introduction to network, network parameters and python coding and network Visualization.

It was all good!

Background on the methods of network analysis.

The basic introduction and the hands-on coding exercises

Without any prior instruction on network theory, I found it useful to learn about the different applications for it.

I really liked that they start from a beginner level and then moved fast to more advanced level.

The bit of hands-on work we did and talking with other students.

The simulations using different network software.

Overviews and applications

I enjoyed learning some techniques and programs that I wasn't familiar with. Additionally, I enjoyed hearing how others were thinking of applying these techniques.

The instructors introduced the main ideas and methods in network modeling with real-world applications in a way that covers enough details to help us understand without too much technical details that would get us lost. The hands-on sessions help us understand the methods we learned in earlier sessions.

The lectures

I found that creating an actual network in Gephi was the most useful part. The tutorial could benefit from doing this activity at the very beginning, and then applying all covered topics to the context of our "social network."

Presentations and real-world examples

Participation/discussions from different science domains and applications.

What, if anything, would you change about the tutorial?

Details on what will be covered during hands on session sent out before the session begins

The hands-on exercises could have been better organized and conducted.

Allow more time. More help with software incompatibilities with laptop operating system.

I would have loved for the tutorial to be a little longer - but I understand time constraints, so for the time allotted it was perfect.

Longer/more sessions

The duration. I would make the tutorial longer to form small working groups tackling a common research problem or question.

Maybe a bit slower on some details on percolation

The tutorial was great in general. The first day was a bit repetitive for people that had worked with networks, but I understand that people that were starting to work with them needed the introduction.

Nothing. It was well organized, and we got lot of information and new techniques which we can use our own research.

I think I outlined this in a previous question.

I would have added more practical aspects of network building and understanding of the practical meaning of network parameters. For example we learned about degree centrality, betweenness and closeness among other. What was missing is what do these really capture in a practical sense beyond the description of what they are.

We also learned about degree distribution and fitting power law to that distribution. It was not clear why we were doing that. It would have been great from the get go to say that if that distribution follows power law then we can infer that this is a scale free network and that such network were generated via preferential attachment.

This was an awesome tutorial though, particularly for those who already know a little bit about network analysis.

Have a dedicated session before we get started to de-bug software, so that everyone has it running when we start the coding session. Also, better pacing for the coding. More time on the nitty-gritty math part.

Restructuring hands on work.

For some reasons, I didn't see any collaboration built because of this event. If we could have a section for participant to explain their research and their challenges and ask other participants to join them to collaborate and solve the problem, that would be great!! :)

Less theory, more practice! The more advanced users probably benefited more from the theory than I did.

Take some time to solve some applications

First day had too much basic introduction.

It will be better if there're a couple TAs in addition to the instructor helping with the hands-on session.

Maybe a week-long tutorial

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

Allow more time. Form groups to discuss individual topics.

It could help to have some time for discussions among the participants, as many people seemed to bring up interesting comments and insights.

Force people to switch their seats each day.

Please don't make us socialize. (You didn't, which was good. Don't change that.) There were plenty of opportunities for informal discussions.

More time to discuss specific ways that researchers could incorporate network analyses into their own research.

If we had example problems to do individually and converse about how we solved them in small groups afterward and then with the whole class, that would have been really useful

A GroupMe, perhaps more meals. I went to several meals with participants, so I think there was good communication.

Additional comments:

This has been an outstanding workshop. I learned a lot of useful information, which will help me shape my current and future research.

I suggest posting lecture notes before lectures, so one can concentrate on listening to the lecture and minimize taking down notes.

Excellent experience, excellent presenters.

Thanks Nina, Lazaros, and Gonzalo for their effort in putting together this excellent network!

I am really thankful for the tutorial opportunity, it was really helpful and interesting and you all make us feel very welcomed and happy! Thank you all!

This is a great workshop and we learned lot of things about network modeling. I am planning to attend other workshops in NIMBioS as well.

Thank you! This was an exciting tutorial from organizers who were enthusiastic about the material and the subject. They were knowledgeable and open to questions.

Don't do the potatoes again for lunch. :P This was a great workshop, I learned a ton, and I'm extremely grateful for the opportunity to participate. Thank you!

I had a very pleasant experience in this tutorial. Thanks to all who made this experience a positive one.

That was a great experience. Keep up the good work.

Thanks very much to the organizers, it was a wonderful workshop and I did learn a lot, even if I would have liked to have had more time to practice with datasets (mine or others). Thank you very much for offering the workshop!