

Evaluation Report Undergraduate Research Conference at the Interface Between Biology and Mathematics

October 21-22, 2011

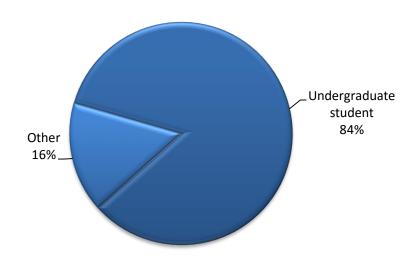
Pamela Bishop Program Evaluation Coordinator National Institute for Mathematical and Biological Synthesis November, 2011

URC 2011 Evaluation Data Report

Findings

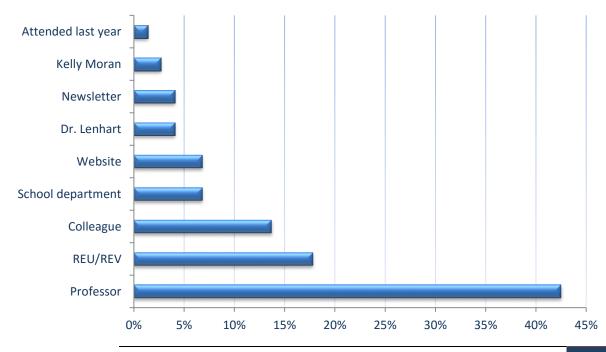
Respondent Status

Figure 1. Status of evaluation survey respondents (n = 81)



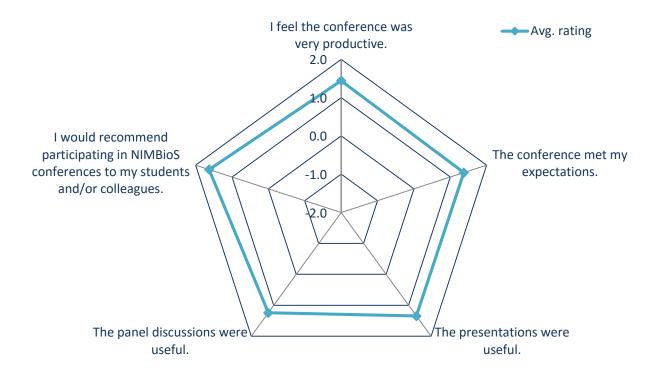
How Respondents Heard about the Event

Figure 2. Sources for hearing about UBM Conference (n = 80)



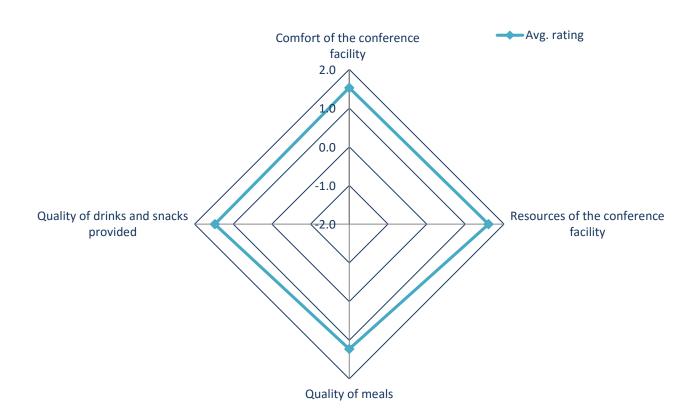
Overall Satisfaction

Figure 3. Respondent agreement levels with statements about various aspects of the conference (n = 81) Scale: -2 = "Strongly disagree to 2 = "Strongly agree"



Satisfaction with Accommodations

Figure 4. Respondent levels of satisfaction with conference accommodations* Scale: -2 = "Very dissatisfied" to 2 = "Very satisfied"



Please indicate any changes NIMBioS can make to improve the resources and/or accommodations available to conference participants: (n=23)

Acoustics and seating in 400A could be improved. Perhaps use of microphone would help.

Breakfast consisted of a bagel maybe something more substantial

Funding for travel expenses

Good enough

Having the conference run parallel to some sort of meditation retreat was off-putting. Having healthier food options during the breaks would have been nice.

^{*}Number of respondents varied for each question as "not applicable" was an option

Healthier food. There is an obesity epidemic going around Tennessee and much of the United States, and having snicker bars and kit-kats doesn't allow a lot of room for improvement.

How about including some brief bio details of poster/oral presenters as part of the abstract (e.g. Bio or Math major? Year in program?)

I drank too many mellow yellows; somebody should have kept me under control.

I was satisfied with everything on NIMBioS end, but making a note about not relying on the transportation provided by Holiday Inn would probably be helpful, as well as something saying that breakfast at Holiday Inn is not free.

I would have liked to have been provided early in the month with a schedule of events happening in the city and on campus. A list of good places to eat and sights to see would have also been helpful.

I would suggest changing the location of the poster presentation.

It would be nice to have seating assignments or something like that at one of the meals to have longer conversations with new people instead of just the networking game.

It would have been nice to have breakfast included at the hotel.

Maybe more healthier options for snacks? Such as fruit, vegetables and hummus.

More room for all the posters.

No changes, everything was excellent.

None.

None-they were great.

Provide a field trip - perhaps an exploration of UT and NIMBioS offices and facilities

The food was amazing and the constant of availability of coffee was much appreciated!

The hotel accommodations were very nice, but we did have problems with the hotel staff and resources provided for us. But the NIMBioS facilities and accommodations were impeccable.

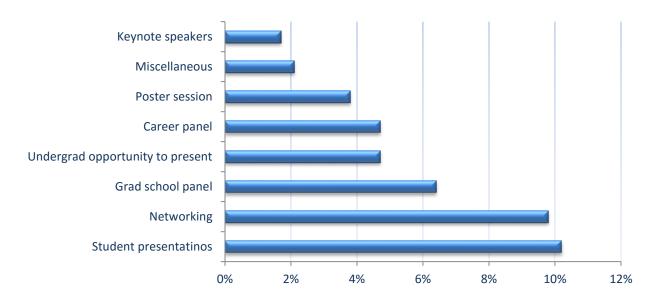
The iced tea at dinner was phenomenal!

The meal could be better. Thanks

Conference Content

Most Useful Aspects

Figure 5. Respondent designated most useful aspects of the conference (n=73)



What do you feel was the most useful aspect of the conference? (n=73)

Actually talking with other undergraduates about our research. It helped with being able to present our project in a concise manner

Career panel

Experience at presenting information.

For me, the chance to network with other faculty working with undergraduates in math bio research. (I was also very inspired by John Jungck's talk.)

For my students to meet other students in the same fields.

Forum for undergraduate students to present and get meaningful feedback

Getting to meet others in the field with the same interests. Also the panel at the end of Friday night was very informative.

Getting to see others present their research. That is, gaining experience on how to present a good talk about research.

Graduate school forums.

Graduate school panel.

Graduate school panel and poster sessions.

Graduate school session, career panel, keynote speakers.

Graduate School Showcase/Panel Discussion.

I feel the most useful aspect of the conference was the panel section.

I felt that the individual projects were the most useful, because they allowed an opportunity to see how different projects can be created to integrate math and science.

I felt the interactions with other students and professors from different universities were the useful aspect of the conference. It gave me a brief idea of university learning outside of my college.

I liked the discussion panel, and the food was very good.

I really enjoyed listening to other students' presentations and talking with them about their research in the poster sessions.

I really enjoyed meeting and talking to other ambitious students studying fields similar to mine.

I really enjoyed the group panel. Many students asked questions that I hadn't considered, and I learned a great deal about the application process and graduate programs.

I think the discussions were the most useful aspect. It helped me understand other projects and really make sure I knew everything about mine.

I think the panel was the most useful.

Interacting with peers from other universities.

Interacting with students and faculty with similar interests and career goals.

Keynote speakers were incredibly helpful as was the graduate information board panel. But I feel that the most useful aspect was the fact that only 2 presentations were going on at the same time. Not more. I was able to maximize my time as to which presentations I wanted to attend.

Learning about all the different kinds of research going on in this field and meeting other students with similar interests

Listening to other people's talks.

Making new connections learn the interesting projects others are doing.

Meeting other student researchers.

Meeting with new people and interact with so many talented undergraduate students. Networking. Networking and exposure to many areas of research. Networking for the students, practicing their speaking skills. Poster presentations. Poster session. Posters and Presentations. Presentations. Presentations by peers. Presenting my research. Presenting my research to people with subject area knowledge who hadn't seen it before. Seeing other undergraduate students present their research via talks and posters Seeing the cooperation of math and science students. Seeing the product of students' work. Seeing what others were working on. Speakers and Staff Student Participation. Student presentations. Student presentations. Seeing that students my age are involved in interesting and exciting research was really empowering.

Talking to Dr. Lou Gross one on one about graduate school and course work. Also, I am one of 5 students (I am the only undergraduate) in my department that works with mathematics and biology, so it was definitely beneficial to see presentations in my field.

Talks and posters by undergraduates

The ability to talk to other undergrads doing research

The Career panel and sharing information with other. Also learning about the kind of research other people are doing around the country.

The career panel and the posters were very useful. Because the presentations were short, the posters that accompanied some talks helped to get a better understanding of the research.

The chance to meet other professors in the field, and the chance to see other people's research so that I can get a better feel of the field was also useful.

The chance to meet other undergraduate students involved in research.

The game we played to get to know people. It is easier to learn someone's name playing a game and then talk more about careers/research after you've broken the ice.

The Graduate Fair

The graduate school showcase

The most useful aspect has its unassuming and unpressured environment. I felt that it was ok to simply say, "I don't know"

The most useful aspect of the conference was making having the opportunity to present our research to other undergraduate students and faculty and gain new ideas from those who brought a different angle to our discussion through questions.

The most useful aspect was the fact that students from all over the country came together and discussed research that was similar in many regards. The presentations were interesting as well as some of the posters.

The most useful aspects for me was learning about the graduate bio-math programs such as SCALE-IT, and also the first day presenters were very inspiring as to continuing working hard to be part of a good graduate program and contribute to scientific advancements.

The most useful part of the conference was the discussion panel that discussed graduate school options.

The opportunity for undergraduates to present at a conference.

The opportunity to network and ask questions of the representative of different institutions.

The opportunity to present our research that we have worked hard on over the past year.

The oral presentations, which allowed each of us to practice publicly speaking about our work.

The Panels and keynote speakers

The poster sessions and student presentations.

The posters were a great way to talk and take more time to understand what other students were doing.

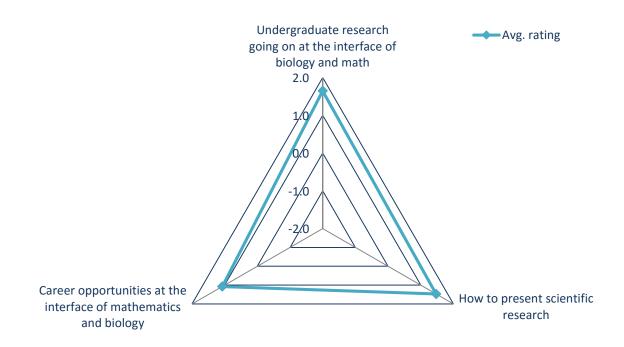
The presentations by different students which showed me the wide range of studies that included biology and math.

The talks and posters were the most useful.

The variety of talks and poster presentation. It was great seeing how many things Mathematics can be applied to!

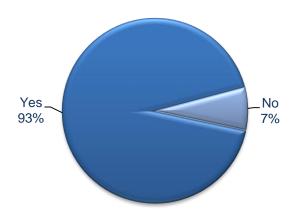
Undergraduate Participant Learning

Figure 6. Undergraduate respondent learning levels (n = 68)Scale: -2 = "Strongly disagree" to 2 = "Strongly agree"



Progress Toward Goals

Figure 7. Do you feel that participating in the conference helped you make connections with others within the interdisciplinary field of math and biology? (n = 81)



Comments: (n=23)

Getting to see the different fields available as well as particular areas of research going on within the field was very helpful.

Have a dance or something social next year. The only time I truly socialized with others at this conference was during meals. A dance or other kind of social event would be fun.

I feel that I made a many connections, and of those a few that will contribute greatly to my professional development.

I had the opportunity to talk with students and professors who were currently working in the similar field that my summer project was on. It was quite interesting to hear what they all had to say.

I made a lot of friends relate to my field. This is definitely helpful.

I really enjoyed meeting people from all over the country who participated in summer programs similar to the one at YSU.

I think it was a really good opportunity to interact with other undergraduates doing similar research.

I think the networking game was definitely a plus - I talked to people I probably otherwise wouldn't have because of it.

I thought that the interactions between different students were very important. It was great getting to know other students and seeing their interests in math and research.

It seemed like most of the students were math people who moved into biology through applied math, it would have been nice to see more people going the other direction as well.

IT WAS AMAZING. PLEASE KEEP UP THE GOOD WORK...

It was extremely beneficial for me. I met with a lot of faculties with whom I will continue to have association.

It's interesting to me as a faculty member in Biological Sciences that, among attendees, Mathematical Sciences faculty members dominated...

Learning about graduate bio-math related programs directly from grad students and mentors within the program was most useful to me, and it is very much something that I want to be part of in graduate school.

Made good connections with faculty and students

Participating in a large and diverse conference was a new experience for me. I very much enjoyed the conference and took away new knowledge and direction for my education.

The Conference was definitely an eye opener as to my being able to express this unique research that I have been conducting as well as seeing others that have to present similar demonstrations. Definitely willing to attend again and will pass on the notion of the conference.

The graduate school session was a great chance to talk to representatives of different institutions, and gave me a good idea of what research is going on at those institutions which were represented.

The research end of things was great. The speakers need improvement.

The Set game was a really good and appropriate ice breaker and helped me to make connections I would not have made otherwise made.

This was a great opportunity to present the research that I have been working on, as well as network with other student researchers and professors. On a scale of 1 to 10, I'd give this conference an overall 10!

Though there were several graduate programs represented at the conference, it would be helpful to have more programs present for the graduate fair.

Yes, I have a greater appreciation for mathematics as well.

Figure 8. Do you feel the conference was successful in achieving its goal of creating a forum through which undergraduates can present research and make new connections at the interface of math and biology? (n = 81)



Comments (n = 10)

Being able to present my research to a group of peers was a unique experience which taught me a lot.

From the comments I heard, the conference was very beneficial for the students - they didn't feel overwhelmed by the presentations or by presenting. They seemed to really enjoy the conference, and I would definitely recommend this conference to others!

Great way to get undergrads participating and collaborating.

I enjoyed the interaction with other undergraduates who have interests similar to mine.

I feel like I had opportunities to meet both of those goals at this conference.

It was nice presenting with others at the same knowledge level.

The main speakers gave great talks with energy and fun.

There were a lot of useful faculty at the conference that had good input on research projects.

This conference was my first time ever doing a research presentation, and it was a great environment to do so for the first time. This experience has motivated me to want to continue working on projects and presenting research.

Very receptive and welcoming environment for students. Faculty questioners dominated the oral sessions, but students were more vocal questioners at posters.

Figure 9. [Undergraduates only] Do you feel that the exchange of ideas that took place during the conference will influence your career plans? (n = 68)



Please explain the impact on your career plans: (n = 22)

Considering MD/PhD to continue to research and not lose out on math with only an MD

I am already going to medical school next year, however after this conference I think I'm more likely to seek computational biology research positions.

I am already planning on pursuing graduate studies (Ph.D.), but this may affect how I mentor other people in the future.

I am aware of more options for furthering my education, and subsequently, my career.

I am not sure exactly which field of applied math I would like to go in to, this conference gave me a taste of the biology side of applied math. I enjoyed the subjects presented; however, I do not believe it was enough exposure to the subject matter to sway me completely towards math biology.

I am now seriously considering UTK as a graduate school after a discussion of potential collaboration with an EEB faculty member in attendance

I am still in between my decision to go to either graduate school or to medical school, and seeing all these projects makes me think more and more about graduate school.

I am trying to decide where to go to graduate school as well as what area I would like to focus on, so the conference helped me see various opportunities in bio math that I really needed to see and experience to help in the decision that I am going to have to make in the next two months.

I have always wanted to enter medical school and become a physician. Attending this conference only reassured me that this is the path I will continue to take.

I think some of the research projects lend themselves to collaboration with different fields of study. I thought as a future public health professional, it was interesting to see how some research projects in both math and biology have public health components.

I was able to discuss possible directions to take in looking at graduate programs. This discussion has allowed me to feel more sure of my current career plans while leaving several career options open.

I was already planning on graduate school, and I feel that was almost all that was talked about.

I will be pursuing a future in veterinarian medicine, but this conference has shown me another side of research that greatly interests me.

I will definitely continue my research as well as pursue biomath as a career choice.

I would be interesting in switching to modeling hospital setting like I saw on one poster.

I would like to stay in research. But the overall experience has helped me to realize I will probably not take the academia path.

It doesn't really change what I want to do (pursue a PhD and research/teaching in bioinformatics and computational biology) but helped reinforce the idea that I'm on the right track.

It expands my interests on specific area for math.

Most definitely!

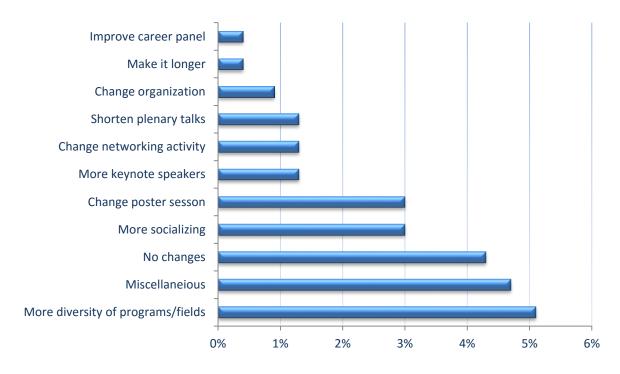
The conference allowed me to consider the relative benefits of working in universities or industry, and in focusing on applied and interdisciplinary studies.

The ideas discussed probably won't have a direct effect, but the conference left me with a feeling that the mathematical community in academia is a place where I fit in, will find kindred spirits, and will enjoy working. That provides a strong confirmation that my plans to pursue a Ph.D in statistics and possibly a career in academia are a good idea.

Thinking more about grad school

Suggestions for Future Conferences

Figure 10. Respondent suggestions for future conferences, by category (n = 59)



What would you change about the conference? (n=59)

1. Two plenary talks and an hour-long panel discussion may be too long for some students in the audience. Keep it to at most one plenary talk and a panel discussion in a day. Some of the undergraduates I talked to enjoyed the second day more than the first day, because they got to see what other students were doing, plus it is easier for them to follow the 15-minute talks. 2. This really nitpicking, but have the organizers sit at different tables during dinner. It would be best for the participants to meet as many different people as possible with the NIMBioS.

Better speakers, maybe a lecture.

Extend it

Find a more effective networking activity than the "sets" game.

food

Fun Activity on Saturday

Have more student presentations on Friday.

I didn't like the fact that the 1st poster session took place at 7:00 at night. I feel as though many people left by that time. Similarly, I felt that many people left right after lunch on the second day of the conference. Also, I thought that the 1st day's presentations were far too long. Some of the

talks were interesting, but it's hard to sit in a room for 5-6 hours and listen to presentations. One other thing that I would change is the amount of time allotted to poster presentations. One hour is not nearly enough time. Another thing that I didn't particularly like is the fact that the graduate informational session consisted of only math departments. This being a Biology-mathematics conference gave me the impression that both disciplines were going to be represented. Besides the one talk by the biologist, I felt that the conference was heavily swayed towards mathematics.

I don't have anything to change. Good Job!

I feel like there should have a representative with a Master's degree on the panel discussion. The PHD's were very knowledgeable and instructive; however, there was not an opposing view point for this. It was heavily pressed that a doctoral program was the best way to go when in reality that may not be the best fit for the entire audience. Information from the perspective of a person in a career with a Master's degree would have been useful.

I think it would be beneficial if all students were required to give a short presentation introducing their work AND participate in a poster session to further elaborate on their research. This would give students the opportunity to practice both styles of presentation, and encourage them to push their limits and try things that are outside of their comfort zone.

I think the career panel and graduate school displays could be either expanded or removed entirely-I felt like they each showed only a narrow subset of options and as a result they weren't terribly helpful.

I was expecting the conference to be larger and more of a networking event.

I wish more questions were encouraged or raised my professors to learn how to compose questions on new research being done, learn how to personally think about topics being presented, and how to analyze the presentation.

I would change the location of the poster presentation. I felt it got a little too crowded in that hallway.

I would have less (or shorter) breaks between talks (particularly the final afternoon).

I would have liked to get to know the other undergraduate students in a less formal environment as well.

i would have liked to see a greater variety of graduate programs at the graduate school showcase

I would have liked to see a little more statistics research and maybe have a statistics department represented in the grad school fair.

I would invite more graduate schools from the area to present their offers or invite more speakers to the graduate school panel.

I would like to have more panel discussion related to different research topics.

I would make sure that the web page editor coordinates better. About a third of the poster abstracts were missing, and some people who gave presentations had times listed in one section of the schedule of events, but yet didn't have an abstract or title whatsoever about their presentation. Obviously, there was a lack of communication somewhere. The webpage organization was sloppy and unprofessional at times. I liked how they had included a medical school portion into the panel, but this has nothing to do with mathematical biology. Since it was decided to include a physician on the discussion panel, wouldn't it have been nice to have some more information the University of Tennessee's medical school during the graduate school showcase? Couldn't someone, an admissions director, or just anyone have been allowed a table for the graduate school showcase? I just feel that since you acknowledged at this conference that some students wanted to go into medicine, it was only followed halfway through.

I would not change anything.

If possible more undergraduate talks and/or posters. Tour of UT and/or NIMBioS facilities.

Include, if possible, a tour of the campus at which we are attending the conference.

Invite even more participants.

It would have been nice if on at least one day, we had good old fashioned hamburgers or sandwiches to eat. I found the food a bit too fancy.

Maybe encourage the presenters who give talks to have a poster as well, so they could get more individual interaction with faculty and other students

Maybe having presentations on both days instead of just on Saturday.

Maybe more guest speakers who are professors or researchers or medical doctors

Maybe try to get more representatives from other schools there to talk about their graduate programs.

Maybe, have more individuals from industry and graduate school to tell us some about biomath applications.

More people on the discussion panel to broaden the "knowledge pool" that students can utilize.

More poster time

More time to discuss and interact with the different students. Maybe break up into groups and further discuss ideas and projects.

Nothing

Nothing

Nothing really

Nothing, met my expectations

Nothing.

Nothing. It was great

Possibly the addition of more schools at the Graduate Fair as well as more independent research presentations. Another change would be to have more small groups to meet more undergraduate students individually instead of just at the posters.

Separating the presentations more

Since this was my first, nothing.

Social event. Not a game, but an actual social event.

Solve challenging problems?

The first talk was a bit long and not very entertaining. I liked the chance to be able to decide what talk to go to.

The focus on graduate school was great, and very strong, so perhaps include an additional part about industry opportunities. But keep the grad school stuff.

The game for social interactions was a little weird.

The only thing I would have changed would have been the dates we were there. The group i was with was from Georgia and we had to miss classes in order to get to the conference. I realize that scheduling is difficult and it may not be something that can be helped.

The panel discussion and the talk on undergraduate research were not that helpful for our students (maybe some faculty might have found them useful for them). The conference needs a different way to stimulate the attending undergraduate students' participations. Maybe a practical hand-on workshop and (or) more invited talks delivering practices and vision in this area would be an alternative option.

The poster sessions should be held in a bigger room so that some posters aren't in a secluded area so everyone will see all the posters.

The Set game was interesting. Yes, it did prompt interactions between people, but some people were really only interested in forming sets to win the competition, which wasn't really the point of the game.

To see more graduate schools at the showcase. I understand that the majority of participants were math majors, but I would have liked to seen more schools that would be fit for a biologist who uses mathematics.

Very little

What about a poster/presentation prize that named some key criteria of a good biomath synthetic project/talk?

I didn't like how the first poster session was the last event of the night. I noticed that some students already left the conference by that time. I feel that the poster session could've been earlier to promote more student interaction. I feel that it would have been better if professors would've split their talks into two days; some talk on the first day, and some talk on the next day. We sat in the same room for four hours on Friday, and we also had to listen to two student presentations that day. Every other student presentation was split, and I do not understand why those two students were allowed to present to the entire student and faculty body while the others were not. I think that those two presentations could've easily been incorporated into the next day. It was almost as if they were trying to figure out how to keep us at the conference until 8:30 P.M.

Poster sessions weren't scheduled at night. There were more breaks or even activities in between the first day's talks.

There were more activities, like a mock project.

Additional Comments

Please provide any additional comments about your overall experience with the conference: (n=32)

A nice job overall. It would be nice to hear some presentations from NIMBioS or other Biomath postdocs...after all they have a unique and CURRENT perspective on what's going on in the world...

Again, overall excellent experience.

Excellent, hope to attend again next year

Great conference

Great conference enjoyed it and learned a lot.

Great conference! Thank you!

Great conference! Thanks for organizing! The graduate school info session was very useful for our students, and we hope that it can be extended in the future.

Great conference!!

Great Job. Thanks for providing students the opportunity to present research and hear other students from other schools.

I am very grateful to have had the opportunity to participate in this conference and I think it was a great experience.

I enjoyed it a lot.

I enjoyed the experience and think that the conference is a great opportunity for undergraduates interested in mathematics and biology.

I had a wonderful experience at the conference this year. If I wasn't graduating, I'd participate again next year. Thank you for the wonderful hospitality and the opportunity to participate.

I really appreciated having this opportunity to present our research and learn from other researchers!

I really enjoyed the poster sessions, something I haven't spent much time learning from before!

I really enjoyed this experience and I'm glad NIMBioS was my first research conference.

I was glad to be part of this conference!

It was a fun and inspiring experience, and I plan on presenting at more conferences and keep working hard towards graduate school because of this.

It was a good experience.

It was a great experience and I hope that this conference continues in future years.

It was a great experience that allowed me to view what else is possible in this field. I would recommend my friends and colleagues to attend it the next year.

It was a positive experience.

It was Awesome!

Over it was great

Overall, i had a nice experience on this undergraduate conference.

Thank you for the opportunity! The students were very happy attending and interacting with other students.

The conference ran more smoothly and was better organized than any other conference I've ever been too. It was a great experience and I would highly recommend other students to attend.

The conference was a great experience, it was well organized and provided me with many contacts in the field and allowed me to converse with people who are interested in the same topics I am. I was a great experience and I appreciate the opportunity given to me by NIMBioS

The first key note speaker from St. Jude's Hospital was the presentation that I most enjoyed.

The sets game was a confusing to the point that it distracted from actually meeting and talking with people.

This conference was a first for me. I really enjoyed it and found it useful too at the same time. This experience has boosted my confidence, and I am looking forward to participate in other such conferences.

Very good

Appendix: URC Survey

Undergraduate Research Conference at the Interface Between Biology and Mathematics Evaluation Survey

Thank you for taking a moment to complete this survey. Your responses will be used to improve the conferences 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.
Are you an undergraduate student? Yes No
How did you hear about this conference?
Please check the appropriate box to indicate your level of agreement with the following statements about this conference:
Strongly agree, Agree, Neutral, Disagree, Strongly disagree, Not applicable)
I feel the conference was very productive. The conference met my expectations. The presentations were useful. The panel discussions were useful. I would recommend participating in NIMBioS conferences to my students and/or colleagues.
Please check the appropriate box to indicate your level of agreement with the following statements. As a result of participating in this conference, I am more knowledgeable about: (Strongly agree, Agree, Neutral, Disagree, Strongly disagree)
undergraduate research going on at the interface of biology and math. how to present scientific research. career opportunities at the interface of mathematics and biology.
Do you feel that participating in the conference helped you make connections with others within the nterdisciplinary field of math and biology? Yes No Comments:
Do you feel the conference was successful in achieving its goal of creating a forum through which undergraduates can present research and make new connections at the interface of math and biology? Yes

No

Comments:

(Undergrads only) Do you feel that the exchange of ideas that took place during the conference will influence your career plans?

Yes

No

Possibly

Please explain impact on career plans:

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

What would you change about the conference?

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

> Comfort of the facility in which the conference took place Resources of the facility in which the conference took place Quality of meals Quality of drinks and snacks provided

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

Please provide any additional comments about your overall experience with the conference