



USER RESEARCH REPORT

ABS NETWORK

December 2019



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EXECUTIVE SUMMARY

A few years ago, the Biostatistics team at MICHHR noticed that staff statisticians were spread out and siloed across campus. They wanted a way to bring them all together, and the Applied Biostatistical Science (ABS) network was born. This resource aimed to foster partnerships among statisticians, epidemiologists, and researchers across the university.

Now that the network is 250+ people strong, we're looking at what's next for the network. We sought improvements in three different areas and created separate projects to tackle each one. We restyled the existing homepage with an enhanced look and feel, interviewed biostatisticians to learn what value they were getting out of the network and the website, and interviewed CTSU administrators about whether a biostatistician directory would be useful to them.

Through our research, we discovered that very few people interact with the ABS Network website. Biostatisticians get the greatest value out of the network through the in-person seminars and events, not through online resources posted on the website. CTSU admins similarly do not use the website to look up statisticians since they either do not have a need for U-M Biostatistician expertise, or do not have the capacity to make meaningful matches on behalf of the faculty.

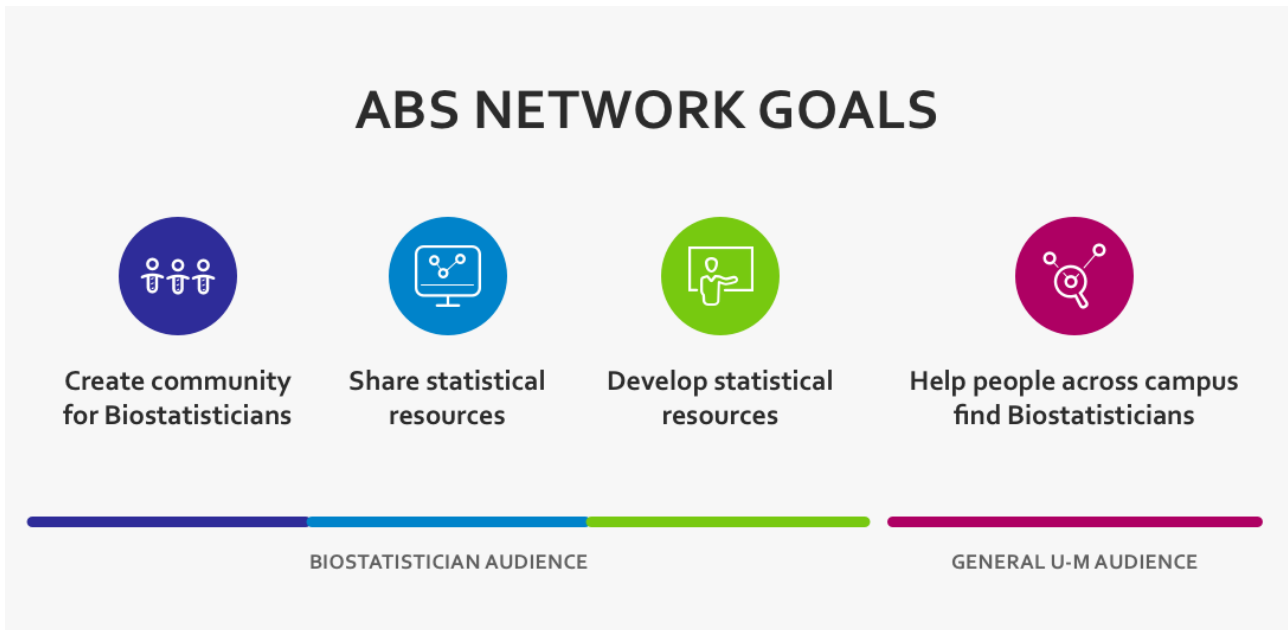
The results of this research suggest expanding in-person events, increasing engagement through email, and looking to other groups that have successfully created networks of dispersed members as some possible options to expand the impact of the ABS network.

OVERARCHING GOALS

The overarching goals of the three ABS Network projects can be split into two core audiences:

1. Biostatisticians
 - Create community
 - Share resources
 - Develop resources
2. Greater U-M audience
 - Help people across campus find Biostatisticians

These overarching project goals are summarized in the following diagram.



PROJECT 1: REVAMP ABS NETWORK WEBSITE WITH AN UPDATED LOOK AND FEEL

BACKGROUND

The ABS Network website was created in 2017 in order to test the idea that Biostatisticians at U-M would be willing to come together in a campus-wide professional network. Since this was a pilot, emphasis was placed on the functionality of the website: adding members, displaying members, and highlighting upcoming events. Less attention was paid to the website's visual design.

In the years since the network began, it has grown to over 200 members. The network is gaining notoriety, and what began as a small pilot has grown into a point of pride for MICHR. As the network is gaining prominence and the team is starting to exhibit the site to greater audiences, the site's visuals need to appear more high-quality and professional.

GOALS

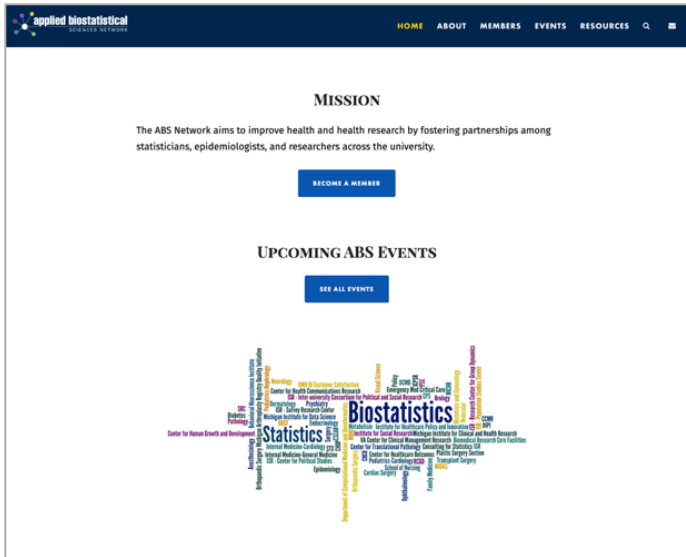
Upgrade the level of aesthetic polish on the ABS Network website so that it accurately represents the quality of the network.

AUDIENCE

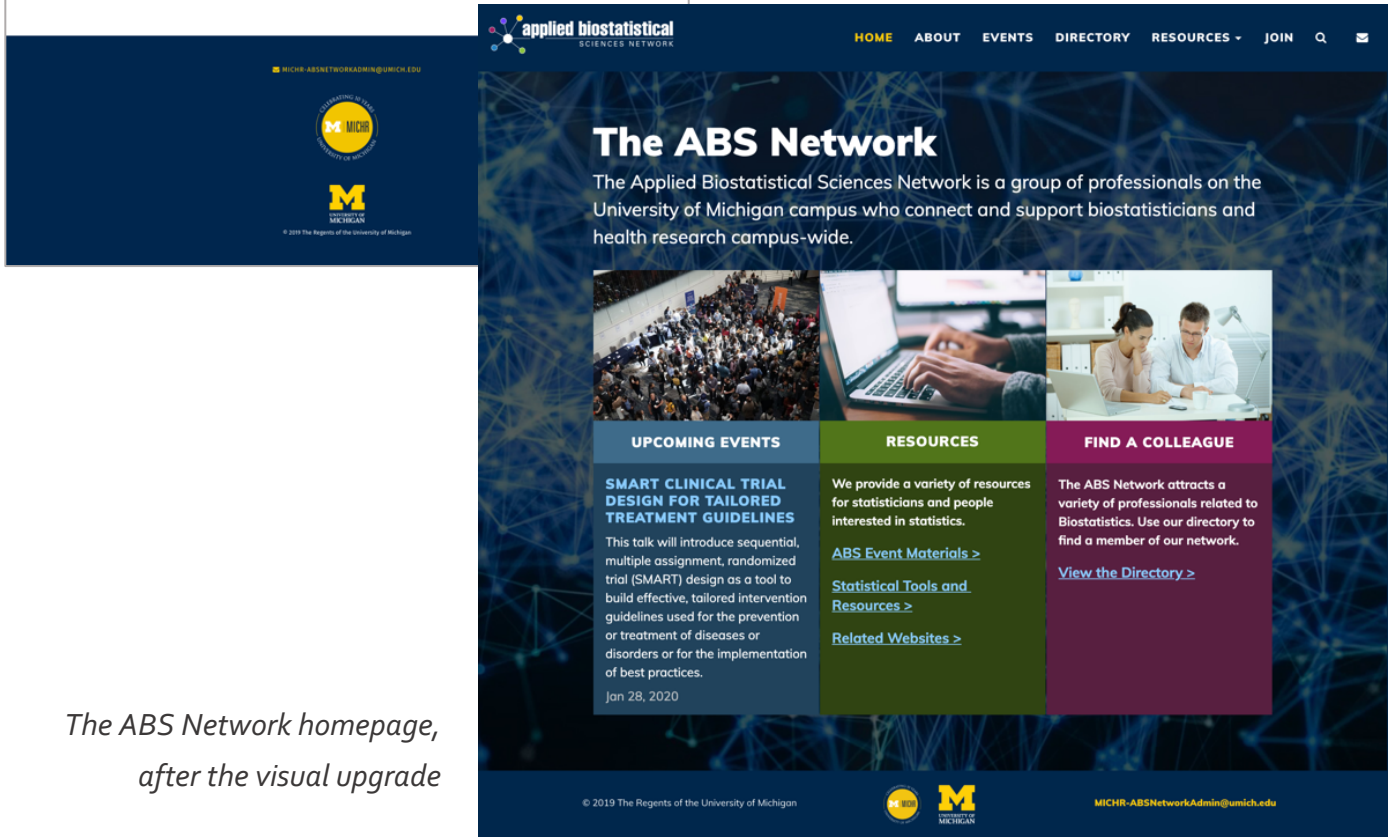
The target audience was Biostatisticians at U-M, as well as administrative staff or faculty who may be looking up a Biostatistician.

WEBSITE RELEASE

The new website design went live on October 9, 2019. Before and after screenshots of the homepage are below.



The ABS Network homepage, before the restyle



The ABS Network homepage, after the visual upgrade

ANALYTICS

Looking at a month period before and after the restyle, fewer people visited the site (down from 47 to 32), but when they did visit, they **hit more pages** (up from an average of 2.84 to 3.20) and **stayed slightly longer** (up from an average of 2:53 min to 3:29 min).

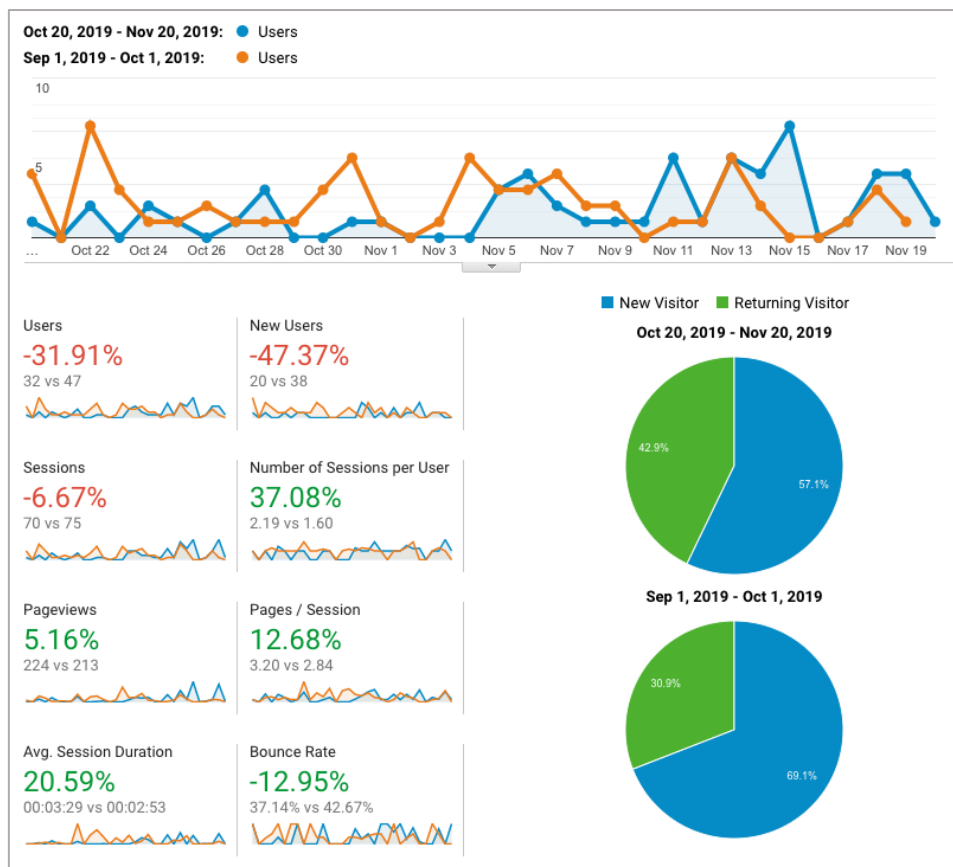
TIME PERIOD

Time period before the restyle (orange): Sep 1, 2019 – Oct 1, 2019

RESTYLE LIVE: OCT 9, 2019

Time period after the restyle (blue): Oct 20, 2019 – Nov 20, 2019

FULL DATA



CONCLUSION

The new look and feel of the ABS Network website adds polish and professionalism to the public face of the network. With the new styling, people are staying longer on the site and browsing more pages once they are there, though the total number of people visiting is too small to establish any kind of statistical significance.

PROJECT 2: BIostatistician USER RESEARCH

BACKGROUND

Now that the ABS Network has grown in size to over 200 members, there seems to be an opportunity to serve those members beyond the current offerings of in-person seminars and courses. Since the internet is a fast and efficient way to disseminate information, the website could be a hub from which to increase the support the ABS Network could provide its members.

GOALS

Speak to ABS Network members in order to learn what they value in the network and determine if and how the website could better serve them.

AUDIENCE

Master's-level Biostatisticians in the ABS Network from across campus.

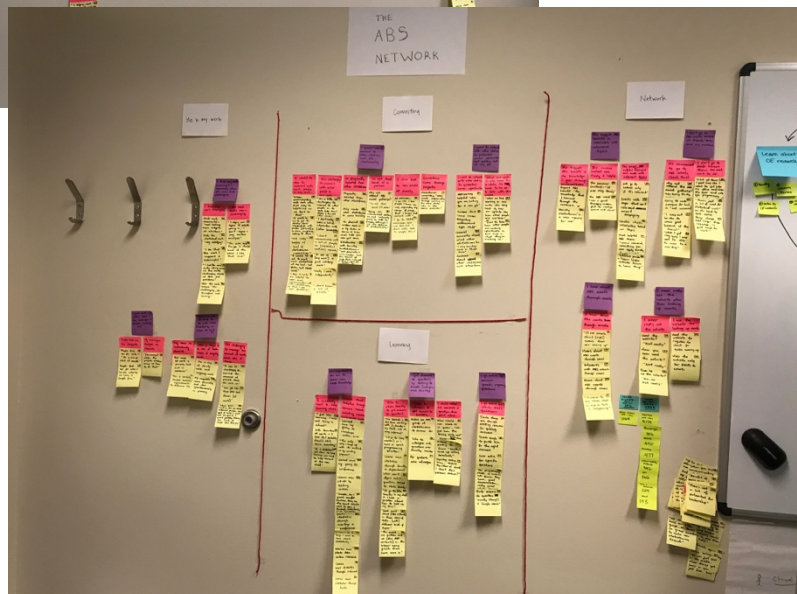
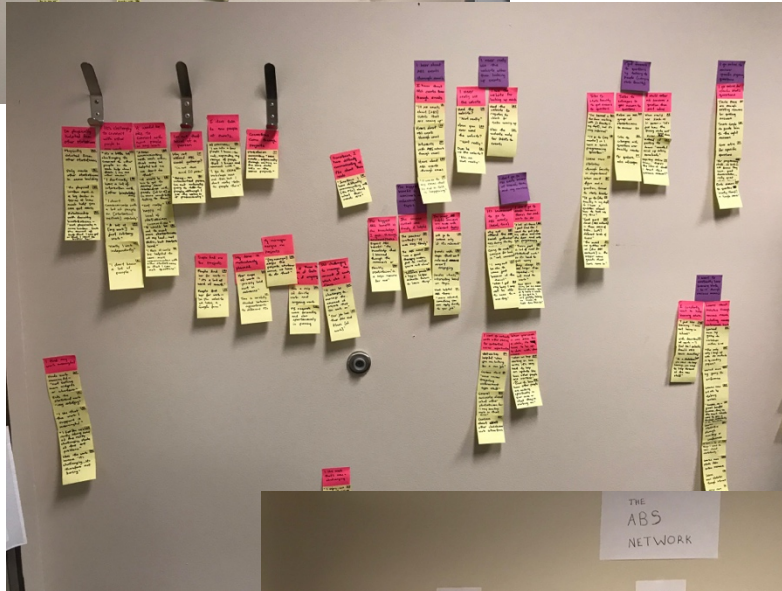
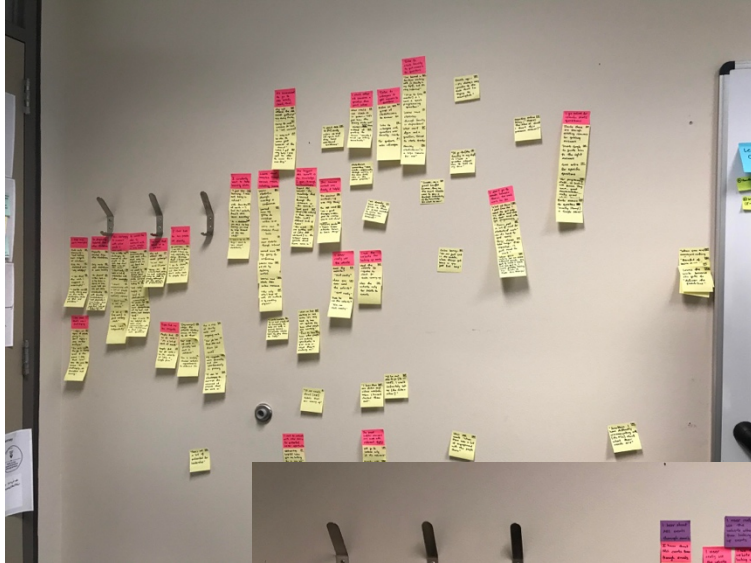
METHODS

We engaged in six one-hour, qualitative interviews with Master's-level Biostatisticians.

We used five interviews in our affinity diagram analysis. One Biostatistician interviewed was not our core audience — he was a team manager who did not engage in typical statistician activities and could not speak to being involved in the ABS network.

The interview questions are attached in Appendix A at the end of the document.

The following photos partially show the progression of the affinity diagram we used for our analysis.



RESULTS

We divided our results into four sections:

- Me & My Work
- Connecting
- Learning
- The ABS Network

Full documentation of the quotes and themes used to arrive at these results can be found in Appendix B at the end of the document.

ME & MY WORK

Biostatisticians find their work meaningful, but feel inundated with the requests they get

Biostatisticians at U-M find the health research work meaningful. One interviewee said, “I feel like we’re really solving some of the really challenging, state of the art problems.” They are particularly engaged when they work on new projects that they find challenging.

They get assigned work from either their manager or are directly contacted by faculty within their departments. Because their time is often divided up very carefully, they feel that they cannot spend any time on longer term professional development. One interviewee expressed, “When you’re working for so many different people—you get 4 hours a week and you get 6—I can’t justify taking too much of that time from you.”

CONNECTING

Biostatisticians have a desire to connect to other biostatisticians but experience internal and external barriers to connecting.

Biostatisticians have a desire to connect to other biostatisticians. One interviewee said, "It would be cool to meet more statisticians at my level...not Ph.D.s, but Master's level."

However, there are barriers that get in the way of their making connections, such as physical isolation ("not physically in same location...limits the amount of help that I can get"), the nature of the work being solitary ("I don't really have a lot of interactions with others"), and a mindset of not being social ("Being an introverted person, I'm not naturally...going to talk to people").

The statisticians see the value in making connections particularly for career opportunities and for keeping up to date in other areas ("I may someday work in that area").

LEARNING

Biostatisticians have an appetite for learning more statistics, whether in a formal setting or informally through asking questions to people they have access to.

Biostatisticians constantly want to keep learning more statistics. They actively seek new knowledge through a variety of means such as courses, conferences, books, and online resources. When one interviewee was recounting a period when he had downtime at work, he said "I feel like I probably should still learn something."

When getting an answer to specific work-related questions, biostatisticians engage in a mix of asking other people and searching the internet. They appreciate having experts around them, as one interviewee said that the faculty statistician in their department was "a huge resource" for her. When questions are more specific or programming-related, they often asked Google.

THE ABS NETWORK

Biostatisticians do not use the ABS Network website, but rather find value in the network through seminars and events. They learn about ABS events primarily through emails.

The biggest benefit of the ABS Network to biostatisticians is the knowledge gained through the seminars and talks. They found the speakers impressive (“The most I’ve gotten out of [the ABS Network] is...the bigger name guests that have come in”) and relevant to their work (“It was very timely”). When choosing a seminar to attend, they made their decision largely based off of topic (the most helpful talks were ones that were “more relevant, something you can apply directly to your job”).

Sometimes, an ABS event would not be attended not because of a lack of interest, but instead because of the inconvenience due to time and travel. Biostatisticians also feel pressures to complete their work, as one interviewee noted, “A lot of times I just feel like I need to get into my office and close the door and write SAS programming for eight hours straight.”

The ABS Network members do not use the website for much more than signing up and occasionally checking on the next event. They more regularly interact with the network through the ABS event emails.

WEBSITE ANALYTICS

The website analytics data shows that indeed, very few people have utilized the website. For a single year, there were 404 visitors and 2200 page views in total.

When people first sign up to become a part of the ABS Network, they look around at what the website has to offer. But after the initial visit,

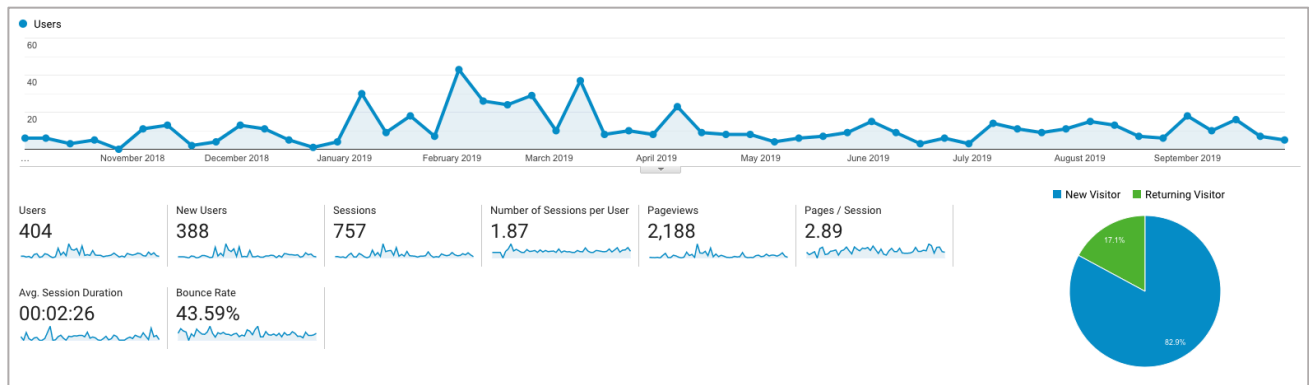
only 4% of people, a figure which includes the MICHR staff, have returned to the website.

When people did return to visit the website, it was often to check the upcoming events. Very few people came to the site for resources from past lectures or to look up existing members in the directory.

VISITOR DATA

Data for a single year: Oct 1, 2018 – Oct 1, 2019

- 404 people visited
- Only 80 of all visitors (including the MICHR team) were returning users
- 2200 page views total



BEHAVIOR FLOW DATA

Data for a single year: Oct 1, 2018 – Oct 1, 2019

- 757 people visited
- 361 people left after seeing only a single page (48%)
- A typical visit went from the homepage to the Events page and back



CONCLUSION

Current Biostatisticians in the ABS Network are getting value from the network’s events and seminars, which they learn about through email. Very few users are visiting the site after they initially sign up for the network, and do not find significant value in the online resources the ABS Network provides.

BIOSTATISTICIAN PERSONA

Our interviews granted us insight into the life and mindset of a typical ABS Network member.

Biola Biostatistician

STATISTICIAN INTERMEDIATE

 Center for Human Growth and Development

 Master of Science in Biostatistics

 29 years old



What I do is interesting and meaningful, but I have so much work to do that it needs to be worth my time to step away

WORKING STYLE

Biola prefers to work alone, since most of her work is solitary. She looks up programming resources online when she has a specific question and goes to the faculty statistician if the internet doesn't help her figure it out. Biola loves learning more statistics and keeping up with the latest developments in the field.

WORK JOYS

- The problems she's solving are important
- Delivering the punchline on a study
- Learning and applying new statistical methods

ABS NETWORK INVOLVEMENT

Biola finds out about the newest ABS Network offerings through the email newsletters. She'll attend an event if she finds the topic interesting, if she's not too busy, and the event isn't too inconvenient for her to access. She doesn't talk to new people at the events but finds value in learning from the speakers.

PERSONALITY TRAITS

- Diligent
- Introverted
- Eager to learn and improve

WORK CHALLENGES

- Large quantities of work to be done
- Carefully assigned percentage of his hours
- Little say in the specific projects she works on

OPPORTUNITIES

- Expanded in-person events
- Enhanced e-newsletters
- Opportunities to participate in policy change

PROJECT 3: PILOT INTERVIEWS WITH OTHER POTENTIAL STAKEHOLDERS

BACKGROUND

The ABS Network contains a repository of Biostatisticians from across the U-M campus, which could be a useful resource for researchers who are looking for statistical assistance in their research.

GOALS

Determine whether CTSUs could use the ABS Network member information in order to help match Biostatisticians to research studies that need their support.

AUDIENCE

CTSU Admins at U-M.

METHODS

We conducted interviews with the administrative leads of four of the eight CTSU admins at the U-M Medical Center. The interview questions can be found in Appendix C at the end of the document.

CONCLUSION

None of the CTSUs we interviewed did any direct statistician matching. Two CTSUs dealt mostly with industry-sponsored studies and did not have a need to contact Biostatisticians at U-M. Another CTSU suggested that Biostatisticians could be part of the initial review on proposed studies, but for any long-term partnership between a statistician and a researcher they would defer to an organization like MICHR to make the match. A big challenge raised by the administrators was the lack of clarity on which biostatistician they could approach, and what capacity

or structures were in place for biostatisticians to take on more projects. In other words, did they need permission from their employers/managers to work on other projects or were they a shared resource that could be approached?

Given these insights, building out a resource to give CTSUs access to a list of members may not be a fruitful direction. Most CTSU administrators do not match statisticians to projects, and if they do provide assistance, the right statistician fit is determined by far more factors of fit than can be provided in a directory-like resource. There is also the matter of institutional platforms in place that can allow biostatisticians to become shared resources.

RECOMMENDATIONS FOR NEXT STEPS

We discovered there is little need for expansion of the ABS Network website for meeting the current goals. However, through our conversations we uncovered a series of latent needs outside the website that would provide significant value to the members of the network.

- Expand ABS events to include more topics and add more inclusivity and convenience for biostatisticians in different work configurations.
- An U-M Annual Biostatistics conference to celebrate the biostatistician community and form closer bonds.
- Slack channel, or some other forum of short, just-in-time, informal communication needs.
- Expand on or take inspiration from the IHPI group of biostatisticians, who seem to have found a good structure for productive and engaging careers.
- Take inspiration from EMG team and the analogous problem they've tackled with study coordinators.
- Take inspiration from other successful professional organizations that form a professional community across geographical, educational and topical boundaries.
- Run deliberate experiments to explore digital communication mediums such as e-newsletters.
(An experiment canvas can be found in Appendix D at the end of the document.)
- Involved engaged ABS members to work towards policy change at U-M. Biostatisticians are looking to create meaningful change and the ABS network is uniquely positioned to bubble deficiencies in a systematic and constructive manner.

The Design and Innovation Team is happy to help you take on any or all of these challenges.

APPENDIX A

BIostatistician RESEARCH PROTOCOL

Introduction and Job Role

- Tell us about your role and the type of work you do.
- Tell us about your team/department.
- What are the parts of your job you enjoy the most?
- What are the parts of the job you find more frustrating?
- How do you get assigned to projects?

Making Connections

- What is your connection to other biostatisticians?
- What are your sources for keeping up to date in the field?

The ABS Network

- What have been your experiences with the ABS Network?
- Why did you join the network?
- How do you engage with the network?
- Tell us a recent example of something that you used the network for.

The ABS Network Website

- Have you used the ABS Network website?
- Can you run us through a recent example of what you used the website for?
- How could we make the website serve your needs more effectively?

Further connections

- Could you connect us to people you think would be helpful to talk to?

APPENDIX B

FULL AFFINITY DIAGRAM DATA

ME & MY WORK

I find my work meaningful, especially when it's new and challenging

I find my work meaningful

B3: Finds work meaningful – “not selling more widgets or whatever”

B1: Finds the statistical work “very satisfying”

B2: “I like that the work I support is meaningful”

B4: “I feel like we’re really solving some of the really challenging, state of the art problems”

B2: Likes the work because “it’s challenging...it’s therefore not boring”

I like work that’s new and challenging

B5: “I enjoy...new types of projects coming in...I don’t enjoy a very routing analysis”

B2: “The work and the job is always kind of the same. I like that less.”

I get work either from my manager or people reaching out

People find me for projects

B2: People find her for work—“it’s a lot of word of mouth”

B2: People find her for work—“on the website we have a google form”

My manager assigns me projects

B5: “[My manager] assigns the projects. Whatever comes, we have to do that”

There's a lot of work to do, with little flexibility in what to work on

My time is meticulously planned

B3: Her scope of work is "pretty laid out in advance"

B1: Time is carefully divided between appointments to different PIs

There is a mix of finite work and ongoing work

B2: Has a mix of finite work and ongoing work

B3: PI requests come formally, and also spontaneously in passing

It's challenging to manage the amount of work, which ebbs and flows

B4: "It can be challenging to...manage the...amount of projects that you work on"

B4: Our job has these ebbs and flows [of work]"

B2: "When you're working for so many different people...you get 4 hours a week and you get 6, I can't justify taking too much of that time from you"

CONNECTING

I would like to connect to other statisticians, but it's challenging

It would be nice to connect with more people in my work

B5: "A team communicating with each other...that may be helpful but no we don't do that"

B1: "it would be nice to get to develop closer relationships with people [at U-M] so I'm more comfortable talking to them"

B5: "Not really" happy with level of statistician connection

B1: "It would be cool to meet more statisticians at my level...not PhDs, but Master's level"

B1: "I think it could be helpful to have...more communication with other statisticians so I can ask questions"

It's challenging to connect with other people in my work

B4: "It's a little bit challenging to connect to other people or to seek help when I think I can use other peoples' opinions or expertise"

B2: "I don't really have a lot of interaction with [other biostatisticians]"

B1: "I don't communicate with a lot of people on [statistical methods] regularly"

B2: "A lot of [my work] is just solitary work"

I'm physically isolated from other statisticians

B2: Physically isolated from other statisticians

B1: Only meets other statisticians in the same building

B4: "The physical location aspect...is a big factor in terms of how much help you can access"

B4: Relationship with faculty biostatistician—"Not physically in same location...limits the amount of help that I can get or that I can bother her"

B1: "Mostly I work independently"

B1: "I don't know a lot of people"

I'm not that social of a person

B5: Why not attend ABS social gatherings? "I'm not that social [a] person"

B1: "Being an introverted person, I'm not naturally...going to talk to people, although I see the value in it professionally"

I don't talk to new people at events

B3: At seminars: "I run into a few people I know...I'm not...expanding my range of people that I know and connect with"

B1: "I go to CSCAR workshops now and then, but I don't really talk to people there"

Connections come through projects

Statistician connections "were made...organically through working on the same data sets or the same projects"

I want to network with other statisticians for potential career opportunities and getting out of my silo

I want to network with other statisticians for potential career opportunities

B4: Networking helpful “when you are looking for a new job”

B2: Curious about “more career trajectory advancement type stuff”

B5: General curiosity about what other statisticians do—“I may someday work in that area”

B2: Curious about other statisticians’ work situations

When you work in one area for a while, it’s hard to be up-to-date with other areas

B5: “When we keep working in one area, it’s very hard to keep an update like how other people are working”

B5: “It’s good to learn how other people are working specifically in your area or what they’re working on”

LEARNING

It’s important for me to learn new stats knowledge

I constantly want to keep learning stats

B2: “I just like learning...I miss not being in school”

B4: with downtime at work—“I feel like I probably should still learn something”

B4: “As a statistician you want to keep learning...you need to keep abreast of the new stuff”

Learns about statistics through various means, including courses, conferences, and books

B4: Learned more by going to workshops within U-M

B5: “The only way I keep up with its methods...is by reading papers”

B4: Learned more by going to conferences

B4: Learns new stats by taking courses

B4: "Courses are a great benefit because...they are the most reliable way to gain a thorough understanding of the knowledge you want to learn"

B3: Learns statistics through meetings and conferences

B1: "I have a lot of...things I want to learn about statistically"

B2: Learn more stats from online resources

B1: Learns more stats through internet

B1: Learns more stats through books

I prefer to get answers to questions by talking to people (colleagues, stats faculty)

Talks to stats faculty to get answers to questions

B2: "I've learned a ton from working with [a faculty in my department], but it's very informal"

B1: "I'll go to [my mentor] if I have a quick programming question"

B1: Learns more statistics through faculty in department

B5: When can't figure out a question, turned to stats director

B1: "I'll go to [the faculty in my department] if I have a question about how to best use my time"

B2: Faculty statistician "is a huge resource for me"

Talks to colleagues to get answers to questions

B3: Relies on IHPI group of statisticians to answer questions

B1: Talks to colleagues with questions over faculty mentor

B4: For questions, ask colleagues

I would rather ask someone a question than post online

B3: When would use slack vs in person – "It's just how the timing works out", person is first choice

B3: Instead of posting to forums "usually I wind up asking somebody"

B1: Regarding online forums – "there's the issue of should I trust this person's answer?"

I go online to answer specific programming questions

I go online for specific programming questions

B4: Think there are enough existing resources for getting answers

B4: Trusts Google to guide him to the right answers

B4: Goes online for specific questions

B3: "For programming stuff...I'll look on SAS forums. They have ... great documentation...really great white papers"

B5: Gets answers to questions "mostly [through] a Google search"

NETWORK

The biggest ABS benefit is seminars with relevant topics

The biggest ABS benefit is the knowledge I gain through seminars/talks

Biggest ABS benefit: "The knowledge that I learned through the seminars or the events"

B5: "The most I've gotten out of [the ABS Network] is...the bigger name guests that have come in"

B5: "Good part about [ABS Network] is the series of talks...[with] different kinds of topics"

The ABS seminar content was timely and helpful

B2: The seminar content—"it was very timely"

B2: The ABS event "was a good therapy session, just to realize you're not alone"

B2: "ABS seminars provide a bigger, larger didactic forum to learn things"

The most helpful ABS seminars are ones with relevant topics

B4: Will go to lectures only "if it's relevant"

B3: Events with a topic that isn't relevant aren't engaging

B1: Decides what's interesting based off of topic

B4: Most helpful ABS topics: "more relevant, something you can apply directly to your job"

I don't go to ABS events because of travel, time, and my workload

It's inconvenient to go to ABS events (travel, time)

B5: Why not attend the ABS social gatherings? "It's during the day"

B2: Going to north campus for lunch is "not convenient"

B4: "I may not be able to come just because of the travel"

B4: "When I get very busy I may not be able to come to a meeting"

I don't go to events because there's too much work to do

B2: "A lot of times I just feel like I need to get into my office and close the door and write SAS programming for 8 hours straight"

B1: "There's just a lot of need for statistical work" so it's hard to get away

B2: Things always take longer than expected – "I just need to work"

I hear about ABS events through emails

I hear about ABS events through emails

B1: "I'll see emails about [ABS] events that are coming up"

B3: Hears about ABS events through emails

B2: Interacts with ABS network through email

B4: Hears about ABS events through email

B5: "It comes to my email that so and so talk is happening"

I never really use the website other than looking up events

I never really use the website

B3: Used the website? "Not really"

B2: Have you ever used the website? "Not really"

B1: Do you use the website? "No, no. Not really"

I use the website for looking up events

B5: Used the website to register, to check for talks coming up

B4: Uses the website only for RSVPs to events

APPENDIX C

CTSU ADMINISTRATOR RESEARCH PROTOCOL

About CTSUs

- How would you describe the role of the CTSU within the research process?
- What does your typical workday consist of?

Incoming projects

- How does the CTSU get requests?
- How often?
- How do people know to reach out?
- At what stage of development are studies in when they approach the CTSU?

Getting statistician requests

- When do statistics requests come in and how?
- Could you give us a few examples of what people ask for?
- Were these requests in line with what they actually needed? (“Statistical literacy”)
- Could you tell me about the last time someone didn’t know what they needed?
- What do you do next?

Making statistician matches

- How do you look for statisticians?
- How do you connect statisticians to studies?
- How do you evaluate whether it was a good match?

Closing

- As it relates to your work with biostats, what are areas you think your CTSU is doing well? Areas it can improve on?
- Are there any other people you can put us in touch with?
 - Other CTSUs
 - Department heads
 - Faculty

APPENDIX D

SAMPLE EXPERIMENT CANVAS

ABS Network Newsletter Community

EXPERIMENT CANVAS

How might we expand
Biostatistician connections
across the U-M campus?

#	Assumption <small>Hypothesis – The most high-stakes assumptions you're making</small>	Cohort <small>Group the experiment is designed for</small>	Experiment <small>Designed using the minimum set of requirements needed to test the hypothesis</small>	Fail criteria <small>Lowest limits for not proceeding or persevering</small>	Time <small>How long the experiment will run</small>	Results <small>Findings of the experiment, focusing on the fail criteria</small>	Learnings <small>Key learnings from the experiment</small>	Decision <small>Decision made based off of results and learnings</small>
1	Biostatisticians are willing to engage in virtual online communities	Members of the ABS Network	Create a Slack channel. Send out the notice to ABS Network members. See how many people sign up.	Less than 50 people sign up.	1 month.	LAUNCH EXPERIMENT		