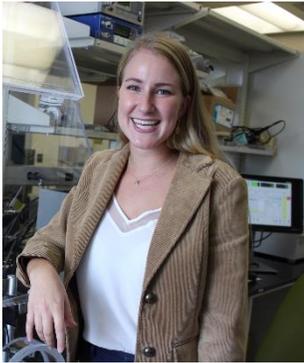


ADVICE FOR THE 2019 SUMMER SCHOLARS BY THE WFIRM ALUMNI SCHOLARS



KATHERINE BOLTEN

Temple University, Philadelphia, Bioengineering & Spanish

Faculty Advisers: Anthony Atala, MD, Director of WFIRM; Sang Jin Lee, PhD, Associate Professor

Congratulations on your acceptance to WFIRM's summer scholars program, everyone! While the research was an incredible and invaluable experience, I found the friendship among the summer scholar cohort to be the best part. Your time in Winston Salem will fly by, so I've prepared a few tips below to help you to make the most of your two months.

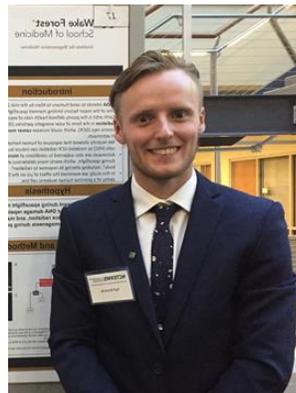
1. Make friends! I've made multiple lasting friendships at WFIRM (and just recently visited a friend last month!) and encourage you to do the same. A lot of us ended up living very close to each other in NC, so we would make a point to hang out (movie night, tennis, volleyball, hanging out in our blow-up kiddie pool that we purchased) after work and to do something fun every weekend.
2. Definitely join WFIRM's softball team. It's a very casual league, but it's a great way to meet more people at WFIRM and to hang out with your fellow summer scholars. Whether sports are your thing or not, trust me, you'll have fun.
3. Take advantage of Wake Forest's undergraduate campus. They have a tennis court, several volleyball courts, basketball courts, and running trails.
4. There are a bunch of places to hike that are within an hour away and definitely worth the trip. We probably made four or five trips, going to Pilot Mountain State Park, Hanging Rock State Park, and (if you're up to drive a couple more hours) Great Smokey Mountain National Park.
5. With regards to research, my biggest recommendation is that you should never be afraid to ask questions. While my two mentors were extremely helpful, discussion with people outside your lab can really worthwhile. On top of that, everyone is extremely friendly and almost always willing to take the time to help you.
6. While failed experiments can definitely be frustrating, just remember that that is science! Don't let it get you down. Your mentors are there to help you and to ensure that you have something worthwhile to present on final research day. In the long run, 10 weeks isn't a lot of time for a research project, so make sure that your expectations aren't too high and that you cut yourself a break every once in a while.

EGIL BRUDVIK

Union College, English

Faculty Advisers: *Graça Almeida-Porada, MD, PhD, Professor, and Christopher D. Porada, PhD, Associate Professor*

Congratulations on getting accepted to the Summer Scholars program at WFIRM. This is a highly competitive undergraduate research internship, and you should all be very proud to be among the students selected for this year's program. I had a wonderful summer at WFIRM last year, and I would go back in a heartbeat if I got the chance. I hope all of you enjoy your time at the institute as much as I did. Here are some tips that will help you make the most out of your summer:



1. On Mondays, you need to go to Moe's Southwest Grill on South Stratford. This is not only because of "Moe Monday," where you can get any burrito, fountain drink, and unlimited tortilla chips for only \$5.99, but also because Moe's happens to be almost right next door to Dewey's Bakery, which gives out free cake on Mondays. Needless to say, it's a double homerun!
2. There are a ton of great hiking opportunities around Winston-Salem, especially if you are willing to drive somewhere. My roommates and I drove to Chimney Rock State Park, which is in Rutherford County, North Carolina. Even though it was a pretty far drive, I would totally recommend it to anyone who is looking for a daytrip one weekend.
3. If you have aspirations of presenting your research at a conference after your time at WFIRM, make sure to tell your research mentor as early as possible. Since a lot of the research at WFIRM is confidential, what project you decide to work on will ultimately determine whether or not you can present it outside of the institute afterwards.
4. Utilize every opportunity you get to interact with all of the researchers at WFIRM. There are so many exciting projects going on simultaneously at the institute, and it is always interesting to hear what people are currently working on.
5. Don't ever be afraid to ask for help or clarification in the beginning. You don't want to potentially risk ruining an experiment because you didn't understand the protocols as well as you ought to have, so there is nothing wrong with asking for advice or extra clarification.
6. Make sure to document everything you do thoroughly in your lab notebook. You will probably have a lot of people tell you this but writing everything down will prove very important if your mentor finds use for your data in one of his or her future publications.



WILLIAM COLLIER

Purdue University, Biochemistry, Premedical

Faculty Adviser: *Shay Soker, PhD, Professor*

1. First off, **get excited** for the opportunity of a lifetime to work at WFIRM for the summer and spend 10 weeks in Winston-Salem! You will learn a ton and meet some pretty great people along the way.
2. **Do not be afraid to make mistakes at first in the lab.** Chances are, the project you will be working on will throw many new concepts and techniques your way. It may not go smoothly all the time, but having the ability to learn from your mistakes and improve your lab skills goes a long way.
3. **Make the most out of your weekends!** North Carolina has so much to offer. Visit

Charlotte, go hiking in Asheville, go to the beach, or visit some cool restaurants. Whatever it is, make sure you pack as much as you can in your 10 weeks there. Time goes fast!

4. **Free or half-priced stuff!** Dewey's Bakery gives out free cake squares every Monday and once a week Camino's Bakery has half-priced cheesecake. Need I say more?
5. **Get to know your lab mates!** This includes your fellow summer scholars and your mentors! As scholars, we would typically have movie nights, go hiking, play tennis, and go out to eat together. It is a great way to make new friends and extend relationships beyond the lab!
6. **Make Connections!** The Regenerative Medicine Essentials course is a great way to connect with scientists from around the country who are a part of cutting edge research. Don't be afraid to go up and introduce yourself!
7. **Eat and Drink in Winston!** Winston-Salem has some great food. My personal favorite places were El Rancho Taqueria, Slappy's Chicken, and Teeter Thai (a Thai restaurant inside of Harris Teeter). For the over 21 year olds, Small Batch Brewery has some great local beers as well "over the top" milkshakes for all ages.
8. **Speaking of Harris Teeter,** Get a frequent shopper card!
9. **Finally, learn as much as you can.** The hands-on experience you will gain from working at WFIRM is unparalleled and will truly set you apart from other students. Do not be afraid to ask questions and always thank those at WFIRM who make this all possible!

NANCY CONTRERAS-QUINTEROS

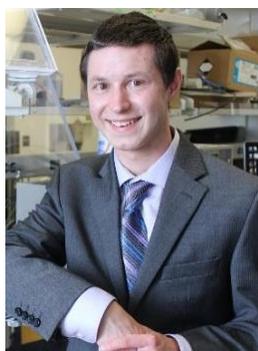
Appalachian State University, Chemistry

Faculty Adviser: *Stephen Walker, PhD, Associate Professor*

First of all, I would like to congratulate the 2018 class of WFIRM Summer Scholar on being accepted to conduct summer research in one of the most well-known and innovative regenerative medicine research institutes in the world! During your ten weeks, you will have the opportunity to meet and work with amazing fellow researchers and mentors. Before you embark on your scientific journey this summer I would like to give you some advice based on my experience last year.



1. Take advantage of the opportunity to attend the Regenerative Medicine Essential Course. Coming into WFIRM I only had a very basic understanding of what research in regenerative medicine entailed. These courses provided me with so much information on the type of discoveries that were being made every day in Regenerative Medicine. As well as how it impacted multiple other fields of medicine. Some of the information I gained while attending the courses proved to be very valuable later on, in my research over the summer as well as in my research once I returned to my university.
2. The people at WFIRM are always there to help so don't be afraid to ask for it. Once you go to WFIRM you will notice how they have implemented an open floor concept in the laboratories. This was done with the intent of making WFIRM a place where you could collaborate with each, share ideas, and even lead a helping hand.
3. Get involved and have fun! Get to know your fellow scholars and the city of Winston-Salem. Joan takes that time to plan many group events where you can socialize with many of the great people working at WFIRM. Go to as many of these events as you can, you won't regret the opportunity to build lifelong connections!



NICKOLAS MUNDO

Texas A&M University – Corpus Christi, Mechanical Engineering

Faculty Advisers: *Sang Jin Lee, PhD, Associate Professor; James Yoo, PhD, Professor, Associate Director, CSO*

Hey everyone,

I hope you all are excited for the things you will learn and do while at WFIRM over the summer. Last summer I was given the wonderful opportunity to be able to do research on the production of a bio-ink for 3D-bioprint kidney constructs. To be honest, I was new to

regenerative medicine before coming to WFIRM, so my bellow advice maybe general, but these are the things I learned from my experience last summer.

- Never be afraid to ask for help if you do not know something or would like to just know more. Like I said, I came to WFIRM last summer with very little knowledge about my placed research project. I ended up needing a lot of guidance at the start, but my PI and mentors were very helpful and willing to teach me so that by the end I could do most parts of my research independently. Everyone is very friendly there and happy to explain anything that you may be curious about.
- Do not get discouraged if parts of the research do not work out or even fail. That is part of research and you cannot take it personally. It ok to admit that things did not work out. People respect and understand that. Keep working hard and try to get what information you can out of what results you obtain. I had to throw out several parts of my research because the tests did not work or were compromised by one thing or another. In the end though, I still had a decent set of results to present.
- Heads up, if you are bio-printing, you will need to be patient. It is awesome opportunity to learn how to operate the printers by yourself, but for me it was not always easy. It took some time and I had to redo several prints with the aid of my mentor before getting the constructs I was looking for.
- Don't stress if you get to the end and you do not have all of your results yet. Most people get the majority of their results in the last two weeks. I got most of my final prints done within the last ten days of the program.
- The whole program is just ten weeks and it goes by fast. Try to pass yourself but leave room to allow for correcting and figuring out things that don't work out as expected. Also, if you are new, give yourself time to learn. I spent the first mouth there mainly learning about my subject and how to work in WFIRM's dynamic lab environment.
- Get to know the other summer scholars. It is a wonderful opportunity to meet new people who share common interests as you. They can really make your time outside of lab enjoyable.
- If you like nature, I highly recommended Pilot Mountain and Hanging Rock.
- It is ok if you find out research is not exactly for you by the end of this experience. If it is not, I hope you still learn many valuable things about regenerative medicine and other skills.
- Have fun, stay opened mind, and enjoy the summer :)

I hope everyone enjoys their time and WFIRM. Best of luck with all of your researcher!

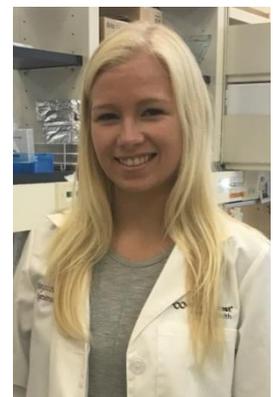
MARGARET VANSCHAAYK

Wake Forest University, Communications

Faculty Adviser: *Sang Jin Lee, PhD, Associate Professor*

The Summers Scholar Program is an excellent opportunity to refine and build lab techniques, improve presentation and public speaking skills, and form relationships with accomplished and eager fellow scholars! Here are some tips to help you make the most of your time at WFIRM:

1. Start strong. The first couple weeks seem slow and not very demanding because it is mostly training and orientation, but 10-weeks is very short for completing an entire project, so use the time to find references and refine your experimental plan.
2. Plan on experiments failing. Be sure to give yourself flexibility when designing your experiments. Putting in a little extra work, like making extra replicates or taking more images than you think you'll need, gives you more options for Plan B when things don't go as anticipated.
3. Don't be afraid to ask for help! Everyone is eager to watch you succeed and is more than willing to answer questions or help you with something you're unsure about regardless of whether they are from your research group or another group.



4. Winston-Salem doesn't have the best public transportation system so it's convenient to either have a car or to live with someone who has a car.
5. Use your final presentation for future professional development opportunities. Be on the lookout for calls for abstracts for conferences. Even poster presentations can be a valuable addition to a resume or CV.
6. Spend time building relationships with other summer scholars and students at WFIRM. Trivia at Wiseman on Mondays or Foothills on Tuesdays and Thursdays is always a fun event to do together, as are Dash games and playing for the WFIRM softball intramural team!

SUE ZHANG

University of Rochester, Biomedical Engineering

Faculty Adviser: *Hooman Sadri-Ardekani, MD, PhD, Assistant Professor*

- The Summer Scholars Program is a great opportunity to immerse yourself in research and learn from other scientists. Take the time to read research literature involving your research topic before the program starts so that you can get to know your research and be ready to start experiments.
- Visit Camino's bakery! They have super delicious cheesecake and horchata.
- Krankie's is a great place to hang out and go for drinks on the weekends.
- Definitely visit Hanging Rock! They have awesome hiking trails and a lake where you can rent out canoes and go swimming.
- Visit the Reynolda museum as well as the art museum! There is also a small cinema that shows independent films.
- Bringing a car to WFIRM would make commuting and visiting places more convenient, but you can also carpool with others or take Uber.
- Take advantage of the RME course! You will be exposed to up and coming research in different areas of regenerative medicine and hear from scientists who are renowned in their field.
- Get to know other students in the group and hang out as much as possible!
- Try to be proactive and assemble your data into presentations early on. It will be helpful when you have to present your progress throughout the program.
- Work hard and have fun!



AGNE NIXON

Washington State University, Biological Sciences

Faculty Adviser: *John Jackson, PhD, Associate Professor*

First, congratulations on getting accepted to the Summer Scholars program at WFIRM! Even though the ten weeks flew by incredibly fast, I learned a lot about research in regenerative medicine and made lifelong friendships with other scholars. Hands down, this was one of the best summers of my life. I hope that your experience will be as great as mine was. Here are some tips that will help you make the most of your summer:

- Come prepared. I would strongly encourage you to email your assigned PI as soon as possible asking about any reading recommendations related to your project. It would be even better if you got in touch with your mentor(s) as well, since they know more about what exactly you will be doing as a summer scholar.
- Try your best in making time to have some fun. The people that I got to know and the lasting friendships that I made are



just as, if not more valuable as the research experience I had.

- If you like hiking, there are a bunch of places you all should check, such as Hanging Rock and Pilot Mountain State Parks.
- Visit Krankie's and the Small Batch Brewery. These were only two of so many great places to hang out in Winston-Salem. I wish I remembered the others, but I hope that some of the other 2018 scholars will give you a more detailed list.
- Attend all of the lectures of the Regenerative Medicine Essentials Course. Since the summer at WFIRM was my first serious exposure to the field of regenerative medicine, this course was a great introduction on what regenerative medicine is, what it encompasses, what kind of discoveries are being made, and what are the future directions.
- Talk to as many scientists at WFIRM as you can and learn about their research. And never be afraid to ask questions if you are stuck or if you simply want to learn something. Everyone will be more than happy to spend some time chatting with you. I don't think I ever worked in any institution where every single person was so friendly and eager to help.

UGNE ZIAUSYTE

Carnegie Mellon University, Biological Sciences

Faculty Advisor: *Colin Bishop, PhD, Professor*

Congratulations upon being accepted. I'm happy to share some tips to make your summer soar!

- Be clear with your mentor about what you want out of your project early on. Is it possible to get a publication out of your summer project? Is it possible to present it at conferences?
- Keep in touch with your mentor after you leave! Keeping the connections you form strong will only help you!
- Spend time with the other scholars often! You will end up making lifelong friends!
- Push yourself to learn skills outside of those that you currently have. These are more translatable than you realize. When applying to grad school you can explore fields you haven't tried before and it helps to have skills that field may require, even if your previous research isn't directly related to that field.
- Ask questions often. How did people get to where they were? Why are they doing what they are doing? What did their path look like?
- Get in touch with the previous scholars if at all possible! We can be a resource to you too!

