



**Wake Forest University  
School of Medicine**

**CAIR**  
CENTER FOR ARTIFICIAL INTELLIGENCE RESEARCH

# 2025 Summer Research Internship Program Biomedical Engineering & Informatics

Welcome Orientation

Wednesday, May 28<sup>th</sup>, 2025



# Meet the Program Co-Directors!



**Ashley Weaver, PhD**  
Biomedical Engineering



**Ryan McGinnis, PhD**  
Biomedical Engineering



**Metin Gurcan, PhD**  
Center for Artificial  
Intelligence Research



**Arezoo Movaghar, PhD**  
Center for Artificial  
Intelligence Research

# ASHLEY WEAVER, PHD

ASSOCIATE PROFESSOR, BIOMEDICAL ENGINEERING

- B.S. Biomedical Engineering, NC State
  - *Summer internship, Biomedical Engineering, WFU (in 2007)*
- M.S. Biomedical Engineering, VT-WFU SBES
- Ph.D. Biomedical Engineering, VT-WFU SBES

## Research Interests:

- Injury Biomechanics - Musculoskeletal focus
- Motor vehicle crash injuries
- Spaceflight musculoskeletal deterioration and injury risk
- Osteoprotective interventions to protect against bone loss (diet, exercise, weighted vest)

Email: [asweaver@wakehealth.edu](mailto:asweaver@wakehealth.edu)

Office: Biotech Place, 5th Floor, Suite 530



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UNIVERSITY  
SCHOOL OF MEDICINE



SCHOOL OF BIOMEDICAL ENGINEERING AND SCIENCES

## RYAN MCGINNIS, PHD

ASSOCIATE PROFESSOR, BIOMEDICAL ENGINEERING  
DIRECTOR, CENTER FOR REMOTE PATIENT AND  
PARTICIPANT MONITORING

- B.S. Mechanical Engineering, Lafayette College
- M.S. Mechanical Engineering, University of Michigan
- Ph.D. Mechanical Engineering, University of Michigan

### **Research Interests:**

- Mental Health
- Biomedical Engineering
- Machine Learning
- Biomechanics
- Rehabilitation
- Biomedical Data Science

Email: [rmcginni@wakehealth.edu](mailto:rmcginni@wakehealth.edu)

Office: 525@Vine, 5<sup>th</sup> Floor, Suite 520, Office #5219



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# AREZOO MOVAGHAR, PHD

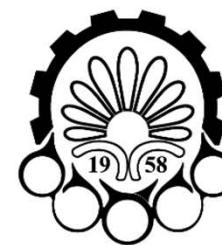
ASSISTANT PROFESSOR, PEDIATRICS  
ASSISTANT PROFESSOR, CENTER FOR ARTIFICIAL INTELLIGENCE  
RESEARCH



- B.S. Computer Engineering (Software) & B.S. Information Technology, Amirkabir University of Technology – Tehran Polytechnic
- M.S. Artificial Intelligence, Amirkabir University of Technology – Tehran Polytechnic
- Ph.D. Biomedical Informatics, University of Wisconsin-Madison

## Research Interests:

- |                             |                            |
|-----------------------------|----------------------------|
| • Artificial Intelligence   | • Decision Support Systems |
| • Biomedical Informatics    | • Neurological Disorders   |
| • Electronic Health Records | • Rare Diseases            |



Amirkabir University of Technology  
(Tehran Polytechnic)



Email: [amovagha@wakehealth.edu](mailto:amovagha@wakehealth.edu)

Office: Bailey Power Plant, 4th Floor

<https://school.wakehealth.edu/faculty/m/arezoo-movaghah>



# Summer Program Administrative Staff



**Thea Marie Smith**  
**Biomedical Engineering**  
Program Coordinator I

Email: [thmsmith@wakehealth.edu](mailto:thmsmith@wakehealth.edu)

Program Email:  
[BME-REU@wakehealth.edu](mailto:BME-REU@wakehealth.edu)

Phone: (336) 716-2507



**Latrice Harris**  
**CAIR/CALIBIR**  
Associate Project Manager

Email: [latrice.harris@advocatehealth.org](mailto:latrice.harris@advocatehealth.org)

Program Email:  
[CALIBIR@wakehealth.edu](mailto:CALIBIR@wakehealth.edu)



**Jaelyn Holmes**  
**CAIR/CALIBIR**  
Associate Project Manager

Email: [jmholmes@wakehealth.edu](mailto:jmholmes@wakehealth.edu)

Program Email:  
[CALIBIR@wakehealth.edu](mailto:CALIBIR@wakehealth.edu)

**WAKE FOREST  
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Biomedical Engineering**

Joel D. Stitzel, Department Chair

SCHOOL OF BIOMEDICAL ENGINEERING AND SCIENCES

**VIRGINIA TECH™**

**WAKE FOREST  
UNIVERSITY**

# METIN GURCAN, PHD

DIRECTOR, CENTER FOR ARTIFICIAL INTELLIGENCE RESEARCH

SENIOR ASSOCIATE DEAN, ARTIFICIAL INTELLIGENCE

PROFESSOR, GENERAL INTERNAL MEDICINE

PROFESSOR, WAKE FOREST INSTITUTE FOR REGENERATIVE MEDICINE



- B.S.c. Electrical and Electronics Engineering, Bilkent University
- M.S.c. Digital Systems Engineering, University of Manchester Institute of Science and Technology
- Ph.D. Electrical and Electronics Engineering, Bilkent University

## Research Interests

- Imaging informatics
- Medical image analysis
- Medical decision support

## Expertise

- Artificial Intelligence
- Machine learning
- Computer vision

Email: [mgurcan@wakehealth.edu](mailto:mgurcan@wakehealth.edu)

Office: Bailey Power Plant, 4th Floor



**Bilkent University**

**MANCHESTER**  
**1824**

The University of Manchester



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# Center for Artificial Intelligence Research

Director: Metin Gurcan, PhD

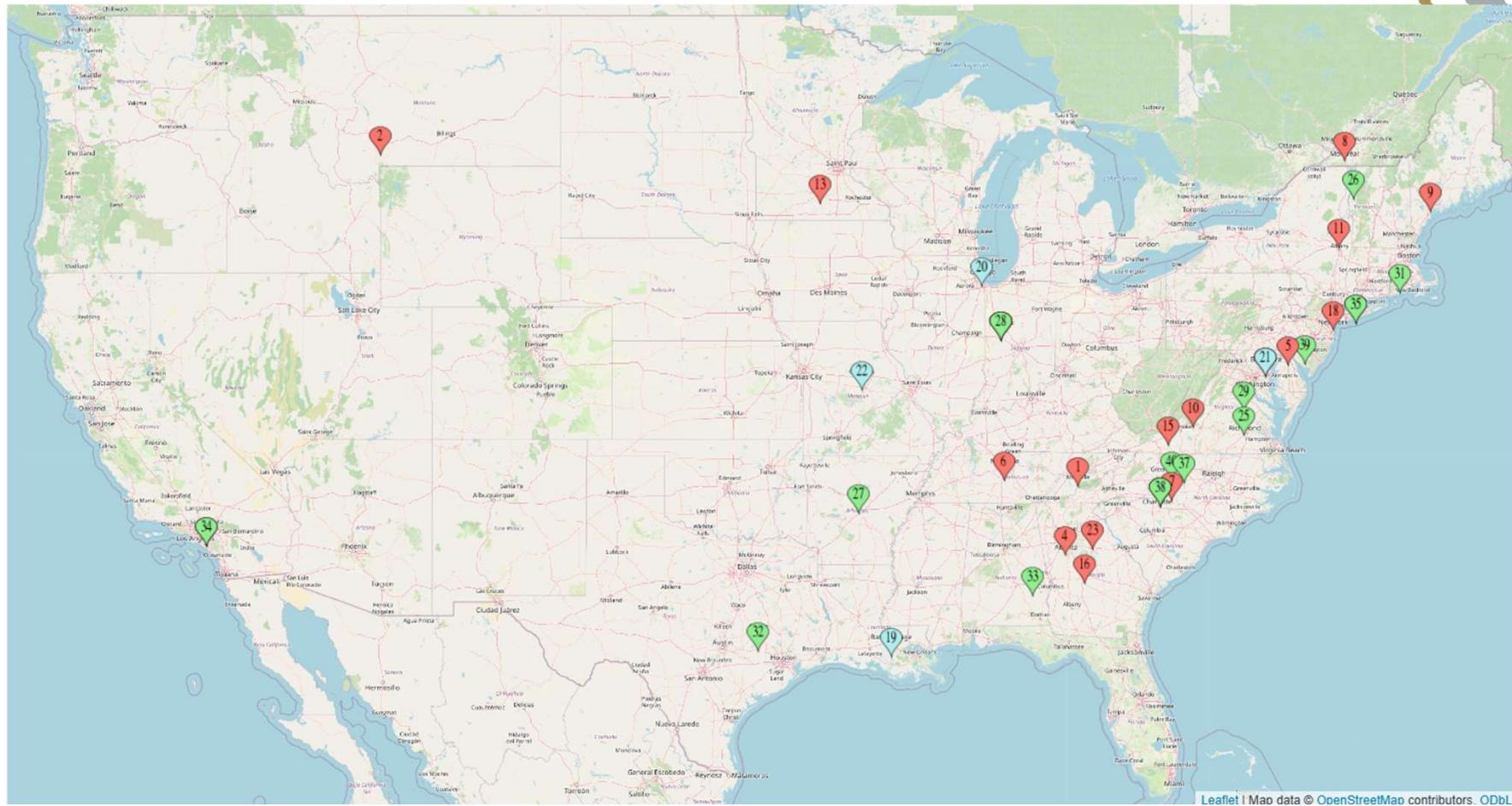


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# Where are you all from?!

40 Summer Interns | 34 Colleges & Universities | 20 U.S. states & 1 Canadian province



# 2025 BME & eREU KEEN Summer Research Interns



**Paige Annen**  
Univ. of Tennessee -  
Knoxville



**Adrien Babet**  
Montana State  
University



**Jennifer Bowles**  
Purdue University -  
Indianapolis



**Max Chen**  
Georgia Institute of  
Technology



**Katherine Duong**  
University of Delaware



**William Ho**  
Vanderbilt University



**Cooper Hyatt**  
Pfeiffer University



**Eden Karp-Foster**  
McGill University



**Henry "Jack" McGovern**  
Bates College



**K. Riley Moorman**  
Washington & Lee  
University



**Jaehyeon "Zach" Park**  
The Cooper Union



**Taisiia Smirniagina**  
Skidmore College



**Calvin Smith**  
California State Polytechnic  
University - Pomona



**Allison Szalay**  
Gustavus Adolphus  
College



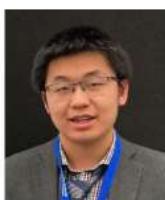
**Anuram Vigneswaran**  
Purdue University –  
West Lafayette



**Akhila Wills**  
Virginia Tech



**Charbel Youhanna**  
Mercer University - Macon



**Eric Zeng**  
Johns Hopkins University



**Piper Leinbach**  
University of Georgia



**Ashleigh Phillips**  
Louisiana State University  
**eREU KEEN Program**



**Julia Ramentta**  
Loyola University Chicago  
**eREU KEEN Program**



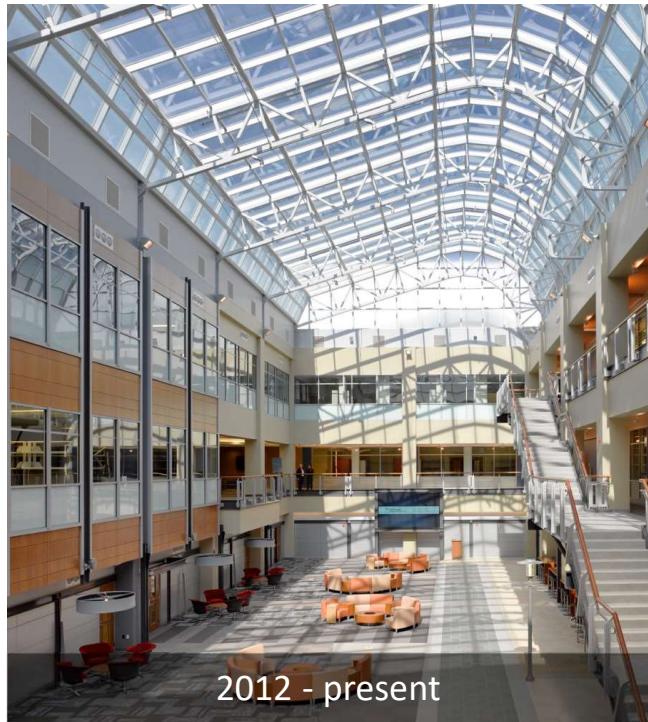
**Prisha Rathi**  
Johns Hopkins University  
**eREU KEEN Program**



**Jessica Xie**  
University of Missouri –  
Columbia  
**eREU KEEN Program**

# Where are we located?

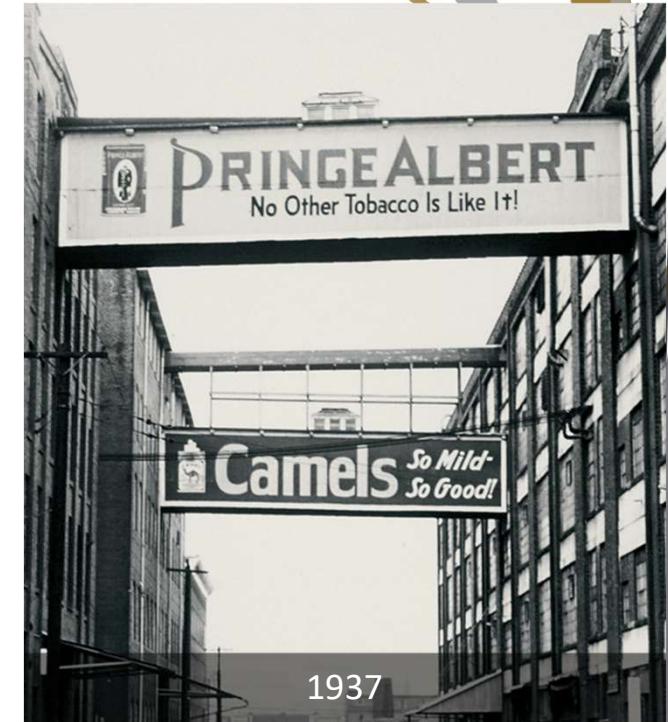
*Biotech Place – Downtown Winston-Salem*



2012 - present



2008 - 2011



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# 2025 CAIR/CALIBIR Summer Research Interns



**Joshua Bowser**  
University of North  
Carolina - Charlotte



**Rhea Chatterjee**  
Virginia Commonwealth  
University



**Jilian Griffith**  
University of Vermont



**Jackson Hamilton**  
Hendrix College



**Olivia Harper**  
Purdue University - West  
Lafayette



**Camille Jacome**  
University of Mary  
Washington



**Atishay Kasliwal**  
Stony Brook University



**Ian Liu**  
Brown University



**Ashlyn Melichar**  
Texas A&M University -  
College Station



**Kendall Powe**  
Tuskegee University



**Bryan Ramillano**  
California State Polytechnic  
University - Pomona



**Zian Shang**  
Stony Brook University



**Minna Siddiqui**  
University of North  
Carolina - Charlotte



**Yeraldine Tamayo**  
University of North  
Carolina - Greensboro



**Mary-Katherine "MK" Thompson**  
University of North Carolina - Charlotte



**Raaha Kumaresan**  
Rowan University



**Molly Stitzel**  
Wake Forest University

# Where are we located?

*Bailey Power Plant – Downtown Winston-Salem*

*AHWFB Medical Center – Winston-Salem*



Wake Forest Baptist Medical Center

# Innovation Quarter

Innovation Quarter is home to:

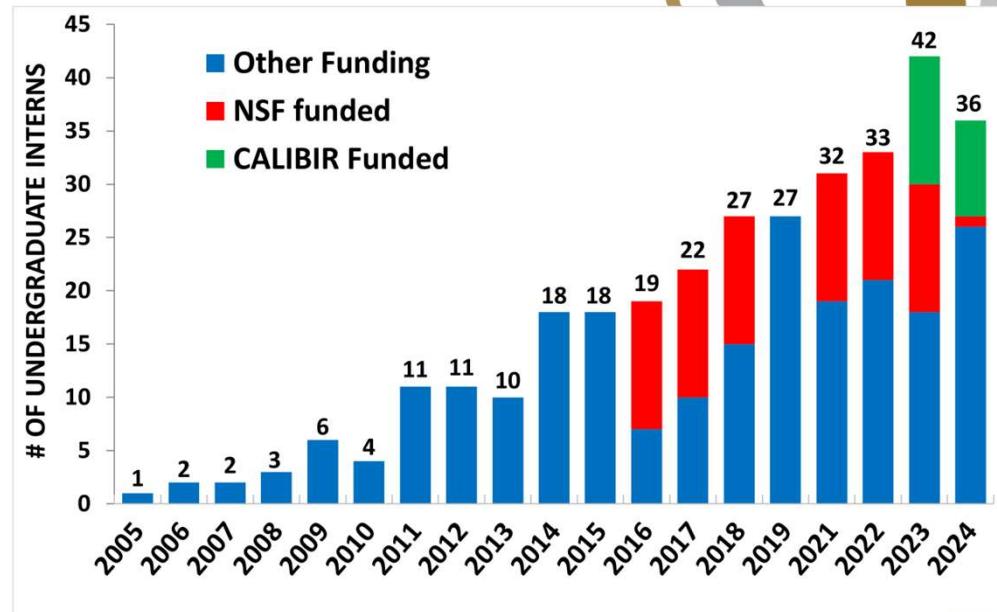
- Wake Forest Biotech Place
- Bailey Power Plant
- Bailey Park
- Bowman Gray Continuing Medical Education (BGCME)
- Wake Forest School of Medicine
- Wake Forest Downtown
- Dean Building (A1)

Wake Forest Baptist Medical Center



# History of our Summer Research Program

- Summer Research began in 2005
- NSF REU Funded: 2016-2018, 2020-present
- NIH CALIBIR Funded: 2023-present
- Our funding support comes from various agencies including:
  - Department of Defense (DOD)
  - NASA
  - NHTSA
  - NIH
  - Wake Forest
  - Other private foundations



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# Summer 2025 Schedule

- **Biomedical Engineering Bootcamps, Training, & Tours**
  - CEAL Training Demo
  - Intro to Imaging
  - Intro to Finite Element Modeling (computational biomechanics)
  - Tour of Experimental Biomechanics Labs at Biotech Place
  - Tour of Motion Capture Lab at David F. Couch Ballpark
- **Biomedical Informatics Bootcamps**
  - Healthcare Informatics
  - Artificial Intelligence
  - Clinical Informatics
  - Translational Bioinformatics
- **Weekly Seminars:**
  - Making the Most of Your Internship – A Workshop on Time Management, Networking, Relationship Building, and Leadership
  - Responsible Conduct in Research (RCR), Rigor & Reproducibility
  - How to become a critical thinker: The art of reading scientific papers
  - How to Write a Scientific Abstract
  - How to find the right career path: A panel of REU alumni
  - Tips for applying to graduate school, medical school and industry positions
  - Intro to Biostatistics & Research
  - How to apply for fellowships & scholarships?
  - From Innovation to Commercialization



# End of Summer Symposium

- **Thursday, July 31, 2025**
  - Morning Session: 9:00am – 12:00pm
  - Lunch Break: 12:00pm – 1:30pm
  - Afternoon Session & Awards: 1:30pm – 4:30pm
- Each intern will present their summer research in the form of a short oral presentation (~5 min), followed by a 2 min Q&A.
- Lunch will be provided during the Symposium.
- You are welcomed to invite family & friends! **Please notify Thea Smith by July 23<sup>rd</sup>** if you'll have additional attendees.
- All keys, badges and equipment will need to be returned to the BME and/or CALIBIR admins before the end of the day on July 31<sup>st</sup>.



## Evaluations Schedule led by Dr. Wayne Pratt

Our program strives to meet (& exceed) our interns' expectations. To help us gauge your feedback, we ask that ALL students complete 3 surveys during the summer, distributed by Dr. Wayne Pratt ([prattwe@wfu.edu](mailto:prattwe@wfu.edu))

Reminders to complete these surveys will be sent out periodically during the summer.

<b>Tuesday, May 27<sup>th</sup></b>	<b>Beginning Survey Evaluations – Open</b>
<b>Monday, June 2<sup>nd</sup></b>	<b>Beginning Survey Evaluations – Close</b>
<b>Monday, June 23<sup>rd</sup></b>	<b>Mid-Summer Survey Evaluations – Open</b>
<b>Friday, June 27<sup>th</sup></b>	<b>Mid-Summer Survey Evaluations – Close</b>
<b>Thursday, July 24th</b>	<b>End/Final Summer Survey Evaluations – Open</b>
<b>Thursday, July 31st</b>	<b>End/Final Summer Survey Evaluations – Close</b>

# Badge Access to Buildings

- Your badge grants you access to the lab and office spaces that are specific to you.
- Don't give your badge to anyone else.
- If you find yourself needing access to a particular area for your research project, ask your primary advisor to put in a request for badge activation. Thea Smith & Latrice Harris can help with this request.
- If you lose your Badge, notify Thea Smith & Latrice Harris immediately. There is a charge for replacement badges.

# Wakehealth Email & Computer Usage

✓ **WakeHealth Email:** Ensure you've received and are using your WakeHealth email.

🔒 **Device Usage:** Use Wake-owned computers for work only. External drives/USBs must be **encrypted & password protected**.

🚫 **Access Restrictions:** Gmail and all Google apps are blocked on the Wake Forest network.

## ✉ Primary Communication:

- Check your **WakeHealth Email** regularly.
- Visit **Canvas** for program updates and announcements.

💬 **Additional Tools:** Microsoft Teams may be used for day-to-day communication.

🛠 **Need IT Help?** Call **6-HELP** (from a Wake phone) or **336-716-4357**.

# Communication Expectations:

## E-mail

- **Use only your @wakehealth.edu email** for internship-related matters — never your personal email.
- **Protect sensitive info** — never email PHI or confidential data.

## Stay responsive:

- Check email daily, even on days off if possible.
- Respond within **24 hours** or by your **next shift** at the latest.
- If you need more time, reply with an estimated response timeline.
- **Always CC** your faculty and/or graduate student mentor on project-related emails.
- **Acknowledge emails** when asked to confirm receipt or understanding — do so promptly.
- These expectations also apply to **Microsoft Teams**.

## Outlook calendars/meetings

- All meetings will be scheduled via **Microsoft Outlook** — use your **calendar** to manage your schedule.
- If you receive an invite, **assume you're expected to attend**.
- Not sure if it's required? **Ask your mentor** for clarification.
- Always respond to invites: **Accept, Tentative, or Decline**, and click “**Send response now**.”
- If you decline, **email the organizer** with a reason and **CC your mentor**.

# Work Expectations

- You are expected to work **full-time** on your summer research project during the 10-week program
  - Observed Holidays off: Juneteenth (Wed. 6/19) and Independence Day (7/4).
- Work hours: **8:00am – 5:00pm** (includes a 30min lunch break)
  - **Discuss & confirm with your mentor about work hours during the first week**, as some research projects might have alternative working hours.
  - Some research projects may request weekend or evening hour, if necessary. Speak with your faculty mentor for more information.
- **Dress Code:**
  - Interns should dress in **business casual attire** while on-site at any Wake Forest location, and on any work-related video calls
  - **Acceptable articles of clothing:** regular jeans, leggings, dress pants/slacks, skirts\*, dresses\*, blouses, polo/collared shirts, sweaters, and Wake Forest/Institution apparel (on casual Fridays).
    - \*Skirts and dresses must be at an appropriate length!
  - **Prohibited articles of clothing:** cut off/ripped/distressed jeans, shorts (includes khaki shorts), crop tops/sweaters, low cut shirts, tank tops, and sweatpants.
  - For those working in research laboratories, you must follow employee health guidelines and wear closed toe shoes & long pants.
- Be respectful of laboratory space, lab members, and each other!
- Be respectful of Deacon Place accommodations!
- Learn and have fun!

# Shuttle Services



All the shuttles will pick-up and drop-off in front of the Clubhouse at Deacon Place.

## Morning Schedule

Wake Downtown Shuttle Bus from Deacon Place: 7:30AM, 8:00AM, 8:30AM

Eden Terrace Shuttle Bus from Deacon Place: 8:15AM

## Afternoon Schedule

Wake Downtown Shuttle Bus to Deacon Place: 5:00PM, 5:30PM, 6:00PM

Eden Terrace Shuttle Bus to Deacon Place: 5:35PM

## Alternative pick-up for the following events:

Thursday, 5/29: 8AM from Deacon Place to Wake Downtown for CEAL training

\*all interns MUST take the shuttle

Friday, 5/30: 8:45AM from Deacon Place to Motion Capture Lab Tour

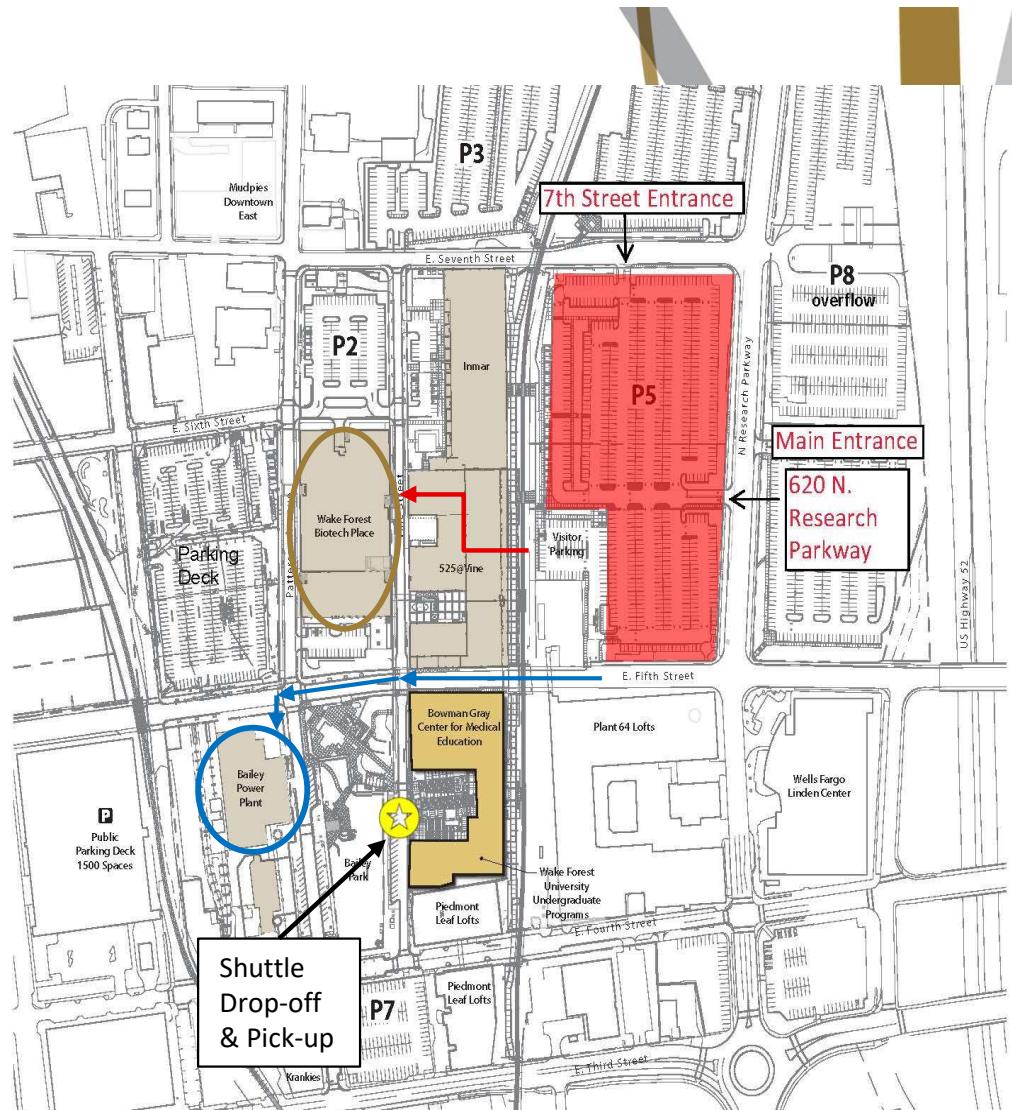
\*students with vehicles may drive to the location, arrive by 9AM

## Additional Shuttle Services – The Wake Line

- Wake Forest Baptist Medical Center Van Services offers five scheduled van routes that service 12 Medical Center facilities.
- Van service will be available Monday – Friday, 7:45 am to 5:30 pm (not including holidays)
- Atrium Health Wake Forest Baptist Medical Center has launched a new app that will help teammates who ride the shuttle vans in Winston-Salem know where the vans are throughout the day.
- The app allows riders to see where the van is on a specific route, the estimated time of arrival at each stop along the route, and real-time notifications of any route changes or significant delays.
- Scan the QR code in your welcome packets to download the app & enter code: **WAKEHEALTH** to access the shuttle system!

# Parking

- All students housed at Deacon Place are REQUIRED to take the shuttle on 5/28 & 5/29! Interns with cars will NOT be able to access the parking lot until 5/30**
- If you have a car, you can park in the P5 parking lot after you've submitted the online parking form. Once approved, you can use your badge to gain access to the lot.
- At Biotech Place & Bailey Power Plant:  
Do not park in the Café / Allegacy Bank Parking lot or on the street beyond posted time limits.  
They do monitor and you can get towed/fined.
- Students working at the Medical Center Campus will need to take the Deacon Place shuttle to/from the campus. On-site parking for student teammates is no longer available.



## Where can you find all this info?

- All information related to the Summer program will be made available on CANVAS:  
<https://wfusm.instructure.com/courses/6279>
- Interns will receive an email “invitation” to join the CANVAS page
- You will be able to log into CANVAS using your wakehealth email.
- Please make sure you have access to CANVAS before Friday, May 30<sup>th</sup>!

## Heads up! Advocate Health Email Migration

- Advocate Health and Atrium Health Wake Forest Baptist are merging this summer!
- Part of this merger includes an email migration where all Wake Forest teammates (including interns) will receive a new email address ending in @advocatehealth.org
- Wake Forest teammates will migrate alphabetically and receive a reminder one week in advance (see attached schedule).
- Expect ~1 hour of downtime during migration for Microsoft 365 apps (Outlook, Teams, SharePoint, etc).
- More details available here: [Microsoft 365 Harmonization SharePoint](#)
- We will provide this information to you all via Email and CANVAS

# Advocate Health Email Migration Schedule

A - Z Tenant Migration Schedule	
Date	Grouping
5-May	Aa-Abr
7-May	Abs-Adh
8-May	Adi-Ale
12-May	Alf-Andl
13-May	Andm-Az
19-May	Ba - Bern
20-May	Bero - Bri
21-May	Bro - By
	C - Cam
22-May	Can - Cla
26-May	Memorial Day-No Migrations

27-May	Cle - Cre
28-May	Cri - Cz
	Da - De
29-May	Dh - Dz
	Ea - Ek
2-Jun	EI - Ez
	Fa - Fos
3-Jun	Fou - Fy
	Ga - Gly
4-Jun	Gm - Gy
	Ha - Hai
5-Jun	Haj - Hem
6-Jun	All Students Migrate

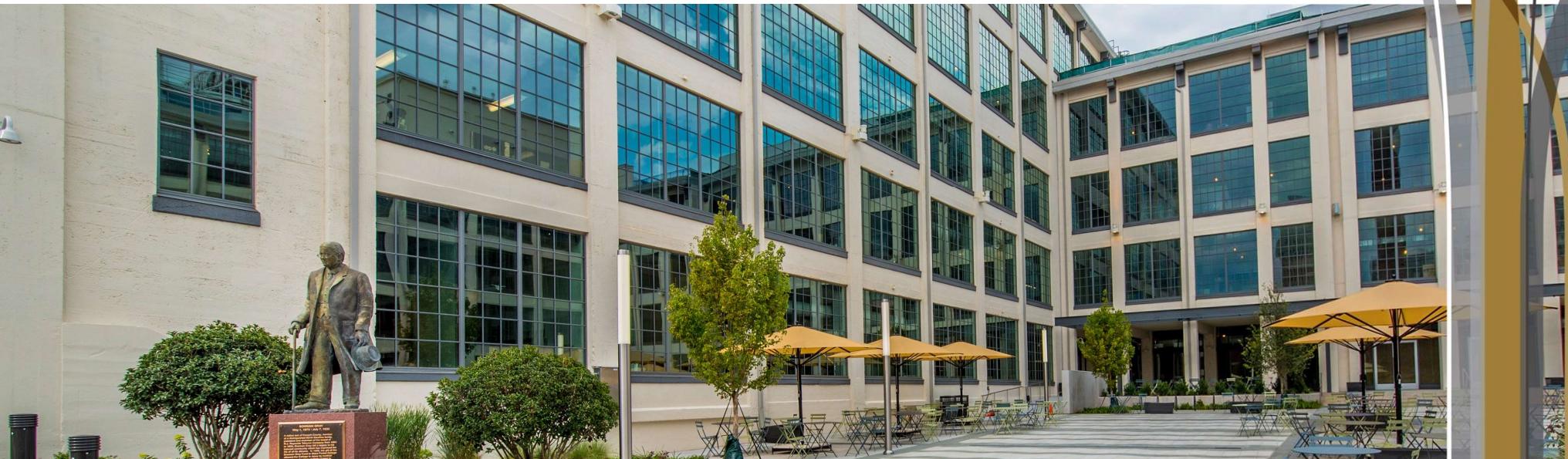
9-Jun	Hen - Ht
10-Jun	Hu - Hy
	Ia - Iz
	Ja - Johno
11-Jun	Johns - Ju
	K - Kil
12-Jun	Kim - Ky
	La - Le
16-Jun	Lea - Ly
17-Jun	Ma - McB
18-Jun	McC - Mil
19-Jun	Mim - My
Pause for Workday	
14-Jul	Na - Ny
	Oa - Oz
15-Jul	Pa - Pim

16-Jul	Pin - Py
	Qa - Qu
	Ra - Ref
17-Jul	Reg - Rup
21-Jul	Rus - Ry
	S - Sha
22-Jul	Shb - Sni
23-Jul	Sno - Sz
24-Jul	Ta - Ty
28-Jul	Ub - Uz
	Va - Vy
	Wa - Weh
29-Jul	Wei - Won
30-Jul	Woo - Wy
	Xa - Xu
	Ya - Yu
	Za - Zy

For interns with last names that merged prior to arrival will have their migration postponed until July 30<sup>th</sup>. We will notify all interns if there are any changes to this schedule.



# Questions?



# Breakout Sessions

- Each group will now separate to meet with their designated Administration Facilitators.
- BME & KEEN Interns: Thea Smith
- CAIR/CALIBIR Interns: Latrice Harris & Jaelyn Holmes

## **What to Expect:**

- Focused discussion tailored to your group's goals.
- Collaborative planning and next steps.
- An opportunity to raise questions and ideas.

**→ Please follow the directions to your assigned breakout room.**