Wake Forest®
School of Medicine
Institute for Regenerative Medicine

WFIRM

Wake Forest Institute for Regenerative Medicine

2023 Summer Scholars Program Welcome Packet

Program Schedule, Key Dates and Deadlines

Wednesday, May 31st to Friday, August 4th, 2023

Multidisciplinary Undergraduate Summer Research Experiences in Translational Regenerative Medicine

Introducing the 2023 WFIRM Summer Scholars

Undergraduate Summer Scholar	Primary Faculty Mentor(s)
Asmaa Alawbali Chemical Engineering North Carolina A&T State University	**Sang Jin Lee, PhD** Professor, WFIRM
Daniella Beiner BME University of Mississippi	**Yuanyuan Zhang, MD, PhD** Associate Professor, WFIRM
Brandon Bell Bioengineering North Carolina A&T State University	**Josh Maxwell, PhD** Assistant Professor, WFIRM
Kyle Cheung Integrative Neuroscience and Environmental Studies Binghamton University	**Baisong Lu, PhD** Associate Professor, WFIRM
Michelle Ebu Biomedical Engineering Miami University	**Victoria Weiss, PhD** Assistant Professor, WFIRM
Kaci Gordon Biology Purdue University	**Marshall Schwartz, MD** Professor, WFIRM
Bailey Hadley Biology North Carolina A&T State University	**Graca Porada, MD, PhD** Professor, WFIRM
Evan Halvorson Biology/Pre-Medicine University of North Dakota	**Chris Porada, PhD** Professor, WFIRM
Fahad Janjua Biology Wake Forest University	**Emmanuel Opara, PhD** Professor, WFIRM
Elsa King Biomedical Engineering Rose-Hulman Institute of Technology	**Josh Maxwell, PhD** Assistant Professor, WFIRM
Karishma Lawrence Molecular Environmental Biology University of California, Berkeley	**Victoria Weiss, PhD** Assistant Professor, WFIRM
Stephanie Leon Biomedical Engineering North Carolina A&T State University	**Giuseppe Orlando, MD, PhD** Associate Professor, WFIRM
Quinn Morris Associate of Science, Biology Concentration Wake Technical Community College	**Steve Walker, PhD** Professor, WFIRM

Undergraduate Summer Scholar	Primary Faculty Mentor(s)
Anna Munro Biochemistry and Molecular Biology Wake Forest University	**Ji Hyun Kim, PhD** Assistant Professor, WFIRM
Christine Ogbuebile Biology Pennsylvania State University	**Emmanuel Opara, PhD** Professor, WFIRM
Ethan Potts Biomedical Engineering University of Arkansas	**Anthony Atala, MD** Professor and Director of WFIRM
Samuel Ramirez Biology Elon University	**Colin Bishop, PhD** Professor, WFIRM
Danielle Rice Biomedical Engineering North Carolina A&T State University	**Sean Murphy, PhD** Associate Professor, WFIRM
Jacqueline Saulnier Biochemistry and Molecular Biology Bryn Mawr College	**Yuanyuan Zhang, MD, PhD** Associate Professor, WFIRM
Richard Silk Science – Business University of Notre Dame	**James Yoo, MD, PhD** Professor, WFIRM
Emily Silva Biology Wake Forest University	**Steve Walker, PhD** Professor, WFIRM
Andrew Spong Mathematics Duke University	**Sean Murphy, PhD** Associate Professor
Priya Tomerlin Microbiology and Cell Science University of Florida	**Sang Jin Lee, PhD** Professor, WFIRM
Maritza Torres-Martinez Psychology and Chemistry North Carolina A&T State University	**James Yoo, MD, PhD** Professor, WFIRM
Evan Zelt Computer Science Wake Forest University	**Hooman Sadri, MD, PhD** Assistant Professor, WFIRM

2023 WFIRM Summer Scholars Program with Key Dates

Wednesday, May 31

10:00 am – 11:30 am
Room 250A&B

Welcome and Overview with Joan Schanck, Summer Scholars Program Director
Includes badge dissemination with Terri Bowen and overview with Karri Adams and Callie Allen

Note*: Students to have completed on-line orientation for access to WF Baptist Medical Center and for your badges to be released.* ***You do not have to go to the badge office at the Wake Forest Baptist Center. We will distribute your badges to you at WFIRM.***
WFIRM Location: Richard H. Dean Building, 391 Technology Way, Winston-Salem, NC 27101

11:30 am – 12:00 pm
Room 250A & B

Dr. Anthony Atala, Director of WFIRM. Welcome w/Round Table Discussion
Wear your WFIRM Summer Scholar T-shirts. Group photo taken by Bonnie.

12:30 pm – 1:30 pm

Scholars meet WFIRM team and Mentors at WFIRM
WFIRM Outside Patio Area (weather permitting) or 2nd floor Collaboration Area

Thursday, June 1

8:30 am – 9:30 am
Room 250A & B

WFIRM Lab Orientation: Phase I Overview followed by Tour with Tara Jones, Lab Operations Manager WFIRM

9:30 am – 12:00 pm
Room 250A & B

Lab Notebook and Lab Safety Training / Core Trainings with Tara Jones, Lab Operations Manager WFIRM

1:00 pm – 1:45 pm
Room 250A & B

Vivarium Orientation with Dr. Erin Mitchell

Friday, June 2

9:00 am – 9:45 am
Room 335

Animal Orientation with Miranda Moore and Amanda Dillard
Attention: Phase II, hands-on training provided for:
See separate Animal Orientation Phase II for instructions at end of packet.

10:45 am – 11:30 am
Room 250A & B

Vivarium Tour with Gaye Hodges

12:00 pm – 1:00 pm

Lunch
Bring your own and remain in WFIRM's 2nd floor Collaboration area of WFIRM, outdoor patio or easy walk into downtown area.

Required orientation completed!
Scholars meet with mentors and his/her team per individualized instructions.

Monday, June 5 – Friday, June 9

10th Annual RME Course and World Stem Cell Summit (RME & WSCS 2023)
NOTE: *Scholars are required to pre-register in order to gain access with links and mobile app to this virtual, global event. See link below and code to waive registration fee.*

Register for RME & WSCS 2023 at: https://wfirm.regfox.com/2023-regenerative-medicine-essentials-course-world-stem-cell-summit
Enter Coupon Code to Waive Fee: WFIRMScholar

Monday, June 12

9:00 am – 10:15 am
Room 150

Summer Scholars Monday Research Meetings Begin
Faculty leaders: Tracy Criswell, PhD and Steve Walker, PhD
Additional dates: 6/19, 6/26, 7/10, 7/17, 7/24, 7/31
Note: Each student attends either the Monday or Thursday weekly reaching meetings. This is project/subject area driven.
Scholars Assigned: Cheung, Ebu, Gordon, Hadley, Halvorson, Janjua, Lawrence, Morris, Ogbuebile, Saulnier, Silva

Wednesday, June 14

12:00 pm – 1:00 pm
Room 250A&B

Summer Scholars Wednesday Seminar Series Begin
June 14 – Michael Seeds, PhD, Communicating Science to Others
June 16 – Johanna Bolander, PhD, Hypothesis Testing: A Joint Perspective ***Special Zoom Session***
June 21 – Emmanuel Opara, MD, PhD, TERM Strategies in KUH Research
June 28 – TBA
July 6 – Victoria Weis, PhD, Intestinal Disease in the NICU ***switched to Thursday due to holiday***
July 12 – Graca Almeida-Porada, MD, PhD, Gene Therapy ***WFIRM Room 150***
July 19 – Tracy Criswell, PhD, Age, Sex and Gender
July 26 – Tom Shupe, PhD, Dealers Choice

4:30pm – 5:30 pm

Wake Forest Summer REU Programs Ice Cream Social – Meet undergraduate students engaged in research across Wake Forest Departments
Location: Outside Bowman Gray Medical Education Building Courtyard (will be moved into 1st floor atrium area if rain)

Thursday, June 15

1:00 pm – 2:15 pm
Room 150

Summer Scholars Thursday Research Meetings Begin
Faculty leaders: Sang Jin Lee, PhD and Josh Maxwell, PhD
Additional dates: 6/19, 6/22, 6/29, 7/6, 7/13, 7/20, 7/27
Note: Each student attends either the Monday or Thursday weekly reaching meetings. This is project/subject area driven.
Scholars Assigned: Alawbali, Beiner, Bell, King, Leon, Potts, Ramirez, Rice, Silk, Spong, Tomerlin, Torres-Martinez, Zelt

Tuesday, July 18

Game starts at 7pm

Social Event – WFIRM Scholars and Mentors Attend Winston-Salem Dash
Game: Rome Braves vs. Winston-Salem Dash Team
Includes Picnic-style dinner on the patio. Details pending.

Wednesday, June 21

3:30 pm – 5:00 pm Seminar: Tips for applying to Graduate School, Medical School, or Industry
Panelists: Brenda Latham-Sadler, Erik Brady, Modupeola Akinola, and Stephanie Rivera
BioTech Place Auditorium

Wednesday, June 28

5:30 pm – 7:30 pm **Diversity Networking Session**
Farrell Hall Terrace – WFU Business School

Monday, July 24

Abstract Deadline for Research Day

Tuesday, July 25

Poster Deadline for Research Day

Wednesday, July 26

4:00 pm – 6:00 pm ***Social Event – WFIRM Team with/Scholars BBQ Picnic***
Location: Bailey Park, Innovation Quarter (walking distance from WFIRM)

Tuesday, August 1

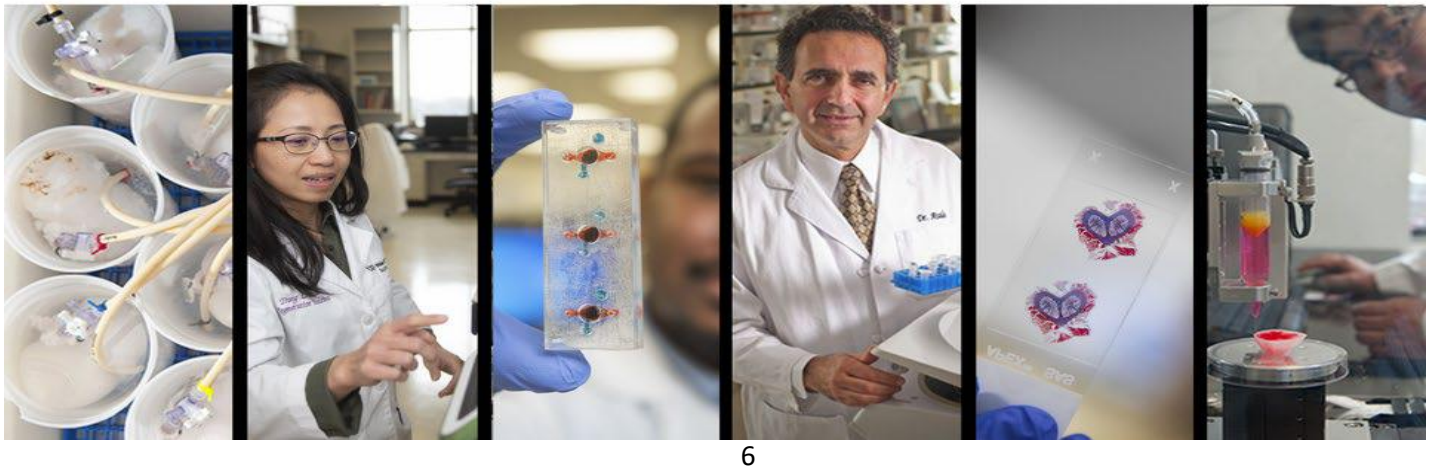
2:00 pm – 5:00 pm **Final Research Day Dress Rehearsal (with loading of PowerPt Presentations)**
Location: Bowman Gray Center for Medical Education
Firth Floor, Multi-Tiered Classroom
475 Vine Street, Winston-Salem, NC 27101

Wednesday, August 2

8:00 am – 3:00 pm **Final Research Day with Poster Session**
Location: Bowman Gray Center for Medical Education Firth Floor, Multi-Tiered Classroom
475 Vine Street, Winston-Salem, NC 27101

Thursday, August 3

10:00 am – 12:00 pm **Final Goodbyes w/Exit Interview, Post-Program Survey Completed, Badge Return**
Location: WFIRM room 150



WFIRM Summer Scholars Visiting Winston-Salem

Check out what to do at: https://www.visitnc.com/listing/zEiQ/visit-winston-salem-visitors-center

Note: WFIRM will also be announcing opportunities to socialize with our team conforming to the health and safety of all. We are all looking to meet you and the time we will have together.

Areas of Interest/Ideas:

Hiking at Pilot Mountain State Park	
Old Salem Museums & Gardens	Historic Town, Salem College; walking distance from WFIRM
Reynolda House and Art Museum	Free for students and employees of WFBMC
Southeastern Center for Contemporary Art	Free admission; rotating exhibitions
Planetarium @ Kaleideum North	Different weekend shows (Museum & Science Center)
North Carolina Zoo	Location: Asheboro, NC (60 minutes away)
Carowinds Amusement Park	Location: Charlotte, NC (90 minutes away)
U.S. National Whitewater Center	Location: Charlotte, NC (90 minutes away)
Visit Winston-Salem Website	Winston-Salem website with a calendar of events

WFIRM
Wake Forest Institute for Regenerative Medicine

Summer Scholars Final Poster Session
Wednesday, August 2, 2023

INSTRUCTIONS FOR PREPARING AN ABSTRACT FOR INCLUSION IN THE PUBLISHED POSTER SESSION
PROCEEDINGS MANUAL

Deadline for Submission of Abstract is Monday, July 24, 2023

Each WFIRM Summer Scholar must prepare an abstract for the final poster session presentation. An abstract is a condensed summary of the main topics covered in your presentation. Abstracts are to be submitted electronically as a Word document. Students will receive invite to DropBox or Share Point

Size and presentation

- The text of the abstract (not including authors, institutions/affiliations and titles) should be limited to 550 words, single-spaced. Interns should list *Wake Forest Institute for Regenerative Medicine* as their institutional affiliation and *Summer Scholar* as their title.
- Must be typed single-spaced with 11 point, Times New Roman typeface.
- Must be free of typographical and grammatical errors.

Title: Type title in CAPITAL LETTERS. The type should be succinct and clearly state the nature of the research study.

Authors' names: Authors should be listed by surname and initials, with the poster presenter's name marked with an asterisk (*).

Body of abstract: The following are elements that should be included in the abstract:

- Brief background
- Statement of objectives and specific aims
- Brief description of research design/methods used
- Data and analysis
- Results and conclusions

References: The abstract should be accompanied by a short list of references which represent the primary sources of information used for the presentation. Place references on the same page as the abstract and give references in standard scientific style.

Abbreviations: Standard abbreviations may be used for common terms. For uncommon terms, the abbreviations should be given in brackets after the first full use of the word.

DIFFERENTIATION OF AUTOLOGOUS SUBCUTANEOUS ADIPOSE-DERIVED STEM CELLS TO EPITHELIAL CELLS

*S. T. Lopresti, S. Natesan, D. O. Zamora, N. L. Wrice, R. J. Christy
*Summer Scholar, Wake Forest Institute for Regenerative Medicine
US Army Institute of Surgical Research, 3698 Chambers Pass, Bldg 3611-BHT1, Fort Sam Houston, TX 78234

Combat burn injuries are often full-thickness burns, involving large total body surface areas (TBSA) of skin (1). Epidermal substitutes have been developed using culture expanded keratinocytes to improve wound healing of burns (2). Although tissue engineered epidermal substitutes using autologous keratinocytes are applicable clinically, their use is limited due to time required for culture expansion and amount of standard skin biopsy sample. Adipose-derived stem cells have gained particular attention due to ease of isolation, relative abundance, and multi-lineage differentiation potential (3, 4). We've recently shown that hypodermal tissue present in discarded skin tissue, that are surgically debrided to remove necrotic tissue during surgical procedure, possess stem cells that retain their ability to differentiate into multilineages and can be isolated in quantities that could be used clinically for burn repair and regeneration (4). We hypothesize stem cells from discarded burn tissue can be differentiated into epithelial cells. These differentiated cells can be used to treat burn wounds that lack an autologous epithelial cell source.

In this study, subcutaneous adipose-derived stem cells were isolated from discarded human skin samples (dsASCs) following previously established protocol (4). Immunocytochemical analysis of human dsASCs showed positive expression for stem cell markers; CD54, CD105, and STRO-1. The dsASCs possessed multilineage differentiation ability, as confirmed through their commitment to differentiate into adipogenic and osteogenic, lineages. For epithelial-like differentiation, dsASCs were treated with a combination of inducers and/or growth factors such as keratinocyte growth factor (KGF), epidermal growth factor (EGF), hepatocyte growth factor (HGF), and insulin-like growth factor (IGF), all- trans retinoic acid (ATRA). Passage 2 dsASCs were seeded on top of a type-I collagen hydrogel matrix (70,000 cells/ml of gel), prepared according to the manufacturer's instructions by adjusting the pH to 6.8-7.0. After 48 hours incubation of dsASCs-gel in MesenPro media they were switched to DMEM media containing 5% fetal bovine serum supplemented with above mentioned growth factors and/or inducers. On day 5 the collagen gels were air-lifted to induce cell stratification. Light microscopy photos were taken at different days (4, 8 and 10) and mRNA was isolated at day 2, 4, 8, and 12. Real- time PCR analysis was used to determine the expression levels of such epithelial markers as keratins KRT5, KRT7, KRT8, KRT10, KRT13, KRT14, KRT18, KRT19, involucrin (IVL) and loricrin (LOR).

After treating the collagen gels with induction media, the dsASCs started to align into squamous cell-like morphology by day 4, and when air-lifted exhibited characteristic epithelial-like cuboidal cell morphology by day 10. Differentiating dsASCs expressed low levels (<10 fold) of both simple (KRT7, KRT8, KRT18 and KRT19) and stratified keratin markers (KRT5, KRT10, KRT13, KRT14) at early time points (day 4 and 8). By day 12, the cells exhibited a robust (>50 fold) increase in expression of stratified epithelial cell markers, along with cytoskeletal proteins IVL and LOR, which are responsible for formation of intermediate filaments in skin epithelia. In summary, we showed that stem cells from discarded human burn tissue can be potentially used as an autologous cell source for epithelial cells and differentiated dsASCs can potentially be used for developing regenerative skin products for burn wounds.

References:

1. Wolf SE, Kauvar DS, et al. Comparison between civilian burns and combat burns from Operation Iraqi Freedom and Operation Enduring Freedom Ann Surg. 2006;243(6):786-92.
2. Bremner LF, Mazurek M. Reconstructive challenges of complex battlefield injury. J Surg Orthop Adv 2010, 19, 77.
3. Zuk PA, Zhu M, Mizuno H, et al. Multilineage cells from human adipose tissue: implications for cell-based therapies. Tissue Eng 2001, 7,211.
4. Brzoska M, Geiger H, et al. Epithelial differentiation of human adipose tissue-derived adult stem cells. Biochem Biophys Res Commun 2005, 330,142.
5. Natesan S, Wrice NL, Baer DG, Christy RJ. Debrided Skin as a Source of Autologous Stem Cells for Wound Repair. Stem Cells, 2011, Jun 14 [Epub ahead ofprint]

BIOFABRICATION OF FUNCTIONAL SKIN GRAFTS USING A 3DBIOPRINTER

J. A. Marco, C. G. Jeong, J. J. Yoo, A. Atala
Summer Scholar, Wake Forest Institute for Regenerative Medicine

Full-thickness skin wounds and extensive burn injuries are one of the major causes of morbidity and mortality. Globally, 11 million burn injuries are reported per year. Between 1998 and 2007, the overall mortality rate due to burn injuries was 4.9%. Currently, the clinical standard for wound treatment is the use of autologous split-thickness skin grafts. Unfortunately, this requires surgery to remove a portion of the patient's skin and is not applicable to extensive wound coverage. An alternative therapy is the use of allografts, but immunosuppression is used in conjunction with this therapy, leading to increased patient susceptibility to illness and pain.

The application of skin cells onto wound sites to improve wound healing is a promising area of research. This can provide wound coverage with minimal skin grafting as cells can be expanded to cover larger wound areas. Cell printing by a 3D bioprinter has been suggested as a primary form of cell application for wounded skin or skin grafting to cover such larger wound sites. The objective of this study was to create functional skin grafts by printing not only human fibroblasts and keratinocytes but also human papilla cells for hair follicle formation and human melanocytes for skin pigmentation, all with carefully controlled layering techniques. Fibroblasts and papilla cells were suspended in a printable hydrogel containing fibrin. These cells were printed first in order to create the dermal layer. Keratinocytes and melanocytes were suspended in the same hydrogel and were printed second to create the epidermal layer. The constructs were 1cm x 1cm and only two layers thick in order to mimic the thickness of normal mouse skin. Once the constructs were printed, they were cross-linked with thrombin to make the gels stable and firm. The bilayered skin grafts were cultured for 5 days and then implanted onto nude mice.

After a week of in vivo implantation, the constructs showed revascularization and started to mimic the structure of mouse skin. This indicated that the mice were not rejecting the implanted skin grafts. The constructs were also able to maintain their structural integrity during this time and were easily retrieved for analysis. A gel-only group (used as control) was also implanted on each mouse along with cell-seeded hydrogels. The gel-only group did not maintain its structure and was not retrievable after one week. This indicated that the cells within the construct were producing a sturdy matrix. Massons Trichrome staining confirmed the presence of ECM in the cell-containing constructs. Finally, it was noted that the wound size containing construct were slightly bigger than the gel only group, indicating that cells from the surrounding area are not migrating in to close the wound and suggesting that the construct is being allowed to integrate into the skin. Further analysis and relevant results from this study are ongoing. Based on the current data, we conclude that the constructs are capable of forming and maintaining their skin-like structure even after 1 week of in vivo implantation (12 days after printing). Constructs will be retrieved again at 3 weeks in vivo (26 days after printing) in order to examine the structural integrity, to determine if follicles are being formed, and to ascertain if any further pigmentation can be seen.

Acknowledgements: The summer scholars research reported was supported by the Douglas Jerome Bodner Fund for Research in Regenerative Medicine. A special thanks to Stephen L. Rego for technical assistance.

References

1. Peck MD. Epidemiology of burns throughout the world. Part I: Distribution and risk factors. Burns 2011; 37:1087– 1100.
2. Miller SF, Bessey P, Lentz CW et al. National burn repository 2007 report: A synopsis of the 2007 call for data. J Burn Care Res 2008; 29:862– 870; discussion 871.

Guidelines for Poster Preparation

Poster Submission Deadline: Tuesday, July 25, 2023

General Aim and Format

- A poster is a graphically based approach to presenting research. In presenting your research with a poster, you should aim to use the poster as a means for generating active discussion of the research.
- Limit the text to about one-fourth of the poster space, and use "visuals" (graphs, photographs, schematics, maps, etc.) to tell your "story."
- Utilize the provided WFIRM Summer Scholar poster template (36 ” x 48 ”)

Design and Layout Specifications

- Your entire poster (use WFIRM Poster Template, size 36” x 48”), will be mounted using push pins on a 40" x 60" foam-core board. Both the foam-core board and easel for display will be provided on site. The board must be oriented in the "landscape" position (long dimension is horizontal).
- A banner displaying your poster title, name, and department (or class, if appropriate) should be positioned at top-center of the board (see Figure 1).
- Make it obvious to the viewer how to progressively view the poster. The poster should read from left to right, and top to bottom. Numbering the individuals’ panels or connecting them with arrows is a standard "guidance system" (see Figure 1).
- Leave some open space in the design. An open layout is less tiring to the eye and mind.

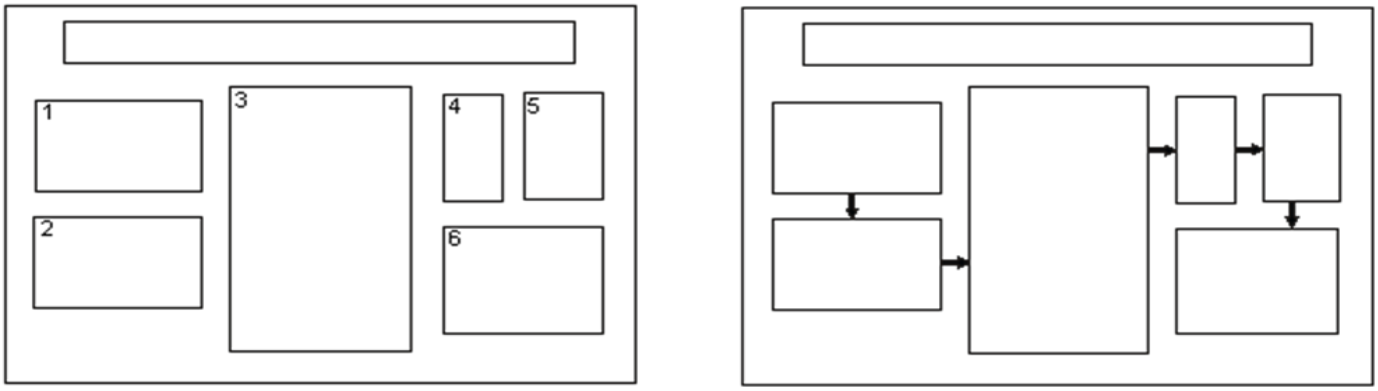


Figure 1: Conventional layouts for a poster. Long panel at top-center is title/author banner. Individual panels can be connected by numbers and arrows. Also, note the use of space between panels to achieve visual appeal. (*From*: C. W. Connor, 1992, The Poster Session: A Guide for Preparation: U. S. Geological Survey Open-File Report 88-667.)

Lettering

- Word-process all text (including captions). Print on plain white paper with a laser printer or inkjet printer.
- Text should be readable from five feet away. Use a *minimum* font size of 18 points.
- Lettering for the title should be large (at least 70-point font). Use all capital letters for the title.

Visuals

- Present numerical data in the form of graphs, rather than tables (graphs make trends in the data much more evident). If data must be presented in table-form, KEEP ITSIMPLE.
- Visuals should be simple and bold. Leave out or remove any unnecessary details.
- Make sure that any visual can "stand alone" (i.e., graph axes are properly labeled, maps have north arrows and distance scales, symbols are explained, etc.).
- Use color to enhance comprehension, not to decorate the poster. Neatly coloring black-line illustrations with color pencils is entirely acceptable.
- Make sure that the text and the visuals are integrated. Figures should be numbered consecutively according to the order in which they are first mentioned in the text. Each visual should have a *brief* title (for example: Figure 1- Location of study area).

Text

- Keep the text brief. Blocks of text should not exceed three paragraphs (viewers will not bother to read more than that). Use text to (a) introduce the study (what hypothesis was tested or what problem was investigated? why was the study worth doing?), (b) explain visuals and direct viewers' attention to significant data trends and relationships portrayed in the visuals, and (c) state and explain the interpretations that follow from the data. In many cases, conclusions can be summarized in a bullet-point list.
- Depending upon the stage or nature of your project, the text could also include sections on future research plans or questions for discussion with viewers.
- Cite and reference any sources of information other than your own, just as you would do with a research paper. Ask your professor about the particular citation system that you should use (every discipline uses slightly different styles). The "References Cited" is placed at the end of the poster.

Miscellaneous Suggestions

- SIMPLICITY IS THE KEY. Keep to the point, and do not try to cover too many things. Present only enough data to support your conclusions. On the other hand, make sure that you present sufficient data to support your conclusions.
- When you begin to make your poster, first create a list of the visuals that you would use if you were describing your project with *only the visuals*. Write the text *after* you have created the list of visuals.
- Mat the components of the poster on separate pieces of colored poster board. This sets-off the text and illustrations from the white mounting board. Also, you can easily attach each component to the mounting board with pushpins or thumbtacks.
- Before the poster session, rehearse a brief summary of your project. Many viewers will be in a hurry and will want a quick "guided tour" of your poster. Do not be afraid to point out uncertainties in your work; this is where you may get useful feedback.

Wake Forest University Baptist Medical Center NON-PATIENT PHOTO RELEASE FORM*

I hereby grant Wake Forest University Baptist Medical Center ("WFUBMC") and its agents, as well as any news media or company working in collaboration with a department of WFUBMC, permission to use my likeness in a photograph (still, film, or video) in any and all of its publications, including print, website entries, or other public media, without payment or any other consideration.

I understand and agree that these materials will become the property of WFUBMC and will not be returned.

I hereby irrevocably authorize WFUBMC to edit, alter, copy, exhibit, publish, or distribute this photo for purposes of publicizing WFUBMC or for any other lawful purpose. I waive the right to inspect or approve the finished product, including written or electronic copy, wherein my likeness appears.
Additionally, I waive any right to royalties or other compensation arising or related to the use of the photograph.

I hereby hold harmless, release, and forever discharge WFUBMC from all claims, demands, and causes of action which I, my heirs, representatives, executors, administrators, or any other persons acting on my behalf or on behalf of my estate have or may have by reason of this authorization or any use of the photograph.

I am at least 18 years of age and am competent to contract in my own name. I have read this release before signing below and I fully understand the contents, meaning, and impact of this release.

Print Name: _____

Signature: _____ Date: _____

If the person signing is under age 18, there must be consent by a parent or guardian, as follows:

I hereby certify that I am the parent or guardian of _____, named above, and do hereby give my consent without reservation to the foregoing on behalf of this person.

Parent/Guardian Print Name: _____

Parent/Guardian Signature: _____ Date: _____

***NOTE: If photo depicts treatment, payment, or health care, use form MR 08/04, Authorization for Multi-Media Use and Disclosure of Protected Health Information.**

Addendum for Phase II Animal Training

Participating Students:

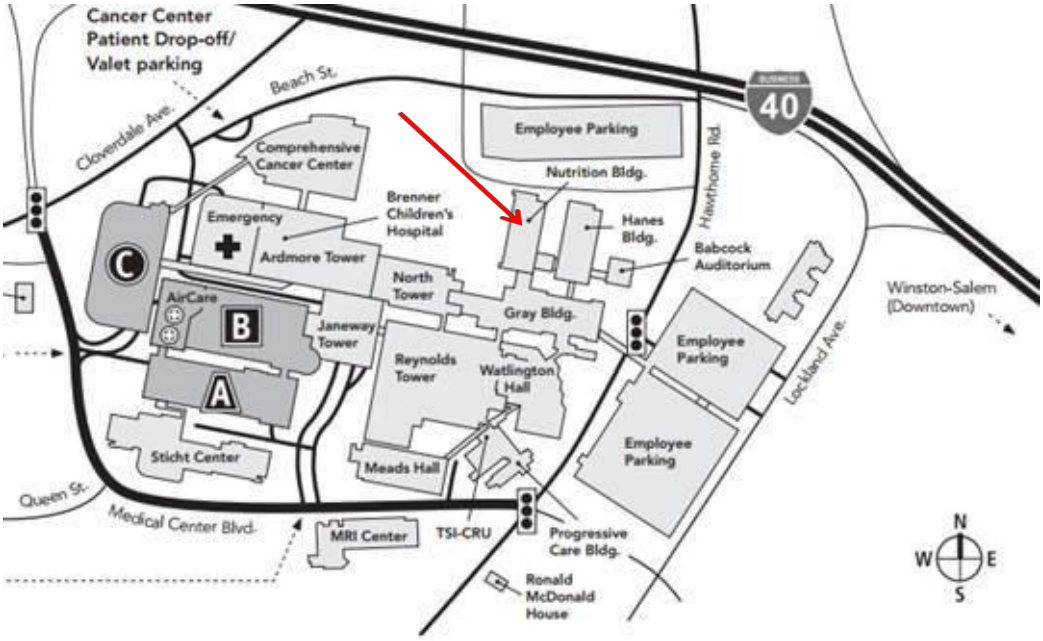
Instructions below for rodent folks from Amanda Dillard, Lab Animal Training Coordinator:

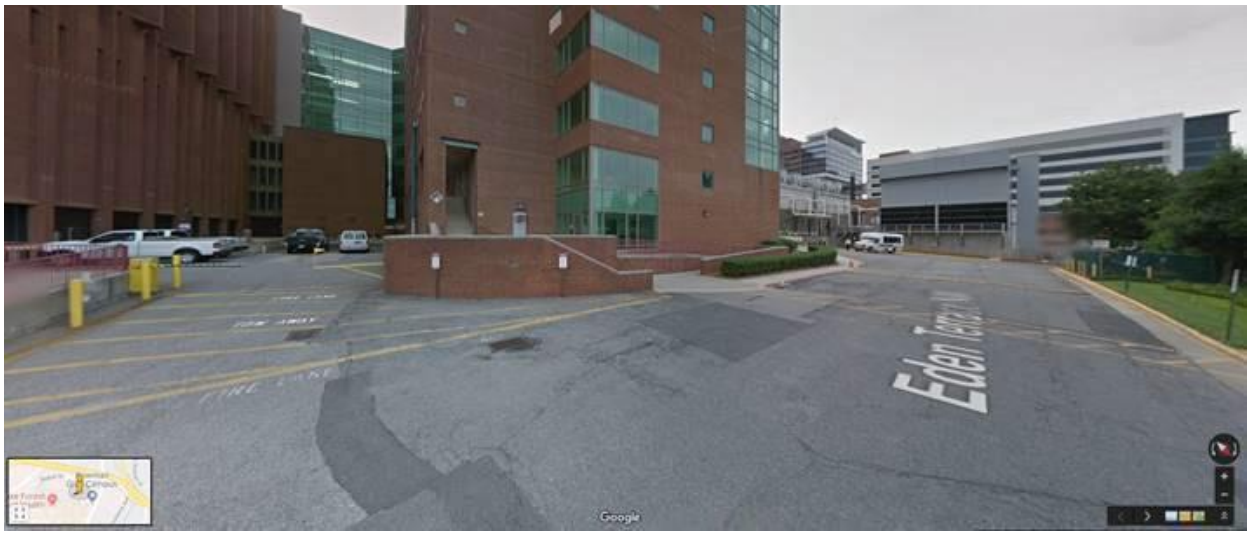
Please plan to wear closed toes shoes and long pants because the class will be in the animal vivarium. The class takes place in the **IACUC Training Room in the NRC (Nutrition Center) Bldg**. located on the Winston Salem/Bowman Gray Campus. A good GPS address to use is 230 Eden Terrace Winston Salem NC 27103. Everyone will meet in front of the NRC Building. If the weather is bad, we can meet on the main floor. I can scan you into the Eden Terrace Employee Parking Deck across from the NRC Building if needed. Just please let me know ahead of time, so that we can plan.

If you will be coming from another campus and do not want to drive, there is a WFSM shuttle service that will bring you to this location (Shuttle service phone number 6-7433). My cell is 336-935-1660. Please don't hesitate to contact me if you have any questions. Thank you.

Amanda Dillard, RVT, LATG
Laboratory Animal Training Coordinator

Wake Forest™
School of Medicine

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