

Helen Scott

Curriculum Vitae | July 9, 2018

(713) 614-0020

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EDUCATION

Texas Tech University

MS, Biotechnology

BS, *magna cum laude*, Biology

Lubbock, TX

Anticipated, 2019

2017

RESEARCH EXPERIENCE

Smith Lab Group, Texas Tech University

Master's Student; Advisor: Nick Smith

Improve climate models by incorporating photosynthesis optimization and acclimation

- Develop plant physiological and ecological theory for the optimization of C₄ photosynthesis
- Create Earth System Model to improve plant physiology influences
- Design and execute greenhouse and field experiments to measure photosynthetic rates
- Uses skills in biomathematics, R, MatLab, LICOR measurements

Lubbock, TX

2018-Present

Lacerda Lab Group, Texas Tech University

Graduate Research Assistant; Advisor: Carla Lacerda

Tissue engineering and mechanotransduction lab

- Implement innovative methods to evaluate heart cell migration and transformation in vitro
- Induce degenerate changes in mitral valve cells mechanically to better establish potential targets for correction of valvular dysfunction
- Maintain cell cultures, and histological analysis using light and fluorescent microscopes
- Trained in 3D printing, microfluidic device fabrication and use, protein identification, and mass spectrometry

Lubbock, TX

2017-2018

Olson Lab Group, Texas Tech University

Lab Technician; Advisor: Matt Olson

Sexual dimorphism and the evolution of sex chromosomes in *Salicaceae* trees

- Responsible for experimental design, and data analysis on independent projects
- Trained in DNA extraction, cloning, DNA sequencing, gel electrophoresis, PCR, growth chamber use, seedling growth, greenhouse management, python, Matlab, and R
- Presented research at local conferences

Lubbock, TX

2014-2017

Wakeman Lab Group, Texas Tech University

Undergraduate Research Scholar; Advisor: Catherine Wakeman

Changing geographic distribution of Chagas disease vectors due to climate change

- Published novel research on Chagas disease as first author
- Delivered poster presentation at the Gordon Conference on Tropical Infectious Diseases
- Used biostatistics, bioinformatics programming, GIS software, and maximum entropy algorithms, including use of MaxEnt software

Lubbock, TX

2016-2017

Rumbaugh Lab Group, Texas Tech University Health Sciences Center

Undergraduate Research Scholar; Advisor: Kendra Rumbaugh

Biofilms and polymicrobial infections in burn and chronic wounds

- Developed a new in vivo model organism for polymicrobial research

Lubbock, TX

2015-2016

- Communicated experimental results via poster presentation at the American Society of Microbiology Texas Meeting
- Designed experiments involving in microscopy, mice and invertebrate in vivo systems, and mono- and poly-microbial communities in vitro

Cannon Lab Group, Texas Tech University

Undergraduate Research Scholar; Advisor: Charles Cannon

Lubbock, TX

2014-2015

Wildflower Phenology

- Digitized herbarium specimen data
- Set-up ecology field research experiments in Muleshoe, Texas
- Proficient in ecological field work, plant identification, and taxonomy

TEACHING EXPERIENCE**Department of Chemistry and Biochemistry, Texas Tech University**

Graduate Teaching Assistant, Experimental General Chemistry I & II

Lubbock, TX

2017-Present

Department of Biological Sciences, Texas Tech University

Supplemental Instruction Leader, Biology I

Lubbock, TX

Spring 2016

STUDENTS MENTORED

Samantha Soto, B.S. Ecology

2016-2017

Alejandra Loya, B.S. Microbiology

2017

PEER-REVIEWED PUBLICATIONS

Scott, H.G. and Wakeman, C.H. (2017). Predictions of Future Geographical Distribution of Two Vectors of American Trypanosomiasis: Implications for Endemic Chagas Disease in Texas, USA. *Fine Focus*. 3(2): 49-59.

CONFERENCE PRESENTATIONS

Scott, H.G. and Wakeman, C.H. Chagas Disease Risk Assessment. Gordon Conference Abstracts.

Poster Presentation delivered at the Gordon Conference for Tropical Infectious Diseases. Galveston, TX, March, 2017.

Scott, H.G. and Wakeman, C.H. Chagas Disease Risk Assessment. Texas Tech University CALUE

Undergraduate Research Conference Abstracts. Poster Presentation delivered at the Texas Tech

University CALUE Undergraduate Research Conference. Lubbock, TX, March, 2017. (Won 1st place in the oral presentation division)

Scott, H.G. Gabrilsilka, R.G., and Rumbaugh, K.A. Use of *Galleria mellonella* as an in vivo model

organism for polymicrobial infections. Texas ASM abstracts. Poster Presentation delivered at the

Texas chapter meeting of the American Society of Microbiology. New Braunfels, TX, April, 2016.

Scott, H.G., Hale, H.H., and Olson, M.S. Sexual Dimorphism in *Populous balsmaifera*. Texas Tech University CALUE Undergraduate Research Conference Abstracts. Poster Presentation delivered at the Texas Tech University CALUE Undergraduate Research Conference. Lubbock, TX, March, 2016.

Scott, H.G. Gabrilsilka, R.G., and Rumbaugh, K.A. Use of *Galleria mellonella* as an in vivo model organism for polymicrobial infections. Texas Tech University CALUE Undergraduate Research Conference Abstracts. Poster Presentation delivered at the Texas Tech University CALUE Undergraduate Research Conference. Lubbock, TX, March, 2016.

Scott, H.G. Gabrilsilka, R.G., and Rumbaugh, K.A. Use of *Galleria mellonella* as an in vivo model organism for polymicrobial infections. Texas Tech University Health Sciences Center Student Research Week Abstracts. Poster Presentation delivered at the Texas Tech University Health Sciences Center Student Research Week Conference. Lubbock, TX, March, 2016. (Won 2nd Place in the Undergraduate division).

CONFERENCES ATTENDED

Gordon Research Conference Tropical Infectious Diseases	Galveston, TX 2017
Gordon Research Symposium Tropical Infectious Diseases	Galveston, TX 2017
American Society for Microbiology Texas Chapter Meeting	Austin, TX

PUBLIC SERVICE

Girl Scouts of Texas Oklahoma Plains Adult Volunteer	Lubbock, TX 2015-Present
<ul style="list-style-type: none"> Designed and taught STEM workshops to introduce girls to careers in science and engineering Lead teams of adult volunteers to teach at the Tech Savvy conference 	
Garrison Geriatric Center Student Volunteer	Lubbock, TX 2016 – Present
<ul style="list-style-type: none"> Addressed patient concerns by programming and interacting with patients Organized community projects to stimulate residents and increase quality of life 	
Heart of Lubbock Community Garden Community Volunteer	Lubbock, TX 2015-Present
<ul style="list-style-type: none"> Assisted in planting and care of plants in community garden Educated the public on health eating, sustainability, and plant biology 	
Texas Tech Women's Leadership Institute Public Relations Chair	Lubbock, TX 2016-2017
<ul style="list-style-type: none"> Filmed, edited, and published a video recapping the women's leadership conference, and promoting the application for the institute 	

- Wrote press releases for the president's gender equity council and the women's leadership conference

HELPS International

Solala, Guatemala

Clinical Assistant

2016

- Shadowed and assisted physicians, performed physicals, and took histories
- Prepared patients for surgery and aided in surgical recovery

Texas Women's Hospital

Houston, TX

Observer; Attending Physician: Dr. Hunter Hammill

2016

- Observed procedures and appointments in hospital and clinical settings
- Rounded on patients, familiarizing myself with terminology, disorders, and patient experiences related to HIV and drug use

University Medical Center

Lubbock, TX

Health Unit Coordinator

2015

- Assisted nurses in administrative duties, including arranging discharges, and paging doctors
- Communicated with hospital nurses, physicians, and staff

PROFESSIONAL ASSOCIATIONS

Aerospace Medical Association

2017-Present

Association for Women in STEM

2015-Present

SCHOLARSHIPS AND AWARDS**Biotechnology Director's Scholarship**

2017

Texas Tech University, Center for Biotechnology and Genomics

Earl Camp Scholarship, for outstanding graduating biology senior

2017

Texas Tech University, Department of Biological Sciences

Hafen Leadership Award

2017

Texas Tech University, Center for Integration of STEM Education and Research

Director's Award

2017

Texas Tech University, Center for Integration of STEM Education and Research

Rushing Scholarship, for academic merit

2016

Texas Tech University, Department of Biological Sciences

Gary and Nancy Fish Medical Missions Scholarship

2016

Texas Tech University, Center for Integration of STEM Education and Research

Florence Brown En Avant Scholarship

2016

Texas Tech University, Department of Women's Studies

Presidential Scholarship Texas Tech University	2014
Girl Scout Gold Award Girl Scout of the United States of America	2014
High School Valedictorian Westchester Academy for International Studies	2014
International Baccalaureate Diploma Westchester Academy for International Studies	2014
Ronald Reagan Student Leader Award The Ronald Reagan Presidential Foundation	2013

LANGUAGES

English	Fluent
French	Fluent
Spanish	Proficient

SKILLS

Computer Skills

- Bioinformatic Analysis
- Computer programming and statistical analysis (MATLAB, Python, R)
- Microcontroller project construction and programming
- Microsoft Office (Excel, PowerPoint, Word)

Field Work Skills

- Boating
- Dendrochronology specimen collection and analysis
- Plant taxonomy/identification
- SCUBA diving certified
- Transect/plot analysis

Laboratory Skills

- Mammalian cell line maintenance
- Microscopy (Fluorescent and confocal)
- Molecular Biology (DNA, RNA and protein extraction, DNA sequencing, PCR, gel electrophoresis, western blot, cloning, etc.)
- In vivo work with mammals (including mice) and invertebrates

REFERENCES

Julie Isom

Associate Program Director
of Research
CISER
Texas Tech University
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Catherine Wakeman

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