



SPARK Research Mentorship Program at Mayo Clinic in Florida Science Program for the Advancement of Research Knowledge

The mission of SPARK Research Mentorship Program at Mayo Clinic in Florida is to provide high school students in Duval and St. Johns Counties mentored research experiences in world class laboratories at Mayo Clinic in Florida which will help them develop a basic understanding of scientific research and produce a **highly-competitive science fair project.**

Juniors and seniors enrolled in Duval and St. Johns County schools who are interested in **biomedical science,** will be provided an opportunity to design and carry out research projects within world class research laboratories in the Discovery Translation Labs at Mayo Clinic in Florida for the **purpose of entering science fair competitions.**

It is expected that a minimum of 20 lab hours per week will be required during the summer break for a successful project to be completed for **deadlines of the Science Fair.** Should additional time be needed after school resumes, a flexible schedule will be determined and agreed upon between the student and faculty mentor.

Discovery Translation Labs:

In Florida, teams of scientists and physicians conduct research with the goal of improving patient care. Their focus is finding new and better ways to predict, prevent, diagnose and optimally treat complex brain conditions, cancer and several other conditions. Guided by unmet patient needs, researchers work collaboratively in laboratories, on clinical trials, and epidemiological studies to turn promising discoveries into effective treatments.

How to Apply:

Students should go to the SPARK website in January 2019 for information on criteria, how to apply, and application forms, then contact their current science teacher to complete the recommendation form.

SPARK Alumni

2017: Cohort 1



The SPARK Research Mentorship Program launched in the summer of 2017 with nine scholars in its pilot year.



Devanik Biswas

Stanton College Preparatory School

Devanik was a senior at Stanton when he entered the SPARK program. His research in [Dr. Melissa Murray's Lab](#) on blood-brain barriers earned him First Place in the Biochemistry category of the Northeast Florida Regional Science and Engineering Fair (NEFRSEF) and Third Place Grand Award winner in the category Biomedical and Health Science at the Intel International Science and Engineering Fair (Intel ISEF) in 2018. Devanik is now studying Neuroscience at Johns Hopkins University.



Yara Chehade

Nease High School

Yara was a senior at Nease when she entered the SPARK program. Her research in [Dr. John "Al" Copland's Lab](#) on ovarian cancer earned her an Honorable Mention in the Cellular and Molecular Biology category at the State Science & Engineering Fair of Florida (SSEF) and an opportunity to compete at the Intel ISEF in May 2018. Yara is now majoring in STEM studies at the University of Florida.



Emma Kee
Ponte Vedra High School

Emma was a senior at Ponte Vedra High School when she entered the SPARK program. Her research in [Dr. Pam McLean's Lab](#) on traumatic brain injury earned her Second Place at the Northeast Florida Regional Science and Engineering Fair (NEFRSEF) and Recognition at the State Science & Engineering Fair of Florida (SSEF) in 2018. Emma is now studying Biology at Wake Forest University.



Tim Kellett
Ponte Vedra High School

Tim was a senior at Ponte Vedra High School when he entered the SPARK program. His research with [Dr. Aneel Paulus](#) on Waldenstrom Macroglobulinemia (WM) earned him Second Place at the Northeast Florida Regional Science and Engineering Fair (NEFRSEF) and at the State Science & Engineering Fair of Florida (SSEF) in 2018. Tim is now studying Biochemistry at Florida State University.



Courtney Krider
Ponte Vedra High School

Courtney was a junior at Ponte Vedra High School when she entered the SPARK program for the first time. Her research in [Dr. Dev Mukhopadhyay's Lab](#) on Non-Small Cell Lung Cancer Cells earned her Third Place at the Northeast Florida Regional Science and Engineering Fair (NEFRSEF) and Recognition at the State Science & Engineering Fair of Florida (SSEF) in 2018. Courtney also was awarded Third Place in the Regional Junior Science Engineering and Humanities Symposium.



Louis Otero
Ponte Vedra High School

Louis was a senior at Ponte Vedra High School when he entered the SPARK program. His research in [Dr. Keith Knutson's Lab](#) on HER2+ Breast Cancer earned him Third Place at the Northeast Florida Regional Science and Engineering Fair (NEFRSEF) and Second Place at the State Science & Engineering Fair of Florida (SSEF) in 2018. Louis is now studying Microbiology at the University of South Florida.



Jonathan Perera

Stanton College Preparatory School

Jonathan was a senior at Stanton when he entered the SPARK program. His research with Dr. Rachel Sarabia Estrada was on the migratory interactions between Microglia, MSCs, and BTICS in vitro. Jonathan had the opportunity to present his work at the annual Research Presentation for SPARK students and Mayo Clinic Mini Science Fair. He is now studying Biomedical Engineering at Duke University.



Kavitha Vudatha

Stanton College Preparatory School

Kavitha was a junior at Stanton when she entered the SPARK program for the first time. Her research in Dr. Baoan Ji's Lab on Pancreatic Cancer earned her First Place at the Northeast Florida Regional Science and Engineering Fair (NEFRSEF), a special award from the University of Florida's College of Medicine, and Second Place at the State Science & Engineering Fair of Florida (SSEF) in 2018.



Darren Wang

The Bolles School

Darren was a senior at Bolles when he entered the SPARK program. His research with Dr. Hugo Guerrero Cazares was on Glioblastoma (GBM) cell proliferation and migration. Darren had the opportunity to present his work at the annual Research Presentation for SPARK students and Mayo Clinic Mini Science Fair. He is now studying Biomedical Engineering at the University of Florida.



2018 SPARK Scholars



Afreen Ashraf
Senior, Stanton College Preparatory School

Pharmaco-Synthetic Lethal Effect Upon Co-Targeting BCL-2 and Proteasome Degradation System Pathways in B-Cell Lymphoma

Faculty Mentor: Dr. Aneel Paulus Lab Supervisor: Dr. Alak Manna



Ahmet Bilgili
Senior, Atlantic Coast High School

The Effects of Vitamin D on Mesenchymal Stem Cell Characteristics

Faculty Mentor: Dr. Abba Zubair Lab Supervisor: Dr. Nisha Durand



Alexander "Alex" Tun
Senior, The Bolles School

Anti-PD1 Immune Checkpoint Blockade Therapy to Stimulate T Cell Activating Properties of Dendritic Cells

Faculty Mentor: Dr. Keith Knutson Lab Supervisor: Jay Jenkins



Ashton Body
Junior, The Episcopal School of Jacksonville

Targeted Drug Delivery for Drug Resistant Cancer

Faculty Mentor: Dr. Dev Mukhopadhyay Lab Supervisor: Dr. Vijay Madamsetty



Courtney Krider
Senior, Ponte Vedra High School

Mesenchymal stem cells pre-treated in hypoxic conditions tend to have an increase in potency and possible clinical applications

Faculty Mentor: Dr. Abba Zubair Lab Supervisor: Dr. Peng Huang



Elizabeth "Lilly" McCabe
Senior, Bartram Trail High School

Investigating the Role of SPINK1 in Attachment Free Survival of Ovarian Clear Cell Carcinoma through Inhibition of Trypsin-like Proteases

Faculty Mentor: Dr. Evette Radisky Lab Supervisor: Dr. Christine Mehner



Isha Chekuri
Senior, Allen D. Nease High School

Regeneration of the Heart Using Exosomes

Faculty Mentor: Dr. DeLisa Fairweather Lab Supervisor: Dr. Katelyn Bruno



Katherine Rodriguez
Senior, Allen D. Nease High School

Melatonin as an Anti-Proliferative Agent in Brain Metastasis From Breast Cancer

Faculty Mentor: Dr. Rachel Sarabia Estrada Lab Supervisor: Beatriz Fernandez Gil



2018 SPARK Scholars



Kavitha Vudatha

Senior, Stanton College Preparatory School

Using a Crispr-Cas9 method to knockout Aurora Kinase A gene expression in Pancreatic cancer cells

Faculty Mentor: Dr. Baoan Ji

Lab Supervisor: Ashley Haddock



Marc Pappas

Senior, Mandarin High School

Novel Small Molecule Targeted Combination Therapy for Metastatic Prostate Cancer (mPCa)

Faculty Mentor: Dr. John Copland

Lab Supervisor: Laura Marlow



Priyanka Perisetla

Senior, Stanton College Preparatory School

Attenuating α -synuclein Levels and Mitochondrial Dysfunction in a Cellular Model of Parkinson's Disease with Honokiol.

Faculty Mentor: Dr. Pam McLean

Lab Supervisor: Dr. Marion Delenclos and Jeremy Burgess



Raha Riazati

Junior, Stanton College Preparatory School

The Effect of Interaction with Neural Progenitor Cells on the Morphology, Proliferation, and Proteome of GBM Cells

Faculty Mentor: Dr. Hugo Guerrero Cazares

Lab Supervisor: Dr. Anna Carrano



Rishi Misra

Junior, The Bolles School

The Role of Adherens Junction Protein PLEKHA7 in the Progression of Pancreatic Ductal Adenocarcinoma

Faculty Mentor: Dr. Panos Anastasiadis

Lab Supervisor: Lindy Pence



Sophia Kurian

Senior, Allen D. Nease High School

The Role of Adrenomedullin (ADM) in Breast Cancer Stem Cells

Faculty Mentor: Dr. Keith Knutson

Lab Supervisor: Dr. Geraldine Raja



Victoria Pham

Junior, Ponte Vedra High School

Screening of Novel Anti-Inflammatory Small Molecules in Endothelial Cells

Faculty Mentor: Dr. Dev Mukhopadhyay

Lab Supervisor: Dr. Ying Wang



Zoe Fields

Senior, Ponte Vedra High School

Characterization of Biomarkers of PKCi Directed Therapy for Treatment of Lung Cancer

Faculty Mentor: Dr. Verline Justilien