

EXPERIMENTAL SCIENCE

A unique science course for motivated, dedicated, and curious student researchers



WHAT IS EXPERIMENTAL SCIENCE?

A course that allows students to independently explore science topics of interest with a goal of competing in science fair.

Students...

- Identify a problem in the world they hope to address.
- Design an experiment to characterize and address that problem.
- Collaborate with research mentors and solicit feedback on their research from experts and scientific competitions.

Experimental Science counts as an **Honors science elective** that satisfies the additional science credit requirement outside of the state mandated three equally rigorous courses (ex. Biology, Chemistry, or Physics).

WHO IT'S FOR

Students who are...

- Interested in science.
- Focused on scientific careers in the future.
- Looking to develop interpersonal and career skills.
- Looking to bolster their academic resume for college.
- Searching for a career in research.
- Driven and motivated.

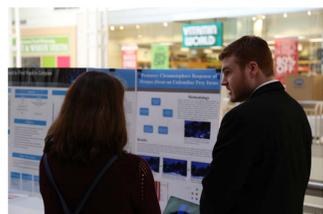


Mitchell Hammack devised a computer algorithm that could take user generated images of moles, blemishes on the skin either from birth or newly arisen from sun exposure, and assess its likelihood of being melanoma. His model had a 93.4% accuracy.

WHAT IT DEVELOPS

As a result of participating in Experimental Science, students develop the following soft skills that are increasingly valuable to college recruiters and businesses:

- Time-management
- Organization
- Effective oral communication
- Analytical thinking
- Technical writing
- Authentic research skills
- Goal-setting



Ben Shirey (left) and **Sapna Patel** (right) share their research with judges at the Seminole County Regional Science Fair. Ben studied how a poorly-studied octopus species reacted to various prey items. Sapna studied how keystroke patterns can reveal an individual's sentiment towards a topic and can possibly be applied to identifying risky behavior on the internet or cognitive decline in students.

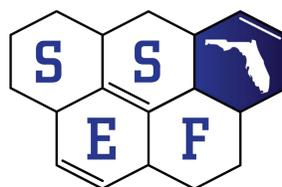


THE MAIN COMPETITIONS



SCPS Regional Science & Engineering Fair (RSEF)

- The first of three traditional science fair competitions.
- Researchers compete in 15 categories against the 9 public schools and additional private schools in Seminole County.
- Traditionally held in **February**.



Florida State Science & Engineering Fair (SSEF)

- Nominations are earned at the regional fair level.
- Students have the opportunity to win \$1.2 million in awards, prizes, scholarships, and internships.
- Traditionally held the last week of **March**.



International Science & Engineering Fair (ISEF)

- Nominations are earned at the regional fair level OR the state level.
- Nearly 2000 students from **over 75 countries** compete in this competition.
- Over **\$4 million** available in prizes, scholarships, and internships.
- Thirteen (13) ISEF alumni became Nobel laureates.
- Traditionally held in **May**.

BY THE NUMBERS

Scholarships & Cash Awards

Since 2017, Oviedo students have earned...

\$108,500
IN
COLLEGE
SCHOLARSHIPS
\$\$\$

\$9725
IN
CASH
PRIZES
\$\$\$

The average... **\$1972** in SCHOLARSHIPS & **\$177** in CASH PRIZES ... per student.

Place Awards

Out of **55** projects since 2017, there have been...

- 47** Regional Award Winners
- 27** Nominations to State
- 12** State Award Winners
- 7** Nominations to International
- 2** International Award Winners

DID YOU KNOW ↴
UCF **\$637** 3-Credit Hour Course
\$2548 Full-Time Tuition Cost

LION'S PRIDE

Oviedo currently has the top performing research program in Seminole County.

PRIOR PROJECTS

Animal Sciences

Predatory Chromatophore Response of Octopus filiosus on Unfamiliar Prey

Benjamin Shirey

1st Place RSEF, Recognition Award SSEF



ECKERD COLLEGE

Behavioral Sciences

KeMotions: Keys to Emotional Cues

Sapna Patel

1st Place RSEF, 1st Place SSEF, 3rd Place in Behavioral Sciences ISEF



Cellular /Molecular Biology & Biochemistry

Optimization of Buffer Used for Deoxyribozyme-Based Fluorescent Sensors

Emma Stewart & Ali Owji

1st Place RSEF



COLGATE UNIVERSITY



Mathematics & Computational Sciences

Early Skin Cancer Detection Using Convolutional Neural Networks - Year 2

Mitchell Hammack

2nd Place RSEF, 1st Place SSEF, Ying Scholar Finalist



Physics & Astronomy

Effects of Meteorite Impacts During Planetary Formations

Ivan del Barco

1st Place RSEF, 4th Place SSEF



Plant Sciences

Growth Methodologies and Phenolic Antimicrobial Compounds in Dwarf Kale

Saadhana Sridharan

2nd Place RSEF, Recognition Award SSEF

FAU Honors Scholarship



HOW DO I START?

- See whether you have the time available in your schedule to commit to a yearlong research project.
- Speak with Mr. Furiosi about potentially taking the class to determine if it'd be a good fit.
- Speak with other Experimental Science students to see if the course fits your expectations.
- Choose Experimental Science as an elective when selecting next year's schedule preferences.
- Begin thinking about scientific topics/fields that interest you.
- Start looking at research mentor profiles at local universities or professional science and technology organizations.

But I'm taking AP Seminar or AP Research?



You can still compete in science fair as an AP Capstone student. **Just pick a science topic!** You'll have to work with Mr. Furiosi outside of class or during AP Research to ensure science fair requirements are met.