

# Decoding the mysteries of DNA

Grant recipient: Joshua Sokoloski  
Science outreach case study

Supported by the Science Outreach & Communication Grant  
Hosted by ASBMB's Science Outreach & Communication Committee



## Project overview

In partnership with the Summer Enrichment Academies, Josh Sokoloski planned three days of activities during STEM week for majority underserved middle-school students. Participants spent the day engaged in a variety of fun and educational activities at Salisbury University.

The goal of the programming was for students to learn about nucleic acids and their societal applications. Students extracted DNA, used 3D models to replicate nucleic acid base pairing, and investigated a faux crime scene using DNA fingerprinting.

ASBMB student chapter members and SEA program counselors volunteered and contributed to the success of the program.

## Aims

- Teach students about nucleic acids, their uses in biotechnology and ethical considerations.
- Teach the students about the the central dogma of biochemistry and molecular biology.
- Demonstrate the process of science with a hands-on approach and illustrate it as a career path.

## Takeaways

- Communicate with your local ASBMB student chapter to find volunteers to help facilitate the outreach project.
- Have a contingency plan. The more outreach projects you facilitate, the easier this will become.
- Take advantage of and partner with existing programs.
- Be passionate about the subject of your outreach project. This will make the planning more fun. Participants will notice, and they'll be excited by it too!

## At a glance

### Challenges

- Keeping the attention of 36 middle-schoolers
- Accommodating additional participants

### Achievements

- Engaged a local partner, which facilitated advertising and registration
- Secured additional funding
- Identified university resources (3D printing)

### Budget: \$970

Example costs:

- [BioRad DNA fingerprinting activity kit and gel supplies](#): \$388.23
- Nitrile gloves: \$144.00
- 3D printing\*: \$37.50

\*Sustainable supply of materials using university resources



"Overall, the participants got to learn the history of DNA, get introduced to the structure-function foundation of biochemistry, and use actual lab equipment to carry out real experiments. We discussed the potential of DNA and RNA biotechnology and got them thinking about ethical considerations of this technology."

**Joshua Sokoloski, assistant professor at Salisbury University**