



# CREATING OPPORTUNITIES FOR OTHERS THROUGH OUTREACH PROGRAMS


Sariah Phipps – OSA Intern

# Things I've done

- Encourage younger generation
- Promote minority physicists
- Organize outreach events
- Help manage student chapters

The logo for the Optical Society of America (OSA) features the letters 'OSA' in a bold, blue, sans-serif font. A small registered trademark symbol (®) is positioned to the upper right of the 'A'. The letter 'A' is stylized with a blue triangle pointing to the right, integrated into its right vertical stroke.The number '100' is displayed in a large, bold, blue, sans-serif font. A thin horizontal line is positioned above the '100', separating it from the 'OSA' logo above.


# Optics4Kids





**Activities**

In this section you will find experiments that will help you understand the physics of light impress your friends with your new ability to manipulate light and color using nothing but a few gumballs and a shoebox. Best of all, you will probably get to make a big mess all in the name of science.

Who knows you may even make a new scientific discovery of your own and get to wear your hair like Albert Einstein.

**For Ages 5 and Up**  [EXPLORE](#)


**For Ages 10 and Up**  [EXPLORE](#)


**For Ages 15 and Up**  [EXPLORE](#)


## Activities Section


Give kids a fun way to learn optics  
Make and publish lesson plans that can be  
done at home  
24 lessons created in total


**Industry**  
Work involving commercial production of goods


**Optical Engineer**  
Optical engineers design precision optical systems for cameras, telescopes, or lens systems. They determine the required specifications and make adjustments to calibrate and fine-tune optical devices.  [EXPLORE](#)

**Manufacturing Engineer**  
Develops and improves manufacturing processes by studying product and manufacturing methods.  [EXPLORE](#)

**Ophthalmic Laboratory Technician**  
Cut, grind, and polish eyeglasses, contact lenses, or other precision optical elements. Assemble and mount lenses into frames or process other optical elements.  [EXPLORE](#)

**Fiber Optic Engineer**  
Design technologies specializing in light information or light energy, such as laser or fiber optics technology.  [EXPLORE](#)

**Laser Applications Engineer**  
The laser applications engineer plays a wide ranging role that requires them to be involved in designing, planning and developing laser applications that would contribute in the success and growth of the organization.  [EXPLORE](#)

**Photonics Engineer**  
Photonics engineers work in the design, production, and use of laser and fiber optics technology.  [EXPLORE](#)

## Career Section

Issues with the existing info  
16 careers updated  
Clear job descriptions and requirements



# Optics Suitcase

- Get kids interested in optics through fun activities
- Provide teachers with a 45-minute lesson
- Reviewed old activities and decided which ones needed to be edited
- Write lesson plans

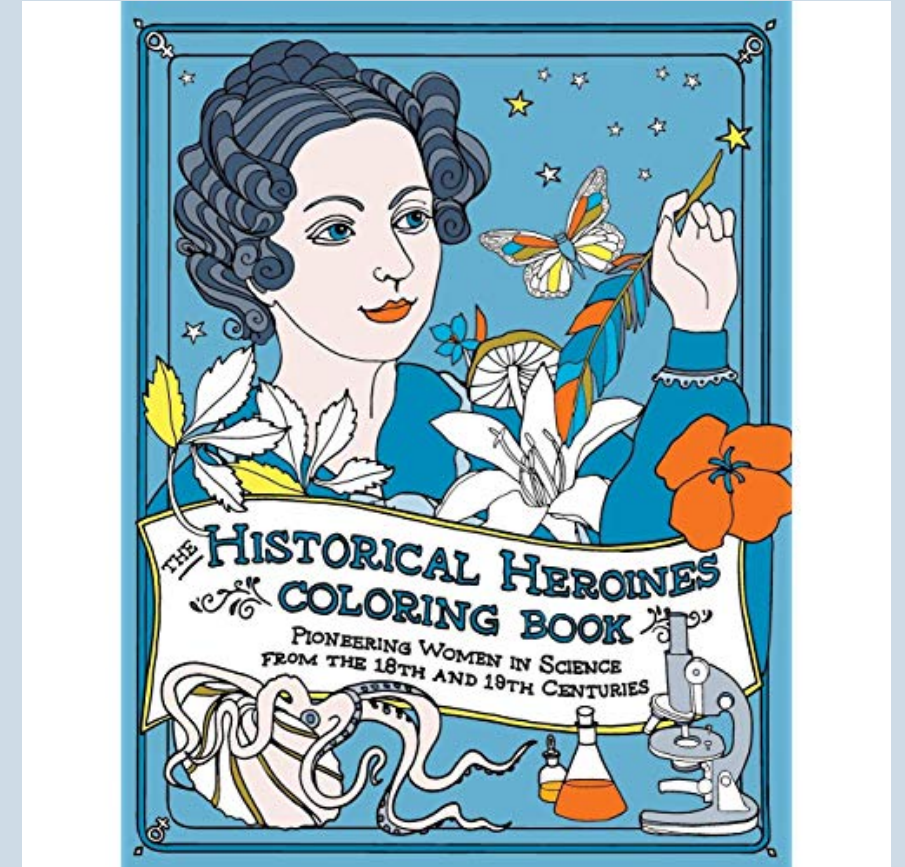


## Wikipedia Pages for Female OSA Award Winners

- Celebrate successful female scientists
- Out of 315 women, 240 did not have a Wikipedia page
- Hours of research to find bio, educational background, awards and their attributions to the scientific community
- Organized info into excel sheets

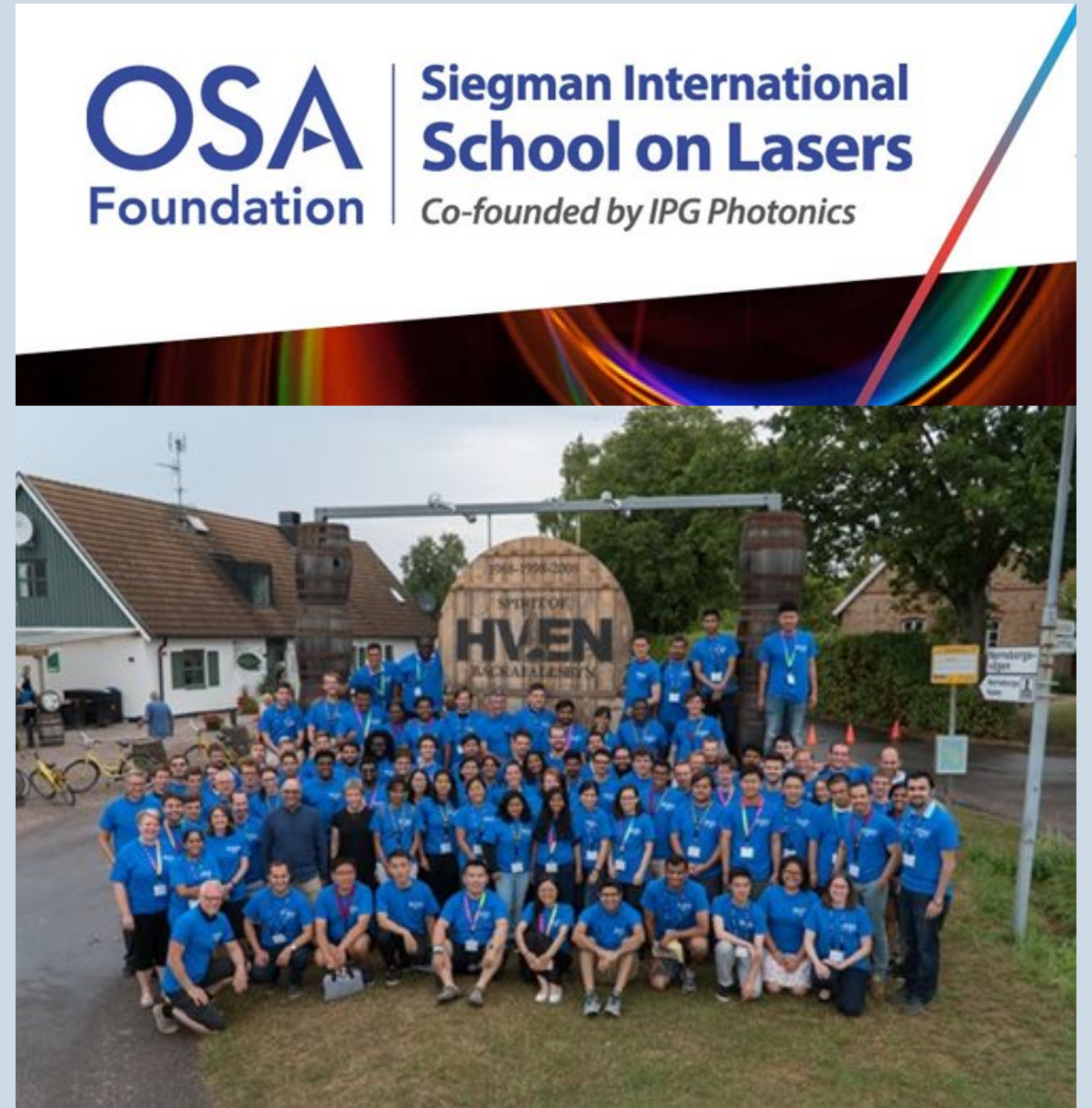
# Female Physicist Coloring Book

- Start kids young!
- Given a list of 26 women and asked to find interesting facts about them
- Prioritize which women should be in the coloring book



# Siegman School

- Read and edited abstracts
- Organized flight and housing information
- Put meal plans on an excel sheet
- Ensured all students and lecturers were on the roster



# Writing Blogs

## The Future of Additive Manufacturing Technologies for Optical Applications

By Sariah Phipps, 2019 Outreach Programs Intern, Brigham Young University - Idaho

On June 12 2019, The Optical Society hosted more than two hundred scientists for the additive manufacturing session of the Design and Fabrication congress. The future of additive manufacturing technologies for optical applications was discussed through a series of questions asked to a panel of optical manufacturers.

The panel consisted of five guest speakers. First to be introduced was Rebecca Dylla-Spears. As a chemist at Lawrence Livermore National Laboratory, U.S.A., Dylla-Spears works to manufacture glass optics. Sitting beside her was Joseph Howard, lead optical designer for NASA Goddard's James Webb Telescope. Howard uses freeform optics to develop larger and faster telescopes with an increased field of view. Next, we were introduced to Michael Sweeney, a scientist at General Dynamics who develops the designs of mirrors with aluminum, titanium, and beryllium. Daniel Werdehausen works with metasurfaces at Carl Zeiss AG while researching new optical materials and elements. Last up, Matthew Jenkins leads the optical engineering group at Raytheon and pushes the rapid design of space devices. The session began with the moderator asking the panel about fabricators and was followed by questions from the audience.

### What applications will benefit most from additive manufacturing?

Dylla-Spears commented that additive manufacturing leaves room for light weighting in complex structures.

### What features will be added to mirrors using additive manufacturing?

Sweeney responded that we can put small radii in corners and semi-close backs. Additive manufacturing is especially good for metal optics and will allow the addition of metering structure to optics.

### How can manufacturers incorporate additive manufacturing into 3-D printing materials?



**Caption:** Optical manufacturers panel including (from left to right) Rebecca Dylla-Spears, Joseph Howard, Michael Sweeney, Daniel Werdehausen and Matthew Jenkins

**Credit:** OSA Communications

- Keep OSA members around the world up to date on Optics news and OSA meetings
- Learned how to use net Forum
- Attended the Design and Fabrication congress and wrote a blog about it
- Reviewed and edited other people's blogs before posting it for them





# Overall

- Learned how much work goes into organizing events
- Learned that I wouldn't mind a 9-5 job
- Learned how to best encourage others to pursue Optics