The Science Public Outreach Team: Integrating outreach across your state

KATHRYN WILLIAMSON, TEACHING ASSISTANT PROFESSOR, WEST VIRGINIA UNIVERSITY

JON SAKEN, ASSISTANT PROFESSOR, MARSHALL UNIVERSITY

ANIKA ROWE, UNDERGRADUATE CHEMISTRY MAJOR, WEST VIRGINIA UNIVERSITY

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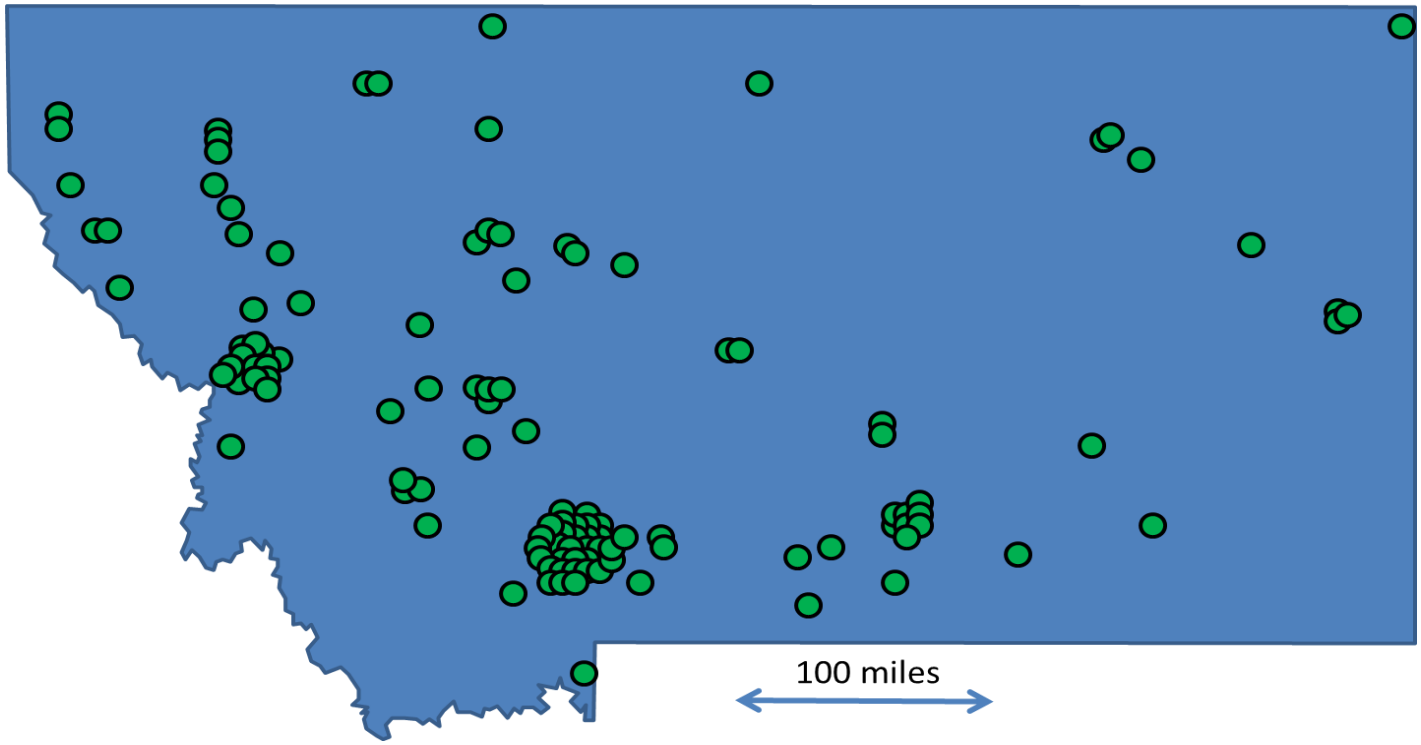
What is SPOT?

Adapted from an existing program in Montana that has had over two decades of success in bringing space science to over 10,000 Montana K-12 students every year (solar.physics.montana.edu/spot)



What is WV SPOT?

Mission: The West Virginia Space Public Outreach Team (WVSPOT) inspires an appreciation of STEM and STEM careers in K-12 students through the delivery of interactive presentations by undergraduate students that highlight cutting edge space science and engineering research in the Mountain State.

Goals for K-12 audiences:

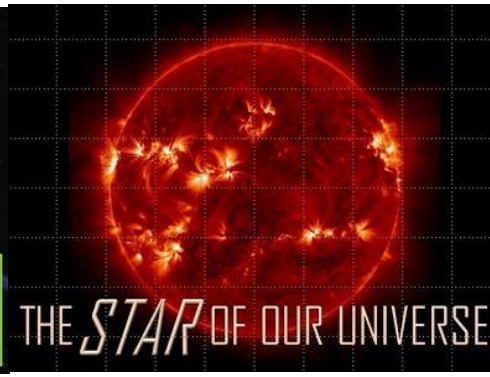
- (1) Increase awareness of and interest in astronomy and space-related STEM research, programs, and careers in West Virginia.
- (2) Increase exposure to college role models.

Goals for college ambassadors:

- (1) Increase 21st century skills such as science communication, public speaking, autonomy, and ability to adapt.
- (2) Increase astronomy and space science content knowledge.

What is a SPOT presentation?

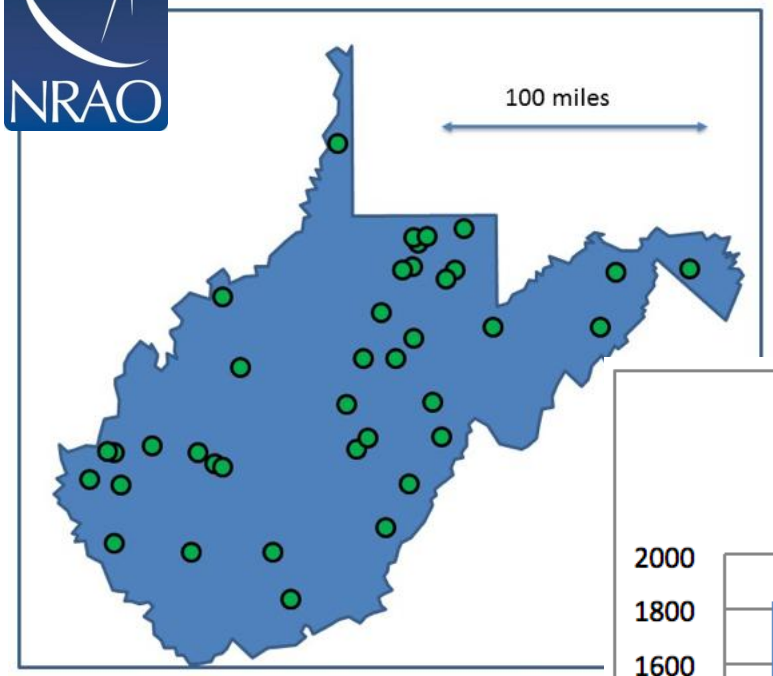
- Targeted to a middle school audience, with enough information to be enhanced for a high school level, and enough things to omit for a 4-5 level.
- Designed to be engaging, with multiple-choice questions for audience members to vote.
- Feature West Virginia space science, with the message that you can do real science right here!

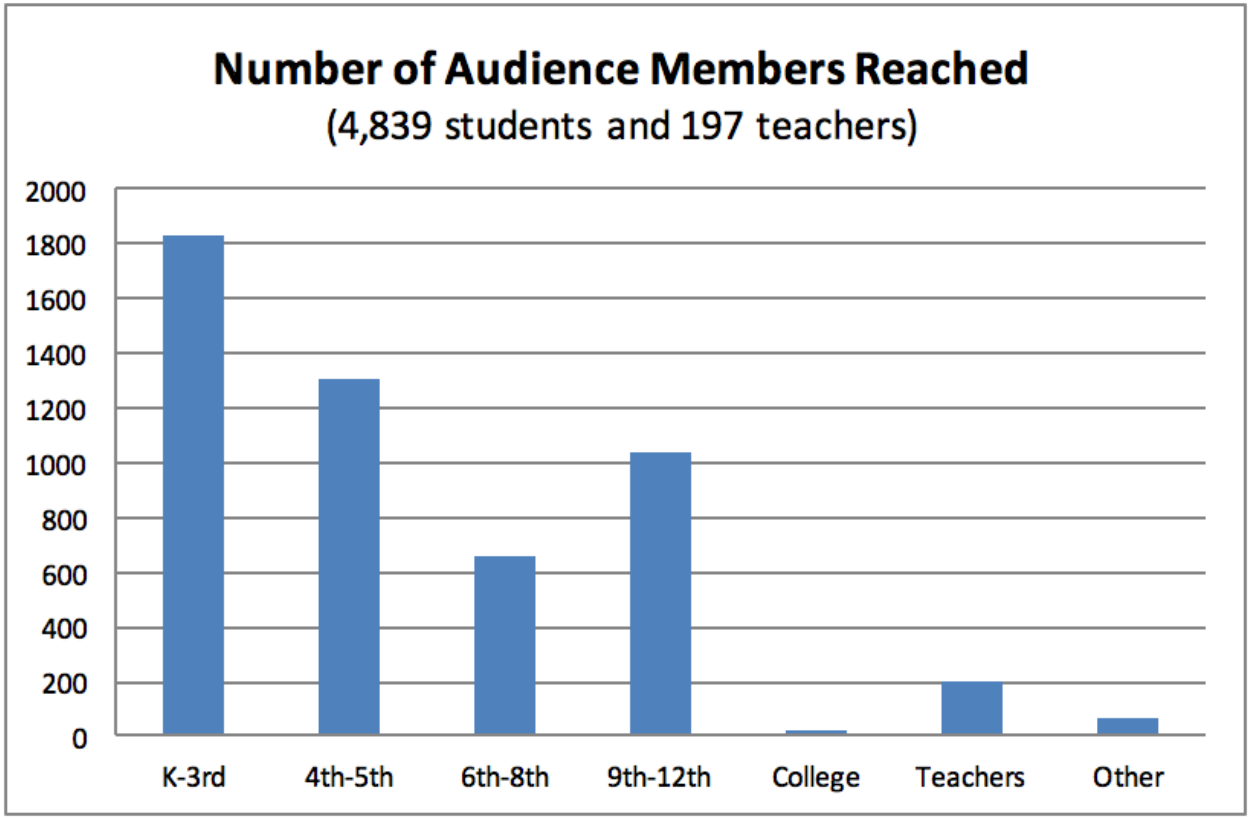


What is a SPOT Ambassador?

- Ambassadors are primarily undergraduates, mostly recruited from STEM and Education majors.
- We train ambassadors to develop their science communication, public speaking, and content knowledge.
- Ambassadors inspire West Virginia students. They represent NRAO, NASA, the state of West Virginia, college, and STEM. They are role models for young students.

Huge Success!





Started in WV in 2013.

2013-2014 reached over 2,700 students and teachers

In 2014-2015, reached over 3,300 students and teachers

In 2015-2016, reached over 5,000 students and teachers

"Adapting a successful outreach programme to a new region," *Communicating Astronomy with the Public*, Issue 16 – December 2014).

How does WV SPOT work?

NRAO/NASA create 30-min-long engaging slide shows that feature WV space science.

Ambassadors attend a weekend training session in Green Bank.

Ambassadors pass a practice presentation to show they are ready to visit schools.

Teachers learn about SPOT at the West Virginia Science Teachers Association meeting and through a NASA education email listserv.

An interested teacher visits the WV SPOT website and fills out a presentation request form.

How does WV SPOT work?

NRAO/NASA schedule presentations
and send notification email to SPOT presenters list

Presentations are awarded on a first come/first serve basis preferably in male/female teams.

Presenters travel to schools to deliver presentations.
Schools pay $50 to cover travel expenses.
SPOT pays presenters additional $50 honorarium.

Teachers receive a “Teacher Pack” of fun additional resources.
Teacher fills out reporting form and returns to presenter.

Presenters enter reporting information into an online form.
Teachers fill out an online feedback form.

Program Operations Status	2013-2014	2014-2015	2015-2016
Number of Students Reached	2,660	3,234	4,839
Total Program Cost	$8,548	$10,237	$17,081
Total Cost per student reached	$3.21	$3.17	$3.53
Total Cost per presentation	$55.41	$93.07	$137.75

"I think SPOT is a very good thing, especially in West Virginia where there are a lot of schools who don't have access to, or can't afford, good science education." (ambassador)

"Students who very rarely are interested in the topics were asking relevant questions." (teacher)

"The hands on class helped students associate the solar system in forms they could grasp."(teacher)

"Doing SPOT shows is something I enjoy doing, and looking forward to an opportunity to do one is always nice." (Ambassador)

"The students were totally engaged during the presentation. They asked questions that were relevant to the presentation and showed they listened and were engaged with the activity." (teacher)

Adaptability to Other Audiences

Ambassadors have proven to be adept at adapting presentations for audiences beyond the K-12 target, further extending the reach of the SPOT program.

- Teacher training workshops
- Campus festivals
- Public gatherings

SPOT impacts lives…

"I accepted a full-time position with NASA Goddard Space Flight Center as an Education and Public Outreach Specialist for the Hubble Space Telescope! I just wanted to share with you how important SPOT was in my quest to get this job. There were over 100 applicants, but in one of my three interviews I actually gave a condensed version of the Space Telescopes presentation. They were blown away by my knowledge of the telescope and my ability to deliver it for different audience types. SPOT truly was a deciding factor in their decision!"

Kristen Basham
2014-2015 SPOT Ambassador

Two years ago…

Analytical chemistry!!

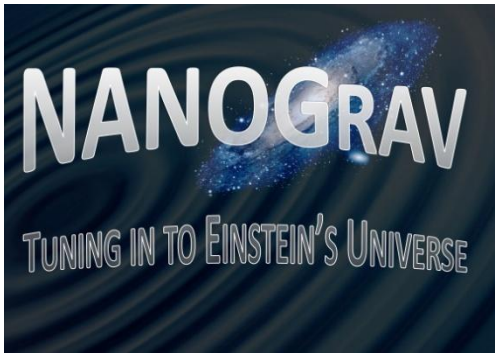
Last year…

Attended the SPOT training weekend in Green Bank

Learned to present *How to Make a Planet…With Life*

Presented to ~140 students, teachers, and administrators

Decided to pursue a physics minor and graduate degree in astrochemistry



This year…

Undergraduate research with Dr. Maura McLaughlin at WVU

NANOGrav Training

IPTA Student Week/Conference in Stellenbosch, South Africa

Pulsar Search Collaboratory mentoring

…all thanks to SPOT!

Challenges and Changes

Ambassador Retention - Approximately 25% of the ambassadors we train go on to pass a practice presentation and visit at least one school.

- ”SPOT Summit”
- Application process with faculty recommendation
- Better coordination across different campuses
- Link to competitiveness for Space Grant scholarships
- Make travel and equipment usage easier (computers, speakers, slide advancer, etc).

Sustainability

- Membership policy for researcher grant broader impacts. $10K per year for grant text and letter of support, presentation review, management, advertisement, and reporting.
- Sponsorship policy for individuals or private companies. Three levels ($1K, $2K, $5K) for an assortment of logo placement, reporting data, name recognition, and visibility.

Let us know how we can help you become involved!

SPOT Website:
www.wvspot.org

SPOT Contact:
spot.wv@gmail.com

Our Contact Info:
Kathryn Williamson
WVU Physics & Astronomy Dept
kewilliamson@mail.wvu.edu
304-293-5099

Jon Saken
Marshall University Physics Dept
saken@marshall.edu

Anika Rowe
WVU Undergraduate
ahrowe@mix.wvu.edu