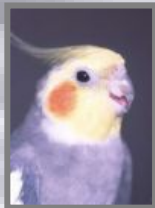




PHYSICS in DC

A Summer Full of Energy !



Jackie A. Michalek
SPS 2006 Intern
AAPT & Student Outreach



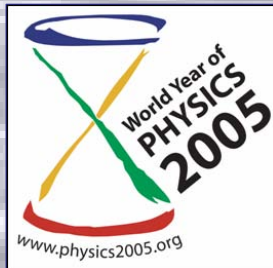
History of the SOCK

User's Guide
to the
2006 SOCK



- ✿ SPS Outreach Catalyst Kits (SOCKs)
- ✿ First SOCK
- ✿ Subsequent SOCKs
- ✿ Kit Contents:

User Guide
Experiments
Demonstration Tools / Ideas
Worksheets
Collaborative Data Collection



'COOL

This year's theme in the . Temperature

PHYSICS

S O C K

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S *t* *t* *t*
r *a* *l*
e *y*
a *s*
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h

'HOT STUFF'

Absolute Zero and the Conquest of Cold: SPS chapter outreach kits for exploring cool physics

'Cool Physics,' 2006 SOCK (SPS Outreach Catalyst Kit).

Partnered with a public broadcasting program "Absolute Zero and the Conquest of Cold, www.absolutezerocampaign.org, SPS will provide qualifying chapters a SOCK filled with experiments/demonstrations relating to the quest for absolute zero. This SOCK will inspire members to enlighten middle/high schoolers about the effect these exploratory results have on the physical world around us. Producing excitement, the Kit offers liquid crystal thermo-paper, mood rings, hand boilers, thermal-paks, a thermodynamic color experiment, and the ever-crowd-pleasing liquid nitrogen ice cream recipe. SPS Chapters will not only find this year's SOCK educational and informative, but also, stimulating and engaging for their target audiences.

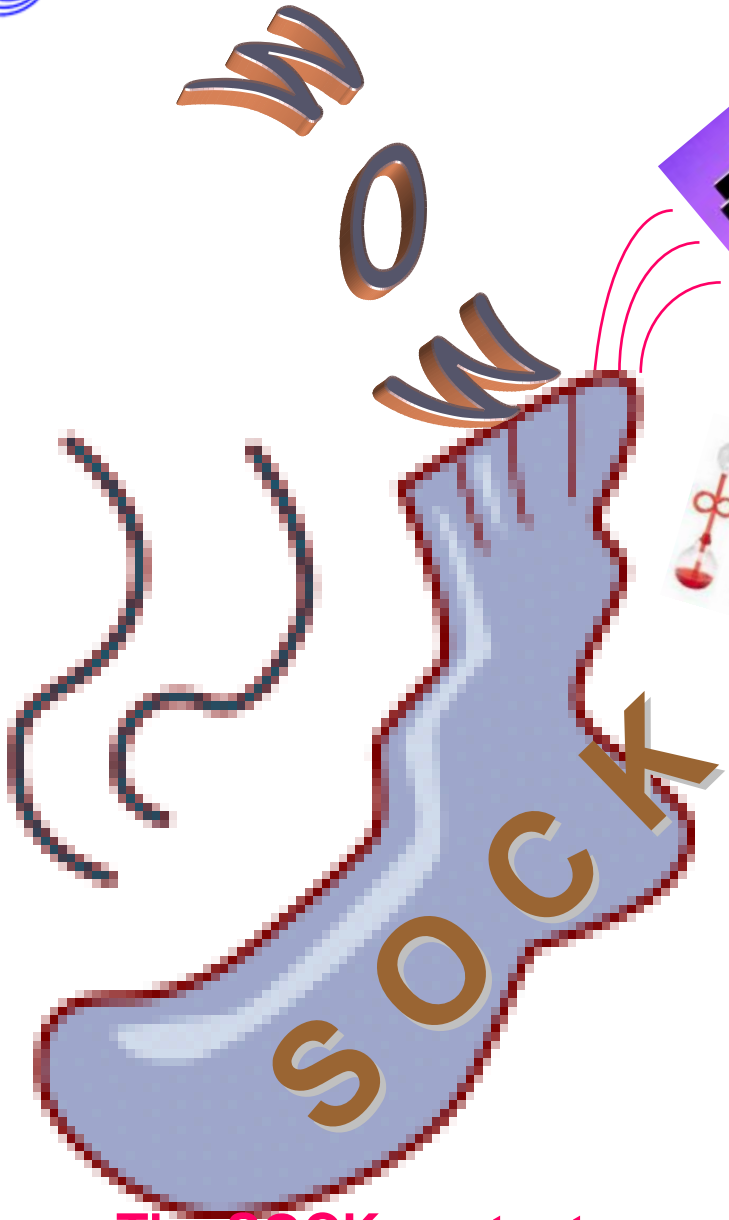


Society of Physics Students



Supported by the National Science Foundation

*SPS Interns: Jackie Michalek
Katherine Zaunbrecher*



**! FULL
COOL!
!**



The SOCK contents are developed in conjunction with the themes from the Absolute Zero and the Conquest of Cold campaign

hand boilers



The hand boiler appears to 'boil.' But, what is really happening? Is the liquid actually boiling? The warmth from the hand on the hand boiler increases the pressure in the glass chamber in two ways; increasing the temperature of the gas and vaporizing more of the liquid. This, subsequently pushes the colored liquid (an ethanol and dye combination) into the upper chamber of the glass bulb. Is this identical to boiling? Let's discuss...!

**Related Topics: Closed Distillation Apparatuses
Compressors
Refrigerators**



Hand boiler – gently grip it (but don't break it) in your palm and watch it bubble!

SOCK in use



Adding the liquid nitrogen to make ice cream



Pouring some liquid nitrogen on the floor brought tons of oohs & aahs



The kids try their hands in ice water, warm water and water at room temperature



"Thanks for the demo - could we have more ice cream, please?"

Tuckahoe Elementary day



Society of Physics Students

What I did for them:

SPS sock website design

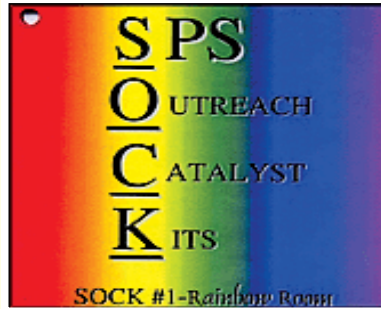
sock poster session – AAPT Summer Meeting

a little thermodynamic research

contributed to sock content development



SOCK 2001



*Sock #1
Rainbow Room*

The properties of light were featured in the first SOCK, which was spearheaded by Mark Lentz (2001 SPS National Intern). Inside the SOCK, SPS Chapters found spectral software CDs, a variety of light sources, discussion ideas and demonstration suggestions. The informative User Guide also gave examples for how the materials could be used and the lessons that could be taught. These kits were modeled after a similar successful outreach effort at an SPS Zone meeting at Northwestern State University of Louisiana which came to be known as "The Rainbow Room".

SOCK includes: Laser
Glow-in-the-dark balls
Circuit board sources
Glowsticks
Mini-Maglight

Contributions by: Mark Lentz (2001 SPS National Intern)



Society of Physics Students

What I did for them:

ACP annual picnic – ‘cool physics’ room

AIP



APS



AAPM

AAPT



Society of Physics Students

What they did for
me:

Coalition for National Science
Funding Capitol Hill reception

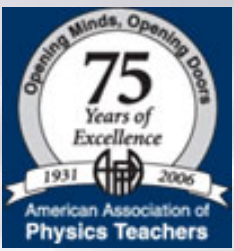




Society of Physics Students

**What they did for
me:**

- reaffirmed my choice for 2nd career
- provided outreach-in-action opportunities
- offered physics teaching advice/guidance



American Association of Physics Teachers

**What I did for
them:**

data collection creative
data conversion development
data organization creative design
create cd's master files



American Association of Physics Teachers
Celebrating 75 Years of Excellence

Introductory Physics Examination

Main Menu

Exams (.doc)

Exams (.pdf)

Answer Keys (.doc)

Answer Keys (.pdf)

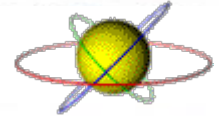
Document Cropping

AAPT Information



American Association of Physics Teachers

PHYSICSBOWL



[Main Menu](#)

[Exams \(.doc\)](#)

[Exams \(.pdf\)](#)

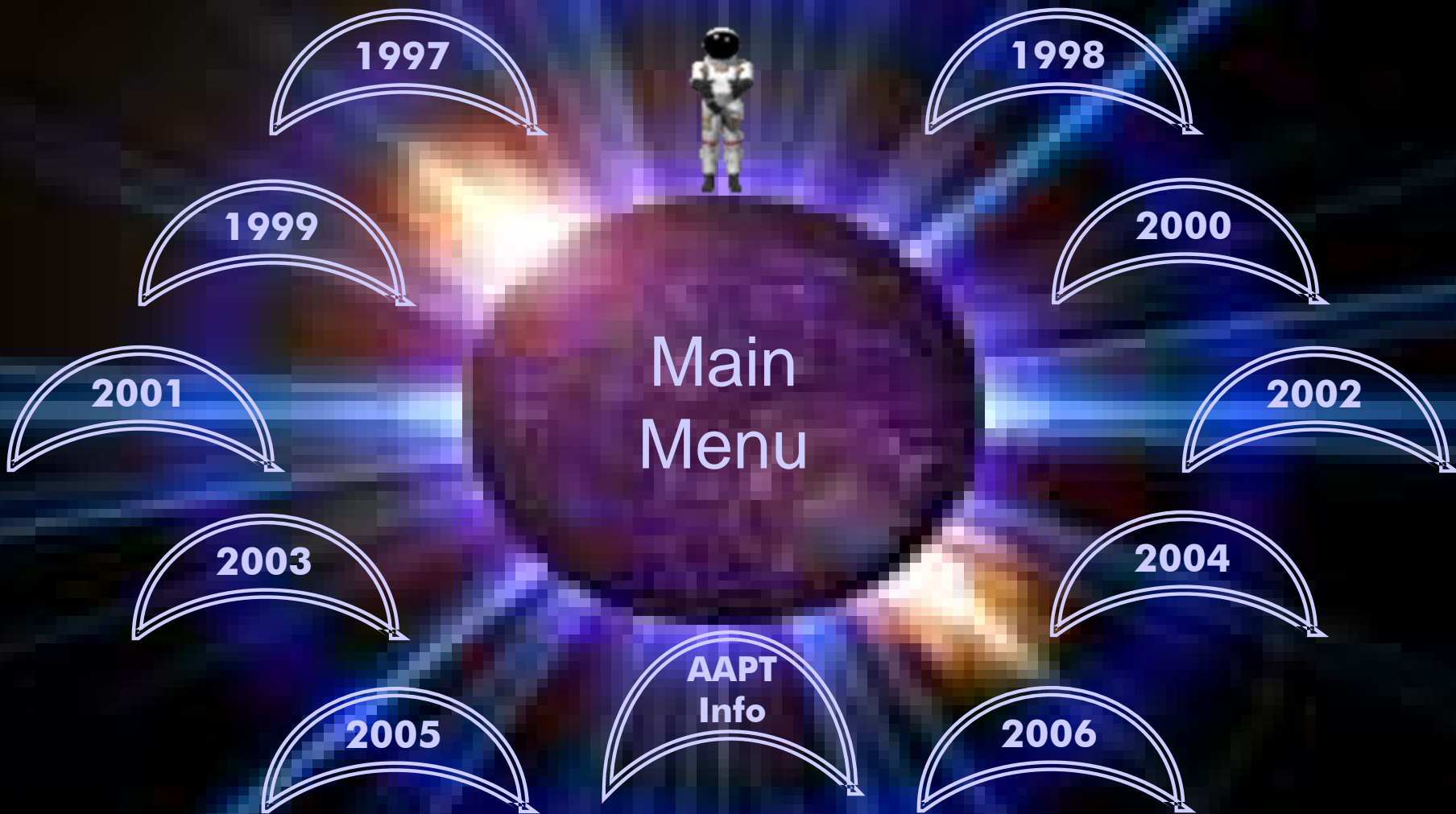
[Answer Keys](#)

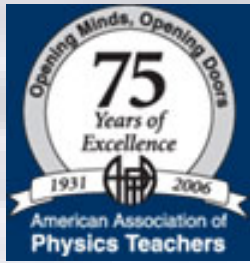
[AAPT Info](#)

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U.S. **Physics Team**



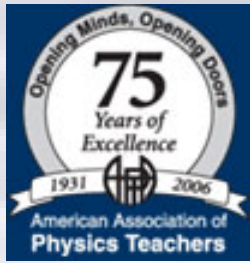


American Association of Physics Teachers

What they did for

me:

- provided lifelong support system
 - boosted my confidence
 - had faith in my development process
 - gave constructive feedback
 - fed me
- accepted me as one of their own



American Association of Physics Teachers

THANK YOU!!

Dr. Bernard
Khoury
Maria Elaina
Khoury

Dr. Warren
Hein
Janet Lane

Fran, Annette, Erwin,
Sylvia,
Natasha, Rogers, Carol,
Rob, S
& the rest of the 5th Floor!



I'll keep
in touch!



Society of Physics Students

Is that all ?
Nooooooo...!





Society of Physics Students

THANK YOU!!

Dr. Gary
Liz White
Dart
Caron

Dr. Jack
Hehn
Doug Dalton

Sonja, Stephanie, Tracy,
Sacha, Lydia, Dr. Stith,
IT dept and the rest of
the 2nd floor!



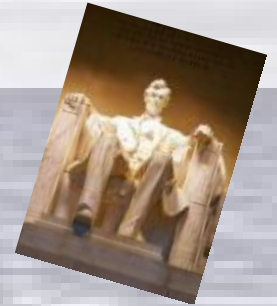
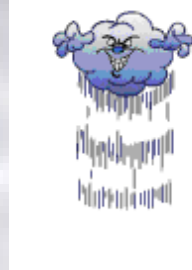
Come
visit me!

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4th of July

