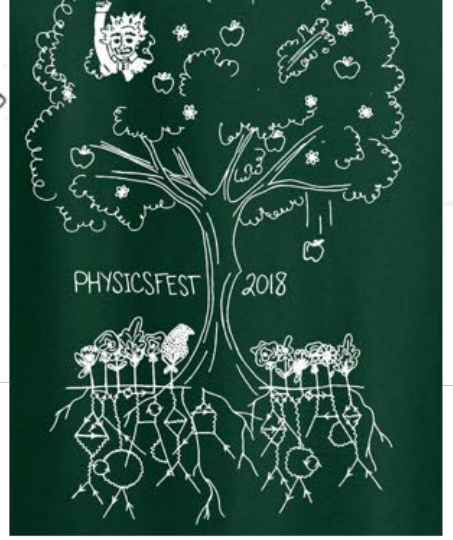
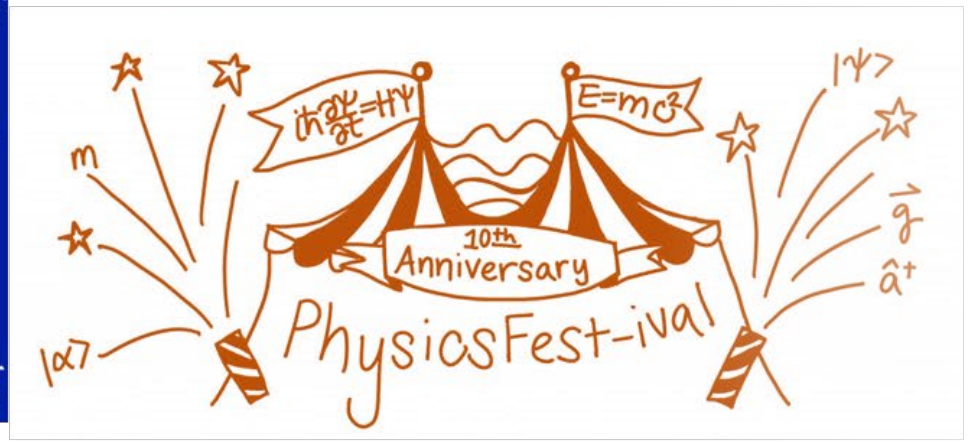
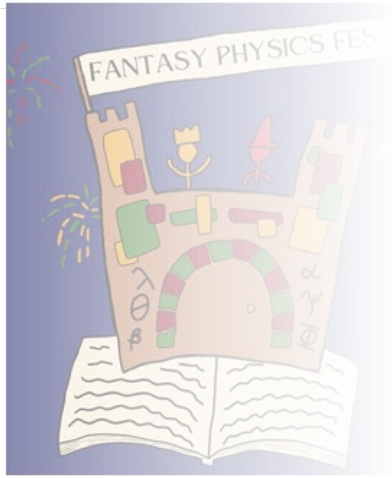




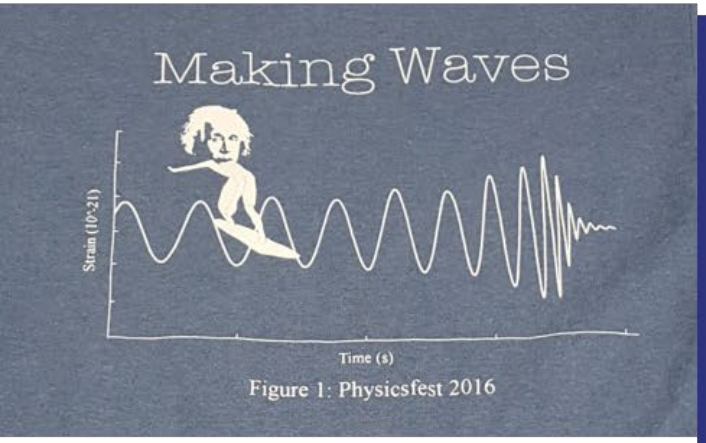














PhysicsFest at William&Mary

Irina Novikova

Physicsfest: what, when and how

- Very brief history
- Main activities
- Organizational details
- Why I think it is important

Origin story: 2010 LaserFest



- Initiated by the grant from Optical Society of America
- Team – 2 professors, 4 undergrads
- Laser shows in schools
- Laser-related videos in Youtube
- Laser themed photocontest
- Laser day at WM

PhysicsFest: open house for WM Physics department since 2011

- Happens annually since 2011 (virtual in 2020, mostly outdoor 2021)
- Scheduled during WM Homecoming weekend
- Organized by local chapter of Society of Physics Students (de facto club for physics majors and friends) (12-15 people)
- Large fraction of the department (faculty, grad students, undergrads) volunteer on the day of the event (50-60 volunteers)
- It is hard to count, but we estimate we see 200-300 visitors on average every year: WM alumnae, students, local community members

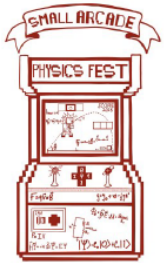
Main event structure

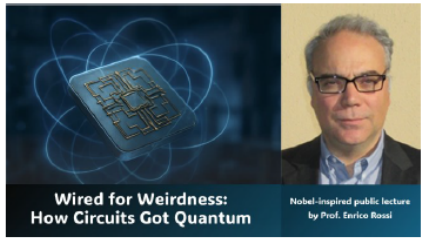
Arcade PhysicsFest schedule

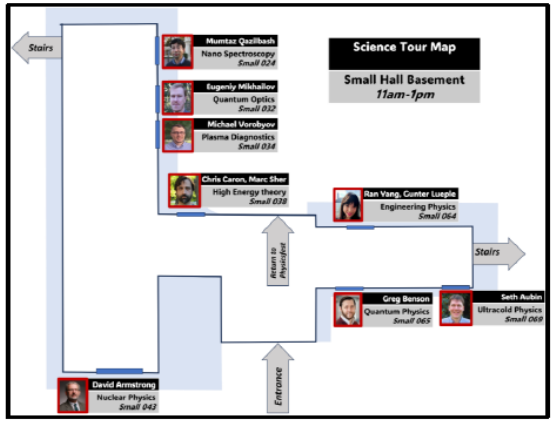
October 18, 2025 10am – 3pm

Small Hall, Home of William&Mary Physics Department

Activity/Event A	Time	Location
Welcome desk Quantum Personalities quiz Prize counter	10am-3pm	Main Lobby
Papa's Freezeria Liquid Nitrogen Ice Cream	10am-3pm	Main Lobby
Animal Crossing Family Play Room (ages from 0 to 99 are welcome)	10am-3pm	Room 122
Interactive Demo Shows	10:30, 11:30am, 12:30, 1:30,2:30pm	Room 110
Laser Un-Death Machine Plasma Orbs	10am-3pm	Room 132
Small Hall Science Tour	11am-1pm	Basement (see map)
Nobel-inspired public lecture by Enrico Rossi	12-12:30pm	Room 111
Undergraduate Research Lightning Talks Competition	1-2:30pm	Room 111





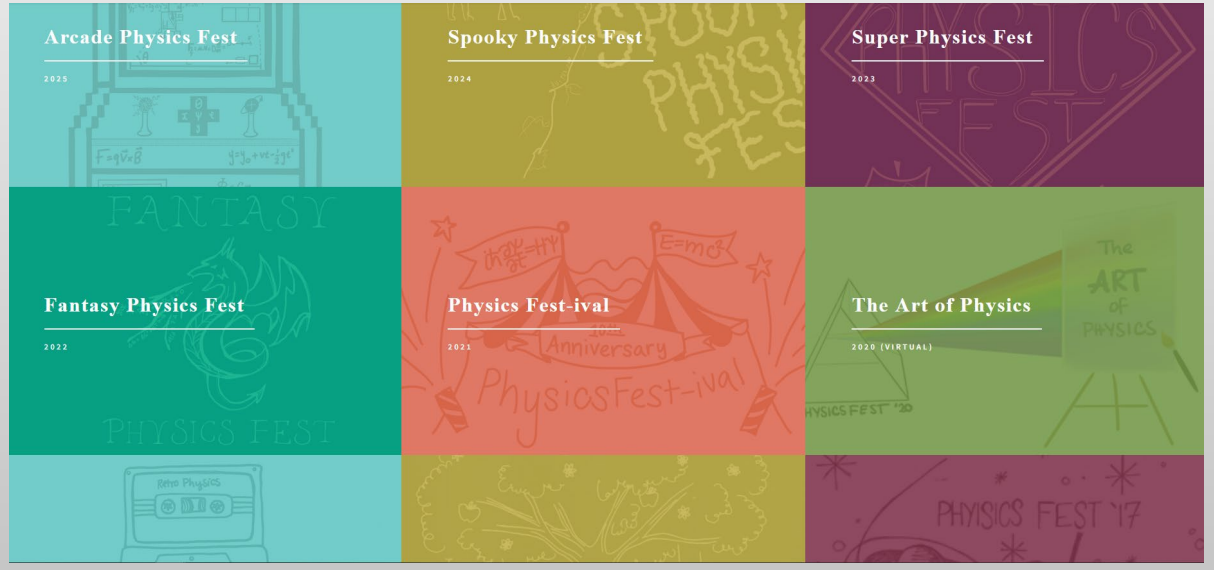


Small Arcade (10am-3pm)	Location
Minecraft Enchantment Table Microwave Liquid Nitrogen Super Smash Bros Mario Kart Hovercraft Math Club+CAMS Club: Pac-Man probabilities Donkey Kong drop challenge Angry Birds Archery Grand Turismo Marble Race	Small Hall, First Floor Corridor
Outdoor PhysicsQuest Stations Frogger oobleck Pool Tetris bubbles MCP Club: Save the Critter Space Invaders Stomp Rockets NOBCCHE: Sugar Inferno Aviation Club: Paper Pilots	Small Hall Front Lawn (weather permitted)

- Liquid Nitrogen Ice cream
- Hands-on "Stations"
- Scavenger hunt (of a sort)
- Demo show (by UG student team)
- Tours of WM research labs
- Nobel-inspired lecture
- Lightning student talks

Each year students select the PhysicsFest theme

- Original artwork for volunteer t-shirts
- Theme-related names for Stations
- Theme-inspired activities





Favorite activities

- Demo show
- Giant Oobleck pool
- Giant bubbles
- Microwave
- Egg drop
- Hovercraft
- Archery
- Play Room (for younger visitors)













For ideas, check out our virtual PhysicsFest:
http://www.physics.wm.edu/PhysicsFest/PhysicsFest2020/

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<u>What works well?</u>

Quick and exciting

Easy to do, hard to break

With hand-on components

Clear resolution/ending



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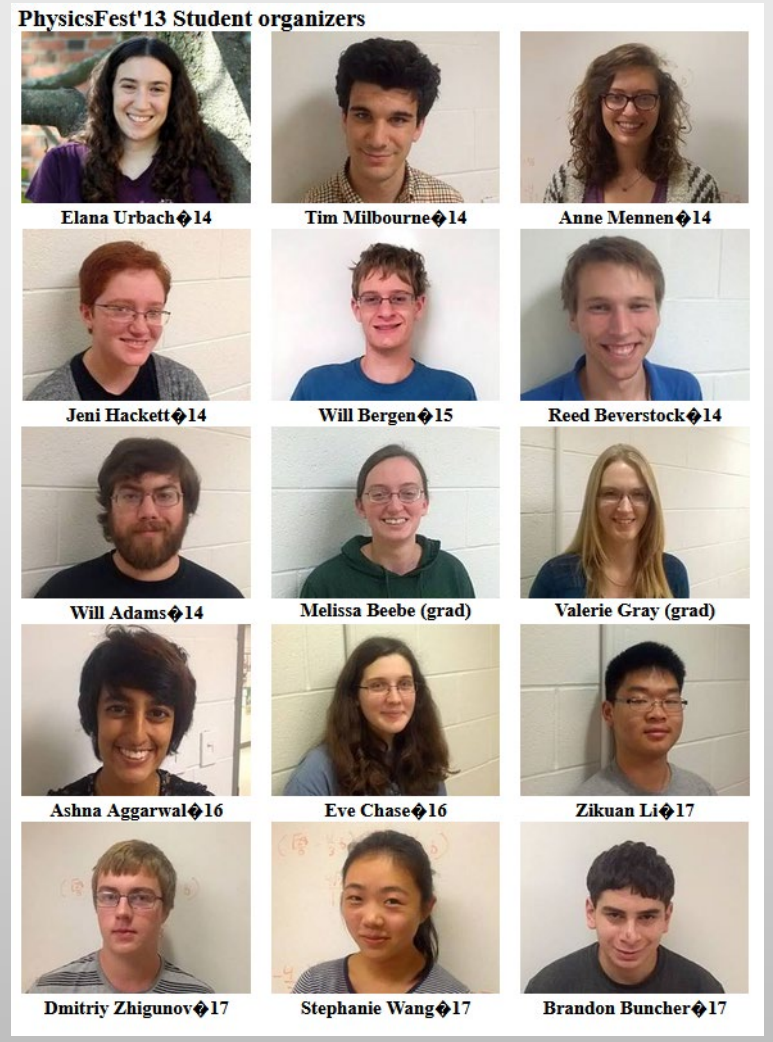
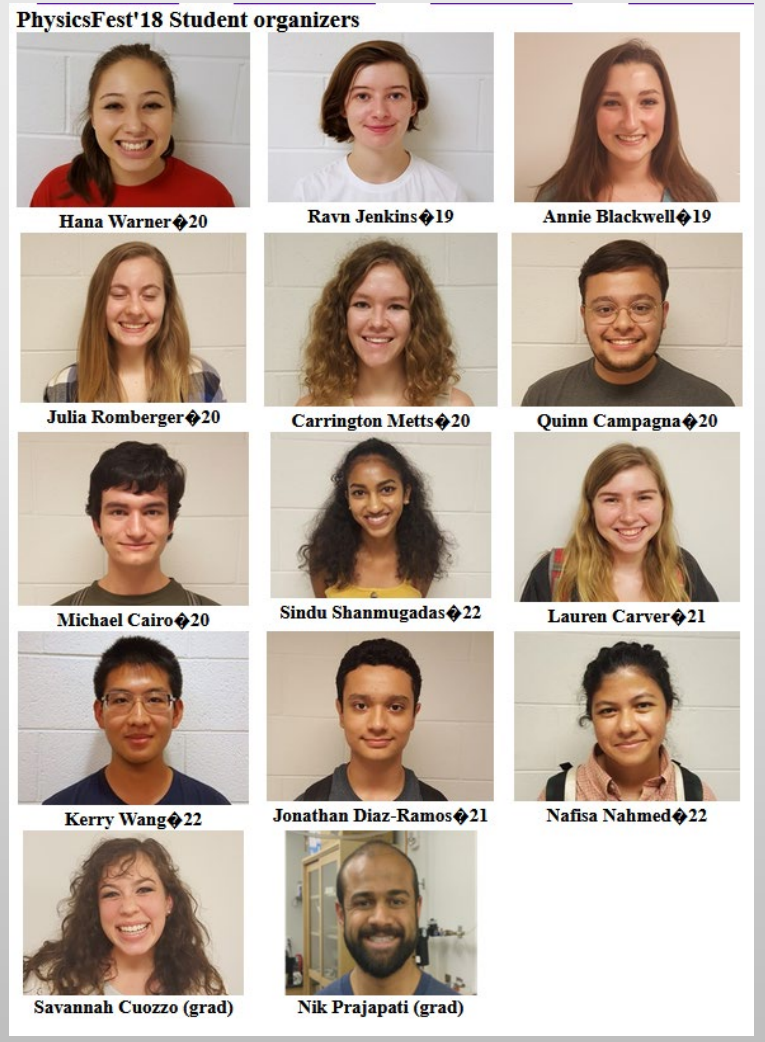
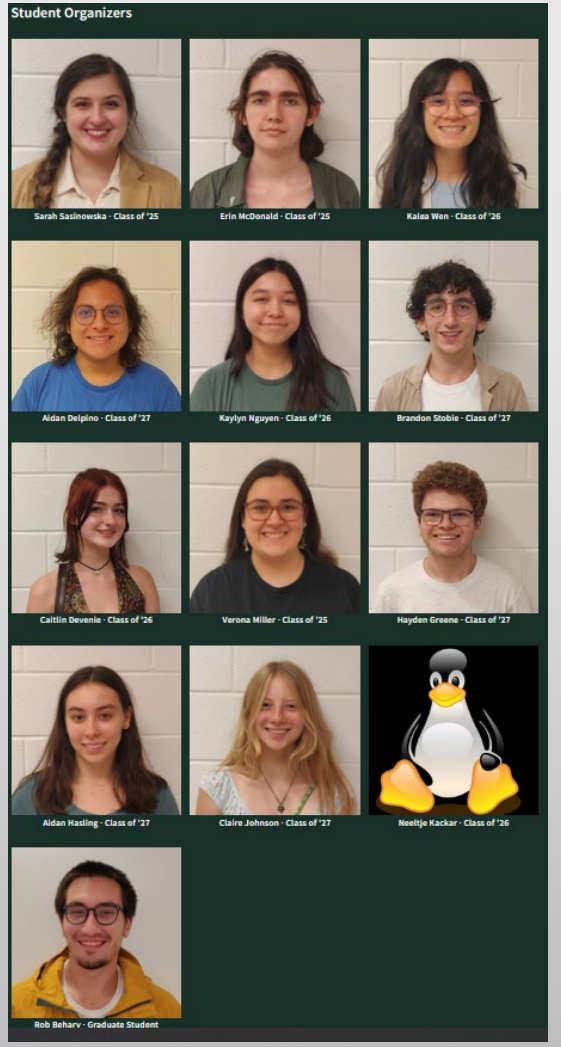
Student organizers

- The organizing committee meets weekly from the start of the year to plan all aspects of the event
- A few (usually senior) students assign volunteers, apply for student organization funding, organize necessary prep work
- The most diverse group of physics students I have seen in physics departments

Student organizers







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- The most diverse group of physics students I have seen in physics departments
- Participation in PhysicsFest as a volunteer and as an organizer creates real sense of belonging and purpose to many students (especially underrepresented groups)

PhysicsFest is growing beyond Physics

In the recent year more student clubs from other departments are participating



William & Mary Chapter of NOBCChE



William & Mary Math Club



William & Mary Aviation Club

Is it worth the time and effort?

- Participating in outreach activities leaves students with deep sense of satisfaction and remind them that physics is fun
- Talking about physics with people who know very little science (but want to learn) is a major moral boost
- Taking charge of some aspects of organization and being responsible gives a strong sense of self-respect and self-importance
- It helps training important career skills (being responsible, being on time, work with others, interact with strangers) that often are lacking in a standard educational curriculum

Beyond PhysicsFest

- Our students visit local school for classroom demonstrations and science-related events
- Such visits are initiated by teachers
- Since students take classes and have busy lives, scheduling may be challenging





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