

Systemic Change in QIS Education

It ain't what you don't know
that gets you into trouble. It's
what you know for sure that
just ain't so.

Mark Twain

www.thequotes.in

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Quantum in the HS Classroom

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Timeline

- 2012—Perimeter Institute & Institute for Quantum Computing
- Workshops/sessions at national, state, and local conferences
- 2016—Teacher workshop/Student Camp
- 2017—PTRA leadership institute focused on quantum
- 2020—NSF funded Conference grant; pivoted virtual
- 2021—proposals submitted for teacher workshops/student camps



Challenges

You don't know what you don't know. (Socrates)

- Chicken vs the egg
 - Doesn't matter, just start
- Inertia
 - Change before you are forced to change
- Integration to curriculum and standards
 - Start with prior knowledge (i.e. waves)
 - Integrate Technology
- Support System
 - Phone a Physics Pfriend
- Confidence
 - Don't overwhelm, limit options
- Reliable content
 - Vet the sources
 - Get it right

Successes

- The options are increasing
- Interest is growing
 - 118 individuals, 6.3 avg. hrs.
- Collaboration efforts
- Funding
- Standards
 - NGSS
 - TEKS

7/6/20	Malus Law	75
7/7/20	Heisenberg	76
7/8/20	Quantum Security	75
7/9/20	Quantum Cryptography	77
11/14/20	WPD 1	12
12/12/20	WPD 2	14
1/16/21	Quantum in HS	25
April 2021	Power of Quantum Computing	

Quantum “Bytes”

- Need more than one “byte”
- Expert vs novice
- Make the first “byte” count
- Balance the meal



On the Horizon

- Camps
- Workshops
- Conferences
- Online resources

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