

# **AAPT Programs & Conferences Tools**

Hello, Eleanor Sayre!

Select a tool:		PAC Tools	Program Chair Tools	Communications	Dashboard	Log Ou
Paper Sort View A	JI					
Select Meeting:S	elect		<b>♦</b> go			
Sacramento - Califorr	nia (SM16 ) / Status	: Inactive				
Abstract List   Sort All						
Approved Topic	s' Abstracts					
Collapsed All View						
Click on abstract titles t	o see more informatio	n				
Adaptaton of Physi	ice Activities to Th	ree Major Com	nonents of NCSS			
			Organizer: Trina Cannon			
concepts we have taug	ht in many forms. Sha this is the time to shar	re the new produre your work and i	ics lessons that have stood the test cts that are clearly designed for the understanding of the NGSS directiv ed: 0	e NGSS curriculum plan. Since		
Order Type Su	ggest Title der	Session Change	e?		Comments	Update
Contributed	NGSSifying Exploratorium Snacks (Activities)	No Yes	d like to change the session			Submit
01 Invited	Integrating NGSS Physics Concepts with Common Core Mathematics and English	No YesSelect here if you would	d like to change the session	· ·		Submit
Committee on Grade Description: Call for Papers: The Ceducation as the leverathis session, we will dis Abstracts Submitted Order Type	CIRTL (Center for the I age point to develop a scuss the impact of CII (# 4)   Abstracts You	ntegration of Resonational STEM fac		a work of 22 leading U.S. resear nd advancing effective, evidenc		
Contributed	der Teaching and	○ No ○ Yes				Submit
Contributed	Research Training: A Graduate Student Perspective		d like to change the session	Į.		A
Contributed	The CIRTL  Network and  Graduate  Professional  Development at  Texas A&M		d like to change the session	· ·		Submit
01 Invited	University The Integration of Research, Teaching and		d like to change the session			Submit

			Learning: Preparation of the Future STEM Faculty			:
02	Invited		New doorways to physics instruction: Blending a MOOC and classroom discussion to train graduate students and postdocs in evidence-based teaching	No Yes Select here if you would like to change the session  O		Submit
Clima	ate Change	2				
		hysics in	Two-Year Colle	ges   Type: Inv/Con   Organizer: Tom Carter		
	iption: or Papers: ]	his sessio	n will review curr	rent research in climate change along with innovative techniques used in the teachir	na of the physics of cl	imate
change	-					
Abstra	acts Submit	tted (# 7	)   Abstracts Yo	ou Have Reviewed: 0		
Order	Туре	Suggest Order	Title	Session Change?	Comments	Update
	Invited		Worldwide Climate Change: Darkest Just	No Yes Select here if you would like to change the session		Submit
			<u>before the</u> <u>Dawn</u>			
	Contributed	d	Climate Change Films for the Physics Classroom	No Yes Select here if you would like to change the session		Submit
	Contributed	i	A selection of climate myths from AAPT posters	<ul> <li>No  Yes</li> <li>Select here if you would like to change the session</li> </ul>	,,	Submit
01	Invited		Climate Physics in the Classroom	No Yes Select here if you would like to change the session		Submit
02	Invited		Climate Change and California: Potential Impacts and Solutions	No Yes Select here if you would like to change the session		Submit
5	Contributed	i	Physics of Climate	<ul> <li>No</li></ul>		Submit
6	Contributed	1	The effect of place attachment on Learning Sustainable Energy at the undergraduate level	No Yes Select here if you would like to change the session		Submit
Cours	se Program			ges   Type: Con   Organizer: Tom Herring		

### **Description:**

Call for Papers: Ideas concerning course and program assessment in physics at all levels. Best practices, avoiding problems, and communicating results of assessments are welcome topics.

Abstracts Submitted (# 0)

#### **Developing Experimental Skills at all Levels** Committee on Laboratories | Type: Inv/Con | Organizer: Mary Ann Klassen **Description:** Call for Papers: One of the principal goals of the physics laboratory is the development of experimental and analytical skills. We expect our students to acquire this expertise in the laboratory, yet often we give no explicit framework in which to do so. This invited/contributed session is a forum to share ways of structuring the physics lab curriculum at all levels to teach these valuable skills to majors and non-majors alike. Abstracts Submitted (# 17) | Abstracts You Have Reviewed: 0 Suggest Title **Order Type** Session Change? Comments Update Order Contributed No Yes <u>Assignment</u> Submit --Select here if you would like to change the session --Sequences for Experimental Skill Development in **Physics** Advanced Lab Contributed No Yes **Scientific** Submit --Select here if you would like to change the session --Reasoning Curriculum Effect on Students' Control of Variables Skills Contributed Design, Build, No Yes Submit Measure!: "Do- --Select here if you would like to change the session --**It-Yourself** Experimental **Atmospheric Physics** Contributed Normal Modes O No Yes Submit --Select here if you would like to change the session -and Symmetry Breaking in single Two-**Dimensional Pendulum** Contributed No () Yes Identifying Submit **Statistical** --Select here if you would like to change the session --Reasoning **Abilities** Necessary for Informed **Decision** Making Contributed Flipped modular • No Yes Submit --Select here if you would like to change the session -skills-based introductory electronics course: firstyear results Contributed No Yes Developing Submit student --Select here if you would like to change the session -attitudes about experimental science and being a scientist Contributed A Pedagogical O No ○ Yes Submit Method for --Select here if you would like to change the session --Advanced Laboratory Writing: Letters Home Project Contributed **Enhancing** No Yes Submit --Select here if you would like to change the session -studentdesigned experiments using a realworld funding scenario

/9/2016			AAPT PaC Tools		
	Contributed	Teaching	No Yes		Submit
		techniques for experimental	Select here if you would like to change the session		
	Contributed	success Assessing	No ○ Yes		Submit
	Contributed	students'	Select here if you would like to change the session	•	Gubiliit
		laboratory skills in introductory			,
		and			9
		intermediate			
	Contributed	physics courses Changes in lab	No ○ Yes		Submit
		curriculum to	Select here if you would like to change the session	0	
		develop lab skills.			
	Contributed	Troubleshooting	No ○ Yes		Submit
		in the	Select here if you would like to change the session	0	
		electronics lab: A study of		//	:
		instructor			
	Contributed	<u>practices</u> <u>From cookbook</u>	No		Submit
		to authentic	Select here if you would like to change the session		
		research - what skills should			;
		they be			
		<u>learning</u>	• N. O.V.		1(2,1)
	Contributed	AP Chemistry Content	No Yes Select here if you would like to change the session		Submit
		Knowledge and			
		Guided Inquiry Lab			
		Instructional			
01	Invited	Strategies  Developing	No		Submit
01	Inviced	scientific	Select here if you would like to change the session	•	Gubiliit
		communication skills using lab			
		notebooks		//	3
02	Invited	Physics	○ No ○ Yes		Submit
		<u>Laboratory</u> Activities for	Select here if you would like to change the session		
		Pre-health and			
		<u>Life Science</u> <u>Students</u>			
Diffe	rent Ways to Flip a	a Classroom			
			Co-Sponsor: Committee on Physics in Two-Year Colleges   Type: Inv/Con   Or	rganizer: Daniel Sanch	ez
Guzm	ian				
	iption:				
			courses that use different technologies and scenarios has created a diversity of co f students and teachers to all these recent scenarios and how are they facing new		
instruc	ction. This sessión trie	_	verview of how teachers have improved their class with the adoption of technologic		
	io for future actions.	`			
ADST	acts Submitted (# 0	,			
Do Tr	ry This At Home!				
	-	I Type: Inv/Con	Organizer: Stephen Irons		
	inttee on Apparatus	, 1 17 PC: 111V/COII	1 - gameer occpricit from		
Call fo	or Papers: We seek to		safe, interesting, and fun activities and demonstrations that anyone can try at ho		
			ng environment (hands-on homework, distance learning, etc.) Presentations can d nmon household items or easily available supplies. We are interested in materials		
		_	bu Have Reviewed: 0	.o. an grade levels alla	abilities.
Orde	r Type Sugges	t Title	Session Change?	Comments	Update
Jiuei	Order			Jonnielles	
	Contributed	Try This Experiment	No YesSelect here if you would like to change the session	0	Submit
		Pight Nowl			

	Contribute	ed	<u>Improving</u>	No ○ Yes		Submit
			<u>Student</u>	Select here if you would like to change the session		
			<u>Involvement</u> <u>Outside of</u>		/	
			Class with			
			Family Fizx Fun			
			<u>&amp; Everyday</u> <a href="mailto:Physics">Physics</a>			
			Calculations			
01	Invited		From Online	○ No ○ Yes		Submit
			Stunt to Science	Select here if you would like to change the session		
			<u>Literacy</u>			
02	Invited		<u>Get Your</u>	○ No ○ Yes		Submit
			Science On	Select here if you would like to change the session		
			with the Little Shop of Physics			
03	Invited		Physics beyond			Submit
			the formulas:	Select here if you would like to change the session		
			Creating and sharing			
			<u>demonstrations</u>			1
Educ	ational H	acking: 1	Repurposing T	echnology for Teaching		
		education	iai rechnologies	Co-Sponsor: Committee on Apparatus   Type: Con   Organizer: Jeff Groff		
	iption:	This soci	on will ovolore inn	novative ways that physics instructors and students are modifying, reconfiguring, re	furhiching and/or ron	urnocina
	-			ology's usefullness for the teaching and learning of physics.	rarbisting, and/or rep	ui posii ig
	acts Subm					
Absti	acts Subin	ittea (# t	,,			
Effec	tive Pract	ices in E	ducational Tec	chnologies		
				chnologies    Type: Con   Organizer: Andy Gavrin		
Com						
Com Desci Call fe	mittee on l iption: or Papers:	Education Are you u	al Technologies	Type: Con   Organizer: Andy Gavrin		tails. This
Com Desci Call for session	mittee on la ription: or Papers: n, featured	Are you u	sing technologies sing technology in	Type: Con   Organizer: Andy Gavrin		tails. This
Com Desci Call for session	mittee on la ription: or Papers: n, featured	Are you u	sing technologies sing technology in	Type: Con   Organizer: Andy Gavrin		tails. This
Com Desci Call for session Abstr	mittee on legition: or Papers: n, featured acts Subm	Are you u every mee	sing technologies sing technology in eting, always has 17)   Abstracts \	Type: Con   Organizer: Andy Gavrin  an innovative way in your class or in your teaching? If so, consider giving a contrib an interesting mix of talks, covering a variety of topics pertinent to the use of education.  You Have Reviewed: 0	ational technology.	
Com Desci Call for session Abstr	mittee on la ription: or Papers: n, featured	Are you u	sing technologies sing technology in eting, always has 17)   Abstracts \	Type: Con   Organizer: Andy Gavrin		tails. This Update
Com Desci Call for session Abstr	mittee on legition: or Papers: n, featured acts Subm	Are you u every med itted (# 1	sing technology in eting, always has 17)   Abstracts \text{it Title}  Smartphone	Type: Con   Organizer: Andy Gavrin  an innovative way in your class or in your teaching? If so, consider giving a contrib an interesting mix of talks, covering a variety of topics pertinent to the use of education of the second of the sec	ational technology.	
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Com Desci Call for session Abstr	r Type	Are you u every med itted (# 1	sing technology in eting, always has 1.7)   Abstracts 1.7   Abstracts 1.7   Title  Smartphone and Tablet Physics: Unanswered Questions in	Type: Con   Organizer: Andy Gavrin  an innovative way in your class or in your teaching? If so, consider giving a contrib an interesting mix of talks, covering a variety of topics pertinent to the use of education of the second of the sec	ational technology.	Update
Com Desci Call for session Abstr	r Type	Are you u every med itted (# 1	sing technology in eting, always has 1.7)   Abstracts 1.7   Abstracts 1.7   Title  Smartphone and Tablet Physics: Unanswered Questions in Educational	Type: Con   Organizer: Andy Gavrin  an innovative way in your class or in your teaching? If so, consider giving a contrib an interesting mix of talks, covering a variety of topics pertinent to the use of education of the second of the sec	ational technology.	Update
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Com Desci Call for session Abstr	r Type	Are you u every med itted (# 1  Sugges Order	sing technology in eting, always has 1.7)   Abstracts 1.7   Abstracts 1.7   Title  Smartphone and Tablet Physics: Unanswered Questions in Educational	Type: Con   Organizer: Andy Gavrin  an innovative way in your class or in your teaching? If so, consider giving a contrib an interesting mix of talks, covering a variety of topics pertinent to the use of education of the second of the sec	ational technology.	Update
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Com Desci Call for session Abstr	mittee on I ription: or Papers: n, featured acts Subm r Type	Are you u every med itted (# 1  Sugges Order ed	sing technology in eting, always has to the tit.  Title  Smartphone and Tablet Physics: Unanswered Questions in Educational Technology Two Visualizations of Momentum Conservation in Introductory	Type: Con   Organizer: Andy Gavrin  an innovative way in your class or in your teaching? If so, consider giving a contrib an interesting mix of talks, covering a variety of topics pertinent to the use of education of the session Change?  Session Change?  No Yes  Select here if you would like to change the session	ational technology.	Update Submit
Com Desci Call for session Abstr	r Type  Contribute	Are you u every med itted (# 1  Sugges Order ed	sing technology in eting, always has to the time, always has to the time. Title  Smartphone and Tablet Physics: Unanswered Questions in Educational Technology Two Visualizations of Momentum Conservation in Introductory Physics Vignette Studio Software for	Type: Con   Organizer: Andy Gavrin  an innovative way in your class or in your teaching? If so, consider giving a contrib an interesting mix of talks, covering a variety of topics pertinent to the use of education of the session Change?  Session Change?  No Yes  Select here if you would like to change the session	ational technology.	Update Submit Submit
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Com Desci Call for session Abstr	r Type  Contribute	Are you u every med itted (# 1  Sugges Order ed	sing technology in eting, always has to the time, always has to the time. Title  Smartphone and Tablet Physics: Unanswered Questions in Educational Technology Two Visualizations of Momentum Conservation in Introductory Physics Vignette Studio Software for	Type: Con   Organizer: Andy Gavrin  an innovative way in your class or in your teaching? If so, consider giving a contrib an interesting mix of talks, covering a variety of topics pertinent to the use of education of the session Change?  Session Change?  No Yes  Select here if you would like to change the session	ational technology.	Update Submit Submit
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Com Desci Call for session Abstr	r Type  Contribute	Are you u every med itted (# 1  Sugges Order  ed	sing technology in eting, always has to place the series of the series o	Type: Con   Organizer: Andy Gavrin  In an innovative way in your class or in your teaching? If so, consider giving a contribution interesting mix of talks, covering a variety of topics pertinent to the use of education of the second of the	ational technology.	Update Submit Submit
Com Desci Call for session Abstr	r Type  Contribute	Are you u every med itted (# 1  Sugges Order  ed	sing technology in eting, always has to place to	Type: Con   Organizer: Andy Gavrin  an innovative way in your class or in your teaching? If so, consider giving a contrit an interesting mix of talks, covering a variety of topics pertinent to the use of education.  You Have Reviewed: 0  Session Change?  No Yes  Select here if you would like to change the session  No Yes	ational technology.	Update Submit Submit
Com Desci Call for session Abstr	r Type  Contribute	Are you u every med itted (# 1  Sugges Order  ed	sing technology in eting, always has to place the series of the series o	Type: Con   Organizer: Andy Gavrin  an innovative way in your class or in your teaching? If so, consider giving a contrit an interesting mix of talks, covering a variety of topics pertinent to the use of education.  You Have Reviewed: 0  Session Change?  No Yes  Select here if you would like to change the session  No Yes	ational technology.	Update Submit Submit
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Com Desci Call for session Abstr	r Type  Contribute	Are you u every med itted (# 1  Sugges Order ed	sing technology in eting, always has to the time. Title  Smartphone and Tablet Physics: Unanswered Questions in Educational Technology. Two Visualizations of Momentum Conservation in Introductory. Physics: Vignette Studio Software for Interactive Online Teaching* Investigating Students', Usage Pattern of Web-based Computer	Type: Con   Organizer: Andy Gavrin  an innovative way in your class or in your teaching? If so, consider giving a contrit an interesting mix of talks, covering a variety of topics pertinent to the use of education.  You Have Reviewed: 0  Session Change?  No Yes  Select here if you would like to change the session  No Yes	ational technology.	Update Submit Submit

	<u>Web-based</u> <u>Technologies in</u>		
	<u>Introductory</u> <u>Physics</u>		
Contributed	Creating	No ○ Yes	Submit
	Learning Communities with Web	Select here if you would like to change the session	
	Technology in Professional Development Programs		
Contributed	<u>Usage of Web-</u> <u>based Personal</u> <u>Response</u>	No YesSelect here if you would like to change the session	Submit
Contributed	System  Model Making and Model	● No ○ Yes Select here if you would like to change the session	 Submit
	Breaking with Direct Measurement Video		
Contributed	<u>Let's Code</u> <u>Physics: A</u> <u>Playful</u> Approach to	No Yes Select here if you would like to change the session	Submit
	Learning Computational Physics		
Contributed	Update on the Development of Distance Learning Labs	No Yes Select here if you would like to change the session	Submit
	for Introductory Physics Using IOLab		
Contributed	An Interactive Video Vignette on Fall Rates for Different Masses	No Yes Select here if you would like to change the session	Submit
Contributed	Space Taxi paradigm for freebody analysis	No Yes Select here if you would like to change the session	Submit
Contributed	Teaching Physics in a 3D Immersive World	<ul> <li>No</li></ul>	Submit
Contributed	iTunes U and iBooks: Pathway to OER	No Yes Select here if you would like to change the session	Submit
Contributed	Personalized learning in Physics with Tabletkoulu learning	No Yes Select here if you would like to change the session	Submit
Contributed	environment  Lab Away From  Lab: The  IOLab's  Potential for	No Yes Select here if you would like to change the session	Submit
	Avoiding the Space and Equipment Constraints of The traditional General Physics Lab		
Contributed	Exploring JITT with Traditional	No Yes Select here if you would like to change the session	Submit

> <u>Classroom and</u> <u>Modern</u> **Technologies**

Favor	rite TPT A	rticles				
Comn	nittee on t	he Intere	sts of Senior Pl	nysicists   Type: Inv/Con   Organizer: Karl Mamola		
Descri	iption:					
Call fo	r Papers:	This sessio	n will call attenti	on to especially useful and interesting materials that have appeared in the pages of	The Physics Teacher.	
Abstra	acts Submi	tted (# 8	)   Abstracts Yo	ou Have Reviewed: 0		
	_	Suggest	t			
Order	Туре	Order	Title	Session Change?	Comments	Update
01	Invited		TPT FavoritesOverall trends	No Yes Select here if you would like to change the session		Submit
			and individual	Culcut not a year notate mic to change the coccuta.	,	
			<u>impact</u>			4
02	Invited		Favorites from The Physics	No  Yes Select here if you would like to change the session		Submit
			<u>Teacher</u>		,	
3	Contribute	d	Coming Full	No Vos		Submit
	Continuate	u	Circle: TPT for	No Yes Select here if you would like to change the session  ©		Submit
			All Phases of			
4	Contribute	d	<u>Teaching</u> Ron Edge :	No ∩ Yes	//	Submit
	00110115410	<u> </u>	String and	Select here if you would like to change the session		
			Sticky Tape		,	
5	Contribute	d	The Sand	No ○ Yes		Submit
			<u>Pendulum</u>	Select here if you would like to change the session	1	
					1.	
6	Contribute	d	<u>Why</u>	No  Yes Select here if you would like to change the session		Submit
				Coloca field if you mode manage the decision.	,	
7	Contribute	d	<u>Memorable</u>	No O Voc	11	Submit
,	Continuate	u	<u>Gems</u>	● No Yes Select here if you would like to change the session	J	Submit
8	Contribute	d	EQUATIONS AS	○ No ○ Yes	//	Submit
			<u>DELIGHTFUL</u>	Select here if you would like to change the session	J	
			GUIDES TO THINKING			
Innov	vation Sha	re-a-Th	on for Astrono	omy Education		
Comn	nittee on S	pace Scie	ence and Astron	nomy   Type: Con   Organizer: Joe Heafner		
Descri	iption:					
				minutes each to share a demo, an activity, a lab, or other teaching component for i		
				will be time for the audience to ask questions, experiment with equipment, and disending on the number of presenters.	cuss the shared infort	mation
Abstra	acts Submi	tted (# 0	)			
Innov	vative Use	s of Tech	nnology Enabl	ed Spaces		
Comn	nittee on E	ducation	al Technologies	:   Type: Inv/Con   Organizer: Ben Van Dusen		
	iption:					
	-			el uses of technology within classrooms and their impacts on students' outcomes.		
Abstra	acts Submi	tted (# 4	)   Abstracts Yo	ou Have Reviewed: 0		
Order	Туре	Suggest	t Title	Session Change?	Comments	Update

Have to Be "Black Boxes"

Smartphones in No Yes
Labs Don't --Select here if you would like to change the session --

Order

Contributed

Submit

3/9

0/2016						
	Contribu	uted	The Ubiquitous			Submit
			<u>Use of "IO-Lab"</u> <u>Digital Sensors</u>	Gelect riere if you would line to change the session		
			in Secondary Physics			
01	Invited		Appreciating	No ○ Yes		Submit
			the "space" in	Select here if you would like to change the session	9	
			technology enabled spaces			
02	Invited		Leveraging	No ○ Yes		Submit
			"Teaching-to-	Select here if you would like to change the session		
			<u>Learn" with</u> <u>Technology to</u>			
			Enhance			
			<u>Student</u> <u>Learning</u>			
Inno	vative U	Jses of T	Technology Enabl	ed Students		
				Type: Con   Organizer: Larry Engelhardt		
	ription:	II Luucu	cional recimologics	Type: con   organizer: carry Engenhard		
	•	s: Our st	tudents have a differe	nt set of skills than we had at that age. They know how to operate their smart pho	nes, use social media	(Twitter,
				ell as other skills that we might not have heard of yet! So how do we harness these	_	d of evil??
				d/or effective ways that have been developed to make use of students' prowess wit	th technology.	
Abst	racts Sub	mitted	(# 0)			
Inte	ractive I	ecture	<b>Demonstrations:</b>	What's New? ILDs Using Clickers and Video Analysis		
Com	mittee o	n Resea	rch in Physics Educ	ation   Co-Sponsor: Committee on Educational Technologies   Type: Inv/Con   O	<b>Organizer:</b> Davied Sko	loff
Desc	ription:					
Call f	or Paper	s: We in	vite papers on creatio	n, presentation and research on Interactive Lecture Demonstrations at the college	and high school levels	
Ahsti	racts Sub	mitted	(# 2)   Abstracts Yo	ou Have Reviewed: 0		
71000			(,			
		Suggest 1				
	r Type	Suggest Order		Session Change?	Comments	Update
	r Type	Suggest Order	t Title  Interactive Lecture	Session Change?  • No Yes	Comments	<b>Update</b> Submit
Orde	r Type	Suggest Order	Title  Interactive Lecture Demonstrations:	Session Change?	Comments	
Orde	r Type	Suggest Order	Interactive Lecture Demonstrations: Active Learning in Lecture Including	Session Change?  • No Yes	Comments	
Orde	r Type	Suggest Order	Interactive Lecture Demonstrations: Active Learning in Lecture Including Clickers and Video	Session Change?  • No Yes	Comments	
Orde	e <b>r Type</b> Invited	Suggest Order	Interactive Lecture Demonstrations: Active Learning in Lecture Including	Session Change?  • No Yes	Comments	
<b>Orde</b> 01	r Type	Suggest Order	Interactive Lecture Demonstrations: Active Learning in Lecture Including Clickers and Video Analysis ILDs and Other Strategies that	Session Change?  No Yes Select here if you would like to change the session	Comments	Submit
<b>Orde</b> 01	e <b>r Type</b> Invited	Suggest Order	Interactive Lecture Demonstrations: Active Learning in Lecture Including Clickers and Video Analysis ILDs and Other Strategies that Enable Students to	Session Change?  No Yes  No Yes  No Yes	Comments	Submit
<b>Orde</b> 01	e <b>r Type</b> Invited	Suggest Order	Interactive Lecture Demonstrations: Active Learning in Lecture Including Clickers and Video Analysis ILDs and Other Strategies that	Session Change?  No Yes  No Yes  No Yes	Comments	Submit
<b>Orde</b> 01	e <b>r Type</b> Invited	Suggest Order	Interactive Lecture Demonstrations: Active Learning in Lecture Including Clickers and Video Analysis ILDs and Other Strategies that Enable Students to Understand	Session Change?  No Yes  No Yes  No Yes	Comments	Submit
<b>Orde</b> 01	Invited  Invited		Interactive Lecture Demonstrations: Active Learning in Lecture Including Clickers and Video Analysis ILDs and Other Strategies that Enable Students to Understand	Session Change?  No Yes  Select here if you would like to change the session	Comments	Submit
01 02 Lab	Invited  Invited	nes Foci	Interactive Lecture Demonstrations: Active Learning in Lecture Including Clickers and Video Analysis ILDs and Other Strategies that Enable Students to Understand Newton's Third Law  us Area 3: Modeling	Session Change?  No Yes Select here if you would like to change the session  No Yes Select here if you would like to change the session	Comments	Submit
Orde 01 02 Lab	Invited  Invited	nes Foci	Interactive Lecture Demonstrations: Active Learning in Lecture Including Clickers and Video Analysis ILDs and Other Strategies that Enable Students to Understand Newton's Third Law  us Area 3: Modeling	Session Change?  No Yes  Select here if you would like to change the session	Comments	Submit
Orde 01 02 Lab Com Desc	Invited  Invited  Guideline  mittee oription:	nes Foca	Interactive Lecture Demonstrations: Active Learning in Lecture Including Clickers and Video Analysis ILDs and Other Strategies that Enable Students to Understand Newton's Third Law  us Area 3: Modelinatories   Type: Inv/C	Session Change?  No Yes Select here if you would like to change the session  No Yes Select here if you would like to change the session		Submit
Orde 01 02 Lab Com Desc Call f the la	Invited  Invited  Guidelir mittee oription: for Paper boratory,	nes Foci n Labora s: Accord understa	Interactive Lecture Demonstrations: Active Learning in Lecture Including Clickers and Video Analysis ILDs and Other Strategies that Enable Students to Understand Newton's Third Law  us Area 3: Modelinatories   Type: Inv/C	Session Change?  No Yes  Select here if you would like to change the session  No Yes  Select here if you would like to change the session  Organizer: Joe Kozminski	tions of real systems s	Submit Submit
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Orde 01 02 Lab Com Desc Call f the la your	Invited  Guidelir mittee o ription: for Paper boratory, ab/lab cu	nes Foci n Labora s: Accord understa rriculum?	Interactive Lecture Demonstrations: Active Learning in Lecture Including Clickers and Video Analysis ILDs and Other Strategies that Enable Students to Understand Newton's Third Law  us Area 3: Modelinatories   Type: Inv/Cling to the AAPT Laborand their limitations are (# 3)   Abstracts You	Session Change?  No Yes  Select here if you would like to change the session  No Yes  Select here if you would like to change the session  Organizer: Joe Kozminski  Paratory Recommendations document, students should "develop abstract representations and the session in t	tions of real systems s	Submit Submit
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Orde  O1  O2  Lab  Com  Desc Call f the la your  Abstr  Orde	Invited  Invited  Guidelir  mittee or  ription: for Paper boratory, lab/lab curacts Sub	nes Focu n Labora s: Accord understa rriculum? omitted	Interactive Lecture Demonstrations: Active Learning in Lecture Including Clickers and Video Analysis ILDs and Other Strategies that Enable Students to Understand Newton's Third Law  us Area 3: Modelinatories   Type: Inv/O	Session Change?  No Yes  Select here if you would like to change the session  No Yes  Select here if you would like to change the session  Residence here if you would like to change the session  Residence here if you would like to change the session  Residence here if you would like to change the session  Residence here if you would like to change the session  Session Change?  No Yes  Session Change the session	tions of real systems s	Submit  Submit  Submit  Update  Submit
Orde  01  02  Lab  Com  Desc Call f the la your  Abstr	Invited  Invited  Guidelir mittee oription: for Paper boratory, ab/lab cu racts Sub	nes Focu n Labora s: Accord understa rriculum? omitted	Interactive Lecture Demonstrations: Active Learning in Lecture Including Clickers and Video Analysis ILDs and Other Strategies that Enable Students to Understand Newton's Third Law  us Area 3: Modelinatories   Type: Inv/O	Session Change?  No Yes  Select here if you would like to change the session—  No Yes  Select here if you would like to change the session—  Organizer: Joe Kozminski  Paratory Recommendations document, students should "develop abstract representand uncertainties, and make predictions using models." How do students develop are but Have Reviewed: 0  Session Change?  No Yes	tions of real systems s	Submit  Submit  tudied in e skills in

,,2010				Mai i i ac 100is		_
			<u>Lab Courses</u>			
02	Invited		Modeling the	No ○ Yes	/	Submit
			Physical World	Select here if you would like to change the session	9	
			<u>with RealTime</u> <u>Physics</u>			4
Lead	ership	and Oth	er Skills in the Ui	ndergraduate Curriculum		
				: Inv/Posters   Organizer: Juan Burciaga		
	ription:			. a.v., rostoro   Grammatti saari saatisaga		
	-	rs: Colleg	es are being asked to	incorporate leadership and other "21st century" skills into the curriculum. How do	we incorporate these	skills into
	-		of the classroom. What and other 21st cent	it are the pedagogical challenges? What skills can we introduce and develop? Ple	ase contribute a poste	er on
				ou Have Reviewed: 0		
Absti	acts 5a	Dillicted (	(# 0)   Abstracts 1	a nave reviewed. •		
Orde	r Type	Suggest	Title	Session Change?	Comments	Update
	Poster	Order	Leadership	No  Yes		Submit
	1 03001		Development in a	Select here if you would like to change the session	9	Cability
			Workshop Environment			
	Poster		Motivation and	No ∩ Yes		Submit
			Learning Strategies		3	
			Adaptation and Validation of an			
			Instrument			
01	Invited		Strategies for	No Yes Select here if you would like to change the session	<u>a</u>	Submit
			Gender Equity in STEM	Outdook have in you would like to origingly the session	3	
0.2	Tovitod		Ctudente l'endine	■ No ○ Voc		Submit
02	Invited		Students Leading for Change:	No Yes Select here if you would like to change the session	3	Submit
			Collaboration			
			Outside the Classroom			∅
03	Invited		A Fleet of Ships -	○ No ○ Yes		Submit
			From Scholarship to Entrepreneurship to	Select here if you would like to change the session	3	
			<u>Leadership</u>			6
04	Invited		Educating the	No Yes  Calculations if you would like to absence the coording.		Submit
			Whole Student	Select here if you would like to change the session	3	
						4
Mod	ern Phy	vsics De	monstrations and	Labs		
Com	mittee o	n Appar	atus   Type: Inv/Cor	n   <b>Organizer:</b> Roger Key		
	ription:					
	-			eveal new and exciting ways to illustrate modern physics principles are encouraged	1.	
Abstr	acts Su	bmittea (	(# 5)   Abstracts Yo	ou Have Reviewed: 0		
Orde	r Type	Sug	gest Title	Session Change?	Comments	Update
0.00		Ora	ег			
	Contrib	outed	The teaching research of 2-	No Yes Select here if you would like to change the session	3	Submit
			dimensional			
			standing waves on metal plates			6
	Contrib	outed	Two-photon	No ○ Yes		Submit
			<u>momentum</u> <u>entanglement</u>	Select here if you would like to change the session	9	
			<u>and</u>			4
0.1	T		<u>interference</u>	O No O Voc		
01	Invited		<u>Demonstrating</u> <u>the</u>	No Yes Select here if you would like to change the session	3	Submit
			Photoelectric			
			<u>Effect in a</u> <u>simple and</u>			<u> </u>

9/2016				AAPT PaC Tools		
			comprehensive			
			way by using an antique			
			photo cell and			
			<u>LabVIEW</u>			
			<u>virtual</u> instrumentation			
02	Invited		<u>Chaotic</u>	.  O No ∩ Yes		Submit
			Oscillation of a	Select here if you would like to change the session		
			Magnetic Dipole			
03	Invited		Thin Film	No ∩ Yes	//	Submit
			Tunneling in an	Select here if you would like to change the session		
			SIN Junction			
					//	
Onlir	ne Hybrid	l				
Com	mittee on	Physics in	n Two-Year Colle	eges   Type: Inv/Con   Organizer: Betsy Chesnutt		
Descr	iption:					
Call fo	or Papers:	To meet t	the needs of a dive	erse student population, many colleges and universities are adopting an online hybr	rid course format wher	e some
			ivered online and	some face to face. This session will explore the successes and challenges physics in	structors have had in	creating
	hybrid cou					
Abstr	acts Subm	itted (# :	3)   Abstracts Yo	ou Have Reviewed: 0		
Orde	r Type	Sugges	st Title	Session Change?	Comments	Update
Orac		Order		- · · · - · ·	Comments	
	Contribute	ed	<u>Teaching</u> <u>Introductory</u>	No Yes Select here if you would like to change the session		Submit
			Physics Labs in			
			a completely			
			Online Environment			
01	Invited		Technology	No ∩ Yes		Submit
	Inviced		Enhanced	Select here if you would like to change the session		Cubilin
			<u>Learning: UT</u>			
			Knoxville's			
			engage Engineering			
			<u>Fundamentals</u>			
			<u>Program</u>			
02	Invited		<u>Using HTML5</u> <u>simulations to</u>	No Yes Select here if you would like to change the session		Submit
			teach	Colobs find it you floud into to change the occolor		
			conceptual			
			physical			
			<u>science</u>			
PER	Findings	Related	To Latin Amer	ican Students		
		Internati	onal Physics Edu	ication   Co-Sponsor: Committee on Research in Physics Education   Type: Inv/C	Con   <b>Organizer:</b> Caro	lina
Alvar						
	iption: or Paners:	This sessi	on is intended to	share Physics Education Research implementation results, having a special focus or	showing the effect or	Latin
	can student			and only one Education research impromentation results, nating a special result of	. showing the enece of	. 200
Abstr	acts Subm	itted (#	2)   Abstracts Yo	ou Have Reviewed: 0		
	c.					
Orde	r Type O	iggest rder	tle	Session Change?	Comments	Update
01	Invited	<u>Th</u>	e multi-faceted	No ○ Yes		Submit
		· · · · · · · · · · · · · · · · · · ·	ture of building	Select here if you would like to change the session		
			ccessful learning mmunities for the		2	
		· · · · · · · · · · · · · · · · · · ·	ccess of Hispanic			•
		<u>stı</u>	<u>udents</u>			
02	Invited		ysics Education	No Yes  Calcut has if you would like to change the assets.		Submit
			search: The case Latin America	Select here if you would like to change the session	•	
		<u> 51</u>				

#### **Particle Physics Investigations by Students** Committee on Physics in High Schools | Co-Sponsor: Committee on Physics in Two-Year Colleges | Type: Inv/Con | Organizer: Kenneth Cecire Call for Papers: Particle physics may seem unreachable to students and teachers due to the highly sophisticated equipment and high expertise associated with it. However, from data made public by the large collaborations such as ATLAS and CMS at the Large Hadron Collider to tabletop cosmic ray detectors, opportunities are there. Speakers will share these and discuss how to make it all work. Abstracts Submitted (# 5) | Abstracts You Have Reviewed: 0 Suggest Title Order Type Session Change? Comments Update Order Contributed The Particle No Yes Submit -Select here if you would like to change the session **Physics** Playground: tutorials and activities using experimental data Contributed **Energetic** No Yes Submit Select here if you would like to change the session -Students -Developing Interest and Skill in Experimentation Contributed A HS science No Yes Submit --Select here if you would like to change the session --<u>teacher</u> workshop constructing turnkey cloud chambers Using Cosmic 01 Invited No Yes Submit --Select here if you would like to change the session --Rays to Introduce Special Relativity in a College Physics Course No ○ Yes 02 Invited High School Submit -Select here if you would like to change the session -**Students** Investigating the World of Particle Physics Physicists with Disabilities Committee on Women in Physics | Co-Sponsor: Committee on Diversity in Physics | Type: Inv/Con | Organizer: Jennifer Blue Call for Papers: Are you a disabled physicist? Willing to share your story? Have you made your course more accessible for individuals with disabilities? If so, please consider submitting an abstract for the session on Disabled Physicists. Physicists with all types of disabilities are welcome. Abstracts Submitted (# 5) | Abstracts You Have Reviewed: 0 Suggest Title **Order Type** Session Change? Comments **Update** Order Am I wanted: O No ○ Yes Contributed Submit --Select here if you would like to change the session -Disabled undergraduate student experiences in physics Contributed Submit Exploring best No Yes -Select here if you would like to change the session -practices in accessible design of interactive science simulations Contributed Surviving the No Yes Submit --Select here if you would like to change the session --**Physics** Classroom with **ADHD** 01 Contributed Submit physicist! But --Select here if you would like to change the session --

		you don't look handicapped!			
02 Invited		My Joyous Struggle: Defying the Oddsand Still Climbing	No Yes Select here if you would like to change the session		Submit
Physicists with I	Disabili	ties - A			
	omen in	Physics   Co-Sp	ponsor: Committee on Diversity in Physics   Type: Con   Organizer: Jennifer Blue		
Description: Call for Papers:					
Abstracts Submitt	ed (# 5)	)   Abstracts Yo	u Have Reviewed: 0		
Order Type	Suggest Order	Title	Session Change?	Comments	Update
Contributed		Balancing caregiving with	No Yes Select here if you would like to change the session		Submit
		work.		<i></i>	
Contributed		Suddenly Handicapped,	No Yes Select here if you would like to change the session		Submit
		How my Life changed after a		//	
		Serious Accident			
Contributed		Demonstration with One Leg	No Yes Select here if you would like to change the session  0		Submit
		To Stand On: Anecdotes on			
03 Invited		<u>Different.</u> "But you don't	⊙ No ⊜ Yes		Submit
		look sick" Tenure track	Select here if you would like to change the session		
04 Invited		with a disability You're smart	○ No ○ Yes		Submit
		but Experiences as	Select here if you would like to change the session		
		a disabled graduate		[	
		<u>student</u>			
Post-deadline Pa	pers I				
Type: Con   Orga	anizer:				
Call for Papers:					
			ou Have Reviewed: 0		
Order Type	Suggest Order	Title	Session Change?	Comments	Update
Contributed		Exploring Problem-Based	<ul> <li>No</li></ul>		Submit
		Cooperative Learning			
		(PBCL) in Undergraduate Physics Labs			
Post-deadline Pa	ners I				
Type: Con   Orga					
Description: Call for Papers:					
Abstracts Submitt	ed (# 0)	)			

3/9

2016			AAPT PaC Tools		
Post-deadline	Posters				
Type: Con   Or	ganizer:				
Description:					
Call for Papers:					
bstracts Subm	itted (# 1	)   Abstracts Yo	ou Have Reviewed: 0		
Order Type Ord	gest Ier	e	Session Change?	Comments	Update
Poster	Rad	ioactive Nuts	No ○ Yes		Submit
	· · · · · · · · · · · · · · · · · · ·	<u>Fertilizers—</u> ntitation of	Select here if you would like to change the session		
		cific Dose Levels			Li.
renaring Pre-	service I	Physics Teache	ers for the Middle School Classroom		
Committee on F		-	ol Education   Co-Sponsor: Committee on Teacher Preparation   Type: Inv/Con	Organizer: Geral	dine
Cochran					
Description:	Many of ou	ır nre-service tea	chers are earning certification for the secondary school physics and middle school s	cience simultaneou	isly Desnite
-			achers, some of our teachers are finding more opportunities in the middle school cla		
			chers for the middle school classroom. In particular, we will discuss classroom man- lool science content.	agement strategies	for an
3 3			ou Have Reviewed: 0		
			na nave kevieweu. V		
Order Type Or Or	ggest der	е	Session Change?	Comments	Update
01 Invited		at Can Help	o No ○ Yes		Submit
		<u>dle School</u> ence Teachers be	Select here if you would like to change the session		
	· · · · · · · · · · · · · · · · · · ·	cessful?			11
12 Invited		rning through	No Yes Select here if you would like to change the session		Submit
	· ·	ng: educating -service	Select riefe if you would like to Change the Session		
	eler	mentary and			//
	· ·	dle school chers			
Progress in Pe	dagogy fo	or Introductor	ry Physics for Life Science		
Committee on F	Research i	n Physics Educ	ation   Co-Sponsor: Committee on Physics in Undergraduate Education   Type: C	on   <b>Organizer:</b> Na	ancy
Beverly					
Description:	C	dl			-: Th
-			neet the physics needs of the life science population at the introductory level has be n of biology or health with the physics. Beyond this, the pedagogical approaches ne		-
		-	e your pedagogical strategies that incorporate but go beyond the interdisciplinary co		
Abstracts Subm	itted (#8	)   Abstracts Yo	ou Have Reviewed: 1		
Order Type	Suggest Order	Title	Session Change?	Comments	Update
Contribute		Teach Poiseuille	No ∩ Yes		Submit
33	~ <u> </u>	First: Call for a	Select here if you would like to change the session		
		Fluid Dynamics			
Contribute	d	Paradigm Shift Incorporating	No		Submit
33.16.15463	<u> </u>	Student Ideas	Select here if you would like to change the session		
		and Interests			
Contribute	d	Incorporating	No		Submit
		Research-	Select here if you would like to change the session		
		Based, Biologically-			
		Authentic			
		Physics Problems in			
		IPLS			
Contribute	d	A new IPLS	○ No ○ Yes		Submit
Contribute	d	A new IPLS course: From design to	No Yes Select here if you would like to change the session		Submit

12010		70 H 1 1 aC 10018		
Contributed	Student Self- Assessment of	No YesSelect here if you would like to change the session	0	Submit
	<u>Learning</u> <u>Outcomes in</u>			<i>I</i> .
Contributed	the IPLS Course	O No C Vos		Out to weit
Contributed	NEXUS/Physics: Open-ended	Select here if you would like to change the session	<b>©</b>	Submit
	<u>Design and</u> <u>Peer Review in</u>			
	IPLS			
Contributed	Impact of	No Yes Select here if you would like to change the session		Submit
	<u>mindset and</u> <u>awareness on</u>	select riefe if you would like to change the session		
	<u>Life Sciences</u> students			A
Contributed 10		Change Session		Update
_	<u>student</u> engagement in	No Yes Select here if you would like to change the session		
	<u>IPLS</u>			
SPS Undergradua	ite Research and Ou	treach Poster Session		
AAPT SPS   Type: F	Posters   <b>Organizer:</b> Sea	an Bentley		
Description:	t	Underward or by Chadrack		
•		Undergraduate Students.		
Abstracts Submitte	d (# 22)   Abstracts Y	ou nave kevieweu: 0		
Order Type Sugges	st Title	Session Change?	Comments	Update
Poster	Bubbles and related	o No ○ Yes		Submit
	<u>physics</u>	Select here if you would like to change the session		
Do atau	Character Free	• No C Vos		
Poster	Cheap and Eye- Catching Demo of	No Yes     Select here if you would like to change the session		Submit
	Young's Double Slit			
Poster	Charged Particle	No ○ Yes		Submit
	Irradiation of Stainless Steel 316L	Select here if you would like to change the session		
		- 11 - 11		
Poster	<u>Chemically</u> <u>Synthesized</u>	No YesSelect here if you would like to change the session	•	Submit
	Nanostructures			
Poster	Based Solar Cell Electromagnetic Field	No  Yes		Submit
	Duality in Light	Select here if you would like to change the session	0	
	Polarization Using Geometric Algebra			fo.
Poster	Between the nature	o No ○ Yes		Submit
	of the things, Representations and	Select here if you would like to change the session		
	Mathematical Object:			4
	A study case, scalar and vector fields			
Poster	Classroom Tools -	No Yes		Submit
	<u>Vpython</u>	Select here if you would like to change the session		
Poster	Newton's Second	No O Yes		Submit
1.02(6)	<u>Law</u>	No Yes Select here if you would like to change the session	<u> </u>	Submit
Poster	Nonlinear vibration	o No ○ Yes		Submit
	<u>experiment:</u> <u>Clamped elastic plate</u>	Select here if you would like to change the session		
	with granular			<i>h</i>
	<u>material loading</u>			
Poster	A soil-plate-oscillator			Submit
	apparatus for research projects	Select here if you would like to change the session		
	and student			1.
	<u>demonstrations</u>			

Poster	<u>Learning of Biot-</u> <u>Savart law using the</u>	No Yes Select here if you would like to change the session		
	Project-Based			
	Learning			6
	methodology and			
	development of			
	<u>experimental</u>			
	prototypes in Mexico			
Poster	Analysis of the	o No ○ Yes		
	Effectiveness of Heat	Select here if you would like to change the session		
	Exchangers on			
_	Backpacking Pots		/	4
Poster	Use of Facebook like	○ No ○ Yes		
	instrument to teach	Select here if you would like to change the session		
	Photovoltaic Theory under the theoretical			
	framework of		/	2
	<u>Instrumental Genesis</u>			
Poster	Use of Facebook to	No ∩ Yes		70
i ostei	teach Photovoltaic	Select here if you would like to change the session		1
	<u>ccacii i iiocovoitaic</u>			
			,	
Poster	<u>Vibration</u>	No		Īſ
	experiments:	Select here if you would like to change the session		
	Clamped elastic plate			
	with edible granular			6
	material loading			
Poster	Particle Physics and	O No ○ Yes		
	<u>Minecraft</u>	Select here if you would like to change the session		
Dooton	Madalina pasuatia	• No O Voc	/	4
Poster	Modeling acoustic landmine detection	No Yes Select here if you would like to change the session		
	using a soil-plate	v		
	oscillator			
Poster	High resolution	△ No ○ Yes		7
Poster	measurement of	No Yes Select here if you would like to change the session		1
	lattice spacing of a			
	Sodium Chloride			6
	monocrystal using X-			
	Ray Diffraction			
Poster	Between nature of	No		
	the things,	Select here if you would like to change the session		1
	Representations and			
	mathematical object:		/	6
	The case of the			
	scalar and vector			
	<u>fields</u>			
Poster	Between nature of	o No ○ Yes		
	the things,	Select here if you would like to change the session		
	Representations and			
	mathematical object:		/	6
	The case of the			
	scalar and vector fields			
Dooton		• No O Voc		7
Poster	Interference or	No Yes Select here if you would like to change the session		
	<u>Diffraction, Start</u> <u>from LED Decoration</u>			
	Film			2
Doctor	· <del></del>	■ No ○ Voc		21 7
Poster	A Demonstration of Polarization using a	No Yes Select here if you would like to change the session		
	Mach-zehnder			
	<u>Interferometer</u>			
				- 21

Committee on Women in Physics | Co-Sponsor: Committee on International Physics Education | Type: Inv/Con | Organizer: Daryl McPadden

**Description:** The Hispanic population is the largest minority group in the United States, making up 17% of the total population, and is projected to increase to 31% by 2060. However, Hispanic students are disproportionately underrepresented in physics, especially in the intersection of Hispanic women. This panel will focus on the experiences of, research with, and strategies for supporting Hispanic women students in physics.

### **Call for Papers:**

Abstracts Submitted (# 3) | Abstracts You Have Reviewed: 0

01	er Type	Suggest T Order	itle	Session Change?	Comments	Update
	Invited	<u>Q</u>	ne Among Many: xperiences of a ispanic Woman in hysics	No Yes Select here if you would like to change the session		Submit
02	Invited	<u>E</u> ic d	xamining the lentity evelopment of emale physics naiors	<ul> <li>No  Yes</li> <li>Select here if you would like to change the session</li> </ul>		Submit
03	Invited	<u>U</u> <u>P</u> <u>S</u> <u>U</u>	sing Social sychology to upport nderrepresented tudents in Physics	No Yes Select here if you would like to change the session		Submit
			(TIR) role in M			
Call to pro	ription: for Pape ovide this ibuting to	rs: Mentoring mentoring.	g new physics teac If you have worked	there is critical to their success and retention. Teachers in Residence and Master Te did as a TIR and served as a mentor or have been mentored by a TIR, please share you have Reviewed: 0		
Orde	er Type	Sugge Order	est Title	Session Change?	Comments	Update
	Contrib	outed	Power of the Emotional Component in Teaching and Learning	No Yes Select here if you would like to change the session		Submit
	Contrib	uted	Transience with Continuity: the TIR Paradox	No Yes Select here if you would like to change the session		Submit
	Contrib	uted	Creating a New	No Yes Select here if you would like to change the session		Submit
			PhysTEC Program at WVU	Select riele if you would like to change the session		4
	Contrib	outed	PhysTEC Program at WVU Shared Responsibility: Multiple Teachers in	No Yes Select here if you would like to change the session		Submit
	Contrib Contrib		PhysTEC Program at WVU Shared Responsibility: Multiple	• No Yes		Submit
		outed	PhysTEC Program at WVU Shared Responsibility: Multiple Teachers in Residence Defining the Role of the TIR  Rowan University: New PhysTEC Teacher in Residence	No Yes Select here if you would like to change the session  No Yes Select here if you would like to change the session  No Yes  No Yes		
	Contrib	outed	PhysTEC Program at WVU Shared Responsibility: Multiple Teachers in Residence Defining the Role of the TIR  Rowan University: New PhysTEC Teacher in	No Yes Select here if you would like to change the session  No Yes Select here if you would like to change the session  No Yes  No Yes		Submit

## **Teaching Physics in High Needs High Schools**

Committee on Professional Concerns | Co-Sponsor: Committee on Physics in High Schools | Type: Inv/Con | Organizer: Colleen Megowan-Romanowicz

Description:

Call for Papers: Teaching physics in a high needs school entails a number of unique challenges that are not encountered in the typical suburban middle class high school. This session will examine conditions associated with serving high needs students and shed light on both the challenges and the opportunities teachers encounter in this setting. Abstracts Submitted (# 6) | Abstracts You Have Reviewed: 0 Suggest Title **Order Type** Session Change? Comments Update Order Contributed Submit Effects of --Select here if you would like to change the session --**Instructional** Strategies on Students' Academic Performance in Physics. Contributed **Motivating** No Yes Submit -Select here if you would like to change the session students with limited skills to **learn Physics** concepts through challenges. Contributed Crossing No Yes Submit **Cultural** -Select here if you would like to change the session -**Borders** O No ○ Yes 01 Invited Twenty-plus Submit -Select here if you would like to change the session years of physics teacher professional development in rural Kansas 02 Invited Sometimes the No Yes Submit -Select here if you would like to change the session -Science Comes Second: Modeling in **High Needs** Schools O No ○ Yes 03 Invited Reflections on Submit --Select here if you would like to change the session -Modeling Instruction in **Urban Schools** Using Popular Media to Teach Astronomy Committee on Space Science and Astronomy | Co-Sponsor: Committee on Science Education for the Public | Type: Inv/Con | Organizer: Richard Gelderman Description: Call for Papers: Do you make use of popular media to encourage student learning; and have you studied the actual success for such approaches? Books, poetry, comics, magazines, and news-stories provide opportunities to study science. Video from "Interstellar," "The Martian," or the newest superhero movie demonstrate science principles. Analysis of "Angry Birds" or other games allow us to bring physics into our students' lives. Please share your analysis of the advantages of science through pop culture references. Abstracts Submitted (# 5) | Abstracts You Have Reviewed: 0 Suggest Title **Order Type** Session Change? Comments **Update** Contributed Survivability of No Yes Submit --Select here if you would like to change the session -potatoes and soil bacteria in a Mars chamber Contributed OK GO! (and No Yes Submit -Select here if you would like to change the session other popular culture contexts to learn astronomy!) O No ○ Yes 01 Invited How I Learned Submit --Select here if you would like to change the session -to Stop Worrying and Love Science in **Movies** 02 Invited <u>Interdisciplinary</u> • No Yes Submit --Select here if you would like to change the session --Teaching: Science Fiction,

72010			THE TOOLS		
		etry, Drama, usic and More			
					4
03 Invited		<u>st Real</u> lough - The	No Yes Select here if you would like to change the session		Submit
	·	t of Physics at			
	<u>Pi</u>	<u>kar</u>			
Generic Abs	tracts				
PER: Investiga	ting Classro	oom Strateg	ies		
Abstracts Submi					
PER: Problem	Solving				
Abstracts Submi	tted (# 0)				
DED. Chr. dont D	) o o o o o o i o o				
PER: Student R					
Abstracts Submi	tted (# U)				
PER: Topical U	nderstandi	ng and Attit	rudes		
Abstracts Submi	tted (# 0)				
Astronomy Pap	oer				
		Abstracts Yo	u Have Reviewed: 0		
	Suggest Ti				
Order Type	Order	tle	Session Change?	Comments	Update
Contribute		ow To Be visible?" As	No Yes Select here if you would like to change the session		Submit
	an	Introduction			
		the ectromagnetic			4
		ectrum			
Contribute		npact of Prior tronomy	No Yes Select here if you would like to change the session		Submit
	<u>Le</u>	<u>arning</u>			
		periences on OAST Scores			
Contribute	·	arning to See	⊙ No ○ Yes		Submit
	·	Astronomy: stinguishing	Select here if you would like to change the session		
		<u>bula in</u>			2
		lescopic nages			
Contribute		verview of US	No   Yes		Submit
	As	tronomy	Select here if you would like to change the session		
	· · · · · · · · · · · · · · · · · · ·	ucation search			
	<u>Di</u> :	ssertations in			
		<u>e iSTAR</u> atabase			
Contribute		e Cosmic	○ No  Yes		Submit
		rspective	Select here if you would like to change the session		
	<u> </u>	<u>neline</u>			
Condon					
Gender		Ababa 7 St	u Hans Bridging de A		
Abstracts Submi	tted (# 7)	Abstracts Yo	u Have Reviewed: 4		
You have submitte	nd commonts				
	eu comments	on this item			

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You have submitted of	comments on this item			
Order Type S	Suggest Order	Session Change?	Comments	Update
Contributed [	Gender differences in students' epistemologies regarding the nature of experimental	No Yes  -Select here if you would like to change the session		Submit
Contributed	physics Impacts of lecture-based teaching and faculty disconnection on STEM majoring	No Yes PER: Topical Understanding and Attitudes—G	Identity cluster	Update
Contributed	Learning Assistant Practices in an Active Learning Landscape	No Yes PER: Evaluating instructional strategies—G	Faculty/LA preparation cluster	Update
Contributed [	Sense of belonging in STEM: Intersections of race and gender	No Yes Select here if you would like to change the session		Submit
Contributed	Sentiment Analysis of Teaching Evaluations to Explore Gende	No Yes Select here if you would like to change the session		Submit
Contributed	Student discourse abou equity in an introductory college physics		Identity cluster	Update
Contributed	course The Role of Personality and Gender in Performance in Physics		Research-based assessment instrument cluster	Update
Order Type	Suggest Title Order	You Have Reviewed: 0  Session Change?	Comments	<b>Update</b> Submit
contributed	Private Online Resource for Flipping your AP physics classroom	Select here if you would like to change the session		<u>//</u>
Contributed	Argument- Driven Inquiry in Physics	No Yes  -Select here if you would like to change the session		Submit
Contributed	Closing the STEM Learning Gap for Underserved Populations	No Yes  -Select here if you would like to change the session		Submit
Contributed	Definition of Physics in Introductory	No Yes Select here if you would like to change the session		Submit

	Physics Classes			1
Contributed	Designing and	No  Yes		Submit
	Testing Crash Barriers, an	Select here if you would like to change the session	9	
	Engaging NGSS			
Contributed	Activity Doing Physics:	⊙ No ○ Yes		Submit
	Holding Urban Public Schools	Select here if you would like to change the session	3	
Contributed	Accountable Integrated	No  Yes	//	Submit
	Approach to Learning	Select here if you would like to change the session		
	Physics that			
	increases student			
	engagement in the Physics			
Contributed	<u>Classroom</u> <u>Student</u>	No  Yes		Submit
	Performance and Attitudes in	Select here if you would like to change the session		
	Self-Selected vs. Teacher-			
	Assigned Groups			
Contributed	Summarizing	No Yes		Submit
	discussion interventions	Select here if you would like to change the session	9	
	and student content			
Contributed	learning gains Sustainability	No  Yes		Submit
	Topic Coverage and	Select here if you would like to change the session	3	
	Sustainability Agency In High		//	
Contributed	School Physics	■ No ⊝ Yee		O. h it
Contributed	Teaching AP Physics 1 to the	No Yes    Select here if you would like to change the session	3	Submit
	World, A Second Time			
Contributed	The Effect of Discussion and	No Yes Select here if you would like to change the session	3	Submit
	Student- Generated Data			,
	on Written Scientific			
Contributed	Explanations Using Modeling	No  Yes		Submit
	Techniques in AP Center in	Select here if you would like to change the session	9	
	Wuxi, China	- W - W		
Contributed	Using technology to	No Yes    Select here if you would like to change the session	•	Submit
	increase student			
	learning and teacher			
	<u>confidence</u>			
Introduct C				
Introductory Courses Abstracts Submitted (# 1	5)   Abstracts Y	ou Have Reviewed: 0		
Order Type Suggest	t Title	Session Change?	Comments	Update
Contributed	A Situated	• No Yes	_	Submit
	Learning Approach to	Select here if you would like to change the session	0	

	Introductory Laboratory Reform		
Contributed	Advanced Placement Program	No Yes Select here if you would like to change the session	Submit
Contributed	An Introductory Laboratory Reform Effort at the University of Illinois	No Yes Select here if you would like to change the session	Submit
Contributed	Changing the paradigm of the Jumping Ring Demonstration	No Yes Select here if you would like to change the session	Submit
Contributed	Data-Driven Efforts to Improve General Physics at NIU	No Yes Select here if you would like to change the session	Submit
Contributed	Game Design and Demonstration to Highlight Evidence-Based Reasoning	No Yes Select here if you would like to change the session	Submit
Contributed	Game Design and Demonstration to Highlight Evidence-Based Reasoning	No Yes Select here if you would like to change the session	Submit
Contributed	Implementing Studio Physics: The effect on physics identity development	No Yes  -Select here if you would like to change the session	Submit
Contributed	Interpretations of Physics Differentials and Derivatives in Introductory Physics	No Yes  -Select here if you would like to change the session	Submit
Contributed	Investigating Effects of Reformed Laboratories on Student Motivation and Attitude	No Yes Select here if you would like to change the session	Submit
Contributed	Power boxes: A novel graphical representation of energy in circuits	No Yes Select here if you would like to change the session	Submit
Contributed	Satellite splat! Exploring sticky collisions with a surface- launched	No Yes Select here if you would like to change the session	Submit
Contributed	projectile Student Symbolic Problem Solving Skills in Introductory Calculus-Based Physics	No Yes Select here if you would like to change the session	Submit
Contributed	Students' understanding	No YesSelect here if you would like to change the session	Submit

Contribut	red	of "Centripetal Acceleration" as evidenced by answers to a guided inquiry based lab.  Why active-	No ∩ Yes		Submit
		learning physics teachers should think about facework	-Select here if you would like to change the session	l)	
Introductory :			u Have Reviewed: 1		
You have submit	ted commer	nts on this item			
Order Type	Suggest Order	Title	Session Change?	Comments	Update
Contribut		A laser apparatus for measuring angular resolution of the eye	No Yes Select here if you would like to change the session		Submit
Contribut	ed	Adapting AAPT Lab Recommendations to Meet Local Conditions: DATA	No • Yes Introductory Labs/ApparatusG		Update
Contribut	red	An easily assembled spectrograph for the intermediate lab	No YesSelect here if you would like to change the session		Submit
Contribut	red	An Easy Determination of an Approximate Value for Absolute Zero	No Yes Select here if you would like to change the session  ©		Submit
Contribut	red	Apparatuses for measurement of forces of an electrostatic and magnetic interactions.	No YesSelect here if you would like to change the session		Submit
Contribut	red	Exploratory Freedom for Student Learning in Laboratory Settings	No YesSelect here if you would like to change the session		Submit
Contribut	red	Hacking the Pasco Power Brick for Direct Analog Measurements	No Yes Select here if you would like to change the session  ©		Submit
Contribut	red	Implementation of a laboratory activity designed to promote scientific practice	No Yes Select here if you would like to change the session		Submit
Contribut	red	<u>Ionizing Radiation</u> <u>Experiments as a</u> <u>Mobile Lab</u>	No Yes Select here if you would like to change the session  ©		Submit
Contribut	red	Simple Hack of a CRT for Photoelectic Effect Demonstration	Select here if you would like to change the session		Submit
Contribut	ed	Teaching experimental and data analysis	No Yes Select here if you would like to change the session		Submit

skills in online

	<u>labs</u>			
Contributed	The Physics of Color Temperature in Photography	No Yes Select here if you would like to change the session	Su	ubmit
	<u></u>			_
Other Paper				
Abstracts Submitted	d (# 5)   Abstracts Yo	ou Have Reviewed: 0		
Order Type Si	uggest Title rder	Session Change?	omments Upda	ite
Contributed	Arts + Physics = STEAMed Physix	No Yes Select here if you would like to change the session	Subm	iit
Contributed	How can asynchronous communication support virtual	No Yes Select here if you would like to change the session	Subm	nit
Contributed	faculty learning communities?  Infinite circuits are easy. How about long	No Yes Select here if you would like to change the session	Subm	nit
Contributed	ones? Outreach Program for High School Physics Students and	No Yes Select here if you would like to change the session	Subm	nit
Contributed	Teachers Resonance in Long LC-Ladder Circuits	No Yes Select here if you would like to change the session   O	Subm	nit
		s sorting category if you feel your work doesn't fall into the previous fou	r PER categories.)	
You have submitted c	omments on this item			
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You have submitted comments on this item Suggest Title **Order Type** Session Change? Comments Update Order Contributed [ "Who Can Be No 👩 Yes Identity Cluster Update PER: Topical Understanding and Attitudes--G an Engineer?" Investigating Attitudes and Self-Identification Contributed [ No Yes
PER: Problem Solving--G Update Algebra-Based Representations cluster Students & Vectors: <u>Assessing</u> <u>Physical</u> <u>Understanding</u> in Arrow vs ijk o No O Yes Update Contributed 1 **Applying** -Select here if you would like to change the session --**Business** Literature to **Product** Development in **STEM Education** Contributed [ Assessing the O No O Yes Faculty/LA preparation Update interactivity and PER: Evaluating instructional strategies--G prescriptiveness of professional development workshops Contributed 2 Career No Yes Update -Select here if you would like to change the session -preparation models: <u>Understanding</u> the interplay <u>between</u> education and industry O No ○ Yes Contributed 3 Classroom Update -Select here if you would like to change the session --Instruction **Promotes** Posterior Medial Cortex Brain **Activity During** Problem-Solving

5/9/2016			AAPT PaC Tools		
	Contributed	Curricular Knowledge as an Entry Point for Responsive	No Yes  PER: Evaluating instructional strategies—G	Faculty/LA preparation cluster	Update
	Contributed	Instruction Embedded experts: A productive approach to transforming	No Yes PER: Evaluating instructional strategies—G	Faculty/LA preparation cluster	Update
	Contributed	undergraduate STEM education Equivalence of	○ No ⊙ Yes	Research-based	Update
	Continuated	Web and Paper- based Physics diagnostic testing	PER: Evaluating Instructional strategiesG	assessment instrument cluster	opaus)
	Contributed 4	Examining Time-use in Introductory Calculus-based Physics Students	No Yes Select here if you would like to change the session		Update
	Contributed 5	Exploring Disagreements through	No Yes Select here if you would like to change the session  Select here if you would like to change the session		Update
	Contributed	Positioning Exploring Student Sensemaking through Layers of Epistemic	No Yes PER: Examining content understanding and reasoning-G	Upper division topics	Update
	Contributed	Games Facilitating Physics Education Reform: An	No Yes PEH: Evaluating instructional strategiesG	Faculty/LA preparation cluster	Update
	Contributed	Ethnographic Study of Organizational Change Helping engineers to become effective physics teachers - Part	No • Yes PER: Evaluating instructional strategiesG	Faculty/LA preparation cluster	Update
	Contributed	A Helping engineers to become effective physics teachers - Part	No Yes PER: Evaluating instructional strategies—G	Faculty/LA preparation cluster	Update
	Contributed 21	B Identifying Different Student Groups using Cluster Analysis	No Yes Select here if you would like to change the session		Update
	Contributed 2	Improved recruitment to build a better Faculty Online Learning	No Yes Select here if you would like to change the session  ©	Faculty/LA preparation cluster	Update
	Contributed	Community Linking workshop design to faculty's engagement in professional	No Yes  PER: Evaluating instructional strategiesG	Faculty/LA preparation cluster	Update
	Contributed	development  Making Use of	No Yes PER: Evaluating instructional strategiesG	)	Update

	Resources:		Teaching method evaluation cluster	
	Nudging and the Opportunity		evaluation cluster	
	for Revisions			
Contributed 5	New resources	No ○ Yes	Faculty/LA preparation	Update
	on PhysPort:	Select here if you would like to change the session	cluster	
	Supporting physics			
	teaching with			4
	research-based			
	resources			
Contributed	Novice Index	No Yes  PEH: Evaluating instructional strategies—G	Research-based assessment instrument	Update
	Representation of Conceptual	- In Lindsday not detailed at the good of	cluster	
	Transformation		1.	:
	during Physics			
	<u>Instruction</u>			
Contributed 3	Online Learning Communities to		Faculty/LA preparation cluster	Update
	Support		,	
	Scholarship of			2
	Teaching and			
Contributed	<u>Learning</u> <u>Pathways to a</u>	O No O Vos	Identity cluster	Update
Contributed	physics degree:	No Yes  PEH: lopical Understanding and AttitudesG	Identity cluster	Opuate
	A statistical			
	story			
Contributed	<u>Probing</u> <u>Indicators of</u>	No Yes  PEH: Evaluating instructional strategiests	Teaching method evaluation cluster	Update
	Studio-mode	- In Lindsday not detailed at the good of	•	
	Physics Student		/.	:
	Success			
	<u>through</u> <u>Instructor</u>			
	Interviews			
Contributed	Situated Self-	○ No ○ Yes	Identity cluster	Update
	efficacy in	PEH: Topical Understanding and AttitudesG	1	
	Introductory Physics			,
	<u>Students</u>			4
Contributed 8	<u>SPOTing</u>	No ○ Yes	Faculty/LA preparation	Update
	Effective	Select here if you would like to change the session	cluster	
	Teaching: An Engaging and			
	Reflective			
	<u>Faculty</u>			
	Workshop Series			
Contributed 6	STEM	○ No  Yes		Update
	workplace	Select here if you would like to change the session		
	communication			
	and implications for the physics			1
	curriculum			
Contributed	<u>Student</u>	○ No • Yes	Teaching method	Update
	feedback as a tool in physics	PER: Evaluating instructional strategies—G	evaluation cluster	
	course			:
	<u>development</u>			
Contributed	Supplemental	○ No • Yes	Faculty/LA preparation cluster	Update
	<u>Instruction</u> <u>leader</u>	PEH: Evaluating instructional strategies—G	Glustei	
	development: A			:
	longitudinal			_
	study			
Contributed	The Access Network:	No Yes PER: Topical Understanding and AttitudesG		Update
	Working	• • • • • • • • • • • • • • • • • • • •	'	
	Towards More			
	Equitable and			
Contributed	Inclusive STEM The Effects of	○ No ▲ Yes		Update
Contributed	Grader	No Yes  PEH: Topical Understanding and Attitudes—G	1	Opuate
	<del>-</del>		•	

9/2016			AAPT PaC Tools		
		Assessment Feedback on Student Self- Regulation		la de	
	Contributed	The Evolution of Department-level Teaching Social Networks at One Institution	No Yes PEH: Evaluating instructional strategies—G	Faculty/LA preparation cluster	Update
	Contributed	The importance of student voice in partnerships: Examples from the CSU Learning Assistant Program	No Yes PER: Evaluating instructional strategies—G	Faculty/LA preparation cluster	Update
	Contributed 7	Using conceptual blending to analyze student inquiry in computer- based environments	No Yes select here if you would like to change the session	<i>1.</i>	Update
	Contributed	What happens after paired teaching? Continued use of research- based instructional strategies	No Yes  PEH: Evaluating instructional strategies—G	Faculty/LA preparation cluster	Update
	Contributed	When buy-in is not enough: GTAs' RIOT profile in mini- studios	No Yes PEH: Evaluating instructional strategies—G	Faculty/LA preparation cluster	Update
	Contributed	Who let the cold out?	No Yes PER: Evaluating instructional strategies—G	Faculty/LA preparation cluster	Update
PER:	Evaluating instru	ctional strategi	ies		
Abstra	acts Submitted (# 2	23)   Abstracts Y	ou Have Reviewed: 22		

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You have submitted comme	nts on this item			
You have submitted comme	nts on this item			
Order Type Sugges	t Title	Session Change?	Comments	Update
Order Contributed 1	An Activity-Based	○ No Yes	Faculty/LA preparation	Update
Contributed	Model for Training	Select nere if you would like to change the session	cluster	Opulate
	Physics Teaching and Learning			
	<u>Assistants</u>			
Contributed	Comparing factor analysis and	No Yes	Research-based assessment instrument	Update
	network methods		cluster	
	to cluster test questions			4
Contributed 9	Comparison of	No ○ Yes	Teaching method evaluation cluster	Update
	<u>Lecture/Laboratory</u> <u>Format with</u>	Select here it you would like to change the session	evaluation cluster	
	SCALE-UP Classes			
Contributed 10	Effects of Animated Video	No Yes Select here if you would like to change the session	Teaching method evaluation cluster	Update
	Solutions on			
	<u>Learning and</u> <u>Metacognition</u>			4
Contributed 11	Evaluating JiTT	o No ○ Yes	Teaching method evaluation cluster	Update
	and Peer Instruction using	Select here if you would like to change the session	)	
	Clickers in a Quantum			
	Mechanics Course			
Contributed	Examining the necessity of	No Yes PEH: Problem SolvingG	Representations cluster	Update
	problem diagrams	•		
	using MOOC AB experiments			
Contributed	Inquiry vs.	o No ○ Yes		Submit
	<u>Traditional:</u> <u>Student</u>	Select nere if you would like to change the session		
	perceptions and learning gains			4
Contributed	<u>Large-scale</u>	No <b>○</b> Yes	Research-based	Update
	Assessment Yields Evidence of	PEH: Evaluating instructional strategiesG	assessment instrument cluster	
	Minimal Use of			
Contributed	Reasoning Skills Learning	○ No ⊙ Yes	Research-based	Update
Contributed	introductory E&M:	PEH: Evaluating instructional strategiesG	assessment instrument cluster	( Panis
	a 22k+ students meta-analysis			
Contributed 12	Measuring the	No ○ Yes	Teaching method evaluation cluster	Update
	impact of mastery inspired activities	Select here if you would like to change the session	evaluation cluster	
	in introductory			
Contributed 4	<u>physics</u> <u>National</u>	No  Yes	Faculty/LA preparation	Update
	assessment of the	Select here if you would like to change the session	cluster	
	impact of Learning Assistants on			4
	physics students' learning			
Contributed 13	<u>Natural language</u>	○ No ○ Yes	Teaching method	Update
	vs. multiple choice format in	Select nere if you would like to change the session	evaluation cluster	
	computer-based			
	<u>practice</u>			

Contributed 14	Pathways through Introductory Physics: Effects of	No YesSelect nere if you would like to change the session	Teaching method evaluation cluster	Update
Contributed 6	Switching Between Course Formats Physics Teachers' Questioning Patterns and the Reasoning Behind Them	No Yes Select here if you would like to change the session	Faculty/LA preparation cluster	Update
Contributed 7	Principles for research-based physics activities	No Yesselect nere if you would like to change the session	Faculty/LA preparation cluster	Update
Contributed	Promoting high school students' physics identity through performed recognition	No • Yes PEH: Topical Understanding and AttitudesG	Identity cluster	Update
Contributed 15	Reform Introductory Ouantum Mechanics: Three	No YesSelect nere if you would like to change the session	Teaching method evaluation cluster	Update
Contributed 22	Years In Social Network Analysis of Support Groups in Introductory	No Yes    Select here if you would like to change the session		Update
Contributed 16	Physics Specifications grading in a large- enrollment ISLE physics class	No Yes Select nere if you would like to change the session	Teaching method evaluation cluster	Update
Contributed 17	Students' investigation of thermal radiation with infrared cameras	No Yesselect here if you would like to change the session	Teaching method evaluation cluster	Update
Contributed 18	The effects of group structure in an introductory	No YesSelect nere if you would like to change the session	Teaching method evaluation cluster	Update
Contributed 19	studio classroom Toward instructional design principles: Inducing Faraday's Law with Contrasting Cases	No Yes Select here if you would like to change the session	Teaching method evaluation cluster	Update
Contributed 20	Using and Improving Mastery-Style Online Homework in a Large Introductory Course	No YesSelect here if you would like to change the session	Teaching method evaluation cluster	Update
PER: Examining conto	ent understanding	and reasoning		
Abstracts Submitted (#	32)   Abstracts You	Have Reviewed: 27		
You have submitted comm				
You have submitted comm				
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You have submitted comm				
You have submitted comm	ents on this item			
You have submitted comm	ents on this item			
You have submitted comm	ents on this item			

You have submitted comments on this item Suggest Title **Order Type** Session Change? Comments Update Order Contributed 5 Classical Physics No No Yes Research-based Update assessment instrument Learning from cluster Analysis of Modern Physics Data II Contributed 12 Comparing Two O No O Yes Representations cluster Update Activities' PER: Problem Solving--G **Effectiveness Improving** Reasoning with Multiple-Variable Graphed <u>Information</u> Contributed 6 Concept no Yes Research-based Update assessment instrument PER: Evaluating instructional strategies--G Inventories and the Next Generation of Assessment Contributed 13 Construction No Yes Representations cluster Update PER: Problem Solving--G and interpretation of linear best-fit graphs in introductory labs Contributed 14 Developing No Yes Representations cluster Update PEH: Problem Solving--G metacognitive knowledge <u>about</u> productive reflection on salient distracting features\* o No Nes Contributed 1 **Early** Math cluster Update -Select here if you would like to change the session mathematization ( obstacles: Uncovering roots of student difficulties in majors' courses

17120	10		Mil I ac 100is		
	Со	Examining student	No Yesselect here if you would like to change the session	Math cluster	Update
		reasoning with multi-variable expressions*			
	Co		⊙ No   Yes	Math cluster	Update
		students' abilities to follow	Select nere if you would like to change the session		
		and evaluate qualitative reasoning chains			
	Co		⊙ No ⊜ Yes	Math cluster	Update
		students' multi- step reasoning	Select here if you would like to change the session		
		in energy contexts*		4	
	Co	How Students Combine	No Yes select nere if you would like to change the session		Submit
		Knowledge	Concernation by Section and Continued to Continue and Con		
		<u>Elements While</u> <u>Learning</u>		//	
	Co	<u>Improving</u> student	No Yes		Update
		understanding	<u> </u>		
		of degenerate perturbation		//	
		theory in quantum			
	Со	<u>mechanics</u> Improving	o No ∩ Yes		Submit
		Student Understanding	Select here if you would like to change the session		
		of Vector Fields			
	Со	<u>in E&amp;M</u> Improving	o No ∩ Yes		Update
		understanding of Gauss's law	Select here if you would like to change the session		
		by replacing examples with		4	
	Co	reasoning Influence of	- No - Veg		Update
	CO	Language of	No YesSelect here if you would like to change the session	Research-based assessment instrument cluster	Opuate
		Administration upon Physics		4	
		<u>Concepts</u> <u>Measuring</u>			
	Co	Instruments Investigating	No	Research-based	Update
	Co	student ability	Select here if you would like to change the session	assessment instrument cluster	Opuno
		<u>to reason in</u> <u>different</u>			
	Co	<u>directions*</u> <u>Investigating</u>	o No ∩ Yes	Research-based	Update
		Student Understanding	Select nere if you would like to change the session	assessment instrument cluster	
		Of Radioactivity			
		With The Radiation			
		<u>Conceptual</u> <u>Evaluation</u>			
	Co	<u>Investigating</u> Student	No Yes select here if you would like to change the session		Submit
		<u>Understanding</u>			
		of Vector Calculus in E&M			
	Со	<u>Investigating</u> students'	No Yesselect nere ir you would like to change the session		Submit
		understanding of ac biasing			
		networks*			
	Со	<u>Investigating</u> the Impact of	No Yesselect nere if you would like to change the session		Submit
		<u>Different</u> <u>Prompts On</u>			
		- <del></del>			

	Student Reasoning *			
Contributed 10	Overview of 50+ research-based assessments in	No Yes Select nere if you would like to change the session	Research-based assessment instrument cluster	Update
Contributed 6	physics and beyond Probing Student Ability to	● No Yes Select nere if you would like to change the session	Math cluster	Update
	Construct Reasoning Chains: A New Methodology			
Contributed 15	Sense-making with Inscriptions in Quantum Mechanics	No Yes PEH: Problem Solving—G	Representations cluster	Update
Contributed 7	Student ability to use complex numbers in quantum mechanics	No Yes Select nere if you would like to change the session	Math cluster	Update
Contributed 8	<u> </u>	No Yes Select here if you would like to change the session	Math cluster	Update
	Dimensional Coordinate System Differential Elements			
Contributed 9	Student difficulties with expectation values in quantum mechanics	No Yesselect nere if you would like to change the session	Math cluster	Update
Contributed 10	Student Difficulties with Quantum Operators Corresponding to Observables	No Yes Select here if you would like to change the session	Math cluster	Update
Contributed 11	·	No YesSelect nere if you would like to change the session	Math cluster	Update
Contributed 12	Student reasoning with vectors through the physics curriculum	No Yes Select nere if you would like to change the session	Math cluster	Update
Contributed	Targeted Student Feedback Using Transition Matrices	No o Yes PEH: Evaluating instructional strategiesu	Research-based assessment instrument cluster	Update
Contributed	Teacher Knowledge of Student Difficulties: "Collectively,	No Yes reacner training/EnnancementG		Update
Contributed 11	We're a Genius!" Thinking quantum mechanically: introducing students to reasoning in	No YesSelect here if you would like to change the session	Upper division topics	Update
Contributed 18	modern physics Words vs. graphs: Tracking shifts	No Yes PEH: Problem SolvingG		Update

AAPT PaC Tools

Representations cluster

3/9/2016

in students' understanding of forces

PER: Exploring p	oroblem solving approa	aches and skills		
Abstracts Submitte	ed (# 16)   Abstracts You	u Have Reviewed: 16		
You have submitted	comments on this item			
You have submitted	comments on this item			
You have submitted	comments on this item			
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You have submitted	comments on this item			
You have submitted	comments on this item			
You have submitted	comments on this item			
You have submitted	comments on this item			
You have submitted	comments on this item			
Orger Lyne	Suggest Title Order	Session Change?	Comments	Update
Contributed 2		No Yes Select nere if you would like to change the session	Representations cluster	Update
Contributed	Elective Recitation Sections in Freshman E&M Courses	No Yes PEH: Evaluating instructional strategiesu		Update
Contributed	Eye gaze patterns while viewing visual cues and video solutions	No Yes Select here if you would like to change the session	Tech cluster	Update
Contributed 2	How do Multimodal Hints Affect Conceptual Physics Task Solving?	No Yesselect nere if you would like to change the session	Tech cluster	Update
Contributed [	Identifying Student Difficulties In Causal Reasoning	No Yesselect nere if you would like to change the session	Representations cluster	Update
Contributed [	7 Introductory Physics Students' Perception of Worked-Out Problem Solutions	No Yes select nere if you would like to change the session	Representations cluster	Update
Contributed [	Probing students' mathematical difficulties in introductory physics	No Yes  PER: Examining content understanding and reasoning-43	la de	Update
Contributed [	7 <u>Prompted</u>	• No Yes		Update

19/2016		AAPI Pac Tools		
	evaluation in calculus based introductory		Representations cluster	
	physics		<i>h</i>	
Contributed 8	Purpose of Representation Use in Modeling Instruction Physics	No Yes select nere if you would like to change the session	Representations cluster	Update
Contributed 11	Reading between the lines: lab reports help develop scientific	No Yes Select here if you would like to change the session		Update
Contributed 16	abilities Students learning to coordinate mathematical and physical models in	No Yes PER: Problem Solvingu	Representations cluster	Update
Contributed 9	biology The impact of students' epistemological framing and beliefs on a task requiring representational	No Yesselect nere if you would like to change the session	Representations cluster	Update
Contributed 3	consistency Using phenomenography to better understand student	No Yes Select nere if you would like to change the session	Tech cluster	Update
Contributed 10	development with computational physics Using Spaced Recall to	No Yes select here it you would like to change the session	Representations cluster	Update
	Encourage Expert Practice			
Contributed 4	Using the C3PO interface to develop and modify computing coaches.	No Yes select nere if you would like to change the session	Tech cluster	Update
Contributed 17	Using the Cognitive Reflection Test to investigate student reasoning inconsistencies*	No Yes PER: Problem SolvingG	Representations cluster	Update
PER: Modeling stude Abstracts Submitted (#		ı Have Reviewed: 12		
You have submitted comn	nents on this item			
You have submitted comn	nents on this item			
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You have submitted comm	nents on this item			
You have submitted comm	nents on this item			

Order Type	Suggest Order	Title	Session Change?	Comments	Update
Contributed		"Stupidity in Science" - NOS Lesson or Balm for Inquiry	No Yes select nere if you would like to change the session	h	Update
Contributed		Angst?* Assessing difficult to assess learning goals - formative	No YesSelect nere if you would like to change the session	Group cluster	Update
Contributed		feedback in P3 Characterizing how students group themselves for group exams	No Yes select riere ii you would like to crishige the session	Group cluster	Update
Contributed	2	Group formation on physics exams	No Yes select nere if you would like to change the session	Group cluster	Update
Contributed	6	Longitudinal study of students' participatory habit in active learning	No Yes select nere if you would like to change the session	Group cluster	Update
Contributed	3	Classrooms Performance and Active Engagement through the Lens of Classroom Networks	No Yes serior riere ii you would like to crishige the session	Group cluster	Update
Contributed	8	Research on Identity Trajectories in Undergraduate Research Experiences	No Yes Select nere if you would like to change the session	h	Update
Contributed	7	Splits in students' attitudes toward classical and quantum physics	No Yes Select nere if you would like to change the session	6	Update
Contributed		Student positioning in an inquiry- based physics content and methods course	No Yes PEH: Modeling student engagementG	h	Update
Contributed		Students'	No • Yes		Update
Contributed	9	Traditional physics vs IPLS: Comparing student	No Yesselect nere it you would like to change the session	la de la companya de	Update
Contributed		experiences Using Clickstream Analysis to Understand Student Peer	No Yes PER: Evaluating instructional strategiesG		Update

Physics Majors: High S	School to Docto	prate		
Abstracts Submitted (# (	0)			
Pre High School				
Abstracts Submitted (# (	0)			
Science and Society				
Abstracts Submitted (# 2	2)   Abstracts Y	ou Have Reviewed: 0		
Order Type Sugges	st Title	Session Change?	Comments	Updat
Contributed	Experiments with a New Wind Delivery	No Yes		Submit
Contributed	System Solar Lantern Camp in	No Yes select nere it you would like to change the session		Submit
	<u>Guatemala</u>			4
Teacher Training/Enh	ancement			
Abstracts Submitted (# 8		ou Have Reviewed: 0		
Order Type Sugges	st Title	Session Change?	Comments	Updat
Contributed	A New Online	• No O Yes		Submit
	Master's Program in Physics for	select fiere in you would like to change the session		
	<u>High School</u> <u>Teachers</u>			_
Contributed	Design and evaluation of	No Yesseriect nere it you would like to change the session		Submit
	<u>campus-wide</u> <u>professional</u> <u>development</u>			<i>1</i> .
	program in STEM			
Contributed	<u>Discovering</u> <u>and eliminating</u> <u>flaws in physics</u>			Submit
	test questions			4
Contributed	Framework for Evaluating	No Yes seried there it you would like to change the session		Submit
	<u>Teacher</u> <u>Discourse</u> <u>during</u>			4
	<u>Professional</u> <u>Development</u>			
Contributed	Hands-on Physics Demos - a new	No Yes		Submit
Contributed	approach.  Integrating a	• No Yes		∠/ Submit
Continuaced	<u>Learning</u> <u>Community of</u>	Select nere if you would like to change the session		Gubilli
	Learning Assistants and Teaching			4
Contributed	Assistants Teaching	No  Yes		Submit
	Physics in a Blended Online	Select nere if you would like to change the session		
	Course for Science			4
Contributed	<u>Teachers</u> <u>The OK</u>	o No ∩ Yes		Submit

		<u>PhysTEC</u>	Select nere ii you would like to change the session	0	
		<u>Collaborative</u>			
				//	
Гесhnologies					
Abstracts Submi	itted (# 6)	Abstracts Yo	ou Have Reviewed: 0		
Order Type	Suggest Order	Title	Session Change?	Comments	Update
Contribute		An Optimized	No Yes		Submit
		Garden Hose	Select nere if you would like to change the session		
		Horn.			
Contribute	d 🦳	Electronic Lab	○ No  Yes	//	Submit
		<u>Notebooks</u>	Select nere if you would like to change the session	3	
		using Blackboard,			
		Microsoft Word,			J
		and Livescribe			
		Pens.			
Contribute	а	Preference Voting and	No Yes select nere it you would like to change the session		Submit
		<u>Clickers</u>		<b>9</b>	
				//	
Contribute	а	Use of Arduino Mega 2560 R3	No Yes select nere it you would like to change the session	<u> </u>	Submit
		Board in the		9	
		Automation of			
Contributo	d	a Green House	No. Voc		CO observate
Contribute	u	Video Analysis for Physics	No Yes    select nere it you would like to change the session	_	Submit
		Experiments			
Contribute	d $\square$	Wave Shaping	- No - Yes	1.	Submit
Corteribates	<u> </u>	by Guitar	No Yesselect nere it you would like to change the session	<b>a</b>	Cubiiii
		Amplifier Tubes			
Two Year Colle	eges				
Abstracts Submi	itted (# 3)	Abstracts Yo	ou Have Reviewed: 0		
	Suggest Order		ou Have Reviewed: 0 Session Change?	Comments	Updat
	Suggest Order		Session Change?	Comments	
Order Type	Suggest Order	Title  Assessing a Course Text		Comments	
Order Type	Suggest Order	Title  Assessing a	Session Change?  No Yes	Comments	
Order Type	Suggest Order	Title  Assessing a Course Text	Session Change?  No Yes select riere ii you would like to change the session	Comments	Submit
<b>Order Type</b> Contribute	Suggest Order	Title  Assessing a Course Text Book  New York Times	Session Change?  No Yes  Select trere if you would like to change the session	Comments	Submit
<b>Order Type</b> Contribute	Suggest Order	Assessing a Course Text Book New York Times Automotive	Session Change?  No Yes  Select trere if you would like to change the session	<i>h</i>	Submit
<b>Order Type</b> Contribute	Suggest Order	Title  Assessing a Course Text Book  New York Times	Session Change?  No Yes  Select trere if you would like to change the session	<i>h</i>	Submit
<b>Order Type</b> Contribute	Suggest Order	Assessing a Course Text Book  New York Times Automotive Article Applications which help	Session Change?  No Yes  Select trere if you would like to change the session	<i>h</i>	Submit
Order Type  Contribute  Contribute	Suggest Order d	Assessing a Course Text Book  New York Times Automotive Article Applications which help teach physics	Session Change?  No Yes  Select tiere ii you would like to change the session  No Yes  Select tiere ii you would like to change the session	<i>h</i>	Submit
<b>Order Type</b> Contribute	Suggest Order d	Assessing a Course Text Book  New York Times Automotive Article Applications which help teach physics Successful	Session Change?  No Yes  Select trere if you would like to change the session	<i>h</i>	Submit
Order Type  Contribute  Contribute	Suggest Order d	Assessing a Course Text Book  New York Times Automotive Article Applications which help teach physics	Session Change?  No Yes  Select tiere ii you would like to creatige the session  No Yes  Select tiere ii you would like to creatige the session	<i>h</i>	Submit
Order Type  Contribute  Contribute	Suggest Order d	Assessing a Course Text Book  New York Times Automotive Article Applications which help teach physics Successful STEM Student Pathways: A two- and four-	Session Change?  No Yes  Select tiere ii you would like to creatige the session  No Yes  Select tiere ii you would like to creatige the session	<i>h</i>	Submit
Order Type  Contribute  Contribute	Suggest Order d	Title  Assessing a Course Text Book  New York Times Automotive Article Applications which help teach physics Successful STEM Student Pathways: A	Session Change?  No Yes  Select tiere ii you would like to creatige the session  No Yes  Select tiere ii you would like to creatige the session	<i>h</i>	Submit
Order Type  Contribute  Contribute	Suggest Order d	Title  Assessing a Course Text Book  New York Times Automotive Article Applications which help teach physics Successful STEM Student Pathways: A two- and four- year	Session Change?  No Yes  Select tiere ii you would like to creatige the session  No Yes  Select tiere ii you would like to creatige the session	<i>h</i>	Submit
Order Type  Contribute  Contribute	Suggest Order	Assessing a Course Text Book New York Times Automotive Article Applications which help teach physics Successful STEM Student Pathways: A two- and four- year partnership	Session Change?  No Yes  Select tiere ii you would like to creatige the session  No Yes  Select tiere ii you would like to creatige the session	<i>h</i>	Submit
Contribute  Contribute  Contribute  Contribute	Suggest Order dd	Assessing a Course Text Book  New York Times Automotive Article Applications which help teach physics Successful STEM Student Pathways: A two- and four- year partnership	Session Change?  No Yes  No Yes  Select tiere if you would like to criatige the session  No Yes  Select tiere if you would like to criatige the session  No Yes  Select tiere if you would like to criatige the session	<i>h</i>	Submit
Order Type  Contribute  Contribute  Contribute	Suggest Order dd	Assessing a Course Text Book  New York Times Automotive Article Applications which help teach physics Successful STEM Student Pathways: A two- and four- year partnership	Session Change?  No Yes  Select tiere ii you would like to creatige the session  No Yes  Select tiere ii you would like to creatige the session	<i>h</i>	Submit
Contribute  Contribute  Contribute  Contribute	Suggest Order  d  d  d  undergi	Assessing a Course Text Book  New York Times Automotive Article Applications which help teach physics Successful STEM Student Pathways: A two- and four- year partnership  raduate  1)   Abstracts N	Session Change?  No Yes  No Yes  Select tiere if you would like to criatige the session  No Yes  Select tiere if you would like to criatige the session  No Yes  Select tiere if you would like to criatige the session	<i>h</i>	Submit
Contribute	Suggest Order  d  d  d  d  d  undergr  itted (# 1:	Assessing a Course Text Book  New York Times Automotive Article Applications which help teach physics Successful STEM Student Pathways: A two- and four- year partnership  raduate  1)   Abstracts N	Session Change?  No Yes  No Yes  Select tiere if you would like to criatige the session  No Yes  Select tiere if you would like to criatige the session  No Yes  Select tiere if you would like to criatige the session	<i>h</i>	Updat: Submit
Contribute  Contri	Suggest Order  d  d  u  u  u  u  u  u  u  u  u  u  u	Assessing a Course Text Book  New York Times Automotive Article Applications which help teach physics Successful STEM Student Pathways: A two- and four- year partnership  raduate  L)   Abstracts \( \)	Session Change?  No Yes  No Yes  Select tiere if you would like to criatige the session  No Yes  Select tiere if you would like to criatige the session  No Yes  Select tiere if you would like to criatige the session	<i>h</i>	Submit
Contribute  Contribute  Contribute  Contribute  Contribute  Contribute  Contribute  Contribute  Contribute	Suggest Order  d  d  u  u  u  u  u  u  u  u  u  u  u	Assessing a Course Text Book  New York Times Automotive Article Applications which help teach physics Successful STEM Student Pathways: A two- and four- year partnership  raduate  L)   Abstracts \( \)	Session Change?  No Yes  No Yes  Select tiere if you would like to criatige the session  No Yes  Select tiere if you would like to criatige the session  No Yes  Select tiere if you would like to criatige the session	<i>h</i>	Submit

You ha	ave submitte	d comme	nts on this item			
You ha	ave submitte	d comme	nts on this item			
You ha	ave submitte	d comme	nts on this item			
Ordei	r Type	Sugges Order	<sup>t</sup> Title	Session Change?	Comments	Update
	Contributed		<u>Classical</u>	No Yes		Submit
			<u>Dynamics of a</u> <u>Particle in a</u>	General force in your would mise to change the session		
			One-dimensional Exponential		4	
			<u>Potential</u>			
	Contributed		<u>Divergence of a</u> <u>vector field:</u>	No Yes		Update
			Teaching	The Colonia Holland of the Colonia o		
			strategies and learning		//	
			<u>difficulties</u>			
	Contributed		Entanglement	No Yesselect tiere ii you would like to citalige tile session		Submit
			isn't just spin	Select here if you would like to change the session		
	Contributed		Faraday	No Ses	//	Submit
	Contributed	·	Isolators and the	No Yesselect here if you would like to change the session		Gubiiii
			Second Law of Thermodynamics			
	Contributed		Framing	No No Yes		Update
			<u>Difficulties in</u> <u>Quantum</u>	rcn. student neasoning-to		
			<u>Mechanics</u>		4	
	Contributed		Highlighting Two	No Yes		Update
			<u>Prevalent</u> <u>Student</u>	F.h. Student neasoning 4G		
			Difficulties in Graduate Level			
			<u>Quantum</u>			
	Contributos		Mechanics	- No - You		Undata
	Contributed		Is There Room for Computation	No Yes		Update
			<u>in</u> <u>Undergraduate</u>			
			Physics Courses?			
	Contributed		<u>Learning About</u> <u>Liouville's</u>	No Yesselect tiere ii you would like to critariye tile session		Submit
			Theorem with	<u> </u>		
			ODE Solver Algorithms		4	
	Contributed		Modeling heat	No Yes		Submit
			transfer in undergraduate	Select nere if you would like to change the session		
			Thermal Physics		4	
	Contributed		Multiple-Choice Assessment for	No Yes		Update
			Upper-division	<u> </u>		
	Cantributas		<u>Electrodynamics</u>	- No - Yes	4	C Indata
	Contributed	·	<u>The</u> <u>Effectiveness of</u>	No Yes		Update
			<u>"Pencasts" in</u> <u>undergraduate</u>			
			<u>curriculum</u>			
Uppe	er Division	/Gradua	ate Courses			
Abstra	acts Submit	ted (# 7	)   Abstracts You	Have Reviewed: 0		
		Cu				
Orde	г Туре	Suggest Order	Title	Session Change?	Comments	Update
	Contributed		A Novel Analog of			Submit
			the Double-Cone problem, Only	Select here if you would like to change the session		
			<u>Better</u>			
	Contributed		Application of	No Yes		Submit

Contributed Contributed	Statistical Mechanics and Neural Networks for Large Databases Comparing Chinese and American students' understanding of quantum mechanics Developing and Assessing Quantum Tutorials: Time	No Yes select there if you would like to change the session  No Yes select there if you would like to change the session		Submit
Contributed	Dependence and Measurements Development of Physics of Sustainability Course for Uppel Level Students	No Yes  "Select tiere ii you would like to change the session	6	Submit
Contributed	Guidelines for a new laboratory course for underrepresente students in a graduate bridge program in Sout		8	Submit
Contributed	Africa Teaching Research in Traditional Classrooms: Why Make Graduate Students Wait?	No YesSelect riele ii you would like to criange trie session	0	Submit
Upper Division/Gr				
	(# 0)			
Astronomy Poster				
Abstracts Submitted	(# 7)   Abstracts Yo	u Have Reviewed: 0		
Abstracts Submitted Order Type Sugges Order	(# 7)   Abstracts Yo	Session Change?	Comments	Update
Abstracts Submitted	(# 7)   Abstracts Yo		Comments	<b>Update</b> Submit
Abstracts Submitted Order Type Sugges Order	t Title (Don't) Hit my Planet! - Periapsis from Instantaneous Position and Velocity	Session Change?  No Yes	Comments	-
Abstracts Submitted Order Type Sugges Order Poster	t Title  (Don't) Hit my Planet! - Periapsis from Instantaneous Position and Velocity Exploring Temperature in Astronomy Demonstration Videos	Session Change?  No Yes  Select here in your would like to change the session	Comments	Submit
Abstracts Submitted Order Type Sugges Order Poster	t Title  (Don't) Hit my Planet! - Periapsis from Instantaneous Position and Velocity Exploring Temperature in Astronomy Demonstration Videos Incorporating Exoplanet Radial Velocity Detections to Teach Simple Harmonic Motion	Session Change?  No Yes	Comments	Submit

Poster	Preli Eval Cosr Curr Teac Nige Afric Sum	erstanding minary uation of a New mology riculum ching Inquiry in eria: The West can International mer School for ng Astronomers	No Yes  - Select riste ii you would like to change the session  No Yes  - Select riste ii you would like to change the session		Submit
Labs/Apparat		9)   Abstracts \	You Have Reviewed: 0		
Order Type	Suggest Order		Session Change?	Comments	Update
Poster		Advanced undergraduate biophysics lab on fluid-fluid phase separation	No Yes  Select riele ii you would like to criange trie session		Submit
Poster		An easily assembled spectrograph for the intermediate lab	No Yes select here if you would like to change the session		Submit
Poster		Arduino Explorations in the Physics Classroom	No Yes		Submit
Contribut	ed	Arduino in electronics course leads to Arduino and FPGA student research projects	No Yes select here if you would like to charge the session		Submit
Poster		Best Practices for Intermediate Physics Laboratory Experiences Using E-CLASS	No Yes  Select there if you would like to charge the session		Submit
Poster		Dynamic Simulation Of The Induced Polarization Effects By Mirrors	No Yes select there it you would like to change the session		Submit
Poster		Electron Charge-to-Mass Ratio: Laser Focused on Perfection	No Yes		Submit
Poster		Improving Students' Understanding of Lock-In Amplifiers	No Yes		Submit
Poster		Instrumented Trebuchet	No Yes select here if you would like to change the session		Submit
Poster		Introductory Physics Laboratory Writing Conferences	No Yes select riere ii you would like to change the session	A.	Submit
Poster		Ionizing	No Yes select riere it you would like to citatige the session	1	Submit

			Radiation Experiments as			
			a Mobile Lab		//	
6	Contributed		LEDs go to school	No Yes		Submit
	-				<i>l</i> ,	
	Poster		<u>Visualizing</u>	No Yes		Submit
			Fields and Current Flow			
	Poster		Mini-Lab Implementation	No Yesselect right in try or would like to change the session		Submit
			to Enhance the Undergraduate			
			Experience in Experimental			
	Poster		Physics Normal modes	o No		Submit
			for loaded string:	Select nere in your would like to change the session		
			Accounting for the string's			
	Poster		mass Single Photon	No Yes		Submit
			investigations using a low-	Select treile ii you would like to criainge trie session		
			cost			
			<u>counter</u>			
	Poster		Speed of Light: Practice Makes	No Yes     Seriest here it you would like to change the session		Submit
			Almost Perfect		,	
	Poster		Student research	No Yesselect nere it you would like to change the session	~	Submit
			projects with Arduino and			
			the Xilinx Zedboard FPGA			
	Poster		Teaching Fluid	• No Yes		Submit
			<u>Dynamics using</u> ( <u>a Transparent</u>	Jelect traile ii you would line to change the session		
			<u>Circulatory</u> <u>System Model</u>			
Abstra				ou Have Reviewed: 0 Session Change?	Commonts	Undate
Order	r <b>Type</b> Poster	Order	A New IPLS	No Yes	Comments	Update
			Course at UNC – Fluids, E&M, Optics, Nuclear*			
	Poster		A New IPLS	⊙ No  Yes		Submit
			Course at UNC – Mechanics, Energy,	Select riere ii you would like to change the Session		<u> </u>
	Poster		Thermodynamics Active Learning	● No Yes		Submit
			and Learning Assistant Support	Select here ii you would like to change the session		4
			Predictors of Student Success			
	Poster		Comparison between Two	No Yes		Submit
			Active Methodologies:			4
			<u>Hands-on</u> <u>Experiments and</u>			

	<u>Interactive</u> <u>Simulations</u>			
Poster	Geometric Constructions as	No Yes Select here if you would like to change the session	0	Submit
	Mnemonics in Classical Physics		<i>h</i>	
Contributed	Periodic Roads and Quantized Wheels	No Yes seriect here it you would like to change the session	Ð	Submit
Poster	Power Boxes: A New Tool for Understanding Circuits	No Yes		Submit
Contributed	Serving our students, measuring learning instead of teaching	No Yes  "Defect field if you would like to criding the session		Submit
Poster	STEM Connections: A Cohort Model for First Year Students	No Yes select nare if you would like to change the session		Submit
Poster	Stochastic simulations and finite-difference models for the life sciences	No Yes  Select here if you would like to change the session		Submit
Poster	Study Habits, Observed Habits, and Performance in a	No Yes select here it you would like to change the session		Submit
Poster	TAPIR (Teaching Activities for Physics Inclusion Resources): Enhancing Diversity in Introductory	Select fiere if you would like to change the session	<b>3</b>	Submit
Poster	Physics The Impact of Language on Learning Physics	No Yes		Submit
Poster	Two Stage Exams: Designing Effective Questions	No Yes	2	Submit
Poster	Using Blocks and Money to Understand Temperature	No Yes		Submit
Poster	Using Javascript in PDF Forms to Create Randomized Assessments	No Yes	<b>0</b>	Submit
Poster	What Can It Look Like?: Physics Teaching for Social Justice			Submit
Other Poster Abstracts Submit	ted (# 13)   Abstracts Y	ou Have Reviewed: 0		
Order Type Sugg	er	Session Change?	Comments (	Update
Poster	A continuing list of climate myths VI	No Yes select nere if you would like to change the session		Submit

Poster	<u>Building STEM</u> <u>Student Pathways: A</u>	No Yesselect here it you would like to change the session		Submit
	two- and four-year		'	
Poster	<u>partnership</u> <u>Development of an</u>	o No ∩ Yes		Submi
. 0000.	English-Vietnamese	Select fiele ii you would like to charige tile session		
	<u>bilingual online</u> <u>course on</u>			,
	Geometrical Optics			4
Poster	Inclusive STEM: A Discussion Group	No Yesselect here it you would like to change the session		Subm
	about Equity in STEM	· ·	<b>'</b>	
Poster	<u>Fields</u> <u>Infinite circuits are</u>	o No ∩ Yes		Subm
	easy. How about	"Select field if you would like to charge the session		
	long ones?			,
Poster	Integration of	No Yes		Subm
	Computation into Undergraduate	Coloct nets if you would like to creatings are session		
	Physics Courses: Opportunities for			
	Physics Faculty			
Poster	Investigating student reasoning of	No Yesselect nere in you would like to change the session		Subm
	<u>everyday</u>		•	
	interdisciplinary phenomena - Initial			
	<u>phases</u>			
Poster	<u>Issues of a</u> <u>Community College</u>	No Yes		Subm
	in NY State: 64-		•	
	Credit Cap, Transfer Paths, and Request			
	to Wave Modern			
Poster	<u>Physics</u> <u>Magnets and</u>	⊙ No		Subm
	Dominoes: A Simple	"-Select Here II you would like to charge the session		
	Mechanics Analogy for Chemical Bonding			
Poster	Resonance in Long	○ No  Yes		Subm
	LC-Ladder Circuits	"Geleut here is you would like to change the session ""		
Poster	Sense of belonging	- No - Yes	1	Subm
i ostei	in STEM:	No Yes		Gubin
	Intersections of race and gender			
Poster	The "embedded	No Yes		Subm
	expert" model of educational	Select here if you would like to change the session		
	transformation: The			:
Poster	SEI and TRESTLE The Oklahoma	- No - Yes		Subm
1 oster	PhysTEC	No Yes		Gubin
	<u>Collaborative</u>			
				2
ics Educatio		Vou Hous Pavioused: 0		
acts Submitte	eu (# 103)   ADSTRACTS	You Have Reviewed: 0		
r Type Sugge Order	est Title	Session Change?	Comments	Upda
Poster	A Cross-sectional	No Yes		Subm
	Study of Students' Use of Mathematics	Select liels if you would like to crialize tile session	J	
	in the Unner-Division			

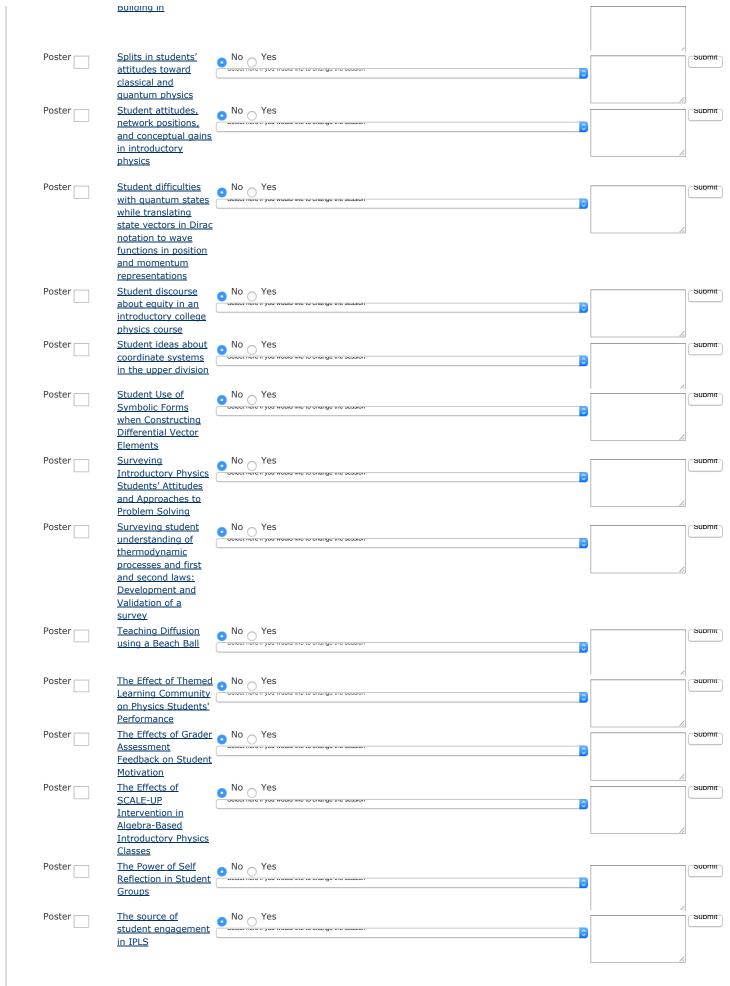
	Poster	A Nonverbal Intelligence Test as a	No Yes		Submit
		Predictor of FCI Gain			
	Poster	A Radiation	o No ○ Yes	] 2	Submit
		<u>Conceptual</u> <u>Evaluation</u>	**-Delect field if you would like to critarye are session ***		
	Poster	A Taxonomy of	No Yes		Submit
		Conceptions about Buoyancy	select nere it you would like to change the session		
	Poster	Adapting AAPT Lab	No Yes		Submit
			Select here if you would like to change the session		
		Conditions: DATA Lab			
	Poster	An Analysis of the	○ No  Yes		Submit
		Misconception about Shape Dependence	Select tiele il you would line to change une session		
	Poster	of Buoyancy An Interesting Twist	○ No ○ Yes		Submit
		on an Old Faraday's Law Experiment	Delect field if you would like to change the session		
	Poster		No Yes	2.	Submit
	roscer	of Student Reasoning Difficulties in	Select here it you would like to change the session		Gubiiii
		Introductory Physics			
		and Upper-Level  Quantum Mechanics			
	Poster	Assessing difficult to assess learning goals	No Yes		Submit
		- formative feedback in P3			
	Poster	Assessing Gender differences in	No Yes		Submit
		Students'	3		
		understanding of Magnetism			
	Poster	Attitudes, Approaches to	No Yes		Submit
		Physics Problem Solving: Turkish and			
	Poster	American Students Challenges engaging	- No - Yes		Submit
	roster	students via interactive e-learning	Select field if you would like to cliaring the session		Gubiiiii
		tutorials for		1.	
	Poster	introductory physics Characterizing how	No Yes		Submit
		students group themselves for group	Collect ries a you would like to charge the session		
	Poster	exams Cognitive wrappers:	No Yes		Submit
	roscer	Learning how to learn physics	Collect field if you would like to cliating the session		Gubiiiii
	Dootou		No. Yes	2	L'idemit
	Poster	Comparing teaching effectiveness across	No Yes		Submit
		years using background-		1	
		attenuated learning gains.			
	Poster	Comparing Two Activities'	No Yes		Submit
		Effectiveness Improving Reasoning			
		with Multiple- Variable Graphed			1
		<u>Information</u>			
	Poster	Concept Inventories	○ No ○ Yes		Submit
		and the Next Generation of	"-Delect tiele ii you would like to criange nie session		
- 1					

	<u>Assessment</u>			
Poster	Conceptual blending:	No Yes		Submit
	an analytical	Select Hele II you would like to change the session		
	framework for			
	immersive computer-		//	
	supported learning			
Poster	Content Knowledge	o No Yes		Submit
	for the Teaching of	Jelect Here II you would like to change the session		
	Energy: Assessing			
	Classroom Artifacts		//	
Poster	Context Dependent	No Yes		Submit
	Mindset: Building	Select field it you would like to change the session		
	New Frameworks			
	and Measurement		/	
	<u>Methodologies</u>			
Poster	Continued use of	No ○ Yes		Submit
	research-based	Select field if you would live to criding the session		
	instructional			
	strategies after		/	
	paired teaching		,,	1
Poster	Decreased failure	o No ○ Yes		Submit
	rates across all	Delect tiele ii And Monio live to cristife file pezziori		
	ethnicities in UC			
	Davis CLASP		,	
Poster	Developing an	No Yes		Submit
. 5555.	Interactive Tutorial	No Yes		
	on a Quantum Eraser	<u> </u>		
			,	
Poster	Developing and	o No Yes		Submit
	Evaluating a	Ocioci noto ii you would iino to origingo iiro sessiori		
	<b>Quantum Interactive</b>			
	Learning Tutorial		/	
	(QuILT) on the			,
	Double-slit			
	<u>Experiment</u>			
Poster	Developing and	○ No  Yes		Submit
	Evaluating Quantum	**Select tiere if you would like to change the session ***		
	Mechanics Formalism			
	and Postulates		,	
	Survey		//	1
Poster	Development of a	No ~ Yes		Submit
1 oster	Survey to Assess	No Yes		Cubiiii
	<u>Transformative</u>			
	Experience in an		,	
	Introductory		//	
	<u>Calculus-Based</u>			
	Mechanics Course			
Poster	Differential Impacts	No ~ Yes		Submit
1 03(01	of Aligning	No Yes		Cabrille
	<u>Epistemological</u>			
	Expectations in			
	Introductory Physics		L	
	<u>Labs</u>			
Poster	Educational Data	No ~ Yes		Submit
. 55(0)	Mining for	No Yes		Cabrille
	Discovering Learning			
	Patterns in High-			
	school Physics		L	
	Students			
D .		No. Voc		
Poster	Effect of Active	o No ○ Yes		Submit
	Learning on Student	- Select here it you would like to change the session		
	Attitudes towards			
	<u>Learning Physics</u>	N V	L	
Poster	Evaluating Just-in-	● No ○ Yes		Submit
	Time Teaching and	Select field if you would like to change the session		
	Peer Instruction			
	using Clickers in a			
	Quantum Mechanics			
	<u>Course</u>			
Poster	Evaluating the	o No Yes		Submit
	Workshop for New	Select field if you would like to change the session		
	Physics and			
	Astronomy Faculty			
Poster	<u>Examining</u>	o No Yes		Submit

				_
	Engineering Course Work Looking for	Collect for to 11 year would like to origingle the session		
	Breadcrumbs			
Poster	Examining the	○ No ○ Yes	//	subm
	Effects of	Concerning in you mount line to untaringe the session		
	Testwiseness Using			
	the FCI and CSEM		li li	
Poster	Examining the	○ No Yes		Subn
	pedagogical fidelity	Select here if you would like to charge the session		
	of an adopted			
	<u>curriculum</u>		/i	
Poster	Explicit incentives to			Subr
	correct mistakes in quantum mechanics	Collect fold in you would like to origingle the session		
	can substantially			
	improve performance		//	1
	on the same			
	problems repeated a			
	second time			
Poster	Exploring One Aspect	No Yes		Subr
	<u>of Pedagogical</u>	Ocident here in you would like to change the session		
	Content Knowledge			
	of Physics Instructors and		//	
	Teaching Assistants			
	Using the Force			
	Concept Inventory			
Poster	Exploring One Aspect	No Yes		Subi
	<u>of Pedagogical</u>	Coroct note it you would like to citalings the session		
	Content Knowledge			
	of Teaching			
	Assistants Using the Test of			
	<u>Understanding</u>			
	Graphs in Kinematics			
Poster	Exploring student	No Yes		Subr
	understanding of the	Celect field if you would like to change the session		
		Ocioca nate ii you modiu iine to change are session		
	understanding of the	Ocioci ricio ii you moutu iiito to citaligo tiro sessiori	1	
	understanding of the negative sign in introductory physics	Ocieda ricire ii you moulu iiile to criainge trie session		
Poster	understanding of the negative sign in introductory physics  Exploring the Role of	No Yes		Subi
Poster	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in	Ocieda ricire ii you moulu iiile to criainge trie session	<i>h</i>	Subi
Poster	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics	No Yes		Subi
	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom	No Yes		
Poster	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending	No Yes  No Yes  No Yes		
	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending psychometric	No Yes		
	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending	No Yes  No Yes  No Yes		
	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending psychometric analysis of gender	No Yes  No Yes  No Yes		
	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending psychometric analysis of gender differences on the	No Yes  No Yes  No Yes  No Yes  Once there is you move the contained the session.		Subi
Poster	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending psychometric analysis of gender differences on the FCI Faculty expectations of dimensional	No Yes  No Yes  No Yes		Sub
Poster	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending psychometric analysis of gender differences on the FCI Faculty expectations	No Yes  No Yes  No Yes  No Yes		Sub
Poster Poster	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending psychometric analysis of gender differences on the FCI Faculty expectations of dimensional analysis	No Yes  No Yes  No Yes  No Yes  No Yes  Octoor finite in you modul line to critaring the season?		Sup
Poster	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending psychometric analysis of gender differences on the FCI Faculty expectations of dimensional analysis  Gender, Network	No Yes		Sub
Poster Poster	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending psychometric analysis of gender differences on the FCI Faculty expectations of dimensional analysis	No Yes  No Yes  No Yes  No Yes  No Yes  Octoor finite in you modul line to critaring the season?		Sub
Poster Poster	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending psychometric analysis of gender differences on the FCI Faculty expectations of dimensional analysis  Gender, Network Analysis, and	No Yes		Sub
Poster Poster	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending psychometric analysis of gender differences on the FCI Faculty expectations of dimensional analysis  Gender, Network Analysis, and Conceptual Gains in	No Yes		SUD
Poster Poster	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending psychometric analysis of gender differences on the FCI Faculty expectations of dimensional analysis  Gender, Network Analysis, and Conceptual Gains in Introductory Physics	No Yes		SUD
Poster Poster	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending psychometric analysis of gender differences on the FCI Faculty expectations of dimensional analysis  Gender, Network Analysis, and Conceptual Gains in Introductory Physics Group dynamics on	No Yes  No Yes  No Yes  Once there is you would mee to crisinge the session  No Yes  Once there is you would mee to crisinge the session  No Yes  Once there is you would mee to crisinge the session  No Yes  No Yes  Once there is you would mee to crisinge the session		SUD
Poster Poster Poster Poster	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending psychometric analysis of gender differences on the FCI Faculty expectations of dimensional analysis  Gender, Network Analysis, and Conceptual Gains in Introductory Physics Group dynamics on group exams	No Yes  No Yes  No Yes  One or here in your mount mile to change the session.		SUD
Poster Poster	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending psychometric analysis of gender differences on the FCI Faculty expectations of dimensional analysis  Gender, Network Analysis, and Conceptual Gains in Introductory Physics Group dynamics on group exams  Helping Students	No Yes		SUD
Poster Poster Poster Poster	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending psychometric analysis of gender differences on the FCI Faculty expectations of dimensional analysis  Gender, Network Analysis, and Conceptual Gains in Introductory Physics Group dynamics on group exams  Helping Students Master Uncertainties	No Yes  No Yes  No Yes  One or here in your mount mile to change the session.		SUD
Poster Poster Poster Poster	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending psychometric analysis of gender differences on the FCI Faculty expectations of dimensional analysis  Gender, Network Analysis, and Conceptual Gains in Introductory Physics Group dynamics on group exams  Helping Students	No Yes		SUD
Poster Poster Poster Poster	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending psychometric analysis of gender differences on the FCI Faculty expectations of dimensional analysis  Gender, Network Analysis, and Conceptual Gains in Introductory Physics Group dynamics on group exams  Helping Students Master Uncertainties in Measurements  How Students	No Yes  ORIGINATION IN YOUR TRAINS HIRE TO CHANGE THE SESSION  NO Yes  ORIGINATION IN YOUR TRAINS HIRE TO CHANGE THE SESSION  NO Yes  ORIGINATION IN YOU TRAINS HIRE TO CHANGE THE SESSION  NO Yes  ORIGINATION IN YOU TRAINS HIRE TO CHANGE THE SESSION  NO Yes  ORIGINATION IN YOU TRAINS HIRE TO CHANGE THE SESSION  NO Yes  ORIGINATION IN YOU TRAINS HIRE TO CHANGE THE SESSION  NO Yes  ORIGINATION IN YOU TRAINS HIRE TO CHANGE THE SESSION  NO Yes  ORIGINATION IN YOU TRAINS HIRE TO CHANGE THE SESSION  NO Yes  ORIGINATION IN YOU TRAINS HIRE TO CHANGE THE SESSION  NO Yes		SUD
Poster Poster Poster Poster Poster	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending psychometric analysis of gender differences on the FCI Faculty expectations of dimensional analysis  Gender, Network Analysis, and Conceptual Gains in Introductory Physics Group dynamics on group exams  Helping Students Master Uncertainties in Measurements  How Students Combine Knowledge	No Yes		SUD
Poster Poster Poster Poster Poster	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending psychometric analysis of gender differences on the FCI Faculty expectations of dimensional analysis  Gender, Network Analysis, and Conceptual Gains in Introductory Physics Group dynamics on group exams  Helping Students Master Uncertainties in Measurements  How Students Combine Knowledge Elements While	No Yes		SUD
Poster Po	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending psychometric analysis of gender differences on the FCI Faculty expectations of dimensional analysis  Gender, Network Analysis, and Conceptual Gains in Introductory Physics Group dynamics on group exams  Helping Students Master Uncertainties in Measurements  How Students Combine Knowledge Elements While Learning	No Yes		Subi
Poster Poster Poster Poster Poster	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending psychometric analysis of gender differences on the FCI Faculty expectations of dimensional analysis  Gender, Network Analysis, and Conceptual Gains in Introductory Physics Group dynamics on group exams  Helping Students Master Uncertainties in Measurements  How Students Combine Knowledge Elements While Learning Impacts of lecture-	No Yes  Once there is you would see to change the season.		Subri
Poster Po	understanding of the negative sign in introductory physics  Exploring the Role of Design Problems in the Physics Classroom Extending psychometric analysis of gender differences on the FCI Faculty expectations of dimensional analysis  Gender, Network Analysis, and Conceptual Gains in Introductory Physics Group dynamics on group exams  Helping Students Master Uncertainties in Measurements  How Students Combine Knowledge Elements While Learning	No Yes		Subr

יר וכ	12010			7741 1 1 ac 10015		
		Poster	Implementing Low- tech SCALE-UP in the	No Yesselect here it you would like to change the session		Submit
			<u>Introductory Physics</u> <u>Classroom</u>			
		Poster	Improving Student	No Yes		Submit
			<u>Understanding of</u> <u>Time-Dependence of</u>	"-Jereut fiele ii yuu wuulu liike tu Urlaitige tile sessiuri		
			Expectation Values in Quantum Mechanics			
			via Larmor Precession of Spin			
		Poster		o No ○ Yes		Submit
			<u>Time well spent or</u> <u>simply inefficient?</u>	Select nere in you would like to change the session		
		Poster	Infrared cameras	- No - Yos	L.	Submit
		Toster	provide disciplinary	No Yes		Odbillit
			affordance to thermal phenomena		,	
		Poster	<u>Insights into</u> <u>undergraduate thesis</u>	No Yesselect mere if you would like to change the session		Submit
			writers: Motivation,	Condenting to the state of the		
			beliefs, and self- efficacy			
		Poster	<u>Instrumentation for</u> <u>Video-Based</u>	No Yesselect mere if you would like to change the session		Submit
			Research in Physics	Condenting to the state of the		
			<u>Education</u>	L		
		Poster	Introductory Astronomy:	No Yes		Submit
			Epistemological Beliefs and Scientific			
		D	Reasoning	N. V		
		Poster	Introductory Physics Students' Perception	NO YES Select tiels it you would like to change the session		Submit
			of Worked-Out Problem Solutions			
		Poster	Investigating	o No ○ Yes		Submit
			Grading Beliefs and Practices of Graduate	Select here in your would like to change the session		
			Student Teaching Assistants using a			
		Poster	Rubric Investigating student	- No - Yes		Submit
		1 oster	interactions during	- Select here it you would like to change the session		Cabillit
			<u>collaborative</u> <u>computational</u>			
		Poster	modeling problems Investigating	No ~ Yes		Submit
		T OSCET	Student Use of	No Yes    select nere it you would like to change the session		Gabiiiii
			<u>Angular Momentum</u> <u>Operators in</u>		B	
		Poster	Quantum Mechanics Investigating	○ No ○ Yes		Submit
			<u>Students</u>	Select here in your would like to change the session		
			<u>Understanding Early</u> <u>Atom models via</u>		4	
		Poster	Model-Based Inquiry Investigating the	o No ⊜ Yes		Submit
			Impact of Task  Design on Student	Select here tryou would like to change the session		
			Reasoning*		4	
		Poster	Jumping through the hoops and loops:	No Yesselect tiere it you would like to change the session		Submit
			neverending battle for success and			
			retention.	L		I
		Poster	Key Factors in Introductory Physics	No Yesselect mere it you would like to change the session		Submit
			Performance: A Four-year Study			
		Poster	Learning of Heat and	• No Yes		Submit

	Inermic energy	Celect there if you would line to critating also session		
	Concepts in Tonala,  Mexico	<u> </u>		
Poster	<u>Learning</u>	⊙ No  Yes	//	Submit
	Orientations towards Physics Problem Solving: Additional	COURSE FIND IT YOU MOUNT INTO TO CHARING THE GREATON		
	Potential Variables			
Poster	<u>Listening to student</u> <u>conversations during</u>	No Yes		Submit
	group exams			
Poster	New resources on PhysPort: Supporting	No Yes	201	Submit
	physics teaching with research-based resources			
Poster	Non-traditional	■ No ○ Yes		Submit
l oster	student status,	No Yes		
	conceptual gains and centrality in introductory physics			
Poster	Open-ended Design	⊙ No  Yes		Submit
	and Peer Review in NEXUS/Physics IPLS	Gelect here it you would like to change the session		
Poster	Pathways to a	⊙ No  Yes		Submit
	physics degree: A statistical story	Colour role ii you modo iine to change die 36330/ii		
Poster	Physics Performance	No Yes	. Δ.	Submit
	and the Influence of Personality	Ocious note it you moud into to change the session		
Poster	Physics Teachers'	○ No ○ Yes	۵.	Submit
	Questioning Patterns and the Reasoning Behind Them	Collect risio ii you moud line to crisings are session		
Poster	Preparing	⊙ No  Yes		Submit
	<u>Undergraduates for</u> <u>Solving Problems in</u>	Collect riers in your would like to criarige title session		
	PhD-level Research			
Poster	Prevalence of College Student Conceptions	No Yes		Submit
	about Buoyancy			
Poster	Promoting student engagement in	No Yes		Submit
	scientific practice in an introductory	, , , , , , , , , , , , , , , , , , ,		
	laboratory		<i>A</i>	
Poster	<u>Quantitative</u> <u>Exploration of the</u>	No Yes		Submit
	Gauss Gun and its Chemistry	· ·		
Dooton	Connection Self-Efficacy in	No. Voc		
Poster	Introductory STEM  Majors	No Yes		Submit
Poster	Sense-making with	■ No ○ Yes		Submit
	Inscriptions in  Quantum Mechanics	No Yes		
Poster	Sensemaking with	⊙ No  Yes		Submit
. 0000	Layers of Epistemic Games	Outcot finic ii you moud iine to criarige are session		
Poster	Shut up and	⊙ No ⊖ Yes	2	Submit
	calculate: Becoming	October ribite is you make into critisingle the seconds:		
Poster	Social Positioning	■ No ○ Yes		Submit
	and Consensus	No Yes		



		Muli lac 100is		
Poster	I ime Evolution of Student	No Yes		Submit
	<u>Understanding of</u> <u>Quantum Mechanical</u>			
	<u>Concepts</u>			
Poster	Toward a Conceptual Model for Problem-	NO YES		Submit
	Solving in Multimedia			
Poster	<u>Learning</u> <u>Tracking shifts in</u>	- No - Yes		Submit
1 oscer	students'	No Yes		Gubiiiii
	understanding: Force, acceleration,		<i></i>	;
	and graphs			_
Poster	<u>Traditional physics</u> vs IPLS: Comparing	No Yes		Submit
	student experiences			
Poster	Training teaching	⊙ No  Yes	1.	Submit
	assistants to be	Select field if you would like to criginge the session		
	effective facilitators in the physics lab			
Poster	Using Google tools to	No Yes		Submit
	follow student learning of scientific	Select field if you would like to charge the session		
	<u>abilities</u>			
Poster	Using Isomorphic	o No Yes		Submit
	Problems to probe Student	select here in you would like to change the session	9	
	Understanding of		<i>h</i>	,
Postor	<u>Speed</u> <u>Using</u>	No Voc		Submit
Poster	phenomenography to	No Yes		Submit
	better understand			
	student development with computational		//	
	physics			
Poster	Using the Cognitive	o No ○ Yes		Submit
	Reflection Test to investigate student	Select here if you would line to change the Session	3	
	reasoning inconsistencies*		1.	
Poster	Using Within-Cluster	■ No → Yes		Submit
	Regression Analysis	Select here in you would like to change the session		
	to Understand Student Differences			
Poster	Utilizing student	No Yes		Submit
	expertise in	Select field if you would like to challed the session		
	<u>informing</u> programmatic			
	changes in STEM		//	1
Poster	Wave Functions &	No Yes		Submit
	Measurements in Quantum Mechanics:	CONSCIENCE II YOU WOULD INCE OF CHANGE OF SUSSIULT	9	
	Student ideas in			
	<u>Chemistry and</u> <u>Physics</u>			
	<u>- 1175165</u>			
ollege/Infor	mal and Outreach			
acts Submitte	d (# 5)   Abstracts Yo	ou Have Reviewed: 0		
Sugge	st Title	Section Changes	Comments	116-3-1
r Type Sugge Order		Session Change?	Comments	Update
Poster	3D Printing	o No ○ Yes		Submit
	Astronomy Lessons in Minecraft	" Gelect riere ii you would ince to charige tire session		
Poster	PhysicsHacker.com -	■ No → Yes	//	Submit
	<ul> <li>where physics and</li> </ul>	Select using it Ann Month live to critative rule session!		
	programming collide!			
Poster	Plasma Outreach to	No Yes		Submit
1 03001	Teachers and			

	Model			
Poster	Repurposing a Cathode Ray Tube to Demonstrate the Photoelectric Effect	No Yes		Submit
Poster	STEM Ambassadors:	○ No  Yes	2	Submit
	An undergraduate- powered outreach program	Collect field if you model line to crisings the 3033001		
Teacher Training/ Abstracts Submittee	Enhancement  I (# 5)   Abstracts Yo	ou Have Reviewed: 0		
Order Type Sugges	t Title	Session Change?	Comments	Update
Poster	8.Mech.CCx: A	○ No  Yes		Submit
	Customized Open Online Course for	Colour field if you mould life to crisinge the 3033001		
	Flipping the AP physics C classroom			
Poster	Action Research and	No Yes		Submit
	<u>Design-Based</u> <u>Research for Physics</u>	Geleut here it you would like to citalings are dession	J	
	Teacher Preparation			
	in Germany: A Case Study			
Poster	An apprentice teacher and	No Yes		Submit
	student's perspective			
	on computer problem-solving		4	
	coaches.			
Poster	ATE Workshop for Physics Faculty	No Yes		Submit
	Project	•	'	
Poster	Helping Prospective	No Yes		Submit
	and Practicing Elementary Teachers	Colour hare it you mount into to change are session		
	Prepare for the NGSS		//	
Technologies				
Abstracts Submitted	l (# 10)   Abstracts \	ou Have Reviewed: 0		
Order Type Sugges	t Title	Session Change?	Comments	Update
Poster	A New App for Physics Simulations	No Yes		Submit
	rnysics Simulacions			
Poster	Assessing Student	No Yes		Submit
	Work Beyond the Final Answer,	Octool field if you mount line to change the session		
	Electronically			
Poster	Five smartphone physics lessons for	No Yes		Submit
	teaching NGSS' DCI			
Poster	Forces and Motion ggrade: Using	- No - Yes		Submit
1 Ostel	Google Forms and	No Yes		Odbinit
	<u>Python to</u> <u>administer/grade</u>			
	administer/grade quizzes			
Poster	administer/grade	No Yes		Submit

	waii	<u>(5</u>			
Poster	<u>iPad</u>	s in Intro Labs	● No ○ Yes		Submit
Poster		ing iPad Videos earn Physics	No Yes		Submit
Poster	Mov Slow	ing Phones Tick ver	No Yes		Submit
Poster	of a	tical Application Web-based onal Response	No Yes	2	Submit
Poster		Evolution of	No Yes		Submit
-	tted (# 1	6)   Abstracts Y	ou Have Reviewed: 1		<u>1</u>
You have submitted Order Type	Suggest Order		Session Change?	Comments	Update
Contributed		Applying Poynting's Energy Flux to Hydrodynamic Systems	No Yes		Update
Poster		Can Classical Mechanics Tutorials Help Approach Other Upper-Level Courses?	No Yes		Submit
Poster		Comparing Chinese and American students' understanding of quantum mechanics	No Yes		Submit
Poster		Core Graduate Courses: A Missed Learning Opportunity?	No Yes		Submit
Poster			No Yes		Submit
Contributed	i	Educational trips for undergraduate Physics majors	No Yes		Submit
Poster		Flipping an Upper Division Electricity and Magnetism Course	No Yes		Submit
Poster		Improving student understanding of addition of angular momentum in OM	No Yes	,	Submit
Poster		<u>QM</u> <u>Improving</u>	No Yes		Submit

3/9/2016 AAPT PaC Tools students. understanding of quantum measurement Investigating No Yes Poster Submit transfer of knowledge in an upper-level <u>quantum</u> mechanics course Mathematization No Yes in upper-Poster Submit division problem solving Neural Networks No Yes and Matlab Poster Supmit and Matlab Algorithms for <u>Pattern</u> Recognition in <u>Databases</u> No Yes Poster **Picturing** Submit <u>quantum</u> mechanics No Yes Poster Self-perception Submit of <u>Undergraduate</u> and Graduate Students as **Educators** No Yes Poster Tutorials on Supmit thinking about quantum <u>entities</u> No Yes Poster Visualizing the Submit

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Electromagnetic
Field with
Differential
Forms