

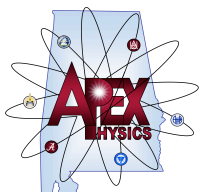
**Alliance For Physics Excellence (APEX)
2015 Summer Institute Workshop – Cohort 2
Physics Teacher Institute (PTI) Activity Schedule
Alabama A & M University**



June 14 – June 26, 2015

APEX 2015 Physics Teachers Institute (PTI) Schedule – Week 1 Cohort 2
Electricity (CASTLE Project, DC Circuit Supplement & Electrostatics Supplement)

| Date | Topic | Activity | Time |
|-----------------|---|--|-------------------|
| Sunday, 6/14/15 | <input type="checkbox"/> Check In <input type="checkbox"/> Introductions <input type="checkbox"/> Announcements | Dr. Barbara Cady Alabama A & M University Announcements/Housekeeping - AAMU Ernest L. Knight Center-VIP Room | 6:00 PM – 6:15 PM |
| | <input type="checkbox"/> Welcome/Greetings | Dr. Mohan Aggarwal, Chairperson, AAMU Department of Physics, Chemistry and Mathematics | 6:15 PM - 6:30 PM |
| | <input type="checkbox"/> Buffet Dinner | Dinner on Campus, Earnst L. Knight West Campus Living Learning Complex Center VIP Room | 6:30 PM – 7:00 PM |
| | <input type="checkbox"/> Electricity | Pre Institute Assessment on Electricity (Participants May Bring a Calculator) Keith Esch Horizon Research, Inc. | 7:00 PM – 8:00 PM |
| | <input type="checkbox"/> Whiteboard Elicitation Questions (J Minstrell) | Battery, Bulb & Wire (How many ways to light a bulb?) | 8:00 PM – 8:45 PM |



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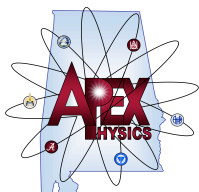
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| Date | Topic | Activity | Time | Resource |
|-----------------|--|-----------------|-------------------|-------------|
| Monday, 6/15/15 | Electricity: Electrostatics | PTRA Activities | 8:00 AM – Noon | J&J Nelson |
| | Lunch on your own. | | Noon – 1:00 PM | |
| | Electricity: Electrostatics | PTRA Activities | 1:00 PM – 4:00 PM | J&J Nelson |
| | What are students thinking? What do they need? What instruction will address their needs? Part I | | 4:00 PM – 5:00 PM | J Minstrell |

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Electricity (CASTLE Project, DC Circuit Supplement & Electrostatics Supplement)

| Date | Topic | Activity | Time | Resource |
|------------------|---|-----------------|-------------------|-------------|
| Tuesday, 6/16/15 | What are students thinking? What do they need? What instruction will address their needs? Part II | | 8:00 AM – 9:00 AM | J Minstrell |
| | Electricity: CASTLE | PTRA Activities | 9:00 AM – Noon | J&J Nelson |
| | Lunch on your own. | | Noon – 1:00 PM | |
| | Electricity: CASTLE | PTRA Activities | 1:00 PM – 4:00 PM | J&J Nelson |
| | How does the battery know? | | 4:00 PM – 5:00 PM | J Minstrell |



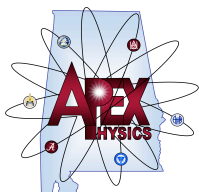
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| Date | Topic | Activity | Time | Resource |
|--------------------|--|-------------------------------------|-------------------|---------------|
| Wednesday, 6/17/15 | Electricity: CASTLE & DC Circuits | PTRA Activities | 8:00 AM – Noon | J&J Nelson |
| | Lunch on your own. | | Noon – 1:00 PM | |
| | TPACK | Effective Power Point Presentations | 1:00 PM – 2:00 PM | M Schamschula |
| | Electricity: CASTLE & DC Circuits | PTRA Activities | 2:00 PM – 4:00 PM | J&J Nelson |
| | Using Diagnoser to collect data for your Action Research | | 4:00 PM – 5:00 PM | J Minstrell |



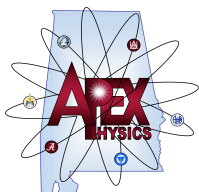
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| Date | Topic | Activity | Time | Resource |
|-------------------|---|-----------------|-------------------|------------|
| Thursday, 6/18/15 | Electricity: CASTLE & DC Circuits | PTRA Activities | 8:00 AM – Noon | J&J Nelson |
| | Lunch on your own. Start Diagnoser Electrostatics Set 1 | | Noon – 1:00 PM | |
| | Electricity: CASTLE & DC Circuits | PTRA Activities | 1:00 PM – 4:30 PM | J&J Nelson |
| | Assignment: Finish Diagnoser Electrostatics Set 1 | | | |



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| Date | Topic | Activity | Time | Resource |
|-----------------|--------------------------|--|--------------------|-----------------------------------|
| Friday, 6/19/15 | Electricity: DC Circuits | PTRA Activities | 8:00 AM – 11:00 AM | J&J Nelson |
| | Electricity | Post Institute Assessment on Electricity (Participants May Bring a Calculator) | 11:00 AM – Noon | Keith Esch Horizon Research, Inc. |
| | In House Lunch | | Noon – 1:00 PM | |
| | Magnets & Magnetism | Pre Institute Assessment on Magnetism (Participants May Bring a Calculator) | 1:00 PM – 2:00 PM | Keith Esch Horizon Research, Inc. |
| | Check out for first week | | 2:00 PM | APEX Leaders |

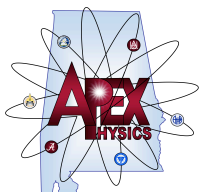
AAPT/PTRA = 29.5 hours

TPACK = 1 hour

Assessments = 1 + 2 hour

Minstrell = (1 + 4) hours

Total = (36.5 + 2)hours



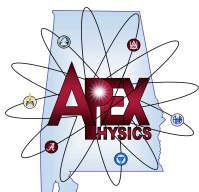
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APEX 2015 Physics Teachers Institute (PTI) Schedule – Week 2 Cohort 2
Magnets & Magnetism (Teaching about Magnets & Magnetism)

| Date | Topic | Activity | Time | Resource |
|-----------------|-------------------------|-----------------|-------------------|--------------------------------------|
| Monday, 6/22/15 | Elicitation for Magnets | | 8:00 AM – 8:20 AM | AAPT/PTRA for J Minstrell (1/3 hour) |
| | Magnets & Magnetism | PTRA Activities | 8:20 AM – Noon | J&J Nelson |
| | Lunch (On Your Own) | | Noon – 1:00 PM | |
| | Magnets & Magnetism | PTRA Activities | 1:00 PM – 4:30 PM | J&J Nelson |



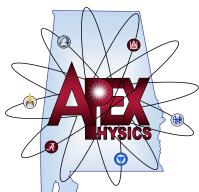
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APEX 2015 Physics Teachers Institute (PTI) Schedule – Week 2 Cohort 2
Magnets & Magnetism (Teaching about Magnets & Magnetism)

| Date | Topic | Activity | Time | Resource |
|---------------------|---------------------|-----------------|-------------------|------------|
| Tuesday, 6/23/15 | Magnets & Magnetism | PTRA Activities | 8:00 AM – Noon | J&J Nelson |
| | Lunch (On Your Own) | | Noon – 1:00 PM | |
| | Magnets & Magnetism | PTRA Activities | 1:00 PM – 4:30 PM | J&J Nelson |



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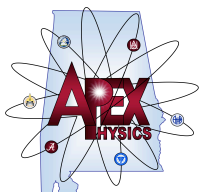


June 14 – June 26, 2015

APEX 2015 Physics Teachers Institute (PTI) Schedule – Week 2 Cohort 2

Magnets & Magnetism (Teaching about Magnets & Magnetism)

| Date | Topic | Activity | Time | Resource |
|--------------------|---|-----------------|---------------------|--------------------------------------|
| Wednesday, 6/24/15 | Action Research as a Necessary Tool for Change | | 8:00 AM – 9:00 AM | Dennis Sunal |
| | APEX Program Data | | 9:00 AM – 10:00 AM | Dennis Sunal, Tara Ray, & JW Harrell |
| | Developing Expertise in Assessing Inquiry I | | 10:00 AM – 11:00 AM | Marilyn Stephens & Dennis Sunal |
| | Magnets & Magnetism | PTRA Activities | 11:00 AM – Noon | J&J Nelson |
| | Lunch (On Your Own) --- Diagnoser Magnets Set 1 | | Noon – 1:00 PM | |
| | Magnets & Magnetism | PTRA Activities | 1:00 PM – 4:30 PM | J&J Nelson |
| | Dinner (On Your Own) – Complete Diagnoser Magnets Set 1 | | | |



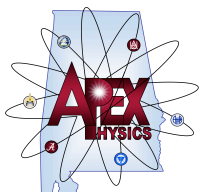
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Magnets & Magnetism (Teaching about Magnets & Magnetism)

| Date | Topic | Activity | Time | Resource |
|-------------------|---------------------|----------------------------|-------------------|--------------------|
| Thursday, 6/25/15 | Magnets & Magnetism | PTRA Activities | 8:00 AM – Noon | J&J Nelson |
| | Lunch (On Your Own) | | Noon – 1:00 PM | |
| | TPACK | Content Management Systems | 1:00 PM - 2:00 PM | Marius Schamschula |
| | Magnets & Magnetism | PTRA Activities | 2:00 PM – 4:30 PM | J&J Nelson |



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APEX 2015 Physics Teachers Institute (PTI) Schedule – Week 2 Cohort 2
Magnets & Magnetism (Teaching about Magnets & Magnetism)

| Date | Topic | Activity | Time | Resource |
|-----------------|---------------------------|---------------------------|--------------------|--|
| Friday, 6/26/15 | Magnets & Magnetism | PTRA Activities | 8:00 AM – 11:45 AM | J&J Nelson |
| | Survey | | 11:45 AM – Noon | Sean Smith Horizon Research, Inc. |
| | In House Lunch | | Noon – 1:00 PM | |
| | Magnetism | Post Institute Assessment | 1:00 PM – 2:00 PM | Eric Banilower Horizon Research, Inc. |
| | Check out for second week | | 2:00 PM | APEX Leaders |

AAPT/PTRA = 29 $\frac{3}{4}$ hours

TPACK = 1 hour

Assessments = 1 $\frac{1}{4}$ hour

Sunal = 3 hours

Total = 35 hours