

| Start Time | July 19 Sunday  |                      |  | July 20 Monday-HS focus                                     |                   |   | July 21 Tuesday  |                    |   | July 22 Wednesday  |  |                    |
|------------|---|----------------------|--|---|-------------------|---|--|--------------------|---|--|--|--------------------|
| 10:00      | Welcome & Orientation   | Land Acknowledgement |  | PLENARY: Boveda (Live Stream)                               | Host: MADER       |   | Parallel Sets E Q&A Time                                       | Parallel sets      | Diversity, Equity,                                  | Parallel Sets G Q&A Time   | Parallel sets                              | Diversity, Equity, |
| 10:30      | Plenary 1: Barnard (Live Stream)                                | Host: Mader          | Q&A: Knowles, Knaub  |   | See details below | Parallel sets   |  | See details below  |   |  |  |                    |
| 11:00      |   |                      | Q&A: Mader   | Plenary 2: HAZARI WITH PANEL (Live Stream)                  | Host: Mader       |   | Plenary 3 APS Plenary Speakers: Bauer and Spyrou (Live Stream) | Host:Mader         |   | Millikan Medal: David Cook /Service recognitions 4 (Live Stream) | Host: sabella                              |                    |
| 11:30      | Parallel Sets A Q&A Time  | Parallel Sets        | Q&A: Mader   |   | Q&A:Mader         |   |  | Q&A:Sabella        |   |  |  |                    |
| 12:00      |   | See details below    |  |   |                   |   |  |                    |   |  |  |                    |
| 12:30      | Awards 1: Paul E. Klopsteg Award Plenary-Kakalios (Live Stream) | Host: Sabella        | Parallel Sets C Q&A Time                                     | Parallel sets   | Parallel sets     | Poster Sets 1 Q&A Time  | Parallel sets  | Diversity, Equity, | K-12 Resource Room, Volunteer staffed in 1hr shifts | Parallel sets  | Diversity, Equity, Inclusion Resource Room |                    |
| 1:00       | Q&A: Sabella  | See details below    |  | See details below   |                   |   | See details below  |                    |   |  |  |                    |
| 1:30       | Parallel Sets B Q&A Time  | Parallel Sets        | Awards 2: Paul W. Zitzewitz Award - Ann Walkup (Live Stream) | Host: Sabella   |                   | Awards 3: Halliday and Resnick - Deborah Mason-McCaffrey, (Live Stream) | Host: Sabella  |                    | SPECIAL TOPICS Discussions                          | Parallel sets  |  |                    |
| 2:00       |   | See details below    |  | QA:Sabella  |                   |   | Q&A:Sabella  |                    |   | See Wednesday Tab for details                                    |  |                    |
| 2:30       | SPS Undergraduate Posters Live                                  | Live Stream          | Parallel Sets D Q&A Time                                     | 11 parallel sets  |                   | Parallel Sets F Q&A Time  | Parallel sets  | Diversity, Equity, | K-12 Resource Room, Volunteer staffed in 1hr shifts | PERC Bridging Session Q&A (LIVE STREAM)                          |  |                    |
| 3:00       |   | Host: Conrad         |  | see below   |                   |   | See details below  |                    |   |  |  |                    |
| 3:30       |   |                      | President's Town Hall (LIVE STREAM)                          |   |                   | PERTG Town Hall (LIVE STREAM)   |  |                    | Snack & Chat (Live breakout rooms)                  |  |  |                    |
| 4:00       | End of day 4:00 EDT   |                      |  | GAME NIGHT  |                   |   | DEMO SHOW  |                    |   |  |  |                    |
| 4:30       |   |                      |  | MONDAY - 2:30 UG Tea Time - Awards + Demo contest VOTE Now! |                   |   | End of day 5:30 EDT  |                    |   |  |  |                    |
| 5:30       |   |                      |  |   |                   |   |  |                    |   |  |  |                    |
| 6:00       |   |                      |  |   |                   |   |  |                    |   |  |  |                    |

| Day            | SET ID   | Main Session Title                        |
|----------------|----------|---|
| SUN 10:00A EDT | WELC-1   | Welcome and Orientation                   |
| SUN 10:30A EDT | PLEN-1   | Plenary 1: Barnard                        |
| SUN 11:30A EDT | VCB-1    | Virtual Coffee Break                      |
| SUN 11:30A EDT | K12-RR1  | K-12 Resource Room                        |
| SUN 11:30A EDT | PAR-A.01 | AAPT Speakers Bureau: Purpose and Samples |

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| SUN 11:30A<br>EDT | PAR-A.02 | Best Practices in Educational Technology   |
| SUN 11:30A<br>EDT | PAR-A.03 | Best Practices for Developing Scientific Thinking, Reasoning, and Decision-Making Abilities I  |
| SUN 11:30A<br>EDT | PAR-A.04 | PER: Assessment, Grading and Feedback I  |
| SUN 11:30A<br>EDT | PAR-A.05 | PER: Diversity, Equity & Inclusion I   |
| SUN 11:30A<br>EDT | PAR-A.06 | PER: Student Content Understanding, Problem-Solving and Reasoning I                            |
| SUN 11:30A<br>EDT | PAR-A.07 | Professional Skills for Students   |
| SUN 11:30A<br>EDT | PAR-A.08 | Promoting and Supporting Equity and Inclusion in STEM Introductory Courses                     |
| SUN 11:30A<br>EDT | PAR-A.09 | TA Training and Innovations to Make Introductory Labs Work                                     |
| SUN 11:30A<br>EDT | PAR-A.10 | What to Say When Students Ask you about Astrophysics   |
| SUN 11:30A<br>EDT | PAR-A.11 | Remote Delivery of Introductory Physics Labs Lessons and Victories                             |
| SUN 12:30P<br>EDT | AWARD1   | Paul E. Kopsteg Award Plenary: Kakalios  |
| SUN 1:30P<br>EDT  | PAR-B.01 | Best Practices for Developing Scientific Thinking, Reasoning, and Decision-Making Abilities II |
| SUN 1:30P<br>EDT  | PAR-B.02 | Computational Thinking in Physics I  |
| SUN 1:30P<br>EDT  | PAR-B.03 | New Curriculum by K-12 Outreach Programs   |
| SUN 1:30P<br>EDT  | PAR-B.04 | PER: Curriculum and Instruction I  |
| SUN 1:30P<br>EDT  | PAR-B.05 | Remote Delivery of Introductory Physics Labs Lessons and Victories II                          |
| SUN 1:30P<br>EDT  | PAR-B.06 | Science and Religion   |
| SUN 1:30P<br>EDT  | PAR-B.07 | Upper Division Undergraduate   |
| SUN 1:30P<br>EDT  | PAR-B.08 | Super celebration of a Loved, Exceptional & Unique Person: Bob Beichner                        |

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| SUN 1:30P<br>EDT  | PAR-B.09    | Using the Effective Practices for Physics Programs (EP3) Guide and its online communities to improve, review, and assess your department |
| SUN 2:30P<br>EDT  | SPS POSTERS | SPS Undergraduate Poster Presentations   |
| MON<br>10:00A EDT | PLEN-2A     | Plenary 2A: Antiracism Plenary, Speaker: Midred Boveda   |
| MON<br>11:00A EDT | VCB-2       | Virtual Coffee Break Drop In   |
| MON<br>11:00A EDT | K12-RR2     | K-12 Resource Room   |
| SPEC              | EDI-RR1     | Equity, Diversity and Inclusion Resource Room  |
| MON<br>11:00A EDT | PLEN-2B     | Plenary 2B: Speaker: Hazari, With Panel Guests Live  |
| MON 12:30P<br>EDT | PAR-C.01    | Doing physics and being ____   |
| MON 12:30P<br>EDT | PAR-C.02    | Gender   |
| MON 12:30P<br>EDT | PAR-C.03    | Get the Facts Out: Changing the Conversation Around Physics Teacher Recruitment  |
| MON 12:30P<br>EDT | PAR-C.04    | Integrating Computation into High School Physics   |
| MON 12:30P<br>EDT | PAR-C.05    | K-12 PER   |
| MON 12:30P<br>EDT | PAR-C.06    | PER: Diverse Investigations  |
| MON 12:30P<br>EDT | PAR-C.07    | PER: Diversity, Equity & Inclusion II  |
| MON 12:30P<br>EDT | PAR-C.08    | PER: Student and Instructor Support & Professional Development, Program and Institutional Change I                                       |
| MON 12:30P<br>EDT | PAR-C.09    | Physics Education Research in Labs I   |
| MON 12:30P<br>EDT | PAR-C.10    | Remote Delivery of High School Labs: Use of Existing Teaching Resources.   |
| MON 12:30P<br>EDT | PAR-C.11    | Tools for Data Analysis  |
| MON 1:30P<br>EDT  | AWARD2      | Paul W. Zitzewitz Award, SPEAKER: Walkup   |
| MON 2:30P<br>EDT  | PAR-D.01    | Astronomy Paper  |

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| MON 2:30P<br>EDT  | PAR-D.02  | Effective Practices in Educational Technology I   |
| MON 2:30P<br>EDT  | PAR-D.03  | Exploring the Implementation of the NGSS Framework in Undergraduate Science Disciplines |
| MON 2:30P<br>EDT  | PAR-D.04A | High School   |
| MON 2:30P<br>EDT  | PAR-D.04B | General Relativity in the High School Classroom   |
| MON 2:30P<br>EDT  | PAR-D.04C | Neutrino Physics in the Classroom   |
| MON 2:30P<br>EDT  | PAR-D.05  | K-12 (Intro UG, AD UG) Physics Courses and Labs in the Shadow of COVID19                |
| MON 2:30P<br>EDT  | PAR-D.06  | PER: Curriculum and Instruction II  |
| MON 2:30P<br>EDT  | PAR-D.07  | PER: Student Content Understanding, Problem-Solving and Reasoning II                    |
| MON 2:30P<br>EDT  | PAR-D.08  | Pre High School   |
| MON 2:30P<br>EDT  | PAR-D.09  | Finding and adapting IPLS materials from the Living Physics Portal                      |
| MON 2:30P<br>EDT  | PAR-D.10  | Tools for Teaching Computation in Physics   |
| MON 2:30P<br>EDT  | PAR-D.11  | SPS AWARDS AND TRIVIA CONTEST   |
| MON<br>3:30PEDT   | PTH       | President's Town Hall   |
| MON 4:30<br>EDT   | GAMES     | VIRTUAL GAME NIGHT - OFF SITE ZOOM GATHERING  |
| TUE 10:00A<br>EDT | VCB-3     | VIRTUAL COFFEE BREAK DROP IN, HOST: VARIOUS   |
| TUE 10:00A<br>EDT | EDI-RR2   | EQUITY, DIVERSITY AND INCLUSION RESOURCE ROOM, HOSTS: VARIOUS                           |
| TUE 10:00A<br>EDT | PAR-E.01  | Computational Thinking in Physics II  |
| TUE 10:00A<br>EDT | PAR-E.02  | Effective Practices in Educational Technology II  |
| TUE 10:00A<br>EDT | PAR-E.03  | Introductory Courses I  |
| TUE 10:00A<br>EDT | PAR-E.04  | PER: Assessment, Grading and Feedback II  |
| TUE 10:00A<br>EDT | PAR-E.05  | PER: Diversity, Equity & Inclusion III  |
| TUE 10:00A<br>EDT | PAR-E.06  | Physics Education Research in Labs II   |

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| TUE 10:00A<br>EDT  | PAR-E.07     | Transforming Physics Curricula to Include Computation  |
| TUE 10:00A<br>EDT  | PAR-E.08     | Physics Majors: High School to Doctorate   |
| TUE 10:00A<br>EDT  | PAR-E.09     | Graduate Education in US- Thinking about Admissions, Diversity, Content Knowledge, and Institutions  |
| TUE 10:00A<br>EDT  | PAR-E.10     | Recruiting, Retaining and Empowering Underrepresented Teachers in Physics  |
| TUE 11:00A<br>EDT  | PLEN-3       | PLENARY 3, TWO SPEAKERS: APS SESSION   |
| TUES 12:30P<br>EDT | POST-1       | POSTER SESSION 1: Labs/Apparatus, Lecture/Classroom, Physics Education Research, Physics Education Research II, Physics Education Research. VI, Physics Education Research V, Technologies |
| TUE 1:30P<br>EDT   | AWARD3       | Halliday and Resnick Award Session, SPEAKER: MASON-MCCAFFREY   |
| TUE 2:30P<br>EDT   | PAR-F.01-PAN | Broadening Participation in STEM Through Science Cafes & Festivals   |
| TUE 2:30P<br>EDT   | PAR-F.02     | Communicating Sensitive Topics in the Classroom  |
| TUE2:30P<br>EDT    | PAR-F.03     | Frontiers of Astronomy   |
| TU2:30P<br>EDT     | PAR-F.03B    | Innovations in Teaching Space Science and Astronomy  |
| TUE2:30P<br>EDT    | PAR-F.03B    | Innovations in Teaching Space Science and Astronomy  |
| TUE2:30P<br>EDT    | PAR-F.03B    | Innovations in Teaching Space Science and Astronomy  |
| TUE2:30P<br>EDT    | PAR-F.05     | PER: Curriculum and Instruction III  |
| TUE2:30P<br>EDT    | PAR-F.06     | PER: Student and Instructor Support & Professional Development, Program and Institutional Change II  |
| TUE2:30P<br>EDT    | PAR-F.07     | PER: Student Content Understanding, Problem-Solving and Reasoning III  |

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| TUE2:30P<br>EDT   | PAR-F.08  | Introductory Courses II  |
| TUE2:30P<br>EDT   | PAR-F.09  | Remote Delivery of Advanced Physics Labs Lessons and Victories                 |
| TUE2:30P<br>EDT   | PAR-F.10  | Teaching Equity in Physics   |
| TUE2:30P<br>EDT   | PAR-F.11  | The Art and Science of Teaching  |
| TUE2:30P<br>EDT   | PAR-F.11  | The Art and Science of Teaching (moved from Introductory Courses I)            |
| TUES 3:30<br>EDT  | PERTGTH   | PERTG TOWNHALL LIVE STREAM   |
| TUES 4:30<br>EDT  | PIRA-DEMO | PIRA VIRTUAL FAMILY PHYSICS DEMONSTRATION EXTRAVAGANZA                         |
| WED 10:00A<br>EDT | PAR-G.01  | Computer Modeling and Computation in Labs                                      |
| WED 10:00A<br>EDT | PAR-G.02  | Exploring Virtual and Augmented Reality in Physics Education                   |
| WED 10:00A<br>EDT | PAR-G.03  | Impact of Evidence-based Active Engagement Pedagogies on Student Learning      |
| WED 10:00A<br>EDT | PAR-G.04  | Introductory Labs/Apparatus  |
| WED 10:00A<br>EDT | PAR-G.05  | Introductory Physics for the Life Sciences (IPLS)                              |
| WED 10:00A<br>EDT | PAR-G.06  | PER: Student Content Understanding, Problem-Solving and Reasoning IV           |
| WED 10:00A<br>EDT | PAR-G.07  | PER: Using Institutional Data Sources and Big Data Research Methods            |
| WED 10:00A<br>EDT | PAR-G.08  | PhysTEC: Building Institutional Support and Leadership for Teacher Preparation |
| WED 10:00A<br>EDT | PAR-G.09  | Rethinking the Boundaries of the Laboratory Classroom                          |
| WED 10:00A<br>EDT | PAR-G.10  | Technologies   |
| WED 10:00A<br>EDT | PAR-G.11  | Upper Division/Graduate Courses  |
| WED 11:00A<br>EDT | AWARD4    | MILLIKAN MEDAL AWARD SESSION, SPEAKER: COOK, SERVICE RECOGNITIONS (LIVE)       |

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| TUES 12:30P EDT | POST-2      | POSTER SESSION 2:<br>Labs/Apparatus,<br>Labs/Apparatus III,<br>Lecture/Classroom, Physics<br>Education Research VI, Physics<br>Education Research, VII,<br>Physics Education Research<br>VIII, Physics Education<br>Research IX, Physics Education<br>Research X, Upper Division<br>and Graduate, Astronomy |
| WED 1:30P EDT   | STPAR-1     | Solo PER  |
| WED 1:30P EDT   | STPAR-2     | Early Career Topical<br>Discussions   |
| WED 1:30P EDT   | STPAR-3     | Student Topical Discussion<br>and Social  |
| WED 1:30P EDT   | STPAR-4     | Museum and Building Lobby<br>Science  |
| WED 1:30P EDT   | STPAR-5     | SPS Undergraduate Meet up   |
| WED 1:30P EDT   | STPAR-6     | TYC Meet UP   |
| WED 1:30P EDT   | STPAR-10    | Retired Physicist's Meet-up   |
| WED 1:30P EDT   | STPAR-13    | Meet-up for Members and<br>Supporters of the LGBTQ+<br>Community  |
| WED 1:30P EDT   | STPAR-9     | Early Career Speed<br>Networking  |
| WED 1:30P EDT   | STPAR-7     | Voices of Women   |
| WED 1:30P EDT   | STPAR-11    | Disability Meeting-up   |
| WED 1:30P EDT   | STPAR-12    | International- Meet-up  |
| WED 1:30P EDT   | STPAR-8     | 30 Demos in 60 minutes  |
| WED 2:30P EDT   | PERC BRIDGE | PERC BRIDGING SESSION LIVE<br>Q&A   |

