**Appendix A:**

|  |
| --- |
| Status within PTRA Master Collection |
| Readable electronic copy available. |
| Unknown/Missing |

| **Title of Book** | **Year** | **Author(s)** | **Status** |
| --- | --- | --- | --- |
| ***Teaching about DC Circuits***  | ***1992*** | ***Earl Feltyberger*** | Published by AAPT |
| ***Teaching about Electrostatics***  | ***1992*** | ***Bob Morse*** | ***Published by AAPT*** |
| Teaching about Kinematics | 1992 | Carl Duzen | Discontinued |
| Role of Demonstrations | 1992 | Dick Heckathorne | Discontinued |
| Role of the Laboratory | ***1992*** | ***Jim Nelson*** | Published by AAPT |
| Teaching about Astronomy | 1993 | Ann Young | Draft |
| Teaching about Dynamics | 1993 | Maxine Willis | Discontinued |
| ***Teaching Lightwave Communication***  | ***1993*** | ***Mark Davids*** | Published by AAPT |
| ***Teaching about Magnetism*** | ***1993*** | ***Bob Reiland*** | Published by AAPT |
| Teaching about Waves & Sound | 1993 | Tom Ford | Discontinued |
| ***Role Graphing Calculator (TI-82)*** | ***1994*** | ***Cherie Lehman*** | Published by AAPT |
| Teaching about Color & Vision | ***1994*** | ***Bill Franklin*** | ***Published by AAPT*** |
| Teaching about Elementary Particles | 1994 | Andy Erzberger | Discontinued |
| Teaching about Quantitative Reasoning | 1994 | Cliff Swartz | Draft |
| Role of Women & Minorities in Physics | 1994 | Judith Parker | Discontinued |
| Role of Lasers in Teaching Physics | 1995 | Harry Rheam | Draft |
| Teaching about Newton’s Third Law | 1995 | Maxine Willis | Discontinued |
| ***Physics of Toys*** | ***1995*** | ***Jodi McCullough*** | Published by AAPT |
| ***Teaching about Cosmology*** | ***1995*** | ***Larry Krause*** | Published by AAPT |
| Physics in Mathematics Curriculum | 1995 | Art Fortgang | Discontinued |
| Role of Calculator Based Laboratory | 1995 | Linda Antione | Discontinued |
| Teaching about Digital Electronics | 1996 | Herman Keith | Draft |
| Teaching about Geometric Optics | 1996 | Jane Nelson | Draft |
| Teaching about Fluids | 1997 | Ronald Cefelo | Draft |
| ***Role Graphing Calculator (TI-83)*** | ***1997*** | ***Cherie Lehman*** | Published by AAPT |
| Teaching about Simple Machines | 1997 | Joe Desrosiers | Draft |
| Active Physics | 1997 | Marilyn Decker | Discontinued |
| Teaching about Radioactivity | 1997 | Wayne Snyder | Draft |
| Active Learning | 1997 | Mano Singham | Draft |
| Teaching about Global Positioning System | 1998 | Larry Chew | Draft |
| Make & Take[[1]](#footnote-1)1 | 1998 | George Amann Pat Callahan | Draft |
| Role of Medicine in Teaching Physics | 1988 | Karen Bouffard | Discontinued |
| Teaching about Music & Sound | 1988 | “Trina” Cannon | Draft |
| Teaching about States of Matter | 1988 | Ron Cefalo | Draft |
| Role of Web Pages | 1988 | Cathy Ezrailson | Discontinued |
| ***Teaching about Momentum & Impulse*** | ***1999*** | ***Bill Franklin*** | Published by AAPT |
| Teaching about Chemistry & Physics | 1999 | Tom Maccarone | Discontinued |
| Role of Demonstrations | 1999 | Marsha Hobbs | Draft |
| Role of C3P | 2000 | Jan Mader | Draft |
| Role of Ripple Tank | 2000 | Jane Nelson | Draft |
| Teaching about Newton’s Laws | 2000 | Bob Morse | Published by AAPT |
| Simulation and Conceptual Understanding | 2001 | Roy McCullough | Draft |
| TI-Update | 2001 | Charles Reno | Discontinued |
| OP Color & Vision | 2001 | Gene Easter | Draft |
| Role of Graphical Analysis | 2002 | Rex Rice | Draft |
| Teaching about Physics of Sports | 2002 | Barney Ricca | Draft |
| Role of Amusement Park Physics | 2002 | Clarence Bakken | Discontinued |
| *Role of Exploratories & Practicums* | ***2002*** | ***George Amann*** | Published by AAPT |
| Role of Epistemology of Physics | 2002 | Ron Newburgh | Discontinued |
| ***Teaching about Energy*** | ***2003*** | ***John Roeder*** | Published by AAPT |
| Teaching about Waves in 1D (Revision) | 2003 | Karen Bouffard | Discontinued |
| Role of TI-83 (Revision) | 2003 | Charles Reno | Draft |
| ***Teaching about Kinematics*** | ***2003*** | ***Jane Nelson*** | Published by AAPT |
| Teaching about Gravity | 2004 | George Amann | Draft |
| CASTLE (PTRA Supplement) | 2005 | Karen Jo Matsler | Draft |
| Role of Inquire | 2005 | Karen Jo Matsler | Draft |
| Waves in One Dimension | 2007 | Jan Mader & Jane Nelson | Draft |
| Force Supplement | 2007 | Jane Nelson | Draft |
| Momentum Supplement | 2008 | Jane Nelson | Draft |
| Teaching Physics for the First Time | ***2008*** | ***Jan Mader & Mary Winn*** | ***Published by AAPT*** |
| Teaching about Radioactivity | 2009 | Alice Flarend | Draft |
| ***Teaching about Magnets & Magnetism*** | ***2010*** | ***Jane Nelson*** | ***Published by AAPT*** |
| Electromagnetic Spectrum: Window to the Universe | 2006 | Pat Callahan & Dave McCachren | Draft |

**Appendix B:**

**PTRA Workshops Procedures for Grant Proposals and Independent Workshops**

#  Grant Proposals

If the authors of a grant proposal wish to incorporate AAPT/PTRA workshops and PTRAs into the proposal, the parts of the proposal related to PTRA must

1. Be approved by the PTRA Project Director at least one month before the proposal submission deadline.
2. Incorporate workshop fees and PTRA stipends in alignment with the guidelines provided below.
3. Specify how grant funds will be used to purchase PTRA materials and support on-going PTRA activities such as the review and revision of PTRA materials and training of PTRAs and future PTRAs. In addition grant funds should be allocated to support AAPT staff time for handling registration and financial details, if appropriate, for the workshops.
4. Specify the PTRAs who will be part of the proposed activity. These PTRAs must be chosen in consultation with the PTRA Project Director. The lead presenter at a workshop must be a PTRA person certified in the content area(s) associated with the workshop. The lead presenter may be assisted by co-presenters (apprentices) who are not certified in those content areas. After the completion of the workshop, the apprentice presenters may apply for PTRA certification in those content areas. The lead presenter is strongly encouraged to include apprentice co-presenters in the workshop.

When consulting about PTRAs for a workshop, the Project Director may take into account geographic location, workshop experience, distribution of PTRA workloads, PTRA certification, and other criteria as appropriate.

1. Include mechanisms to advertise the program activities and the workshops to AAPT members as appropriate.
2. Include workshop surveys (provided by AAPT/PTRA). The results of the survey must be submitted directly to AAPT to monitor the quality of the workshops and will be reviewed by the PTRA Project Director and the AAPT Executive Officer or Associate Executive Officer. A summary of the results will be sent to the grant PIs and co-PIs and the workshop leaders. If other assessment instruments are used, the results of the assessment and copies of the assessment instruments must be submitted to the PTRA Project Director to be added to the assessment database for PTRA workshops. Projects are strongly encouraged to use the assessment instruments that have been developed and used for PTRA workshops.

# Independent Workshops (not directly support by grant funds)

1. The workshop organizer must submit to the PTRA Project Director a PTRA workshop information form (available from AAPT and the PTRA Project Director) as soon as possible before the workshop, but normally no less than one month prior to the start date. The form shall specify the content of the workshop, the PTRAs and others who will be involved in leading the workshop, the workshop fees to be charged to the participants, other sources of funding for the workshop, the stipends to be received by the workshop lead presenters and co-presenters, a list of PTRA materials being used at the workshop, arrangements for assessments, and a clear statement about the portion of the revenue to be designated for the PTRA Continuation Fund and the services those funds support. All of the budget items must be in alignment with the PTRA financial guidelines given below.
2. If the workshop organizer is not a PTRA, the organizer must consult with the PTRA Project Director about the selection of PTRAs who will be presenters at the workshop. The lead presenter at a workshop must be a PTRA certified in the content area(s) associated with the workshop. The lead presenter may be assisted by co-presenters (apprentices) who are not certified in those content areas. After the completion of the workshop, the apprentice presenters may apply for PTRA certification in those content areas. The lead presenter is strongly encouraged to include apprentice co-presenters in the workshop.
3. When consulting about PTRAs for a workshop, the Project Director may take into account geographic location, workshop experience, distribution of PTRA workloads, PTRA certification, and other criteria as appropriate.
4. The workshop organizers are strongly encouraged to work with AAPT members and a local college or university to provide logistic, materials, and equipment support.
5. As part of the approval process, the organizer must submit an announcement of the workshop to be posted on the AAPT/PTRA website, typically at least one month before the workshop. This notice will let the participants know that the workshop is an AAPT “approved” PTRA workshop.
6. The organizer must administer a workshop survey (provided by AAPT/PTRA). The results of the survey must be submitted directly to AAPT to monitor the quality of the workshops and will be reviewed by the PTRA Project Director and the AAPT Executive Officer or Associate Executive Officer. A summary of the results will be sent to the workshop leaders upon request.
7. If other assessment instruments are used, the results of the assessment and copies of the assessment instruments must be submitted to the PTRA Project Director to be added to the assessment database for PTRA workshops. Projects are strongly encouraged to use the assessment instruments that have been developed and used for PTRA workshops.

# PTRA Financial Guidelines

The budget for an approved PTRA workshop should include

1. Stipends for PTRA lead presenters and co-Presenters – typically $500/day + travel + lodging + food (if not covered by other financial sources)
2. Participant materials fee – typically $100/day per participant, sufficient to cover supplies, manuals, assessments etc. If the number of participants is uncertain, a flat rate may be negotiated by the workshop organizer and AAPT (usually through the PTRA Project Director).
3. Contribution to the AAPT/PTRA Continuation Fund – to support training of PTRAs (not necessarily the ones running the workshop) and reviewing and revising PTRA resource materials.
4. AAPT corporate partners donations or discounts for materials such as motion sensors, Video Physics, and so on. However, these corporate partners should not be utilized if the workshop is not an approved AAPT/PTRA workshop meeting the guidelines set out in this document.
5. Whenever possible, funds for assessment of the workshops by an external evaluator, who will use PTRA assessment tools, perhaps in conjunction with other assessment instruments.

**Appendix C:**

The mission of the AAPT/PTRA Program is to improve the teaching and learning of physics topics in pre collegiate education for all teachers and students in the United States.

To accomplish this mission the AAPT/PTRA Program has several goals:

1. **To give outstanding practicing high school teachers an opportunity to improve themselves professionally**. This opportunity is provided at annual AAPT/PTRA Leadership Institutes. At these institutes PTRA leaders grow in the knowledge and skill associated with providing professional development for colleagues. The knowledge and skills include, but are not limited to, workshop leadership, workshop organization, physics content, teaching techniques, trends in science education, equity issues, et cetera.

2. **To develop AAPT/PTRA Teacher Resource Guides**. These Guides are designed to serve not only as a resource for the PTRA leader during professional development sessions but also for practicing teachers after attending an AAPT/PTRA professional development.

3. **To do outreach professional development for teachers** who have had limited opportunity to attend professional development related to the teaching of physics topics. In essence, this is our technique for spreading our excitement about teaching and learning physics topics**.**

4. **To become the recognized provider** of accessible, highest quality, physical science and physics pre college teacher professional development workshops.

5. **To establish a system for the long term continuation** of the AAPT/PTRA Program for providing accessible, highest quality, professional development for teachers of physical science and physics.

**Appendix D:**



**Appendix E:**

Proposed AAPT/PTRA Director Responsibilities

1. Coordinate workshops designated as AAPT/PTRA workshops. Coordination would involve:
	1. Providing resources applicable to workshop topic, including securing resources from partners such as Pearson, Vernier, PASCO, etc.
	2. Finding and designating workshop leaders for PTRA training.
	3. Appointing or designating certified PTRAs as workshop leaders for grant funded workshops.
	4. Providing support for advertising and social media exposure.
	5. Determining budget restrictions and allocations deemed appropriate for the workshop.
	6. Ensure AAPT/PTRA workshops comply with expectations and standards as identified by the AAPT Board and/or Oversight Committee.
2. Actively search for opportunities for PTRA workshops through, for example, Section Meetings, partnerships with institutions of higher education, etc.
3. Coordinate with the oversight committee, meetings with the AAPT staff (location, times), and the chair of the oversight committee (agenda).
4. Meet regularly with the Executive Officer and the AAPT/PTRA Oversight Committee Chair to discuss activities, plans, etc. Work with the Executive Officer and AAPT/PTRA Oversight Committee Chair in developing the Oversight Committee agenda for the twice yearly meetings.
5. In partnership with the Executive Officer and the PTRA Oversight Committee, develop short and long-term programmatic and fiscal plans for the AAPT/PTRA program.
6. Actively identify and recruit new/potential PTRAs and facilitate their training.
7. Oversee development and updating of resources (manuals, assessments) as appropriate.
8. Oversee social media awareness and publicity of workshop opportunities including working with AAPT’s marketing and membership departments to promote AAPT/PTRA.
9. Work with the AAPT Executive Officer or her/his designees in developing grant proposals and other funding sources to support the AAPT/PTRA program.
10. Develop annual budget including expected revenue and expenses in partnership with the Executive Officer and the PTRA Oversight Committee. Oversee budget allocations and maintain transparent accountability of disbursement of funds
11. Plan the yearly AAPT/PTRA leadership institute based on current needs as deemed appropriate by the Oversight Committee and the Executive Office.
12. Maintain regular communication with active certified PTRAs to provide information about the program and encourage PTRAs to take active roles in supporting and promoting the program.
13. Report to the AAPT/PTRA oversight committee at regular (twice yearly) intervals on program progress
1. 1 Publication Title: Home Make Physics Equipment [↑](#footnote-ref-1)