

APS Forum on Education
Executive Committee Meeting (Marriott Courtyard, Philadelphia)
Monday, April 7, 2003
Minutes and Notes by Ernie Malamud

Voting Members Present: Wolfgang Christian, Karen Cummings, Paula Heron, Ken Krane, Ramon Lopez, Ernie Malamud, Richard Robinett, Gay Stewart

Voting Members Absent: Robert Ehrlich, Jack Wilson, Pete Zimmerman, Dean Zollman

Non-voting Members Present: Charles Holbrow (AAPT Pres.), Fred Stein (APS Director of Education and Outreach Programs, PhysTEC PI/PD), Paul Grant (new voting member of the Exec. Comm.)

Non-voting Members Absent: Robert Clark, Stan Jones, Thomas Rossing, James Wynne

Other Attendees: Judy Franz (APS Exec. Officer), Jack Hehn (Director, AIP Education Div.), Ted Hodapp, Prog. Director, Div. of Undergraduate Education, NSF), John Layman (AAPT, PhysTEC Co-PI)

Ken Krane, Chair, called the meeting to order at 1:32 pm and began with introductions. He thanked outgoing members Jack Wilson and Dean Zollman for their service on the Executive Committee and welcomed new members-at-large Paul Grant and Michael Zeilik. Ramon Lopez ends his term as General Member-at-Large and begins his term as Vice-Chair.

There were no modifications to the agenda (**attachment 1**), except as the meeting progressed we adjusted the order of some topics to accommodate those who could not be present for the entire meeting.

There were no corrections or additions to the minutes of our last Executive Committee meeting, January 4, 2003 (teleconference) so they stand as approved.

Treasurer's Report (Ernie)

The most recent report from APS, Mar. 31, shows available funds of \$37,743.03. [updated]. Not yet charged is the cost of two teleconferences, expenses for one invited speaker for this meeting, and expenses for this Executive Committee meeting and the reception/business meeting that will follow. Without detailed arithmetic this will reduce funds available from APS to ~\$35K. Our yearly available funds, mostly from the APS member allocation is ~\$15K. Many of the ideas we will consider in the budget discussion to follow could not begin until FY2004 (FY = CY); at that time available funds will be ~\$50K.

Election Report (Ernie)

Congratulations to Ramon Lopez, our new Vice-Chair, and two new members-at-large: Paul Grant and Michael Zeilik.

At the time of the election there were 4,067 FED members. 3,623 ballots were sent by email and 444 ballots were mailed to the 142 members without email address and the 302 members whose email bounced. Returned were 538 electronic ballots and 29 mail ballots. So 13.9% of the FED membership

voted in this election. (For comparison a year ago there were 410 eballots and 30 paper ballots for a total of 440 ballots, which is 10.1% of our membership.)

The election deadline had to be extended 10 days because APS neglected to send out the paper ballots on time. Ken Lyons ran the electronic voting and tallying from AT&T. It is hoped that at the time of the next election the entire voting can be administered by APS.

Newsletter Report (Ernie)

This year the spring issue was devoted to the Physics on the Road conference/workshop as its theme. Fred Stein was the Guest Editor. The on-line version was up before this meeting and the print version (pdf) in draft form was available at the meeting (the print version needs minor corrections; when they are done it will also be put on line and available to download and print).

Stan Jones, Editor of the summer issue was unable to attend today's meeting. He has most of the articles in hand, earlier than usual, probably because some had been initiated for the spring issue and then switched to the summer issue when we decided to devote the spring issue to the Physics on the Road conference/workshop. The summer issue may be out earlier than last year, perhaps by mid-July.

Budget Discussion (attachment 2)

The Budget Subcommittee appointed by Ken Krane consists of Ken Heller, Dean Zollman, Tom Rossing and Ernie Malamud. There has not been enough time for the four of us to hammer out a real budget, and the fiscal year is 1/3 over. This subcommittee collected a number of ideas for using FEd funds. This report (**attachment 2**) was the basis for the following discussion. There wasn't time to discuss all of the items nor reach a conclusion on more than a few. Clearly the Budget Subcommittee needs to continue to work. It will be easiest to follow the notes below with attachment 2 as reference.

1. **Outreach Handbook**, resource material for research physicists who want to help promote physics in K-12 schools, with a possible second volume for those who want to contribute to informal science education. No consensus was reached on the effectiveness of this idea. Gay felt this handbook could be valuable as a guide to writing outreach components into NSF proposals. Ted added that it would be useful as a guide for writing the assessment portion. Wolfgang proposed that giving each new FEd member a booklet would be a tangible item for joining the FEd. Producing such a booklet(s) would be good PR. Several felt that putting the resources into an on-line version would produce a more widely used vehicle. Conclusion: put the idea in the newsletter to solicit FEd member reactions and continue discussion.
2. **Sponsoring one APS unit/year to hold a session at an AAPT meeting.** Many have lamented the passing of the APS/AAPT joint meetings; this is at least a tiny step toward restoration. An APS division asked by the FEd would run an invited session covering several related topics. A different division would be asked each time. It would be held at the AAPT national winter and/or summer meeting (although in the future local AAPT meetings could be considered). The FEd would pay for handouts and could fund some travel expenses and registration waivers if necessary. Karen added that FEd could host a reception after the session. Consensus was positive. The idea will be presented to the AAPT board. If they agree then after further discussion (Jan. 24-28, 2004 Miami Beach meeting and/or summer Jul-Aug 31-4, 2004 Sacramento meeting and which division to begin with) the FEd program chair will contact AAPT and the chosen APS Division to make this happen.

3. **Registration waiver for high school physics teachers for March and/or April meetings.** The idea is full registration so these teachers could attend both education and research sessions. Getting real physics into the classroom is a role that APS is uniquely situated to accomplish. This item was controversial. Several were not in favor of paying the registration for someone who is not already a member of any Physics-teaching related professional organization. Others felt that APS should waive the registration fee for any high school teacher who attends a March or April APS meeting. Clearly if this had to come from our FEd budget we would have to limit the number of such registrations. In practice, it would be mostly high school teachers within an easy drive of the host city, but FEd volunteers could act as "hosts," show them around, and help to direct them to appropriate sessions. There was positive reaction to the "host" idea, especially if it was limited to the weekend (when teachers are not teaching). We came back to this idea during Judy Franz's APS report. Karen felt that there is not much of interest for the HS teachers.
4. **Awards at State Science Fairs.** Fred says this is already being done through his office but is mostly for Olympiads and goes through AAPT. To implement this idea will require some funds to get it organized; the idea seems good and worth pursuing in further discussions.
5. **Seed money for conferences on teacher preparation held during APS and AAPT meetings.** It was stated that this is being done.
6. **Lunch with the experts.** Aimed at universities and colleges in the local areas in which the March and April meetings are held and focused on undergrads that might be interested in a career in physics teaching. It could also be broadened to include graduate students who may be thinking of teaching careers, perhaps in collaboration with the FSGA. Plan on two tables/meeting at the March and April meetings.
7. **Electronic Vote tallying for the APS units.** It was agreed that FEd could join with other units that have the same concern and offer \$1K to \$2K of FEd funds so it is implemented in time for our next election.
8. **Travel for speakers for FEd sessions for people who don't usually come to APS meetings.** This is already being done and requires approval by the Program Chair, the Chair and the Secretary-Treasurer.
9. **Fellowship for a high school teacher to work during the summer in a research laboratory.** Email comment from Jones: this would be expensive; perhaps it is more appropriate for the divisions to implement. It was not discussed at the meeting.
10. **Speakers Program.** Email comment from Jones: this would be complicated to organize and run. It was not discussed at the meeting.
11. **Print and mail the newsletter (or some of them).** Email comment from Jones: I think we should do this. We need more print versions out in circulation. Not discussed at the meeting.
12. **Establish a web-based clearinghouse for distant learning courses.** Not discussed.

Summary of Budget Discussion

Already being done: 5, 6, 8

Implement: 2, 7

Discuss further: 1, 3, 4

Not discussed at this meeting (discuss further): 9, 10, 11, 12

General APS Report and Announcements (Judy Franz)

The FEd should not try and be an AAPT within APS. Judy regards FEd as a bridge between the University physics teachers and physicists in the National Labs and Industry who are concerned with education. A role of the FEd is to involve research physicists in education.

AAPT has 11,000 members, APS 43,000 members; there are 2,000 with joint members. Judy says that the APS is willing to reduce the cost for APS/AAPT joint membership (not just the first year) but the AAPT has rejected the idea in the past. Charlie Holbrow said that the AAPT will reconsider the issue.

Judy discussed The World Year of Physics. The choice of 2005 as the "WYP" refers to the 100th anniversary of the "Miraculous Year" of Einstein, when he wrote his legendary articles, which became the basis of three fundamental fields in physics. The WYP was started by the European Physical Society. Alan Chodos will represent APS at an International Planning Meeting in July. Judy wants each APS unit to do something to celebrate the WYP, with emphasis on public outreach. After the planning meeting APS will launch a fund drive to support World Year activities. ACTION ITEM: FEd proposes ideas on that time scale. <http://www.isn-oldenburg.de/projects/SINN/sinn02/pdf/World-Year-of-Physics.pdf>

AAPT Liaison Report (Charlie Holbrow)

1. AAPT has responded to FEd's opening to AAPT members of FEd sponsored events at APS meetings. At the AAPT Winter meeting in Austin, TX in January 2003, APS members were offered free entry to the plenary sessions.
2. AAPT has expressed eagerness to facilitate a meeting of the FEd at the AAPT summer meeting in Madison in August 2-6, 2003. Should FEd meet there we would arrange occasions for useful interactions between the FEd Executive Committee and the AAPT Executive Board. *Since so many members of the FEd Executive Committee will be attending we decided to have our next Executive Committee meeting during the Madison meeting.*
3. Should FEd wish to arrange sessions for the Madison meeting, AAPT is waiving certain deadlines. The absolute deadline set by the date that the program goes to the publisher is April 10. *The FEd decided to schedule a "Cracker Barrel" session during the Madison meeting and budgeted \$500 for refreshments. Subsequent to our meeting Karen arranged with Carol Heimpel to hold this session Monday, August 4 from 6:30 – 8 pm.*
4. APS and AAPT Membership Directors have arranged a reciprocal exchange of half-price membership offers to new members. For twelve months each of the organizations will include fliers in their renewal mailings offering their members the chance to join the other organization at half price if they are not currently members. *This is only for one year, not continuing as discussed above in Judy's report.*
5. AAPT is working with APS on PhysTEC and COMPADRE. Fred Stein will say more.
6. AAPT has been asked by the National Academy of Engineering to support a proposal to establish an electronic contents journal on Science and Engineering Education Research: J-Seer. The suggestion has been made that AAPT name a sub-editor for the physics part of J-Seer. Clearly this is a matter of interest to the PER community.

Teacher Licensure (Ted Hodapp)

We were pleased that Ted Hodapp, Program Director at the Division of Undergraduate Education, National Science Foundation could be with us and share his experience on this important issue.

Ted distributed 3 handouts:

- A timeline for the Minnesota experience with teacher licensure.
- A state-by-state survey of the teacher licensure status in each state.
- The text of the Minnesota content standards for a 9-12 physics teacher.

For those who were not at the meeting you can request copies from Ted.
His coordinates: Email: thodapp@nsf.gov, TEL: 703-292-4640; FAX: 703-292-9016.
Address DUE, NSF, 4201 Wilson Blvd., Room 835, Arlington, VA 22230

Ted Hodapp described the Minnesota story. They were under pressure to broaden the requirements so that one license would cover grades 5-12 and also cover physics, chemistry, biology and earth sciences. Because of the teacher shortage the pressure was to qualify teachers to teach several different subjects and grade levels. What was first produced was a piece of crap! Signatures were then gathered from all faculty members in the state (a feat in itself) protesting the draft standards that had been produced. Ted told a fascinating tale how the situation got remedied. The single license requirement, which doesn't make sense, was divided into separate licenses for 5-8 (all sciences) and for grades 9-12 four separate licenses. The standards were written so that in the future they could form the basis of a test. This is not being done now. Currently teachers take required coursework to meet standards.

Typically these licensure requirements get adopted and then last for two decades. This process is going on in almost every state; in most of them there is no physicist involved. There is a need for people who can talk to legislators and get the science content right. Ted advised us to stay away from the controversial standards for students but to get involved in teacher standards. Ted feels that the government agencies revising standards **want** people who will work on the content and will welcome help.

There was a discussion of the NSTA connection. Paula commented that in Washington State NSTA rejected a draft of certification requirements. Jack said it was not clear if NSTA will approve a draft certification requirement because there is a schism within NSTA over whether there should be integrated physical science or not. AAPT has drafted some specific content standards, which have been sent to NSTA. NSTA has not yet responded. Could APS endorse a set of standards? Judy said this would be very difficult. Perhaps COE is the more appropriate body. There are two parts to these standards: content knowledge and pedagogical issues. Content is the area where FED physicists could play a role. Without formal approval, e.g. by APS, of a specific set of content standards, people could be referred to specific models. (E.g. the Minnesota standards that were distributed).

Ted emphasized the importance of splitting the license by subject. Jack reported that in Texas they were asked to choose between a combined Physics-Math license or a Physics-Chemistry-Biology license and chose the first.

What it takes are some people in each state to offer to help. ACTION ITEM: each member of the FED Executive Committee was asked to get the content standards for HS physics teachers (for the State in which they live) and also find out when the standards are coming up for review. By June 15 circulate this information to the rest of us and also to Ted.

APS Education Activities (Fred Stein)

Fred reported on a highly successful Physics on the Road workshop/conference and thanked the FED for their co-sponsorship. The spring issue of the FED newsletter, with Fred as Guest Editor, is a proceedings for this meeting.

PhysTEC. Distributed were:

A memo from Warren Hein and John Layman, PhysTEC update, April 2003.

An attractive brochure, PhysTEC, "Physics Teacher Education Coalition"

The PhysTEC project is expanding this year from the initial 6 Primary Program sites (PPIs) to 7. Eventually, 5 more sites will be added through support from the APS 21st Century Campaign. In addition, other institutions, without a financial commitment, are participating in a broad, active Coalition of physics departments that are working together to improve the science preparation of future teachers. There was discussion of what is the appropriate formal home for this Coalition and PPIs in the future. Fred suggested that the FED is the proper vehicle for carrying this process forward with the PPIs as long as there is interest in improving teacher education. John Layman suggested that AAPT could carry the Coalition. Gay commented that the Coalition has to reside within the APS in order to get University Departments involved. The natural home could be the FED but this still needs to be decided. Fred thought that both APS and AAPT jointly could play a vital role in seeing that the program does not disappear when the money runs out.

Program and COE Reports (Wolfgang Christian)

Attachment 3 lists the March and April sessions, and **Attachment 4** is the April 7th Physics Education Open House flyer. Gay wants to add an 8th sorting category for contributed papers "pre-service teacher preparation." The consensus was in favor. Wolfgang suggested having a focus session for contributed papers (we haven't done this before) at the next March/April meetings. Ernie commented that the attendance at the FED sessions was good, better than at the Albuquerque meeting a year ago.

Wolfgang showed us a flyer that FHS passed out at their sessions – a simple mechanism to get more members! Fill out the form and give it back to the session chair at the end of the session. FED could certainly do the same thing at the next meeting!

COE is negative on the idea of giving a future APS Education Prize to a department. So this issue is still open for good ideas.

Report from the Chair – a number of items (Ken Krane)

Building FED membership. There is a potential to build. Each APS member can join two Fora free. Therefore there is a potential for a total Fora membership of ~80,000, whereas the total Fora membership is currently ~20,000. Ken wrote a letter to a list of lapsed FED members. Ernie will try and find out if this was effective in having any of them rejoin the FED. Ken has had second thoughts about writing Department Chairs to recruit more FED members. He feels a better idea is a contact within each Department who solicits members among colleagues.

Fellows. Ken described the following process. He went through the list of FED members, selected a few he felt should be fellows but were not, then called them, asked if they were interested in being proposed for fellow, and if they were found a sponsor.

Ken wants to continue promoting Education sessions at APS Division and Section meetings. He described a productive meeting that he and Ernie had with the Education Committee of DPF, chaired by Liz Simmons.

New Business

Ted had a few comments. He told us that he most likely will be around for another year as a rotator in the NSF Division of Undergraduate Physics. He invited us to discuss ideas with him and also to let us know if someone is interested in being a proposal reviewer.

He also encouraged each of us to participate in and be informed by the federal budget process. In the discussion that followed it was suggested that FEd members visit their Congressional Representatives when in Washington.

Currently we have 5 subcommittees: Budget, Fellows, Nominating, Licensure, Program. Wolfgang would like every member of the Executive Committee to be on at least one of these. Executive Committee members are invited to communicate with Wolfgang on this subject and also to suggest other people to serve on subcommittees. Members of these subcommittees do not necessarily have to be on the FEd Executive Committee but generally the chair of each is a member of the Executive Committee.

The next meeting of the Executive Committee will be a teleconference, tentatively scheduled for Saturday, October 25. There will be an informal get together of Executive Committee members after the "Cracker Barrel Session," Monday, August 4 from 6:30 – 8 pm, held during the Madison AAPT meeting.

The gavel was passed from Ken Krane to Wolfgang Christian our new Chair and the meeting was adjourned at 4:30 pm.

Business Meeting

A moderately well attended reception was followed by a short business meeting at which Ken Krane presented fellow certificates to the new APS Fellows: Mort Kagan, Fred Stein, Margaret Norris McMahan, Cyrus Taylor.

Attachments:

1. Agenda
2. Budget Subcommittee Report
3. Program Committee Report
4. Physics Education Open House flyer

Attachment 1 (to minutes of the April 7, 2003 FEd Executive Committee Meeting)

Forum on Education Executive Committee Meeting. Monday, April 7, 2003.
Marriott Courtyard, Philadelphia, Room 103

AGENDA

- 1:00 Lunch
- 1:30 Introductions
Additions/corrections to the Agenda
Approval of the minutes from the January 4 virtual meeting.
- 1:45 Ernie Malamud: Treasurer's, Election and Newsletter Reports
- 2:00 Discussion of FY2003 and FY2004 budgets
- 2:30 Judy Franz: General APS Report and Announcements
- 2:45 Ted Hodapp, Rick Robinett and Karen Cummings: Teacher Licensure

3:15 – 4:15 short reports:

- 3:15 Wolfgang Christian:
Program Report
COE report; status of proposed education prize/award
- 3:30 Ken Krane:

Building FEd membership.
2004 Fellows Report
Promoting education session at APS Meetings
- 3:45 Charles Holbrow: AAPT report
- 4:00 Fred Stein: APS Education & Outreach Programs Report

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- 4:15 New business
- 4:25 Schedule next Executive Committee meeting. Passing of the Gavel, Krane to Christian.
- 4:30 Adjourn.

Please also reserve 5-9 p.m. for the FEd-sponsored Education Open House and the FEd business meeting.

Attachment 3 (to minutes of the April 7, 2003 FEd Executive Committee Meeting)

Program Committee

Report to Fed

APS March Meeting. FEd Sessions 2 Slots Total

Science Education Outreach from Science and Technology Centers (1 Slot)

Organizer: David Haase

Speakers: David Haase, Stephen Thornton, Ramon Lopez, Lisa Hunter, Fiona Goodchild

Career Transitions: Physics in Africa (1/2 slot with FIP)

Organizer: Henry Glyde

Speakers: Abebe Kebede, Lebohang Moleko, Mulugeta Bekele, Edmund Zingu, A. Wague

Jump-Start-Ups: Educating Physics Entrepreneurs (1/2 slot with FIAP)

Speakers: Cyrus Taylor, Dennis Hamill, Kathleen Allen, Mark Xueming Zou

APS April Meeting. FEd Sessions 4 Slots Total

Teaching Quantum Mechanics (1 Slot) Monday @ 10:45

Organizer: Peter Shaffer

Speakers: Mario Belloni, Michael Whittmann, Richard Robinett, Chandralekha Singh, Bradley Ambrose

Physics Demonstrations in the 21st Century (1 Slot) Sunday @ 10:45

Organizer: Richard Berg

Speakers: Richard Berg, Louis Bloomfield, Clint Sprott, Catherine Crouch

The Impact of Advanced Placement and teacher preparation on
Students, High Schools, and Colleges (1 slot) Saturday @ 12:00

Organizer: Jerry P. Gollub

Speakers: Jerry Gollub, Robin Spital, Fred Stein, David Hammer, Penny Moore

History of Physics in Physics Education (1/2 slot with FHP) Saturday @ 2:30

Organizer:

Speakers: Steve Brush, Dave Cassidy, Peter Galison, Bob March

Research, Teaching, and Education Outreach (1/2 slot with FPS) Tuesday @ 8:00

Organizers: Al Saperstein and/or Andrew Post Zwicker

Speakers: Diandra Leslie-Pelecky, Walter Gekelman, Susan Wyckoff, Chris Rogers, Gay Stewart.

APS April Meeting Events

Physics Education Showcase and Open House Monday 5:00-7:00 PM

FEd Business Meeting Monday 7:00-8:00 PM

FEd Executive Committee Meeting Tentative date/time: Monday after Teaching QM session.

Attachment 2 (to minutes of the April 7, 2003 FEd Executive Committee Meeting)

Budget Subcommittee Report

Ken Heller, Dean Zollman, Tom Rossing, Ernie Malamud

April 2, 2003

Budget Subcommittee. There has not been enough time for the four of us to hammer out a real budget, and the fiscal year is 1/3 over. We have come up with a number of ideas for using FEd funds for discussion at the April 7 Executive Committee meeting.

This subcommittee was also charged with making up a FEd financial policy, i.e. approval levels, but there hasn't been time to get into that. Right now we been operating on the basis that the Secretary-Treasurer can approve amounts below \$500, and amounts over that require Executive Committee approval.

Anything we can do to help under prepared physics teachers is good. Get teachers in contact with resources. AAPT and FEd can both do this.

1. Produce an outreach handbook, specially designed as resource material for research physicists who want to help promote physics in elementary and secondary schools. A second volume might be for research physicists who want to get involved in informal education. Tom comments: "If I could find help, I would be willing to edit these myself. I would try to enlist Chris Chiaverina for the one directed at visitors to schools and Ernie Malamud for the one directed at volunteers for informal education through science museums, media, etc.. I would like these to be honest to goodness books (or notebooks), and so the publication cost would be the main item. A ballpark figure is \$8K each for producing 500 copies of each of them." One might also consider the reverse, i.e. a handbook for teachers and science museum staff on how to get help from your local research laboratory or university physics department.
2. Wolfgang suggests sponsoring one APS-unit/year to hold a session at an AAPT meeting. Many of us have lamented the passing of the APS/AAPT joint meetings, and this is at least a tiny step toward restoration. This may not involve much financial support. Tom comments: "I'm sure that Wolfgang had national AAPT meetings in mind, but if we really want to reach teachers, we should extend this to state and regional AAPT meetings. Most of the state AAPT sections hold two meetings a year, and more and more, one of these is a joint meeting with one or two adjacent states. Many more teachers attend these meetings than national meetings, due to travel restrictions and the difficulty (especially for high school teachers) of missing classes. We could provide support (perhaps on a matching basis) for a team of presenters from an APS division to present "hot topics" sessions for these meetings."
3. Registration waiver for 5 - 10 local high school physics teachers who are not members of either APS or AAPT for March and/or April meetings. This should be a full registration so these teachers could attend both FEd and Physics research sessions. The point is to get real physics into the classroom. This is a role that APS is uniquely situated to accomplish. In response to this suggestion, Gay suggested that it be (one year) membership + registration. This way they would receive Physics Today. Wolfgang: "I am not in favor of paying for someone who is not a member of any Physics-teaching related professional organization." Ken Heller was strongly in support of this idea, and not just FEd sessions but also all sessions. Possible cost \$500 x 10 teachers = \$5K. Tom comments: "I think APS should waive the registration fee for any high school teacher who attends a March or April APS meeting. Given the APS attitude, it might only come about if the registration fee could be charged against our FEd budget. In practice, it would

be mostly high school teachers within an easy drive of the host city, but FEd volunteers could act as "hosts," show them around, and help to direct them to appropriate sessions.”

4. Awards at State Science Fairs (Ken Heller). All 50 states. This would be an APS award to kids with a matching award to their teacher. Could be \$50 - \$100 and/or a plaque. Needs a volunteer (someone from FEd) who would track down who is in charge of science fairs in each state. Starting point: Commissioner of Science Education in each State. We can also consider hiring temporary clerical help to move this along. Would be great PR for the APS. Dean likes this idea.
5. Seed money for conferences on teacher preparation held during APS and AAPT meetings.
6. Lunch with the experts. Aimed at undergrads at universities and colleges in the local areas in which the March and April meetings are held. This would be focused on undergrads that might be interested in a career in physics teaching. Possible cost $\$15 \times 50 \text{ people} = \750 . (Ken Heller was not enthusiastic). Dean Zollman feels we should broaden this idea to include graduate students who may be thinking of teaching careers. Could we collaborate with FSGA? Tom: “I am in favor of anything that encourages undergraduate physics students to consider high school teaching as a career. If a free lunch with an "expert" would help, why not?”
7. Vote tallying for the APS units. This came up at the February 4 convocation. Several units expressed the need that APS provide this service. In particular FPS suggested that several units each put in some money (mainly software) from their budgets to move this along. Ernie is strongly in favoring of putting in \$1K to \$2K of FEd funds if that gets this implemented in time for our next election.
8. Pay travel for speakers for FEd sessions for people who don't usually come to APS meetings. (teachers, science center staff etc.). This is already being done but we can allocate an amount in our budget, e.g. $4 \times \$1K = \$4K$, and make sure that those in FEd organizing sessions know that we have funds for a limited number of such speakers.
9. Fellowship for a high school teacher to work during the summer in a research laboratory. (Ken Heller). There are already some programs like this, e.g. QuarkNet at Fermilab, NSF has the RET program. But Ken says that there is a great demand for this and the number of applicants far exceeds the available slots. There would be a contest with a committee of FEd people making the choice. Say two/year would be chosen. Generally these teachers would work in a local research environment (lab or university) and commute from home. So the cost is to cover their salary for say 6 weeks. If we had, e.g. 50 applicants, there would be a catalytic effect for the ones not chosen, since part of the application process would be to obtain a letter of support from the institution where they are proposing to work. That gets them in contact with a research program; perhaps other ways would then be found to hire them. Est: \$15K. Dean likes this idea; however, he feels that if we can also pay some expenses (in addition to 6 weeks salary) we could target rural HS physics teachers who don't live in a city with a research laboratory or university.
10. Speakers Program (Ken Heller). This would be an organized effort by FEd to inform high schools of the names of physicists prepared to speak at schools. The cost might be hiring some part-time help to put this together, either in a book form that could be mailed to all high schools, or (better) on the FEd web page with a notice to HS teachers. Dean: small pay-off.
11. Print and mail the newsletter (or some of them).
12. Establish a web based clearing house for distant learning courses.

Physics Education Open House

Monday, April 7

5:00pm-7:00pm

Lescaze Room, Loews Hotel

sponsored by the APS Forum on Education

and the APS Committee on Education

You are invited to drop in, have some refreshments, and engage in informal discussions about areas of concern in physics education. Table discussions will focus on the following topics:

- introductory physics for engineers and pre-meds
- teaching non-science students
- outreach to K-12 teachers and students
- recruitment and retention of majors
- preparation of K-12 teachers
- innovation in upper-division classes

Whether you wish to describe your own programs or find out what others are doing, take advantage of this opportunity to exchange ideas and explore new approaches to a variety of education issues.