

REPORT OF THE SUMMER PROGRAM COMMITTEE

August 10, 2004

The summer program committee consisted of: Howard Haber (chair), Matthew Fisher, Josh Frieman, Andrew Millis (ex-officio), Hitoshi Murayama, Karin Rabe, Boris Shraiman, Eva Silverstein and Rosemary Wyse.

The committee received sixteen workshop proposals and one proposal for an extended working group. Of the sixteen proposals received, five were in astrophysics, four were in particle physics (this includes one proposal in string theory/cosmology), four were in condensed matter physics (this includes one proposal in atomic and molecular physics), two were in biophysics and one was multidisciplinary (a proposal on climate studies). The extended working group proposal (called “Systems of Interacting Strategic Agents”) was descoped to a working group of six scientists, and was not considered further by the committee.

The committee completed its work in July, 2004 with the help of three extended conference calls. As a result of our work, we selected twelve proposals listed below (organizers are listed inside the parentheses) for the 2005 Summer Program.

1. Physics of the s-process (F. Herwig, R. Reifarth, J. Truran and M. Wiescher)
2. LISA Data: Analysis, Sources and Science (M. Benacquista, S. Finn, A. Vecchio and V. Kalogera)
3. Ultracold Trapped Atomic Gases (G. Baym, R. Hulet, E. Mueller and F. Zhou)
4. Novel Approaches to Climate (D. Cox, J. Harte, G. Falkovich and B. Marston)
5. New Approaches to Electroweak Symmetry Breaking (C. Csaki, K. Matchev and J. Terning)
6. Dynamics, Structure and Correlation in Glasses (C. Chamon, P. Goldbart, D. Reichman and J. Schmalian)
7. Revealing Black Holes (W. Kluzniak, M. Mendez, M. Nowak and L. Titarchuk)
8. Gauge Theories and Fractionalization in Correlated Quantum Matter (M. Franz, A. Vishwanath, D.A. Bonn, O. Tchernyshyov, M. Randeria and X.-G. Wen)

9. Supercosmology (K. Becker, P. Gondolo, A. Maxumdar and D. Tong)
10. Collider Physics: from the Tevatron to the LHC to the Linear Collider (T. Han, S. Mrenna and J. Hewett)
11. Ultrahigh-Energy Cosmic Rays (K. Arisaka, G. Gelmini, A. Kusenko and A. Olinto)
12. Spatial effects in signal transduction (W.-J. Rappel and Y. Tu)

The time-line for the proposals is included at the end of this report.

In making our selections, we asked the organizers of two of the particle physics proposals to join forces and submit a proposal for a single workshop on collider physics. This was successfully achieved. One condensed matter proposal, “Materials for Condensed Matter Physics by Design”, was delayed for a year, with the understanding that it would be reconsidered (hopefully with favor) by next year’s program committee. One of the proposed bi-physics programs, “The Facts of Life: Data-driven approaches to systems biology”, was not fully fleshed out, and they will be encouraged to resubmit a more detailed program proposal next year. One of the proposed astrophysics programs, “Cosmic Voids”, was viewed favorably by the committee, but we were not able to find a suitable place for it in the 2005 summer program schedule.

The committee notes that the program proposed this year contains 12 programs and a total of 38 program weeks, which is just slightly above the average for summer programs of the last five years (see table below). Although we tried to keep to the usual rule of avoiding weeks with three workshops in Weeks 5–12 (the so-called “prime-time” part of the summer schedule), the committee felt that a small violation of the rule (by extending the “Climate” program to a third week in Week 5), was warranted in order to encourage more interdisciplinary physics workshops at the Aspen Center for Physics. The chair of the admissions committee, Andy Millis, as an ex-officio member of our committee, has accepted the challenge that will be faced next year as a result of this decision.

I would like to raise two issues for consideration by the general members. The first is the question of proposal deadlines. The nominal deadline for summer program proposals is July 1, but this deadline is not universally respected. The instructions on the website seem ambiguous. In fact, I received a query about a possible proposal submission on July 30, well after the program committee had completed its work. I propose to rewrite the instructions on the website to indicate that July 1 is a serious deadline.

In principle, we can accept some proposals after July 1, but I would place a hard deadline of July 15. In practice, the program committee needs to review all proposals prior to the July pre-meeting of the general members in order to have sufficient time to ask for revisions to proposals (if necessary), and to communicate with the authors of the proposals while setting up the time-line for the summer program.

The second issue is more serious, and deserves attention in light of the recommendations of the long range planning committee. The summer program schedules of the last decade have been remarkably constant. Typically, the main three disciplines (astrophysics, particle physics and condensed matter physics, broadly defined) have had ten or eleven program weeks each summer. This leaves room for at most three to six program weeks for biophysics and other subfields of physics. The long range planning committee suggests that the Aspen Center for Physics should try to reach out to areas of the physics community not well represented in Aspen. For this to be effective, the three main disciplines will have to relinquish some of their coveted workshop weeks each summer. It is often said that no discipline of physics should regard some number of workshop weeks as an “entitlement.” But in practice, this has surely been the case in the planning of the summer program during the past decade. To achieve the goals of the long range planning committee, there will need to be a change in culture in the way future summer programs are planned. It is easy for the general members to pay lip service to the lofty goals announced by the long range planning committee. It is much harder to put these principles into practice.

# weeks	2001	2002	2003	2004	2005
2	1	1	3	1	1
3	7	4	6	4	8
4	2	3	2	5	3
5	1	2	1	1	0
# wshps.	11	10	12	11	12
wshp.-weeks	36	36	37	39	38

Finally, I noted some concern among general members about the increase of three workshop *vs.* four week workshops. I believe that this is a valid concern, and it is connected with the points raised in the previous paragraph. This year we have two three week workshops that are outside the disciplines of the “big three”. This put pressure on the remaining schedule, whereas the program committee was still operating on the paradigm that has guided

program committees of the past decade. In the table above, I list the number of programs of 2, 3, 4 and 5 week durations over the past five years. Keep in mind that nearly all two week workshops take place in June, and most (three of the five in the table above) of the five week workshops run at the very end of the summer.

I hope this report encourages discussion among the general members on how to address some of these issues in the future.

Respectfully submitted,

Howard Haber
Chair, Summer Program Committee
August 10, 2004

2005 Aspen Center for Physics Summer Program

- May 29-June 12 **Physics of the s-process**
- May 29-June 19 **LISA Data: Analysis, Sources and Science**
- May 29-June 19 **Ultracold Trapped Atomic Gases**
- June 12-July 3 **Novel Approaches to Climate**
- June 19-July 10 **New Approaches in Electroweak Symmetry Breaking**
- June 19-July 17 **Dynamics, Structure and Correlation in Glasses**
- July 10- July 31 **Revealing Black Holes**
- July 17-Aug 14 **Gauge Theories and Fractionalization in Correlated Quantum Matter**
- July 31-Aug 21 **Supercosmology**
- Aug 14-Sept 11 **Collider Physics: from the Tevatron to the LHC to the Linear Collider**
- Aug 21-Sept 11 **Ultrahigh-Energy Cosmic Rays**
- Aug 21-Sept 11 **Spatial Effects in Signal Transduction**

MAY	JUNE				JULY				AUGUST					SEPT
5/30 Mondays	6/6	6/13	6/20	6/27	7/4	7/11	7/18	7/25	8/1	8/8	8/15	8/22	8/29	9/5
W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15
—Atomic Gases—		—Electroweak—			—Black Holes—			—Supercosmology—			—Cosmic Rays—			
—LISA Data—		—Glasses—			—Correlated Quantum Matter—			—Collider Physics—						
—s-process—		—Climate—								—Signal Transduction—				