

HEPAP

February 2005

ILC Status

- Global Design Effort (GDE) Central Team Director Search
- Central Team Site Evaluation Panel Report
- Current GDE Activities Leading up to Snowmass

GDI Director Search report

Committee: Dongchul Son, Yoji Totsuka, David Miller, Albrecht Wagner, Jonathan Dorfan, Paul Grannis

- ❖ 13 nominations from the 3 regions
- ❖ Selected 4 candidates invited to interview
- ❖ 3 interviewed: Barry Barish, David Burke, Satoshi Ozaki
- ❖ Set of questions addressed to each candidate
- ❖ Each provided us with written responses to questions
- ❖ Interviews Jan. 4, 5, 6
- ❖ Committee phone meeting Jan. 12 and subsequent e-mails
- ❖ Report to ILCSC Jan. 27; written summary circulated
- ❖ ILCSC discussion and interview Feb. 10

Committee evaluated candidates in 3 broad areas:

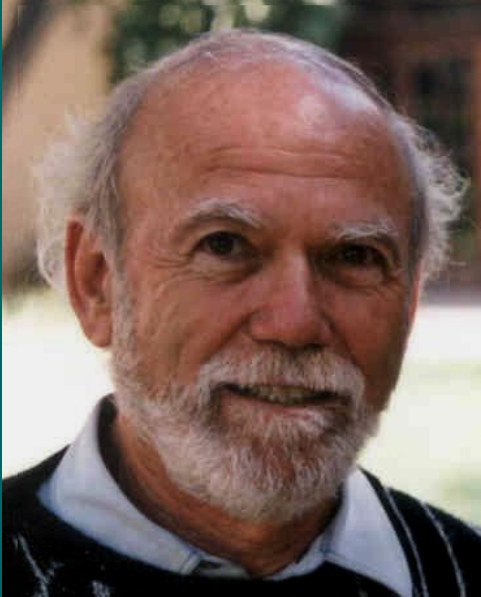
- ❖ Ability to lead the ILC technical design process
- ❖ Management capability
- ❖ Leadership within accelerator and HEP communities, vision, ability to speak for ILC in wider community

All 3 candidates would be excellent directors.

Each has the necessary understanding and appreciation of the technical issues presented by ILC; each has extensive relevant management experience.

The leadership, vision, energy and ability to speak for the ILC project was the largest discriminant.

Our prioritization of the candidates was:



1. Barry Barish

2. Satoshi Ozaki



3. David Burke

The committee proposed that these candidates be approached in turn. ILCSC has unanimously accepted this recommendation, and has initiated discussion with Barish.

Special considerations:

1. Barish asked that if there is a designated Central Team site that it be in North America
2. He requests that he retain 20% of his time for LIGO research
3. He would ramp up from 25% full time initially to 80% by summer

If ICFA approves the ILCSC recommendation and an acceptable offer is made, Barish would undertake to make a decision by beginning of March.

ILCSC has discussed the character of the Central Team site within itself, and with Barish. It is exploring a model in which the technical and costing expertise reside in the regional laboratories but with final authority vested in the Director. The interactions needed among the Central Team and Regional Team members would occur on a rotating basis at regional sites. The personnel resident at the central site do the basic administration and accelerator configuration control.

A virtual Central Laboratory in phase I ?
– sited simultaneously in all three regions

Host Evaluation for the GDI Central Team

Members of the Host Evaluation Committee are: Sergio Bertolucci, Dilip Bhawalkar, James Brau, Ralph Eichler (chair), Sachio Komamiya, A.J. Stewart Smith

The charge to the Host Evaluation Committee for the GDI Central Team is to evaluate and compare on equal basis for each proposal in a neutral way:

- If the proposal meets the required and desired feature of the host institution (letter of M. Tigner dated 7 May 2004 to potential hosts)
- If not, which is missing
- List advantages
- List disadvantages
- List items that will be provided free of charge
- List items for which the Central Team will have to reimburse the hosts. List further questions for the offerer
- Other comments as appropriate

Nine laboratories answered positively and sent detailed answers to the questionnaire. Spreadsheet 1 summarizes the answers. In a first telephone conference, the committee members discussed the proposals and formulated further questions to the nine sites. These questions were:

- Percentage overhead for procurement
- Grand total labor rate for a senior RF-engineer

- Grand total labor rate for a draftsman
- For those labs which have no in-house civil engineering expertise: give an idea on how you deal with contractual civil engineering (availability, speed, expertise and quality)
- Indicate, if the office space offered to the central team is scattered over the site or is concentrated in one building
- What is the cost of housing and its availability off campus?
- Is there an international school in a reasonable distance?

The feedback to these additional questions is summarized in spreadsheet 2 and was discussed by the committee in a second telephone conference. A set of criteria was formulated on which the different proposals should be judged.

Criteria for an ideal site:

- The site should offer an intellectual environment in high energy accelerator science and technology
- The central design team should be located in a single building
- The designated director of the central design team should be involved in the selection
- The central team should not be too far away from the local experts to facilitate interactions
- The amount of overhead charges for procurement and salaries for engineering studies charged by the host should be taken into account

- The availability of a sophisticated test site for test of parts of the accelerator will not have a heavy weight at the beginning. R&D work should happen at several places worldwide. It could become important at a later stage
- Availability of expertise in civil engineering on site or through local industry is a must
- The accessibility of the site for short time visitors should be considered
- Ease of obtaining multiple entry visa is important
- Affordable and available housing for long time team members is desired
- Availability of an international school is desired.

The committee felt that all sites fulfill the criteria. Differences are minor.

Details are in

spreadsheets 1 and 2. All US American sites have a possible visa problem, especially for multiple entry visa.

Additional comments to the different sites:

KEK: Sophisticated test site offered

Berkeley: none

SLAC: none

Fermilab: none

Brookhaven: none

Cornell: Accessibility for short time visitors not optimal

TRIUMF: Strong engineering on site. Intellectual environment for high energy

accelerators weaker. Office space has to be rented
RAL/Daresbury: Accessibility for short time visitors not optimal. 500 k£ offered
to the team

DESY: Synergies with XFEL-project may be helpful

January 25, 2005

The Evaluation Team

Enclosure:

Spreadsheet 1: Summary of the original answers

Spreadsheet 2: Summary of answers to the questionnaire of the site
evaluation team. Personnel costs are given in its original form and converted
into US\$/hour assuming 2'000 hours per year.

**First LCWS
KEK Nov. 04**

Work Group Organization:

- * WG1 – Overall Design: Discuss on the overall design including the conventional facilities. The topics include:**
 - o Choice of the initial and final stage energies and the accelerating gradient.**
 - o Review of the machine parameters and their inter relationship. Clarify the impact of their choices on the machine design.**
 - o Conventional facilities for the main liacs: Two-tunnels vs single-tunnel.**
 - o Damping ring design: Dog-bones to share the tunnels with the main linacs vs rings in separate tunnels.**
 - o Positron source: Undulator-based vs conventional designs. Priority of the polarized positrons?**
 - o Beam crossing angle at the interaction point.**

o Beam dynamics issues. Tolerances.

*** WG2 – Main linacs: Main linac system issues, including:**

o RF power sources; modulators, HV-cables, klystrons.

o RF power distribution

o RF controls on the cavities

o Cryogenic systems

o Superconducting magnets

o Cryomodule engineering

o Instrumentation

*** WG3 – Injector: Electron/positron sources, damping rings, and bunch compressors:**

o Polarized electron sources

o Positron source system designs

o Damping ring designs

• WG4 – Beam Delivery: Collimators, machine protection, final focus, machine detector interface, beam dumps:

- o Everything downstream of the main linacs

- * **WG5 – High gradient cavities:**

- o Discuss about the accelerating cavities, in particular establishing the baseline performance and going beyond it.

Work Group Conveners:

WG1 Kiyoshi Kubo Daniel Schulte Tor Raubenheimer

WG2 Hitoshi Hayano Terry Garvey Chris Adolphsen

WG3 Masao Kuriki Susanne Guiducci Gerry Dugan

WG4 Tomoyuki Sanuki Grahame Blair Andrei Seryi

WG5 Kenji Saito Dieter Proch Helen Edwards

- One convener for each working group from each of the three regions has been appointed by the program committee.
- * The conveners are expected:
 - o to find working group speakers, working with the program committee,
 - o to give the outline of the group in the first day afternoon,

**o to coordinate the group discussion on the second day, and
o to give the group summary on the last day.**

Work Group Scientific Secretaries:

WG1 Kiyoshi Kubo (KEK, also serving as a convener)

WG2 Eiji Kako (KEK)

WG3 Toshiyuki Okugi (KEK)

WG4 Shigeru Kuroda (KEK)

Takanori Mihara (Kyoto)

WG5 Takayuki Saeki (KEK)

Notes for Participants: (Updated: Nov.16, 2004)

- All presentation materials known to the webadmin have been made available for viewing.**
- If you find any errors or omissions, or if the participants would like to replace the presentation files, the communication should be sent to the Local Organizing Committee (LOC) and the relevant WG Conveners.**

- **This was the beginning of the Global Design Effort, GDE**
- **All WG conveners and Program Committee members .have agreed to continue on, preparing for the Second LCWS in Snowmass. They understand that when the GDE Central is in place the organization may be changed.**
- **In replacement of the top layer of the organization of the KEK LCWS, the ILCSC has appointed 3 coordinators, Kaoru Yokoya, Asia, Nick Walker, Europe and Tor Raubenheimer, N. America.**
- **We're up and running!**

