Award Number: DAMD17-99-1-9470

TITLE: Molecular Membrane Biology Gordon Research Conference

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CONTRACTING ORGANIZATION: Gordon Research Conference
                West Kingston, Rhode Island  02892-0984

REPORT DATE: July 2000

TYPE OF REPORT: Final Proceedings

PREPARED FOR: U.S. Army Medical Research and Materiel Command
                Fort Detrick, Maryland  21702-5012

DISTRIBUTION STATEMENT: Approved for public release;
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designated by other documentation.
Molecular Membrane Biology Gordon Research Conference

5. FUNDING NUMBERS
DAMD17-99-1-9470

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Gordon Research Conference
West Kingston, Rhode Island 02892-0984

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)
U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

10. SPONSORING / MONITORING AGENCY REPORT NUMBER

12a. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for public release; Distribution unlimited

13. ABSTRACT (Maximum 200 Words)

14. SUBJECT TERMS
Conference

15. NUMBER OF PAGES
7

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT
Unclassified

18. SECURITY CLASSIFICATION OF THIS PAGE
Unclassified

19. SECURITY CLASSIFICATION OF ABSTRACT
Unclassified

20. LIMITATION OF ABSTRACT
Unlimited
Report on The Gordon Research Conference for "Molecular Membrane Biology", Proctor Academy July 4-9, 1999

The Gordon Conference brought together leading scientists in the field of protein transport across membranes, protein transport in and out of organelles, protein folding in the ER and regulation of protein folding, ER to Golgi transport, endocytosis, endosomes and Rab proteins, budding and fusion of vesicles, and Golgi assembly and membrane transport. Enclosed is the final schedule of the lectures. In addition, the participants presented a large number of posters. In fact some of the most exciting new results were presented by young investigators in posters. Overall, the meeting was very stimulating and open. On the last day in particular we had a number of lively discussions. The controversies centered around crucial questions in cell biology; for example on the question of how vesicles fuse, how vesicles are transported in cells, and whether organelles are disassembled during mitosis.

Enclosed is a compilation of the evaluations written by the participants and sent to us by the central office for Gordon Conferences. This summary sheet expresses most objectively how the conference was perceived. I believe the most important question asked was whether this was the best conference that the participant attended this year, and as you can see, most participants thought so.

The meeting was generously supported by a number of organizations, and it would not have been possible without this support. We would like to take the opportunity to thank the Department of the Army, Special Project Branch V for the generous support that they provided. It was greatly appreciated.

Tom Rapoport
Professor for Cell Biology
August 25, 1999

To: 1999 GRC Chairs and Vice Chairs

Enclosed please find the results of the questionnaires completed by the conferees at your 1999 Conference. In October, the Board of Trustees and the Selection and Scheduling Committee will review all the meetings that took place in 1999 and decide on future Conference scheduling. This evaluation information will be used by the Board and the S&S Committee in evaluating the Conference. After the meeting, the Board's evaluation and decision about the future scheduling of your Conference will be forwarded to you.

Thank you for helping to keep the Gordon Conferences on the frontiers of science. If you have any questions please do not hesitate to contact us.

Best regards,

Carlyle B. Storm
Director

CBS/Irp
Enclosure
### Demographics:

<table>
<thead>
<tr>
<th>Category</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous GRC's</td>
<td>10%</td>
</tr>
<tr>
<td>Typical annual Conf's</td>
<td>80%</td>
</tr>
<tr>
<td>Will attend again</td>
<td>10%</td>
</tr>
<tr>
<td>Professional Status</td>
<td>2%</td>
</tr>
<tr>
<td>Employer Type</td>
<td>2%</td>
</tr>
<tr>
<td>Age Group</td>
<td>1%</td>
</tr>
<tr>
<td>Gender</td>
<td>2%</td>
</tr>
<tr>
<td>Primary residence</td>
<td>2%</td>
</tr>
</tbody>
</table>

### Conference Attended:

- Total Attended: 145
- # of Responses: 99
- % of Responses: 68%

### Conference Data:

#### Science:

1. Presentations defined and analyzed the most important problems & opportunities.
   - Score: 1.5
   - %A: 63%
   - %B: 31%
   - %C: 6%
   - %D: 1%
   - %E: 0%

2. Presentations included a substantial amount of unpublished work.
   - Score: 1.9
   - %A: 37%
   - %B: 40%
   - %C: 15%
   - %D: 8%
   - %E: 0%

3. The meeting was thought-provoking, stimulating, exciting.
   - Score: 1.4
   - %A: 61%
   - %B: 33%
   - %C: 6%
   - %D: 0%
   - %E: 0%

4. Presentations were at the “Frontiers of Science”.
   - Score: 1.3
   - %A: 70%
   - %B: 25%
   - %C: 5%
   - %D: 0%
   - %E: 0%

5. This was the best Conference in this field I attended this year.
   - Score: 1.4
   - %A: 73%
   - %B: 14%
   - %C: 13%
   - %D: 0%
   - %E: 0%

#### Discussion:

1. Adequate time for formal discussion was allowed.
   - Score: 1.4
   - %A: 69%
   - %B: 25%
   - %C: 2%
   - %D: 3%
   - %E: 0%

2. Discussion was not overly dominated by one person or group.
   - Score: 1.4
   - %A: 75%
   - %B: 18%
   - %C: 3%
   - %D: 2%
   - %E: 1%

3. Discussion Leaders managed & stimulated the discussions well.
   - Score: 1.7
   - %A: 45%
   - %B: 38%
   - %C: 16%
   - %D: 1%
   - %E: 0%

4. Discussions evoked and explored new research directions.
   - Score: 1.9
   - %A: 38%
   - %B: 40%
   - %C: 17%
   - %D: 5%
   - %E: 1%

5. Adequate time for informal discussion and interaction was allowed.
   - Score: 1.2
   - %A: 84%
   - %B: 13%
   - %C: 2%
   - %D: 1%
   - %E: 0%

#### Organization:

1. Presentations were consistent with the stated goals and objectives of the Conference.
   - Score: 1.4
   - %A: 72%
   - %B: 20%
   - %C: 7%
   - %D: 1%
   - %E: 0%

2. The meeting did not solely reflect the Chairs field of interest.
   - Score: 1.4
   - %A: 70%
   - %B: 23%
   - %C: 3%
   - %D: 3%
   - %E: 0%

3. Good selection of topics.
   - Score: 1.4
   - %A: 64%
   - %B: 30%
   - %C: 3%
   - %D: 2%
   - %E: 0%

4. Attendees were diverse-mix of industry, academia, established, & new professionals.
   - Score: 1.5
   - %A: 65%
   - %B: 24%
   - %C: 7%
   - %D: 3%
   - %E: 0%

5. Pool of Speakers was diverse & reflected the composition of this field.
   - Score: 1.7
   - %A: 47%
   - %B: 41%
   - %C: 9%
   - %D: 2%
   - %E: 1%

#### Management:

1. Length of talks was appropriate.
   - Score: 1.3
   - %A: 70%
   - %B: 26%
   - %C: 5%
   - %D: 0%
   - %E: 0%

2. On the whole, Speakers were held to their allotted time.
   - Score: 1.8
   - %A: 47%
   - %B: 39%
   - %C: 8%
   - %D: 1%
   - %E: 5%

3. There was sufficient “free” time in the day for informal discussions.
   - Score: 1.1
   - %A: 92%
   - %B: 7%
   - %C: 0%
   - %D: 1%
   - %E: 0%

4. Good selection of Speakers- i.e., knew how to prepare visual aids & give a talk.
   - Score: 1.4
   - %A: 70%
   - %B: 28%
   - %C: 3%
   - %D: 1%
   - %E: 0%

5. Speakers were readily accessible before and after presentations.
   - Score: 1.3
   - %A: 78%
   - %B: 14%
   - %C: 7%
   - %D: 1%
   - %E: 0%

#### Atmosphere:

1. The Conference was more than just a meeting, workshop, or collection of lectures.
   - Score: 1.4
   - %A: 66%
   - %B: 26%
   - %C: 7%
   - %D: 1%
   - %E: 0%

2. An atmosphere for easy exchange of information was established.
   - Score: 1.3
   - %A: 76%
   - %B: 22%
   - %C: 1%
   - %D: 1%
   - %E: 0%

3. The overall Conference atmosphere was friendly, not cliquish.
   - Score: 1.5
   - %A: 60%
   - %B: 32%
   - %C: 6%
   - %D: 1%
   - %E: 1%

4. Conference business was conducted in an open, democratic fashion (Fair, open elections).
   - Score: 1.2
   - %A: 85%
   - %B: 13%
   - %C: 2%
   - %D: 0%
   - %E: 0%

5. The Poster Presenters were sufficiently accessible.
   - Score: 1.7
   - %A: 60%
   - %B: 24%
   - %C: 6%
   - %D: 8%
   - %E: 2%

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**Total Score:** 1.5

A: Agree Completely
B: Mild Agreement
C: No Opinion
D: Mild Disagreement
E: Disagree Completely
Sunday Evening
Chair: Tom Rapoport

7.30-7.45 Welcome and Introduction

7.45-8.45 Mike Brown and Joe Goldstein, “How membrane proteases control membrane lipids”

Monday Morning Protein transport across membranes
Chair: Peter Novick

8.30-8.45 Group Photograph
8.50-9.25 Art Johnson, “Protein translocation and integration at the ER membrane”
9.25-9.50 Chris Akey, “Co-translational translocation: the channel and the gap”
9.50-10.15 Reid Gilmore, “Transfer of the ribosome-nascent chain complex to the translocon: regulation by Sec61a”
10.15-10.30 Coffee
10.30-11.05 Olaf Schneewind, “Type III machines of Yersinia: how to inject proteins into eukaryotic cells”
11.05-11.40 Walter Neupert, “Protein translocases of mitochondria”
11.40-12.15 Janet Shaw, “Mitochondrial membrane dynamics in yeast”

Monday Evening Protein transport in and out of organelles
Chair: Kathryn Howell

7.30-8.05 Danny Schnell, “Protein import into chloroplasts”
8.05-8.40 Suresh Subramani, “Protein interactions during peroxisome biogenesis”
8.40-9.15 Erin O’Shea, “Regulation of nucleo-cytoplasmic transport”
9.15-9.50 Dirk Goerlich, “Transport in and out of the cell nucleus”

Tuesday Morning Regulation inside and across the ER, Protein structure and folding
Chair: Lila Giersch

9.00-9.35 Chris Kaiser, “Pathways for disulfide bond formation in the ER”
9.35-10.00 Maho Niwa, “Intracellular Signaling from the Endoplasmic Reticulum to the Nucleus”
10.00-10.25 David Ron, “Interpreting ER stress signals”
10.25-10.40 Coffee
10.40-11.15 Art Horwich, “GroEL-mediated protein folding”
11.15-11.50 Rod McKinnon, “Structure and function of potassium channels”
11.50-12.25 Doug Rees, “Structure of a mechano-sensitive channel”

Tuesday Evening ER to Golgi Trafficking
Chair: Barbara Pearse

7.30-8.05 Hugh Pelham, “Traffic to the yeast Golgi complex”
8.05-8.40 Charlie Barlowe, “COPII dependent transport from the ER to the Golgi complex”
8.40-9.15 Susan Ferro-Novick, “An analysis of TRAPP and other factors that mediate the late stages of ER to Golgi transport”
9.15-9.50 Randy Schekman, “Receptors and specialized COPII subunits involved in secretory and membrane protein cargo recruitment”
Wednesday Morning  Endocytosis
Chair: Randy Schekman

9.00-9.35  Ira Mellman, “Cell biology of antigen presentation, or how dendritic cells control the entire immune response”
9.35-10.00 Norma Andrews, “Lysosomes as calcium-regulated exocytic vesicles; a role for synaptotagmin VII”
10.00-10.25 David Owen, “The structural basis of protein recruitment to coated pits”
10.25-10.40 Coffee
10.40-11.15 Scotti Robinson, “Adaptor protein complexes”
11.15-11.50 Tom Kirchhausen, “Atomic structure of clathrin, coat assembly and cargo sorting”
11.50-12.15 Sito Mayor, “Sphingolipid and cholesterol differentially regulate domains involved in sorting of GPI-anchored proteins in the endocytic pathway of mammalian cells”

Wednesday Evening  Endosomes, Rab proteins
Chair: Jim Rothman

7.30-7.50  Election of next co-chair
7.50-8.15 Heidi McBride, “Rab5 and downstream effectors in endocytosis”
8.15-8.50 Jonathan Goldberg, “GTPase structure and function in vesicle budding”
8.50-9.15 Catherine Jackson, “Sec7 domain ARF Exchange Factors: Targets of Brefeldin A in vitro and in vivo”
9.15-9.50 Suzanne Pfeffer, “Protein transport from endosomes to the TGN”

Thursday Morning  Budding and fusion of vesicles,
Chair: Suzanne Pfeffer

9.00-9.35  Jim Rothman, “Minimal machinery for membrane fusion”
9.35-10.10 Bill Wickner, “Homotypic vacuole fusion: a new window on organellar traffic”
10.10-10.35 Andreas Mayer, ”Post docking events in vacuole fusion”
10.35-10.50 Coffee
10.50-11.25 Scott Emr, “Links between cell signalling, membrane trafficking and tumor progression”
11.25-12.00 Yoshinori Ohsumi, “Molecular mechanism of autophagy in yeast”
12.00-12.25 Ben Glick, “The Transitional ER-Golgi System in Budding Yeasts”

Thursday Evening  Golgi assembly, signalling and membrane transport
Chair: Aki Nakano

7.30-8.05  Jennifer Lipincott-Schwartz, “ER-Golgi recycling pathways and their role in mitotic Golgi disassembly/reassembly”
8.05-8.40 Vivek Malhotra, “Regulation of Golgi structure in dividing and non-dividing cells”

PARTY