

# AIAA Microgravity and Space Processes Technical Committee Meeting Minutes

January 7, 2003

## Welcome and Introductions

Michael Doherty, MSPTC Chairperson welcomed everyone to the meeting at the Reno Hilton on January 7, 2003. Telecon connections were not available for this meeting. Mike D. started the meeting by handing out the agenda (attachment 1) and the first yearly newsletter for the MSPTC. He recognized Narayanan Ramachandran (Ram) for his hard work as editor for this first-time publication. He also mentioned that there is one correction to the newsletter: on the last page under "Calendar of Events", the Congressional Visit Day will be held on April 8 and 9 (not in March as indicated).

Mike D. then recognized two new members present (Rich Boling from SHOT and Charles Hays from JPL). Each member and visitor present then introduced themselves and provided a brief background. Attachment 2 provides the attendance list.

Mike D. suggested we resurrect the "explosive nut" award. The award recognizes the most outrageous or ridiculous thing said during the meeting.

Following dinner, Basil Hassan provided a pitch for his candidacy for Technical Director of the Aerospace Sciences Group.

Mike D. provided an overview of the state of the MSPTC. We are in a strong position with good diverse membership (17 members from academia, 9 from industry, and 12 from the government). Our membership includes scientists, engineers, managers and advocacy/PR professionals. The things we do well include a great awards program, outstanding publications, organized subcommittees with a listserver and website, excellent technical programs, consistent advocacy and the ability to respond to programmatic threats related to the TC's interests. The outlook for the MSPTC is good and we need to continue to do the things we have been doing. We need to be more proactive in our advocacy to Congress and commercial organizations. We also need to improve our education and outreach to the public, spark an interest in microgravity among young people, and improve networking with other TCs.

## Review of Old Action Items

Brian Motil reviewed the status of open action items from the October 15, 2002 meeting. The table below summarizes the review.

Action Item	Description	Actionee	Status	PTOC	O/C
	<i>Action Items Prior to Oct 15</i>				
1/09.05.01	Contact GRC legal counsel and exact a once-and-for-all ruling on federal employee participation in CVD and formal letter writing activities that would serve as a guideline to government employee committee members in the future.	Sacksteder	Kurt met with legal and was advised to submit his concern in writing. He expects a final ruling very soon and will forward to the listserver.	<del>3/15/02</del> 01/6/02	OPEN
2/01.14.02	Develop subcommittee mission/vision statement.	Subcomm. Chairs	Afina Lupulescu and Karen Barker needs to complete.	1/31/02	CLOSED
3/01.14.02	All members to re-evaluate subcommittee memberships and activities. Identify and contact the subcommittee chair that you want to participate in.	All	Still need info from: - Congressional Lia. - Commercial - Ed. & Outreach - Conf. & Mtgs	2/15/02	CLOSED

**AIAA Microgravity and Space Processes Technical Committee Meeting Minutes**

**January 7, 2003**

4/01.14.02	Report updated subcommittee memberships to Nancy Ma (new membership officer).	Subcomm. Chairs	Still need info from: - Commercial - Ed. & Outreach - Conf. & Mtgs	2/28/02	CLOSED
5/01.14.02	Develop trial 2002 year end newsletter.	Ram	- Draft in work. Will complete in Oct. and distribute via e-mail.	12/01/02	CLOSED
10/01.14.02	Establish process to award undergraduate and master level graduate students the modest TC funding to support their participation. Coordinate with the Awards subcommittee.	Ostrogorsky	Extended PTOC	<del>3/31/02</del> 5/31/02	CLOSED
4/04.17.02	Submit nominations for best author and presentation to Kurt Sacksteder	All	Need nominations by end of October.	10/31/02	CLOSED
2/07.31.02	a) Publish "biotech" article in AIAA; b) determine due dates for ISRU and summary article	Gustafson	a) Too long – working to reduce	12/31/02 10/10/02	OPEN
<b><i>Action Items from Oct 15</i></b>					
1/10.15.02	Submit nominations to Kurt for the Space Processing Award for Reno, 2004.	All		5/1/03	OPEN

There was considerable discussion regarding the guidelines to select who should receive financial support to travel to the Reno conference (AI 10/01.14.02). Alex felt that it should be left to the session chairs to prioritize based on the abstract submitted. Afina explained how she had obtained funding for the last conference (\$10 K from NASA). She suggested we also look at other sources, such as private industry.

AI #1 - a new action item was generated during the review for Ram to provide a draft proposal to NASA HQ for funding students to present papers at the Reno conference. He will include a draft of the selection process to determine who will get funded as well as the amount. PTOC 3/1/03.

# AIAA Microgravity and Space Processes Technical Committee Meeting Minutes

January 7, 2003

## Subcommittee Reports

### Executive – Banish

Mike B. attended the TC chair training session and noted that the Ground Testing TC forms working groups to solve problems effectively. He suggested we consider a working group to develop education plans for use in class rooms such as a 45 minute demonstration showing microgravity principles for each discipline. The final product could be in the form of a training video that we could possibly sell. The Ground Testing TC WGs typically have a 3-7 year life.

Mike B. would like to see more NASA funded Principal Investigators (PIs) involved in the Congressional Visit Day (CVD). Afina and Mike B. will send letters to encourage PI memberships in AIAA (which is required to participate in CVD).

Mike D. asked for a volunteer to co-chair next year's Reno conference with Ram. The co-chair typically assumes the role of chair the following year. Kurt Sacksteder volunteered.

### Awards – Sacksteder

See attachment #3 for report.

Kurt reminded all the chairs and co-chairs to please fill out the "Best Presentation" award form before leaving Reno. If not, please mail it to Kurt a.s.a.p. Kurt discussed the lack of uniformity (between evaluators) in selecting this reward, but did have a better method.

### *The TC voted on two motions:*

Matt Koss made a motion to change the "Best Presentation Award" to the "Best Student Presentation Award". After some discussion, Jeff LaCombe seconded the motion. **MOTION PASSED.**

Mike D. moved to make a "Best Presentation Award" in addition to the student award which would be available to all non-students. Ram seconded the motion. **MOTION FAILED.**

Kurt presented the "Best Presentation Award" for Reno 2002 to Marty Glicksman and the "Best Paper Award" to Marty Glicksman, Matthew Koss and Afina Lupulescu. Congratulations Marty, Matt, and Afina!

### Publications – Ram

Ram is soliciting suggestions for next year's newsletter. He will serve as editor for one more year and then hand it off to someone else. Ram is looking for subcommittee highlights for the "News Roundup" section and will add more outreach material next year. Ram will also consider a guest contributor and the possibility of paid ads to help defray the cost of printing. The newsletter will not exceed 12 pages.

### Education and Outreach – Ostrogorsky

Alex mentioned that RPI had a glovebox display with 2 channels of video from the ISS from July through September. MSFC has formed an outreach group.

Steve Collicott mentioned that he has instituted a course on low gravity flight experiments at Purdue U. that assists the students interested in KC-135 flights. Steve will send a write-up to the list server. Ram suggested that Steve and Matt work together to put together an education session and Jeff LaCombe suggested a student design competition hosted by the MSPTC.

AI#2 – Jeff LaCombe to contact JSC about advertising to students to present results of the KC-135 student flight program at the AIAA conference. PTOC 3/1/03.

Afina mentioned that ASM organizes summer camps for high school students for "hand-on" materials activities.

## AIAA Microgravity and Space Processes Technical Committee Meeting Minutes

January 7, 2003

### Conferences – Chato

Reno 2003 had 11 sessions and 82 presentations for organized by the MSPTC.

Matt attended the chair meeting for 2004 and reported that Reno Hilton is at capacity and will limit next year to 25 parallel sessions (had 27 this year). Ram has requested 12 sessions for MSPTC next year. AIAA will not move the location so we need to make sure the sessions are full and of good quality. Next year the registration fee will be increased by \$50 per person to cover the cost of LCD projectors. It was suggested that AIAA eliminate the “no-paper, no-podium” rule, but this would increase fees even more (AIAA defers costs by selling the papers).

Ram would like to add two new sessions for next year: fundamental physics and radiation shielding.

### Congressional Liaison – Lupulescu

See attachment #4 for report.

Afina is working on coordinating a more united and thus stronger voice among the TCs to Congress. She would like more participation in Congressional Visit Day (CVD) – to be held on April 8 & 9 - especially from different states. She will be working with Mike Banish to organize current and previously funded NASA Principal Investigators. Afina will also work with Bill Atwell (from the Life Sciences and Systems TC) to coordinate on an advocacy package and visit itinerary for April 9<sup>th</sup>. Jeff LaCombe suggested we also target representatives who serve on committees of interest.

### Membership – Ma

Nancy reported that current membership is full at 35. We also have one young professional and two international members.

### Commercial – Barker

Nothing to report.

### Nomination and Election – Nahra

Nothing to report.

### TC Liaison – Nahra

See attachment #5 for report.

### New Business

Vadim Polezhaev gave a brief summary of current work at the Institute of Problems in Mechanics, Russia regarding a model to provide CFD codes with a the ISS microgravity environment. The model is validated using acceleration measurements from SAMS/MAMS. He submitted a paper and presented a more detailed discussion at the MSPTC Fluids II session.

Mike D. discussed possible locations for the next TC meeting. It was felt that the Combustion Work Shop in Cleveland (June 3-6, 2003) would be the best attended.

Kurt S. reminded the TC that he needs a minimum of 5 nomination packages for the 2004 Space Processing Award by July 1<sup>st</sup>. Nominations are good for two years.

**AIAA Microgravity and Space Processes Technical Committee Meeting Minutes**

**January 7, 2003**

**New Action Items**

<b>Action Item</b>	<b>Description</b>	<b>Actionee</b>	<b>Status</b>	<b>PTOC</b>	<b>O/C</b>
1/01.07.03	Provide a draft proposal to NASA HQ for funding students to present papers at the Reno conference. Include a draft of the selection process.	Ram		3/1/03	OPEN
2/01.07.03	Contact JSC about advertising to students to present results of the KC-135 student flight program at the AIAA conference.	LaCombe		3/1/03	OPEN

Submitted by:  
Brian Motil, MSPTC Secretary

**Attachments:**

1. Agenda
2. Attendance
3. Awards Subcommittee Report
4. Congressional Liaison Subcommittee Report
5. TC Liaison Subcommittee Report

AIAA Microgravity and Space Processes Technical Committee Meeting Minutes

January 7, 2003

Attachment #1

AIAA Microgravity and Space Processes Technical  
Committee-MSPTC  
Agenda-January 7, 2003 Meeting  
*McKinley Room, Reno Hilton*

Tuesday, January 7, 2003

<b>Time</b>	<b>Activity</b>	<b>Presenter/ Participant(s)</b>
<b>Local Time</b>		
6:00-6:45	<i>Dinner, Welcome, Introductions</i>	Everyone
6:45-6:50	<i>Candidacy for Director-Technical of Aerospace Sciences Group</i>	Basil Hassan
6:50-7:15	<i>MSPTC Status, Composition, and Outlook</i>	M. Doherty
7:15-7:30	<i>Review of Old Action Items</i>	B. Motil
7:30-8:30	<b><i>Subcommittee Reports</i></b>	
6 min	Executive	M. Banish
6 min	Awards	K. Sacksteder
6 min	Publications	B. Gustafson
6 min	Education and Outreach	A. Ostrogorsky
6 min	Conferences and Meetings	D. Chato
6 min	Congressional Liaison	A. Lupulescu
6 min	Commercial Liaison	K. Barker
6 min	Nominations and Elections	H. Nahra
6 min	TC Liaison	H. Nahra
6 min	Membership	N. Ma
8:30-9:00	<i>New Business...</i> -Presentation: Microgravity sciences in Russia -Future meetings/ telecons	M. Doherty/ All Vadim Polezhaev
9:00-9:15	<b><i>Awards</i></b> -Presentation of Best Paper Award -Best Presentation Award	K. Sacksteder
9:15-9:30	<i>Action Item Review</i>	B. Motil
9:30	Adjourn	

**AIAA Microgravity and Space Processes Technical Committee Meeting Minutes**

**January 7, 2003**

**Attachment #2**

Name and Affiliation	Member Since	<i>Reno – Jan. 2003</i>	<i>Houston – Oct. 2002</i>	<i>Telecon – July 2002</i>	<i>Telecon – April 2002</i>	<i>Reno – Jan. 2002</i>	<i>KSC – Oct. 2001</i>	<i>Telecon – Sept. 2001</i>	<i>Telecon – April 2001</i>	<i>Reno – Jan. 2001</i>	<i>Telecon – Sept. 2000</i>	<i>Vancouver – May. 2000</i>	<i>Telecon – March 2000</i>	<i>Reno – Jan. 2000</i>	<i>Telecon – Sept. 1999</i>	<i>Cleveland – May 1999</i>	<i>Telecon – March 1999</i>	<i>Reno – Jan. 1999</i>	<i>Telecon – Nov. 1998</i>	<i>Cleveland – Aug. 1998</i>	<i>Washington – Mar. 1998</i>	<i>Reno – Jan. 1998</i>	<i>Madison – Aug. 1997</i>	<i>Wash D.C. – Mar. 1997</i>	<i>Reno – Jan. 1997</i>
Basil Antar – U. of Tenn	87			x							x			x		x	x	x				x			x
Michael Banish – U. of Alabama	99	x	x	x	x	x						x	x			x									
Karen Barker – Lockheed-Martin	99		x	x	x		x			x	x			x	x	x	x								
Richard Boling – SHOT	03	x																							
Catherin Casgrain - CSA	02		x		x																				
James Casler – Veridian	00					x	x	x	x		x		x												
Dave Chato – NASA GRC	99	x	x	x	x	x		x	x			x	x	x											
Lai-Chen Chien – Academia Sinica	94	x	x			x				x			x												
Steven Collicott – Purdue U.	02	x		x	x																				
Steve Del Basso – Boeing	01	x	x		x	x		x																	
Larry DeLucas – U. of Alabama	96																	x						x	x
Michael Doherty – NASA GRC	98	x	x	x	x	x	x	x	x		x			x	x	x	x	x	x	x					
Edwin Ethridge – NASA MSFC	97			x					x		x			x			x	x					x		
Michael Fiske – Morgan Research	92						*		x				x	x	x	x	x					x		x	x
Richard Grugel – NASA MSFC	93		x		x				x		x			x		x		x							x
Robert Gustafson – ORBITEC	96			x	x	x	x	x	x	x	x	x		x		x	x	x	x	x	x	x	x	x	x
Charles Hays – JPL	03	x																							
John Hochstein – U. Memphis	93	x	x	x	x	x			x	x	x		x	x	x	x	x	x	x		x	x	x	x	x
Merrill King – NASA HQ	94		x			x				x	x		x	x	x	x	x	x	x		x	x	x	x	x
Fred Kohl – NASA GRC	87	x	x	x	x	x	x		x	x	x		x	x	x	x	x	x	x	x	x			x	x
Mathew Koss – Holy Cross	98	x		x	x					x	x	x		x			x		x						

**AIAA Microgravity and Space Processes Technical Committee Meeting Minutes**

**January 7, 2003**

Name and Affiliation	Member Since	Reno – Jan. 2003	Houston – Oct. 2002	Telecon – July 2002	Telecon – April 2002	Reno – Jan. 2002	KSC – Oct. 2001	Telecon – Sept. 2001	Telecon – April 2001	Reno – Jan. 2001	Telecon – Sept. 2000	Vancouver – May. 2000	Telecon – March 2000	Reno – Jan. 2000	Telecon – Sept. 1999	Cleveland – May 1999	Telecon – March 1999	Reno – Jan. 1999	Telecon – Nov. 1998	Cleveland – Aug. 1998	Washington – Mar. 1998	Reno – Jan. 1998	Madison – Aug. 1997	Wash D.C. – Mar. 1997	Reno – Jan. 1997	
Jeffrey LaCombe – U. Nevada-Reno	01	x		x	x			x	x	x																
Afina Lupulescu – RPI	00	x	x	x	x	x	x	x			x			x												
Nancy Ma – N.C. State	02	x	x	x	x																					
Jeff Marchetta – U. Memphis	00	x	x		x	x				x	x			x												
Brian Motil – NASA GRC	00	x	x	x	x		x		x	x	x		x													
Henry K. Nahra – NASA GRC	98	x	x		x	x	x		x	x	x		x	x	x	x		x	x	x						
Aleksander Ostrogorsky – RPI	95	x		x	x	x				x			x	x			x				x				x	
Masood Parang – U. of Tenn.	91			x														x				x				
John Pojman – U. Southern Miss.	98					x		x	x	x	x			x	x							x				
Narayanan Ramachandran – USRA	97	x	x	x	x	x		x	x	x	x							x	x	x	x	x				x
Kurt Sacksteder – NASA GRC	98	x	x		x	x		x	x	x	x			x			x	x	x	x						
Ron Schlagheck – NASA MSFC	02	x	x	x																						
Olav Smistad – Raytheon AES	01		x		x	x	x		x	x																
Srini Srinivas – SSSI	98		x		x			x	x										x							
Jose Torero – U. of Maryland	98								x	x	x			x	x	x		x		x	x					
Stephen Tse – Rutgers U.	01	x			x	x		x	x	x																
John Williams – Morgan Research	86														x		x									

x -> attended meeting

\* -> a representative attended meeting

**Visitors:** Marty Glicksman (RPI), Jerry Myers (NASA, GRC), Christoph Beckermann, (U. of Iowa), Randy Parsley (Deputy Director of Space and Missile Group, AIAA), Ben Simmons (U. of Memphis), Vadim Polezhaev (The Institute for Problems in Mechanics, Moscow, Russia), Richard DeLombard (NASA, GRC), Bill Atwell (Boeing, Houston and member of the AIAA Life Sciences and Systems TC),

**January 7, 2003**

Attachment #3

**Awards Subcommittee Report**

Submitted by Kurt Sacksteder:

The Awards Subcommittee conducted its annual effort to select the “Best Presentation” and “Best Paper” from among those presented at the previous Aerospace Sciences Meeting. The participating members of the subcommittee are: Basil Antar, Karen Barker, Merrill King, Stephen Tse, Fred Kohl, Ron Schlagheck and Kurt Sacksteder.

Based upon the ratings of the session chairs at the 2002 Aerospace Sciences Meeting, the “Best Presentation” awardees are Martin E. Glicksman and Kegang Wang for their paper entitled, "ELMS: A Long-Duration Microgravity Materials Science Experiment for ISS" AIAA-2002-0188.

Based on the rating criteria adopted by the full TC, the “Best Paper” awardees are Martin E. Glicksman, Afina Lupulescu, and Matthew B. Koss for their paper entitled, "Diffusion-Limited Melting in Microgravity" AIAA-2002-0455.

These awards will be presented at the full TC meeting on January 7th, 2003.

The TC will begin the process of nominating candidates for the bi-annually awarded “Space Processing Award” during the following year. The nominating process should be discussed at the full TC meeting.

**January 7, 2003**

Attachment #4

**Congressional Liaison Subcommittee Report**

Submitted by Afina Lupulescu

The Liaison Subcommittee did not have any spectacular activities or/and results in the last time. After attending the WSC in Houston, I was waiting for the Walker Commission report.

1) I left Houston with the clear idea that Materials program does not have any future. It is quite interesting that few materials areas are a NASA research priority. However, no money to fulfill this priority until 2008 or 2010, or who really knows. The fluid program was very nicely presented and it seems that has a brighter future than materials. Combustion program also resists heroically.

2) ISS presented by his manager sounds great. It is indeed "a technical masterpiece". However, when asked about research future nobody has a clear answer in terms of funds and human force to perform this task. Although, the bio-sciences are another NASA priority, people who are interested in this type of research express deep concerns.

3) All I could find related to Walker Commission report, are a few minutes based on a meeting of the Aerospace Commission on October 31, 2002. Just from screening those minutes, I understood that: a) USA is really concerned about loosing the central figure position in aerospace industry, and b) a few vague solutions are offered to the problem. No word, whatsoever, about our main concern ISS. I also found the attached .pdf file related to the future of the aerospace industry. Again no word about research on ISS.

Consequently, the Liaison Subcommittee has a hard job ahead. We must continue to educate and convince the congressmen and senators that we really value what we were promised in terms of an active research program on ISS.

**AIAA Microgravity and Space Processes Technical Committee Meeting Minutes**

**January 7, 2003**

Attachment #5

**TC Liaison Subcommittee Report**

Submitted by Henry Nahra

The MSPTC chair and Cindy Brennan of the Life Systems TC planned a session titled "Applications of Fluid Physics to Life Support Systems" for the 33rd International Conference on Environmental Systems (ICES) which will be held at the Westin Bayshore Resort and Marina in Vancouver, British Columbia, Canada in July 2003. Only two abstract were received which prompted the cancellation of the session and rolling the two abstract to the Plant Hardware session. I will be the co-organizer and will help Cindy in the paper evaluation process. Although the call for paper was well advertised, not much interest was received from the Fluid Community. So we agreed to work closely for the following year conference in order to plan better the jointly held session.

I recall contacting the chair of the Thermophysics TC to explore ways of planning a joint session which focuses on multiphase flows in fluid dynamics. Unfortunately, due to the lack of time, this effort did not result in any activity at the 41st AIAA ASM. Perhaps we should explore ways to work with Eric Rice's and the Robotics TCs to see how we can hold joint sessions in the future. This is just an idea.