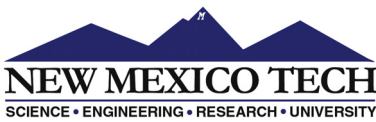




Florida Institute of Technology



www.coe-cst.org



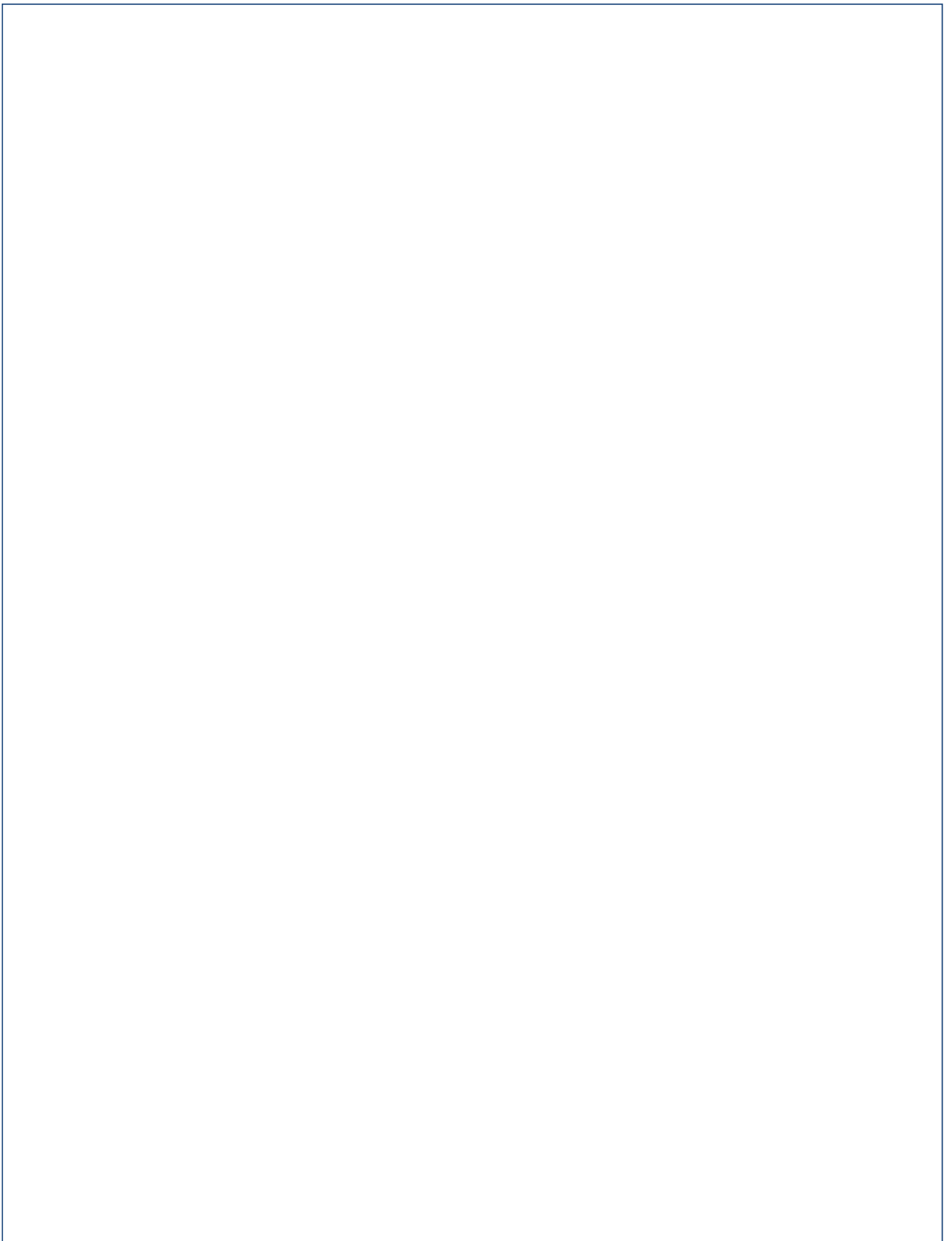
Center of Excellence for Commercial Space Transportation

# Federal Aviation Administration Center of Excellence for Commercial Space Transportation

## Year 5 Annual Report

## Volume 3. Teleconference Notes

December 31, 2015



## COE CST YEAR 5 ANNUAL REPORT – VOLUME 3

This report is produced by the FAA Office of Commercial Space Transportation (AST) in fulfillment of FAA Centers of Excellence program requirements.

The full report is broken into three volumes:

- The Executive Summary gives an overview of the FAA AST, the FAA COE program and the COE CST. A brief description of the member universities precedes a series of “quad charts,” one for each task conducted by the COE CST during the fifth year of operation. The document ends with a listing of the Year 5 students, supporting organizations and technical publications.
- Volume 1 gives a description of the FAA COE CST, its research, structure, member universities and research tasks.
- Volume 2 is a comprehensive set of presentation charts of each research task as presented at the fifth Annual Technical Meeting in October 2015.
- Volume 3 is a comprehensive set of notes from all FAA COE CST teleconferences and face-to-face meetings.

This is Volume 3 of the full report.

In addition to the COE CST Executive Committee Teleconferences notes given here, the notes and audio recordings of all these meetings are available on the web at the following URLs:

#	Date	Notes URL	Audio Recording URL
30	2015-01-12	<a href="https://db.tt/uJhKYT7u">https://db.tt/uJhKYT7u</a>	<a href="https://db.tt/OCFe6fn3">https://db.tt/OCFe6fn3</a>
31	2015-02-09	<a href="https://db.tt/fbdXfPQY">https://db.tt/fbdXfPQY</a>	<a href="https://db.tt/TzmvUpnZ">https://db.tt/TzmvUpnZ</a>
32	2015-03-09	<a href="https://db.tt/ORJ9bNwC">https://db.tt/ORJ9bNwC</a>	<a href="https://db.tt/JecqlcGn">https://db.tt/JecqlcGn</a>
33	2015-04-13	<a href="https://db.tt/aiGvgPQ6">https://db.tt/aiGvgPQ6</a>	<a href="https://db.tt/VxfvLdCD">https://db.tt/VxfvLdCD</a>
34	2015-05-11	<a href="https://db.tt/mYLRV909">https://db.tt/mYLRV909</a>	No Recording "Act of God"
35	2015-06-08	<a href="https://db.tt/Ic7SvHkO">https://db.tt/Ic7SvHkO</a>	<a href="https://db.tt/auXm8jnE">https://db.tt/auXm8jnE</a>
36	2015-07-13	<a href="https://db.tt/xy8tEusA">https://db.tt/xy8tEusA</a>	<a href="https://db.tt/ihbf7dJ">https://db.tt/ihbf7dJ</a>
37	2015-08-10	<a href="https://db.tt/6vMGEUGV">https://db.tt/6vMGEUGV</a>	<a href="https://db.tt/UCV2p4O7">https://db.tt/UCV2p4O7</a>
XX	2015-09-00	No Meeting	
38	2015-10-13	<a href="https://db.tt/ez9Owl37">https://db.tt/ez9Owl37</a>	<a href="https://db.tt/ibXoFOWT">https://db.tt/ibXoFOWT</a>
39	2015-11-09	<a href="https://db.tt/Dx3SyLlk">https://db.tt/Dx3SyLlk</a>	<a href="https://db.tt/mjywfaCk">https://db.tt/mjywfaCk</a>
XX	2015-12-00	No Meeting	

Any questions or comments about the content of this report should be directed to Mr. Ken Davidian, FAA Program Manager for the Center of Excellence for Commercial Space Transportation, or Dr. Patricia Watts, FAA COE Program Director.

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## **Introduction**

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Included in this volume are the notes, recordings, minutes and presentation material from the Center of Excellence for Commercial Space Transportation (COE CST) teleconferences held between January and December 2015.

Each telecon may have some combination of notes (read-ahead material sent out prior to a teleconference), minutes (taken during the teleconference and sent out after the meeting), and/or attachments.

During this time, there were ten different Executive Committee (EC) Teleconferences conducted on the following dates:

- January 12, 2015 - Teleconference #30
- February 09, 2015 - Teleconference #31
- March 09, 2015 - Teleconference #32
- April 13, 2015 - Teleconference #33
- May 11, 2015 - Teleconference #34
- June 08, 2015 - Teleconference #35
- July 13, 2015 - Teleconference #36
- August 10, 2015 - Teleconference #37
- October 13, 2015 - Teleconference #38
- November 09, 2015 - Teleconference #39

There were no EC Telecons conducted in September or December 2015.

The remainder of this report volume includes all the notes, minutes and attachments from these meetings.



**FAA AST COE CST EXECUTIVE COMMITTEE  
TELECON #30 - MONDAY, 12 January 2015**

SCHOOL	PRIMARY	SECONDARY	ADDITIONAL
CU	<input type="checkbox"/> Dr. David Klaus	<input type="checkbox"/> Dr. Penina Axelrad	<input type="checkbox"/> Dr. George Born <input type="checkbox"/> Dr. Tim Fuller-Rowell <input type="checkbox"/> Dr. Dan Scheeres <input type="checkbox"/> Mr. Brad Cheetham
FIT	<input type="checkbox"/> Dr. Tristan Fiedler	<input type="checkbox"/> Dr. Scott Benjamin	<input type="checkbox"/> Dr. Dan Kirk <input type="checkbox"/> Dr. Sam Durrance <input type="checkbox"/> Dr. Nat Villaire
FSU	<input type="checkbox"/> Dr. Farrukh Alvi	<input type="checkbox"/> Dr. Emmanuel Collins	<input type="checkbox"/> Dr. Billy Oates <input type="checkbox"/> Dr. Rajan Kumar
NMSU	<input type="checkbox"/> Dr. Patricia Hynes	<input type="checkbox"/>	<input type="checkbox"/> Ms. Kristi Burden <input type="checkbox"/> JoyLynn Watkins
NMT	<input type="checkbox"/> Dr. Warren Ostergren	<input type="checkbox"/> Dr. Dave Westpfahl	<input type="checkbox"/> Dr. Keith Miller <input type="checkbox"/> Dr. Andrei Zagrai
SU	<input type="checkbox"/> Prof. Scott Hubbard	<input type="checkbox"/> Dr. Juan Alonso <input type="checkbox"/> Andrew Ow	<input type="checkbox"/> Dr. Sigrid Close <input type="checkbox"/> Dr. Steve Rock
UCF	<input type="checkbox"/> Dr. Jay Kapat	<input type="checkbox"/> Dr. Jan Gou <input type="checkbox"/> Dr. Subith Vasu	<input type="checkbox"/> Dr. Ali Gordon <input type="checkbox"/> Dr. Lin An
UF	<input type="checkbox"/> Dr. Norm Fitz-Coy	<input type="checkbox"/> Dr. Mark Sheplak	<input type="checkbox"/>
UTMB	<input type="checkbox"/> Dr. Jim Vanderploeg	<input type="checkbox"/> Dr. Tarah Castleberry	<input type="checkbox"/> Dr. Charles Mathers
CESTAC	<input type="checkbox"/> TBD	<input type="checkbox"/> Ms. Carissa Christensen	<input type="checkbox"/>
OAT	<input type="checkbox"/> Ms. Carol Gregorek	<input type="checkbox"/> Mr. Fred Bowen	<input type="checkbox"/>
FAA AST	<input type="checkbox"/> Mr. Ken Davidian	<input type="checkbox"/>	<input type="checkbox"/>
FAA	<input type="checkbox"/> Dr. Patricia Watts	<input type="checkbox"/> Dennis Flath	<input type="checkbox"/> John Reinhart (UAS COE)
NASA	<input type="checkbox"/> Mr. Alex MacDonald	<input type="checkbox"/> Dr. Dan Rasky	<input type="checkbox"/> Mark Redlinger
CSF	<input type="checkbox"/> Mr. Eric Stallmer	<input type="checkbox"/> Ms. Sirisha Bandla	<input type="checkbox"/> Tommy Sanford Exec Dir
McGill	<input type="checkbox"/> Ms. Andrea DiPaolo	<input type="checkbox"/>	<input type="checkbox"/>

0.1 Executive Committee Meeting Information

- Dial-In #: 712-432-0075, Participant Access Code: 381319#
- Video Feed : <http://fit1.adobeconnect.com/faa-demo/>
- Aqua Highlighted attendance above from 8 December 2014 telecon
  - The next telecom is scheduled for 9 Feb 2015, 1-2PM EST
  - Orion America - teleconference recording & distribution
  - Affiliate Member – Sample MOU appended via separate document

**1. AGENDA ITEMS**

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1.0 McGill University, Institute of Air & Space Law (Ram Jakhu & Andrea DiPaolo)

- 10 min Affiliate Member briefing

1.1 Annual Administrative Meeting 2015

- Options: NMSU, Dallas Ft Worth Airport (central location), virtual, others?

1.2 Annual Report

- Quad Charts & ATM4 Presentations in Drop Box (Fred)
- Student Data, Publications, Quarterly Reports & Matching Reports Updated (Fred)
- Matching Funds & Student information updated in OMIS (All)

1.3 Research Roadmap Activity (Scott Hubbard & Roadmap PIs)

- Virtual Institute / Adobe Connect

#### 1.4 Website (Fred Bowen)

- Beta web <http://66.116.208.14/>

#### 1.5 Budget & Research Reporting (Ken Davidian & Carol Gregorek)

- FY14Q4: July-Sept, due 31 Oct 2014 Reporting Status (CG)
- FY15Q1: Oct-Dec, due 31 Jan 2015 Reports (CG)
- Finance (KD)
- Jan 12 – AST Tech Monitors deadline for submitting

---

## 2. SELF-GOVERNANCE SUBCOMMITTEE

---

- Members: (Chair TBD), Norm Fitz-Coy/UF
- Draft Governance & Operations By-Laws
- To be Discussed @ AAM5 or prior per Chair's discretion

---

## 3. COLLABORATION SUBCOMMITTEE (LEAD, TRISTAN FIEDLER)

---

- Members: Tristan Fiedler/FIT (Chair), Mark Sheplak/UF, Penny Axelrad/CU, Pat Hynes/NMSU, Warren Ostergren/NMT, Jim Vanderploeg/UTMB, Dan Scheeres/CU
- Subcommittee mtg to be scheduled for Jan 2015.
- CESTAC Update:
- OMIS – record keeping for Affiliate Member MOUs (Fred Bowen)
- Active Affiliates – in OMIS
  - NMSU – ERAU (Task 306)
  - FIT – McGill Univ. (Task 301, 302, 304)
  - NMSU – SatWest (Task 307)
- Potentials
  - Arizona State poc Jim Bell – possible host Stanford
  - Baylor College of Medicine poc John Clark (space safety & medicine)– revised MOU & Task into OMIS (Tara Castelberry - UTMB)
  - Danish Technical Univ - Ken Davidian to ping 16 December 2014
  - U. Nebraska – possible host NMSU
  - USC (Greg Autry), UC-Berkeley (Jasenka Rakas, spaceports) – TJF pinged 1-9-15

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## 4. STRATEGIC PLANNING SUBCOMMITTEE (LEAD, DAVE KLAUS)

---

- Members: Dave Klaus/CU (Chair), Sigrid Close/SU, Andei Zagrei/NMT, Billie Oates/FSU, Dan Kirk/FIT, Juan Alonso/SU, Scott Hubbard/SU
- Subcommittee Topics: Membership terms, Leadership, Policy & Goals
- To be Discussed @ AAM5 or prior per Chair's discretion

---

## 5. ANY OTHER BUSINESS

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- 2015 COE CST EC Telecons
  - Jan 12
  - Feb 09
  - Mar 09
  - Apr 13
  - May 11
  - Jun 08
  - Jul 13

Aug 10  
Sep 14  
Oct 13 (moved to Tuesday/Columbus Day)  
Nov 09  
Dec – No Telecon





**FAA AST COE CST EXECUTIVE COMMITTEE  
TELECON #31 - MONDAY, 9 February 2015**

SCHOOL	PRIMARY	SECONDARY	ADDITIONAL
CU	<input type="checkbox"/> Dr. David Klaus	<input type="checkbox"/> Dr. Penina Axelrad	<input type="checkbox"/> Dr. George Born <input type="checkbox"/> Dr. Tim Fuller-Rowell <input type="checkbox"/> Dr. Dan Scheeres <input type="checkbox"/> Mr. Brad Cheetham
FIT	<input type="checkbox"/> Dr. Tristan Fiedler	<input type="checkbox"/> Dr. Scott Benjamin	<input type="checkbox"/> Dr. Dan Kirk <input type="checkbox"/> Dr. Sam Durrance <input type="checkbox"/> Dr. Nat Villaire
FSU	<input type="checkbox"/> Dr. Farrukh Alvi	<input type="checkbox"/> Dr. Emmanuel Collins	<input type="checkbox"/> Dr. Billy Oates <input type="checkbox"/> Dr. Rajan Kumar
NMSU	<input type="checkbox"/> Dr. Patricia Hynes	<input type="checkbox"/>	<input type="checkbox"/> Ms. Kristi Burden <input type="checkbox"/> JoyLynn Watkins
NMT	<input type="checkbox"/> Dr. Warren Ostergren	<input type="checkbox"/> Dr. Dave Westpfahl	<input type="checkbox"/> Dr. Keith Miller <input type="checkbox"/> Dr. Andrei Zagrai
SU	<input type="checkbox"/> Prof. Scott Hubbard	<input type="checkbox"/> Dr. Juan Alonso <input type="checkbox"/> Andrew Ow	<input type="checkbox"/> Dr. Sigrid Close <input type="checkbox"/> Dr. Steve Rock
UCF	<input type="checkbox"/> Dr. Jay Kapat	<input type="checkbox"/> Dr. Jan Gou <input type="checkbox"/> Dr. Subith Vasu	<input type="checkbox"/> Dr. Ali Gordon <input type="checkbox"/> Dr. Lin An
UF	<input type="checkbox"/> Dr. Norm Fitz-Coy	<input type="checkbox"/> Dr. Mark Sheplak	<input type="checkbox"/>
UTMB	<input type="checkbox"/> Dr. Jim Vanderploeg	<input type="checkbox"/> Dr. Tarah Castleberry	<input type="checkbox"/> Dr. Charles Mathers
CESTAC	<input type="checkbox"/> TBD	<input type="checkbox"/> Ms. Carissa Christensen	<input type="checkbox"/>
OAT	<input type="checkbox"/> Ms. Carol Gregorek	<input type="checkbox"/> Mr. Fred Bowen	<input type="checkbox"/>
FAA AST	<input type="checkbox"/> Mr. Ken Davidian	<input type="checkbox"/> Ms. Evelina Bern	<input type="checkbox"/>
FAA	<input type="checkbox"/> Dr. Patricia Watts	<input type="checkbox"/>	<input type="checkbox"/> John Reinhart (UAS COE)
NASA	<input type="checkbox"/> Mr. Alex MacDonald	<input type="checkbox"/> Dr. Dan Rasky	<input type="checkbox"/> Mark Redlinger
CSF	<input type="checkbox"/> Mr. Eric Stallmer	<input type="checkbox"/> Ms. Sirisha Bandla	<input type="checkbox"/> Tommy Sanford Exec Dir
McGill	<input type="checkbox"/> Ms. Andrea DiPaolo	<input type="checkbox"/>	<input type="checkbox"/>

0.1 Executive Committee Meeting Information

- Dial-In #: 712-432-0075, Participant Access Code: 381319#
- Video Feed : <http://fit1.adobeconnect.com/faa-demo/> (No Voice over IP used)
- Aqua Highlighted attendance above from 12 January 2015 telecon
- The next telecom is scheduled for 9 Mar 2015, 1-2PM EST
- Orion America - teleconference recording & distribution
- **Distribution List & POC verification needed from list above**

**1. AGENDA ITEMS**

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1.0 Affiliate Member Briefing – Mr. Brian Barnett, Satwest

- Slides presented via Adobe Connect

1.1 Annual Administrative Meeting 2015

- Tentatively Dallas Ft Worth Airport 1.5 days approx. OR Florida Institute of Technology TBD
- Straw vote for March 17, 18, 19 – meeting to coincide with Melbourne Air Show Mar 21-22
- Tentative AAM5 Agenda Items: (unprioritized)
  - Ownership of publications
  - Management/administration structure
  - Process of selecting funded tasks
  - Terms and conditions of Individual Cooperative Agreements
  - Congressional ask for 2016 (contingent on AAM5 meeting date)
  - Funding (R&D, Operations, other, or combination)
  - Other TBD

## 1.2 Annual Report

- Student Data, Publications, Quarterly Reports & Matching Funds - OMIS Updated (Fred)

## 1.3 Research Roadmap Activity (Scott Hubbard & Roadmap Pls)

- Virtual Institute / Adobe Connect

## 1.4 Website (Fred) – no report

- Beta web <http://66.116.208.14/> (please provide any feedback to Fred)
- To go live on XX ?

## 1.5 Budget & Research Reporting (Ken Davidian & Carol Gregorek)

- FY15Q1: Oct-Dec, due 31 Jan 2015 Reports (CG)
- Finance (KD)
- Jan 12 – AST Tech Monitors deadline for submitting

## 2. SELF-GOVERNANCE SUBCOMMITTEE

---

- Members: (Chair TBD), Norm Fitz-Coy/UF
- Draft Governance & Operations By-Laws
- To be Discussed @ AAM5 or prior per Chair's discretion

## 3. COLLABORATION SUBCOMMITTEE (LEAD, TRISTAN FIEDLER)

---

- Members: Tristan Fiedler/FIT (Chair), Mark Sheplak/UF, Penny Axelrad/CU, Pat Hynes/NMSU, Warren Ostergren/NMT, Jim Vanderploeg/UTMB, Dan Scheeres/CU
- Subcommittee mtg to be scheduled for Jan 2015.
- CESTAC Update: CSF discussion in progress
- OMIS – record keeping for Affiliate Member MOUs (Fred Bowen)
- Active Affiliates – in OMIS
  - NMSU – ERAU (Task 306)
  - FIT – McGill Univ. (Task 301, 302, 304)
  - NMSU – SatWest (Task 307)
- Potentials
  - Arizona State poc Jim Bell – possible host Stanford
  - Baylor College of Medicine poc John Clark (space safety & medicine)– revised MOU & Task into OMIS (Tara Castelberry - UTMB)
  - Danish Technical Univ - Ken Davidian to ping 16 December 2014
  - U. Nebraska – possible host NMSU
  - USC (Greg Autry), UC-Berkeley (Jasenka Rakas, spaceports) – TJF pinged 1-9-15
  - Mitre – Stanford ? TJF pinged Zheng Tao 27 Jan 2015 & DC f2f AST conf.

## 4. STRATEGIC PLANNING SUBCOMMITTEE (LEAD, DAVE KLAUS)

---

- Members: Dave Klaus/CU (Chair), Sigrid Close/SU, Andei Zagrei/NMT, Billie Oates/FSU, Dan Kirk/FIT, Juan Alonso/SU, Scott Hubbard/SU
- Subcommittee Topics: Membership terms, Leadership, Policy & Goals
- To be Discussed @ AAM5 or prior per Chair's discretion

## 5. ANY OTHER BUSINESS

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- 2015 COE CST EC Telecons

~~Jan 12~~  
~~Feb 09~~  
Mar 09  
Apr 13  
May 11  
Jun 08  
Jul 13  
Aug 10  
Sep 14  
Oct 13 (moved to Tuesday/Columbus Day)  
Nov 09  
Dec – No Telecon



**FAA AST COE CST EXECUTIVE COMMITTEE  
TELECON #32 - MONDAY, 9 March 2015**

SCHOOL	PRIMARY	SECONDARY	ADDITIONAL
CU	<input type="checkbox"/> Dr. David Klaus	<input type="checkbox"/> Dr. Penina Axelrad	<input type="checkbox"/> Dr. George Born <input type="checkbox"/> Dr. Tim Fuller-Rowell <input type="checkbox"/> Dr. Dan Scheeres <input type="checkbox"/> Mr. Brad Cheetham
FIT	<input type="checkbox"/> Dr. Tristan Fiedler	<input type="checkbox"/> Dr. Scott Benjamin	<input type="checkbox"/> Dr. Dan Kirk <input type="checkbox"/> Dr. Sam Durrance <input type="checkbox"/> Dr. Nat Villaire
FSU	<input type="checkbox"/> Dr. Farrukh Alvi	<input type="checkbox"/> Dr. Emmanuel Collins	<input type="checkbox"/> Dr. Billy Oates <input type="checkbox"/> Dr. Rajan Kumar
NMSU	<input type="checkbox"/> Dr. Patricia Hynes	<input type="checkbox"/>	<input type="checkbox"/> Ms. Kristi Burden <input type="checkbox"/> JoyLynn Watkins
NMT	<input type="checkbox"/> Dr. Warren Ostergren	<input type="checkbox"/> Dr. Dave Westpfahl	<input type="checkbox"/> Dr. Keith Miller <input type="checkbox"/> Dr. Andrei Zagrai
SU	<input type="checkbox"/> Prof. Scott Hubbard	<input type="checkbox"/> Dr. Juan Alonso <input type="checkbox"/> Andrew Ow	<input type="checkbox"/> Dr. Sigrid Close <input type="checkbox"/> Dr. Steve Rock
UCF	<input type="checkbox"/> Dr. Jay Kapat	<input type="checkbox"/> Dr. Jan Gou <input type="checkbox"/> Dr. Subith Vasu	<input type="checkbox"/> Dr. Ali Gordon <input type="checkbox"/> Dr. Lin An
UF	<input type="checkbox"/> Dr. Norm Fitz-Coy	<input type="checkbox"/> Dr. Mark Sheplak	<input type="checkbox"/>
UTMB	<input type="checkbox"/> Dr. Jim Vanderploeg	<input type="checkbox"/> Dr. Tarah Castleberry	<input type="checkbox"/> Dr. Charles Mathers
CESTAC	<input type="checkbox"/> TBD	<input type="checkbox"/> Ms. Carissa Christensen	<input type="checkbox"/>
OAT	<input type="checkbox"/> Ms. Carol Gregorek	<input type="checkbox"/> Mr. Fred Bowen	<input type="checkbox"/>
FAA AST	<input type="checkbox"/> Mr. Ken Davidian	<input type="checkbox"/> Ms. Evelina Bern	<input type="checkbox"/> Larry.Scott@faa.gov
FAA	<input type="checkbox"/> Dr. Patricia Watts	<input type="checkbox"/>	<input type="checkbox"/> John Reinhart (UAS COE)
NASA	<input type="checkbox"/> Mr. Alex MacDonald	<input type="checkbox"/> Dr. Dan Rasky	<input type="checkbox"/> Mark Redlinger
CSF	<input type="checkbox"/> Mr. Eric Stallmer	<input type="checkbox"/> Ms. Sirisha Bandla	<input type="checkbox"/> Tommy Sanford Exec Dir
McGill	<input type="checkbox"/> Ms. Andrea DiPaolo	<input type="checkbox"/>	<input type="checkbox"/>
MITRE	<input type="checkbox"/> Mr. Zheng Tao	<input type="checkbox"/>	<input type="checkbox"/>
NASA AMES	<input type="checkbox"/> Mr. Michael Dudley	<input type="checkbox"/>	<input type="checkbox"/>
DLR	<input type="checkbox"/> Dr. Juergen Drescher	<input type="checkbox"/>	<input type="checkbox"/>
Spaceport Sweden	<input type="checkbox"/> Ms. Karin Nilsson	<input type="checkbox"/>	<input type="checkbox"/>

0.1 Executive Committee Meeting Information

- Dial-In #: 712-432-0075, Participant Access Code: 381319#
- Video Feed : <http://fit1.adobeconnect.com/faa-demo/> (No Voice over IP used)
- Green Highlighted attendance above from 9 Feb 2015 telecon
- The next telecom is scheduled for 13 April 2015, 1-2PM EST
- Orion America - teleconference recording & distribution

**1. AGENDA ITEMS**

---

1.0 Tech Monitor or Affiliate Member Briefing – Mr. Nick Demidovich (FAA)

- Self Introduction + Task Descriptions (10 min + Q&A)

1.1 Annual Administrative Meeting April 27, 28, 2015 (Carol)

- Westin Hotel WESTIN DALLAS / FORT WORTH AIRPORT HOTEL  
4545 West John Carpenter Freeway, Irving , Texas 75063
- Tentative AAM5 Agenda Items:
  - Management/administration structure

- Process of selecting funded tasks
- Ownership of publications
- Terms and conditions of Individual Cooperative Agreements
- Congressional ask for 2016 (contingent on AAM5 meeting date)
- Funding (R&D, Operations, other, or combination)
- CESTAC
- OMIS/Website
- Other

#### 1.2 Annual Report

- Student Data, Publications, Quarterly Reports & Matching Funds - OMIS Updated (Fred)
- Volumes 1, 2 & 3 – Target Completion by 15 April 2015

#### 1.3 Research Roadmap Activity (Scott Hubbard & Roadmap PIs)

- Virtual Institute / Adobe Connect

#### 1.4 Website (Fred) – no report

- Beta web <http://66.116.208.14/> (*please provide any feedback to Fred*)
- Target rollout 15 April 2015

#### 1.5 Budget & Research Reporting (Ken Davidian & Carol Gregorek)

- FY15Q1: Oct-Dec, due 31 Jan 2015 Reports (CG)
- Finance (KD)

## **2. SELF-GOVERNANCE SUBCOMMITTEE**

---

- Members: (Chair TBD), Norm Fitz-Coy/UF
- Draft Governance & Operations By-Laws
- To be Discussed @ AAM5 or prior per Chair's discretion

## **3. COLLABORATION SUBCOMMITTEE (LEAD, TRISTAN FIEDLER)**

---

- Members: Tristan Fiedler/FIT (Chair), Mark Sheplak/UF, Penny Axelrad/CU, Pat Hynes/NMSU, Warren Ostergren/NMT, Jim Vanderploeg/UTMB, Dan Scheeres/CU
- Subcommittee mtg to be scheduled for Jan 2015.
- CESTAC Update: CSF discussion in progress; Tech Reports distributed to Eric Stallmer
- OMIS – record keeping for Affiliate Member MOUs (Fred Bowen)
- Active Affiliates – in OMIS
  - NMSU – ERAU (Task 306)
  - FIT – McGill Univ. (301, 302, 304)
  - NMSU – SatWest (Task 307)
- Potentials
  - Arizona State poc Scott Smas & Jim Bell – Stanford
  - Lincoln Labs – Stanford
- No response – to be removed after AAM5
  - Baylor College of Medicine poc John Clark (space safety & medicine)– revised MOU & Task into OMIS (Tara Castelberry - UTMB)
  - Danish Technical Univ - Ken Davidian
  - U. Nebraska – possible host NMSU
  - USC (Greg Autry), UC-Berkeley (Jasenka Rakas, spaceports) – TJF pinged 1-9-15

#### **4. STRATEGIC PLANNING SUBCOMMITTEE (LEAD, DAVE KLAUS)**

---

- Members: Dave Klaus/CU (Chair), Sigrid Close/SU, Andei Zagrei/NMT, Billie Oates/FSU, Dan Kirk/FIT, Juan Alonso/SU, Scott Hubbard/SU
- Subcommittee Topics: Membership terms, Leadership, Policy & Goals
- To be Discussed @ AAM5 or prior per Chair's discretion

#### **5. ANY OTHER BUSINESS**

---

- 2015 COE CST EC Telecons  
Jan 12  
~~Feb 09~~  
~~Mar 09~~  
Apr 13  
May 11  
Jun 08  
Jul 13  
Aug 10  
Sep 14  
Oct 13 (moved to Tuesday/Columbus Day)  
Nov 09  
Dec – No Telecon



**FAA AST COE CST EXECUTIVE COMMITTEE  
TELECON #33 - MONDAY, 13 April 2015**

SCHOOL	PRIMARY	SECONDARY	ADDITIONAL
CU	<input type="checkbox"/> Dr. David Klaus	<input type="checkbox"/> Dr. Penina Axelrad	<input type="checkbox"/> Dr. George Born <input type="checkbox"/> Dr. Tim Fuller-Rowell <input type="checkbox"/> Dr. Dan Scheeres <input type="checkbox"/> Mr. Brad Cheetham
FIT	<input type="checkbox"/> Dr. Tristan Fiedler	<input type="checkbox"/> Dr. Scott Benjamin	<input type="checkbox"/> Dr. Dan Kirk <input type="checkbox"/> Dr. Sam Durrance <input type="checkbox"/> Dr. Nat Villaire
FSU	<input type="checkbox"/> Dr. Farrukh Alvi	<input type="checkbox"/> Dr. Emmanuel Collins	<input type="checkbox"/> Dr. Billy Oates <input type="checkbox"/> Dr. Rajan Kumar
NMSU	<input type="checkbox"/> Dr. Patricia Hynes	<input type="checkbox"/>	<input type="checkbox"/> Ms. Kristi Burden <input type="checkbox"/> JoyLynn Watkins
NMT	<input type="checkbox"/> Dr. Warren Ostergren	<input type="checkbox"/> Dr. Dave Westpfahl	<input type="checkbox"/> Dr. Keith Miller <input type="checkbox"/> Dr. Andrei Zagrai
SU	<input type="checkbox"/> Prof. Scott Hubbard	<input type="checkbox"/> Dr. Juan Alonso <input type="checkbox"/> Andrew Ow	<input type="checkbox"/> Dr. Sigrid Close <input type="checkbox"/> Dr. Steve Rock
UCF	<input type="checkbox"/> Dr. Jay Kapat	<input type="checkbox"/> Dr. Jan Gou <input type="checkbox"/> Dr. Subith Vasu	<input type="checkbox"/> Dr. Ali Gordon <input type="checkbox"/> Dr. Lin An
UF	<input type="checkbox"/> Dr. Norm Fitz-Coy	<input type="checkbox"/> Dr. Mark Sheplak	<input type="checkbox"/>
UTMB	<input type="checkbox"/> Dr. Jim Vanderploeg	<input type="checkbox"/> Dr. Tarah Castleberry	<input type="checkbox"/> Dr. Charles Mathers
CESTAC	<input type="checkbox"/> TBD	<input type="checkbox"/> Ms. Carissa Christensen	<input type="checkbox"/>
OAT	<input type="checkbox"/> Ms. Carol Gregorek	<input type="checkbox"/> Mr. Fred Bowen	<input type="checkbox"/>
FAA AST	<input type="checkbox"/> Mr. Ken Davidian	<input type="checkbox"/> Ms. Evelina Bern	<input type="checkbox"/> Larry.Scott@faa.gov <input type="checkbox"/> Nick Demidovich <input type="checkbox"/> Henry Lampazzi
FAA	<input type="checkbox"/> Dr. Patricia Watts	<input type="checkbox"/>	<input type="checkbox"/> John Reinhart (UAS COE)
NASA	<input type="checkbox"/> Mr. Alex MacDonald	<input type="checkbox"/> Dr. Dan Rasky	<input type="checkbox"/> Mark Redlinger
CSF	<input type="checkbox"/> Mr. Eric Stallmer	<input type="checkbox"/> Ms. Sirisha Bandla	<input type="checkbox"/> Tommy Sanford Exec Dir
McGill	<input type="checkbox"/> Ms. Andrea DiPaolo	<input type="checkbox"/>	<input type="checkbox"/>
MITRE	<input type="checkbox"/> Mr. Zheng Tao	<input type="checkbox"/> Mr. Dean Fulmer	<input type="checkbox"/>
NASA AMES	<input type="checkbox"/> Mr. Michael Dudley	<input type="checkbox"/>	<input type="checkbox"/>
DLR	<input type="checkbox"/> Dr. Juergen Drescher	<input type="checkbox"/>	<input type="checkbox"/>
Spaceport Sweden	<input type="checkbox"/> Ms. Karin Nilsdotter	<input type="checkbox"/>	<input type="checkbox"/>

0.1 Executive Committee Meeting Information

- Dial-In #: 712-432-0075, Participant Access Code: 381319#
- Video Feed : <http://fit1.adobeconnect.com/faa-demo/> (No Voice over IP used)
- Yellow Highlighted attendance above from 9 Mar 2015 telecon
- The next telecom is scheduled for 11 May 2015, 1-2PM EST
- Orion America - teleconference recording & distribution

**1. AGENDA ITEMS**

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1.0 Tech Monitor or Affiliate Member Briefing – Mr. Henry Lampazzi (FAA)

- Self-Introduction + Task Descriptions (10 min + Q&A)

1.1 Annual Administrative Meeting April 27, 28, 2015 (Carol)

- WESTIN DALLAS / FORT WORTH AIRPORT HOTEL  
4545 West John Carpenter Freeway, Irving, Texas 75063
- Tentative AAM5 Agenda attached.

## 1.2 Annual Report

- Student Data, Publications, Quarterly Reports & Matching Funds - OMIS Updated (Fred)
- Volumes 1, 2 & 3 – Target Completion by 15 April 2015

## 1.3 Research Roadmap Activity (Scott Hubbard & Roadmap PIs)

- Virtual Institute / Adobe Connect

## 1.4 Website (Fred) – no report

- Beta web <http://66.116.208.14/> (please provide any feedback to Fred)
- Target rollout 15 April 2015

## 1.5 Budget & Research Reporting (Ken Davidian & Carol Gregorek)

- FY15Q1: Oct-Dec, due 31 Jan 2015 Reports (CG)
- Finance (KD)
- \$3M in Pres budget for AST RE&D (will say commercial space)
- Regulatory (mission oriented) vs Industry Development (diffusion oriented) research
- \$1M in FY15 to COE CST (proposals by April 15 selected; funds dispersed by May 15)
- \$2M to other CST research (not necessarily COE CST)

## 1.6 Student Opportunity (Ken Davidian)

I was contacted by an executive recruiter that is representing a startup commercial space program that will take ticketed passengers to near space. He is interested in speaking with anyone that may be interested in an opportunity to be a part of a well-funded and cutting edge program.

The available positions are

Senior Systems Engineer: [http://www.jsfirm.com/Job/Engineering/Senior+Systems+Engineer/Tucson-Arizona/jobID\\_236292](http://www.jsfirm.com/Job/Engineering/Senior+Systems+Engineer/Tucson-Arizona/jobID_236292)

Reliability Engineer: [http://www.jsfirm.com/Job/Engineering/Reliability+Engineer/Tucson-Arizona/jobID\\_236306](http://www.jsfirm.com/Job/Engineering/Reliability+Engineer/Tucson-Arizona/jobID_236306)

Contact [phil@aviationsearchgroup.com](mailto:phil@aviationsearchgroup.com) or at the office (724) 547-7015

## 2. SELF-GOVERNANCE SUBCOMMITTEE

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- Members: (Chair TBD), Norm Fitz-Coy/UF
- Draft Governance & Operations By-Laws
- To be Discussed @ AAM5 or prior per Chair's discretion

## 3. COLLABORATION SUBCOMMITTEE (LEAD, TRISTAN FIEDLER)

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- Members: Tristan Fiedler/FIT (Chair), Mark Sheplak/UF, Penny Axelrad/CU, Pat Hynes/NMSU, Warren Ostergren/NMT, Jim Vanderploeg/UTMB, Dan Scheeres/CU
- CESTAC Update: CSF discussion in progress; Tech Reports distributed to Eric Stallmer
- OMIS – record keeping for Affiliate Member MOUs (Fred Bowen)
- Active Affiliates – in OMIS
- NMSU – ERAU (Task 306)
- FIT – McGill Univ. (301, 302, 304)
- NMSU – SatWest (Task 307)
- Potentials
- Arizona State poc Scott Smas & Jim Bell – Stanford
- Lincoln Labs – Stanford
- NEW Apr 2015 Persistence Mining – NM Tech Van Romero & Colleen Guengerich
- NEW Apr 2015 Simpson College – 2 Tasks request funding ??



- New Mar 2015 Univ Vienna poc Irmgard Marboe - Stanford
- No response – to be removed after AAM5
- Baylor College of Medicine poc John Clark (space safety & medicine)– revised MOU & Task into OMIS (Tara Castelberry - UTMB)
- Danish Technical Univ - Ken Davidian
- U. Nebraska – possible host NMSU
- USC (Greg Autry), UC-Berkeley (Jasenka Rakas, spaceports) – TJF pinged 1-9-15

#### **4. STRATEGIC PLANNING SUBCOMMITTEE (LEAD, DAVE KLAUS)**

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- Members: Dave Klaus/CU (Chair), Sigrid Close/SU, Andei Zagrei/NMT, Billie Oates/FSU, Dan Kirk/FIT, Juan Alonso/SU, Scott Hubbard/SU
- Subcommittee Topics: Membership terms, Leadership, Policy & Goals
- To be Discussed @ AAM5 or prior per Chair's discretion

#### **5. ANY OTHER BUSINESS**

---

- 2015 COE CST EC Telecons
  - Jan 12
  - Feb 09
  - Mar 09
  - Apr 13
  - May 11
  - Jun 08
  - Jul 13
  - Aug 10
  - Sep 14
  - Oct 13 (moved to Tuesday/Columbus Day)
  - Nov 09
  - Dec – No Telecon

# Center of Excellence for Commercial Space Transportation

## Fifth Annual Administrative Meeting

April 27-28, 2015

### DAY 1 April 27, 2015

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(1:00 pm CDT – 7:00 CDT)

Main Objectives: To establish and Ratify By-Laws for Self-Governance, shape ways to enhance effectiveness for the Collaboration Subcommittee and the Strategic Planning subcommittee (2) Center of Excellence Terms and Conditions for next Phase

Overall Facilitator: Davidian/Fiedler

- |      |   |               |
|------|---|---------------|
| I.   | Introduction: Overview (Davidian)                   | (1:00 – 1:15) |
| II.  | New Cooperative Agreement (Watts, Gregorek)         | (1:15 – 2:45) |
|      | a. Cost Match Carry Forward and Reconciliation      |               |
|      | b. Funding (R&D, Operations, Other - Davidian)      |               |
|      | c. Ownership of Publications and Publication Right  |               |
|      | d. Other  |               |
| III. | New Space Journal                                   | (2:45 – 3:00) |
|      | a. Scholarship                                      |               |
| IV.  | Website (Bowen)                                     |               |
| V.   | Break   | (3:00 – 3:30) |
| VI.  | Management/administration Models (Davidian)         | (3:30 – 4:15) |
|      | a. Task Selection and Funding; Reviewers & NDAs?    |               |
|      | b. COE Long Term Viability Models (Watts, Gregorek) |               |
| VII. | CST Bylaws  | (4:15 – 7:00) |
|      | a. Self-Governance Document Topics of Discussion    |               |
|      | b. Membership – Definitions and Terms               |               |
|      | c. Leadership – Definitions and Terms               |               |
|      | i. Rotation   |               |
|      | ii. Consensus                                       |               |
|      | iii. Other  |               |
|      | d. Policy Review                                    |               |

## Day 2 April 28, 2015

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(8:00 am CDT – 3:30 pm CDT)

Overall Facilitator: Davidian/Fiedler

- |       |  |                 |
|-------|--|-----------------|
| I.    | CST Bylaws (Continued)   | (8:00 – 9:30)   |
| II.   | Management Issues (Hynes)  | (9:30 – 10:00)  |
|       | a. Funding & Number of annual meetings                             |                 |
|       | b. Orion Program Support   |                 |
| III.  | Break  | (10:00 – 10:30) |
| IV.   | CST Past Funding (Bern, Bowen)                                     | (10:30 – 12:00) |
|       | a. Reconciliation of awards/funds                                  |                 |
|       | b. OMIS  |                 |
| V.    | Lunch  | (12:00 – 1:00)  |
| VI.   | Committees   |                 |
|       | a. Which do we want?   |                 |
|       | b. Collaboration Subcommittee Report (Fiedler)                     | (1:00 – 1:30)   |
|       | c. Strategic Planning Committee Report (Klaus)                     | (1:30 – 2:00)   |
| VII.  | CESTAC – Commercial Space Federation<br>(Hynes, Fiedler, Davidian) | (2:00 – 2:30)   |
| VIII. | Joseph Carrabino – NCURA award (Fiedler)                           | (2:30 – 2:45)   |
| IX.   | Congressional ask for 2016 (minus FAA employees)                   | (2:45 – 3:00)   |
| X.    | Other & Close, Next Steps (Davidian)                               | (3:00 – 3:30)   |

All presenters are requested to provide presentation materials one week prior to the meeting.



**FAA AST COE CST EXECUTIVE COMMITTEE  
TELECON #34 - MONDAY, 11 May 2015**

SCHOOL	PRIMARY	SECONDARY	ADDITIONAL
CU	<input type="checkbox"/> Dr. David Klaus	<input type="checkbox"/> Dr. Penina Axelrad	<input type="checkbox"/> Dr. George Born <input type="checkbox"/> Dr. Tim Fuller-Rowell <input type="checkbox"/> Dr. Dan Scheeres <input type="checkbox"/> Mr. Brad Cheetham
FIT	<input type="checkbox"/> Dr. Tristan Fiedler	<input type="checkbox"/> Dr. Scott Benjamin	<input type="checkbox"/> Dr. Dan Kirk <input type="checkbox"/> Dr. Sam Durrance <input type="checkbox"/> Dr. Nat Villaire
FSU	<input type="checkbox"/> Dr. Farrukh Alvi	<input type="checkbox"/> Dr. Emmanuel Collins	<input type="checkbox"/> Dr. Billy Oates <input type="checkbox"/> Dr. Rajan Kumar
NMSU	<input type="checkbox"/> Dr. Patricia Hynes	<input type="checkbox"/>	<input type="checkbox"/> Ms. Kristi Burden <input type="checkbox"/> JoyLynn Watkins
NMT	<input type="checkbox"/> Dr. Warren Ostergren	<input type="checkbox"/> Dr. Dave Westpfahl	<input type="checkbox"/> Dr. Keith Miller <input type="checkbox"/> Dr. Andrei Zagrai
SU	<input type="checkbox"/> Prof. Scott Hubbard	<input type="checkbox"/> Dr. Juan Alonso <input type="checkbox"/> Andrew Ow	<input type="checkbox"/> Dr. Sigrid Close <input type="checkbox"/> Dr. Steve Rock
UCF	<input type="checkbox"/> Dr. Jay Kapat	<input type="checkbox"/> Dr. Jan Gou <input type="checkbox"/> Dr. Subith Vasu	<input type="checkbox"/> Dr. Ali Gordon <input type="checkbox"/> Dr. Lin An
UF	<input type="checkbox"/> Dr. Norm Fitz-Coy	<input type="checkbox"/> Dr. Mark Sheplak	<input type="checkbox"/>
UTMB	<input type="checkbox"/> Dr. Jim Vanderploeg	<input type="checkbox"/> Dr. Tarah Castleberry	<input type="checkbox"/> Dr. Charles Mathers
CESTAC	<input type="checkbox"/> TBD	<input type="checkbox"/> Ms. Carissa Christensen	<input type="checkbox"/>
OAT	<input type="checkbox"/> Ms. Carol Gregorek	<input type="checkbox"/> Mr. Fred Bowen	<input type="checkbox"/>
FAA AST	<input type="checkbox"/> Mr. Ken Davidian	<input type="checkbox"/> Ms. Evelina Bern	<input type="checkbox"/> Larry.Scott@faa.gov <input type="checkbox"/> Nick Demidovich <input type="checkbox"/> Henry Lampazzi
FAA	<input type="checkbox"/> Dr. Patricia Watts	<input type="checkbox"/>	<input type="checkbox"/> John Reinhart (UAS COE)
NASA	<input type="checkbox"/> Mr. Alex MacDonald	<input type="checkbox"/> Dr. Dan Rasky	<input type="checkbox"/> Mark Redlinger
CSF	<input type="checkbox"/> Mr. Eric Stallmer	<input type="checkbox"/> Ms. Sirisha Bandla	<input type="checkbox"/> Tommy Sanford Exec Dir
McGill	<input type="checkbox"/> Ms. Andrea DiPaolo	<input type="checkbox"/>	<input type="checkbox"/>
MITRE	<input type="checkbox"/> Mr. Zheng Tao	<input type="checkbox"/> Mr. Dean Fulmer	<input type="checkbox"/>
NASA AMES	<input type="checkbox"/> Mr. Michael Dudley	<input type="checkbox"/>	<input type="checkbox"/>
DLR	<input type="checkbox"/> Dr. Juergen Drescher	<input type="checkbox"/>	<input type="checkbox"/>
Spaceport Sweden	<input type="checkbox"/> Ms. Karin Nilsdotter	<input type="checkbox"/>	<input type="checkbox"/>

0.1 Executive Committee Meeting Information

- Dial-In #: 712-432-0075, Participant Access Code: 381319#
- Yellow Highlighted attendance above from 13 April 2015 telecon
- The next telecom is scheduled for 8 June 2015, 1-2PM EST
- Orion America - teleconference recording & distribution

**1. AGENDA ITEMS**

---

1.0 AAM5 Summary

- Bylaws adopted (attached)
- Jim Vanderploeg elected as Executive Director
- Two committees established – people interested in serving on or leading on a committee please notify Jim by May 29<sup>th</sup>
- External Relations Committee
- Planning Committee

- 1.1 Annual Technical Meeting – Date and location TBD (Fred & Carol)
  - Possible co-location with other meetings.
  - SpaceCom November 17-19, 2015 in Houston
- 1.2 Annual Report
  - Volumes 1, 2 & 3 – In Final Review Process (Carol)
- 1.3 Research Roadmap Activity (Scott Hubbard & Roadmap PIs)
- 1.4 Website (Fred) – no report
  - Beta web <http://66.116.208.14/> (please provide any feedback to Fred)
- 1.5 Budget & Research Reporting (Ken Davidian & Carol Gregorek)
  - FY15Q2: Jan-Mar, due 30 April 2015 Reports (Carol)
  - Finance (Ken)
  - Decisions on funding tasks for 2015 are expected any day
  - Budget update (Ken)

## 2. EXTERNAL RELATIONS COMMITTEE

---

- Expression of interest for Chair – Tristian Fiedler, Others?
- Members – notify Jim of interest in serving on committee

## 3. PLANNING COMMITTEE

---

- Expression of interest: Pat Hynes, Andrei Zagrai, Others ?
- Members - notify Jim of interest in serving on committee

## 3. AFFILIATE MEMBERS

---

- Members : - notify Jim of interest in heading up this activity and/or assisting with recruiting and tracking of Affiliate Members
- Active Affiliates – in OMIS
  - NMSU – ERAU (Task 306)
  - FIT – McGill Univ. (301, 302, 304)
  - NMSU – SatWest (Task 307)
- Potentials
  - Arizona State poc Scott Smas & Jim Bell – Stanford
  - Lincoln Labs – Stanford
- New
  - Apr 2015 Persistence Mining – NM Tech Van Romero & Colleen Guengerich
  - Apr 2015 Simpson College – 2 Tasks request funding ??
  - Mar 2015 Univ Vienna poc Irmgard Marboe - Stanford
- No response – to be removed after AAM5
  - Baylor College of Medicine poc John Clark (space safety & medicine)– revised MOU & Task into OMIS (Tara Castelberry - UTMB)
  - Danish Technical Univ - Ken Davidian
  - U. Nebraska – possible host NMSU
  - USC (Greg Autry), UC-Berkeley (Jasenka Rakas, spaceports) – TJF pinged 1-9-15
  - Others

## 5. ANY OTHER BUSINESS

---

- 
- 2015 COE CST EC Telecons
- Jan 12
- Feb 09
- Mar 09
- Apr 13
- May 11
- Jun 08
- Jul 13
- Aug 10
- Sep 14
- Oct 13 (moved to Tuesday/Columbus Day)
- Nov 09
- Dec – No Telecon



**FAA AST COE CST EXECUTIVE COMMITTEE  
TELECON #35 - MONDAY, 08 June 2015**

SCHOOL	PRIMARY	SECONDARY	ADDITIONAL
CU	<input type="checkbox"/> Dr. David Klaus	<input type="checkbox"/> Dr. Penina Axelrad	<input type="checkbox"/> Dr. George Born <input type="checkbox"/> Dr. Tim Fuller-Rowell <input type="checkbox"/> Dr. Dan Scheeres <input type="checkbox"/> Mr. Brad Cheetham
FIT	<input type="checkbox"/> Dr. Tristan Fiedler	<input type="checkbox"/> Dr. Scott Benjamin	<input type="checkbox"/> Dr. Dan Kirk <input type="checkbox"/> Dr. Sam Durrance <input type="checkbox"/> Dr. Nat Villaire
FSU	<input type="checkbox"/> Dr. Farrukh Alvi	<input type="checkbox"/> Dr. Emmanuel Collins	<input type="checkbox"/> Dr. Billy Oates <input type="checkbox"/> Dr. Rajan Kumar
NMSU	<input type="checkbox"/> Dr. Patricia Hynes	<input type="checkbox"/>	<input type="checkbox"/> Ms. Kristi Burden <input type="checkbox"/> JoyLynn Watkins
NMT	<input type="checkbox"/> Dr. Warren Ostergren	<input type="checkbox"/> Dr. Dave Westpfahl	<input type="checkbox"/> Dr. Keith Miller <input type="checkbox"/> Dr. Andrei Zagrai
SU	<input type="checkbox"/> Prof. Scott Hubbard	<input type="checkbox"/> Dr. Juan Alonso <input type="checkbox"/> Andrew Ow	<input type="checkbox"/> Dr. Sigrid Close <input type="checkbox"/> Dr. Steve Rock
UCF	<input type="checkbox"/> Dr. Jay Kapat	<input type="checkbox"/> Dr. Jan Gou <input type="checkbox"/> Dr. Subith Vasu	<input type="checkbox"/> Dr. Ali Gordon <input type="checkbox"/> Dr. Lin An
UF	<input type="checkbox"/> Dr. Norm Fitz-Coy	<input type="checkbox"/> Dr. Mark Sheplak	<input type="checkbox"/>
UTMB	<input type="checkbox"/> Dr. Jim Vanderploeg	<input type="checkbox"/> Dr. Tarah Castleberry	<input type="checkbox"/> Dr. Charles Mathers
CESTAC	<input type="checkbox"/> TBD	<input type="checkbox"/> Ms. Carissa Christensen	<input type="checkbox"/>
OAT	<input type="checkbox"/> Ms. Carol Gregorek	<input type="checkbox"/> Mr. Fred Bowen	<input type="checkbox"/>
FAA AST	<input type="checkbox"/> Mr. Ken Davidian	<input type="checkbox"/> Ms. Evelina Bern	<input type="checkbox"/> Larry.Scott@faa.gov <input type="checkbox"/> Nick Demidovich <input type="checkbox"/> Henry Lampazzi
FAA	<input type="checkbox"/> Dr. Patricia Watts	<input type="checkbox"/>	<input type="checkbox"/> John Reinhart (UAS COE)
NASA	<input type="checkbox"/> Mr. Alex MacDonald	<input type="checkbox"/> Dr. Dan Rasky	<input type="checkbox"/> Mark Redlinger
CSF	<input type="checkbox"/> Mr. Eric Stallmer	<input type="checkbox"/> Ms. Sirisha Bandla	<input type="checkbox"/> Tommy Sanford Exec Dir
McGill	<input type="checkbox"/> Ms. Andrea DiPaolo	<input type="checkbox"/>	<input type="checkbox"/>
MITRE	<input type="checkbox"/> Mr. Zheng Tao	<input type="checkbox"/> Mr. Dean Fulmer	<input type="checkbox"/>
NASA AMES	<input type="checkbox"/> Mr. Michael Dudley	<input type="checkbox"/>	<input type="checkbox"/>
DLR	<input type="checkbox"/> Dr. Juergen Drescher	<input type="checkbox"/>	<input type="checkbox"/>
Spaceport Sweden	<input type="checkbox"/> Ms. Karin Nilsdotter	<input type="checkbox"/>	<input type="checkbox"/>

0.1 Executive Committee Meeting Information

- Dial-In #: 712-432-0075, Participant Access Code: 381319#
- Yellow Highlighted attendance above from 8 June 2015 telecon
- The next telecom is scheduled for 13 July 2015, 1-2PM EST
- Orion America - teleconference recording & distribution

**1. AGENDA ITEMS**

---

1.0 AAM5 Open Actions

- Two committees established – people interested in serving on or leading on a committee please notify Jim by May 29<sup>th</sup>
- External Relations Committee
- Planning Committee

- 1.1 Annual Technical Meeting – Date and location TBD (Fred & Carol)
  - Possible co-location with other meetings.
  - SpaceCom November 17-19, 2015 in Houston
- 1.2 Annual Report
  - Volumes 1, 2 & 3 – In Final Review Process (Carol)
- 1.3 Research Roadmap Activity (Scott Hubbard & Roadmap PIs)
- 1.4 Website (Fred) – no report
  - Beta web <http://66.116.208.14/> (please provide any feedback to Fred)
- 1.5 Budget & Research Reporting (Ken Davidian & Carol Gregorek)
  - FY15Q2: Jan-Mar, due 30 April 2015 Reports (Carol)
  - Finance (Ken)
  - Decisions on funding tasks for 2015
  - Budget update (Ken)

## 2. EXTERNAL RELATIONS COMMITTEE

---

- Expression of interest for Chair – Tristian Fiedler, Others?
- Members – notify Jim of interest in serving on committee

## 3. PLANNING COMMITTEE

---

- Expression of interest: Pat Hynes, Andrei Zagrai, Others ?
- Members - notify Jim of interest in serving on committee

## 3. AFFILIATE MEMBERS

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- Members : - notify Jim of interest in heading up this activity and/or assisting with recruiting and tracking of Affiliate Members
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  - Lincoln Labs – Stanford
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  - Danish Technical Univ - Ken Davidian
  - U. Nebraska – possible host NMSU
  - USC (Greg Autry), UC-Berkeley (Jasenka Rakas, spaceports) – TJF pinged 1-9-15
  - Others



## 5. ANY OTHER BUSINESS

---

- 
- 2015 COE CST EC Telecons
- Jan 12
- Feb 09
- Mar 09
- Apr 13
- May 11
- Jun 08
- Jul 13
- Aug 10
- Sep 14
- Oct 13 (moved to Tuesday/Columbus Day)
- Nov 09
- Dec – No Telecon



**FAA AST COE CST EXECUTIVE COMMITTEE  
TELECON #36 - MONDAY, 13 July, 2015**

SCHOOL	PRIMARY	SECONDARY	ADDITIONAL
CU	<input type="checkbox"/> Dr. David Klaus	<input type="checkbox"/> Dr. Penina Axelrad	<input type="checkbox"/> Dr. George Born <input type="checkbox"/> Dr. Tim Fuller-Rowell <input type="checkbox"/> Dr. Dan Scheeres <input type="checkbox"/> Mr. Brad Cheetham
FIT	<input type="checkbox"/> Dr. Tristan Fiedler	<input type="checkbox"/> Dr. Scott Benjamin	<input type="checkbox"/> Dr. Dan Kirk <input type="checkbox"/> Dr. Sam Durrance <input type="checkbox"/> Dr. Nat Villaire
FSU	<input type="checkbox"/> Dr. Farrukh Alvi	<input type="checkbox"/> Dr. Emmanuel Collins	<input type="checkbox"/> Dr. Billy Oates <input type="checkbox"/> Dr. Rajan Kumar
NMSU	<input type="checkbox"/> Dr. Patricia Hynes	<input type="checkbox"/>	<input type="checkbox"/> Ms. Kristi Burden <input type="checkbox"/> JoyLynn Watkins
NMT	<input type="checkbox"/> Dr. Warren Ostergren	<input type="checkbox"/> Dr. Dave Westpfahl	<input type="checkbox"/> Dr. Keith Miller <input type="checkbox"/> Dr. Andrei Zagrai
SU	<input type="checkbox"/> Mykel Kochenderfer <input type="checkbox"/> Jonah Zimmerman	<input type="checkbox"/> Dr. Juan Alonso <input type="checkbox"/> Andrew Ow	<input type="checkbox"/> Dr. Sigrid Close <input type="checkbox"/> Dr. Scott Hubbard <input type="checkbox"/> Dr. Steve Rock
UCF	<input type="checkbox"/> Dr. Jay Kapat	<input type="checkbox"/> Dr. Jan Gou <input type="checkbox"/> Dr. Subith Vasu	<input type="checkbox"/> Dr. Ali Gordon <input type="checkbox"/> Dr. Lin An
UF	<input type="checkbox"/> Dr. Norm Fitz-Coy	<input type="checkbox"/> Dr. Mark Sheplak	<input type="checkbox"/>
UTMB	<input type="checkbox"/> Dr. Jim Vanderploeg	<input type="checkbox"/> Dr. Tarah Castleberry	<input type="checkbox"/> Dr. Charles Mathers
CESTAC	<input type="checkbox"/> TBD	<input type="checkbox"/> Ms. Carissa Christensen	<input type="checkbox"/>
OAT	<input type="checkbox"/> Ms. Carol Gregorek	<input type="checkbox"/> Mr. Fred Bowen	<input type="checkbox"/>
FAA AST	<input type="checkbox"/> Mr. Ken Davidian	<input type="checkbox"/> Ms. Evelina Bern	<input type="checkbox"/> Larry.Scott@faa.gov <input type="checkbox"/> Nick Demidovich <input type="checkbox"/> Henry Lampazzi <input type="checkbox"/> Steph Earle
FAA	<input type="checkbox"/> Dr. Patricia Watts	<input type="checkbox"/>	<input type="checkbox"/> John Reinhart (UAS COE)
NASA	<input type="checkbox"/> Mr. Alex MacDonald	<input type="checkbox"/> Dr. Dan Rasky	<input type="checkbox"/> Mark Redlinger
CSF	<input type="checkbox"/> Mr. Eric Stallmer	<input type="checkbox"/> Ms. Sirisha Bandla	<input type="checkbox"/> Tommy Sanford Exec Dir
McGill	<input type="checkbox"/> Ms. Andrea DiPaolo	<input type="checkbox"/>	<input type="checkbox"/>
MITRE	<input type="checkbox"/> Mr. Zheng Tao	<input type="checkbox"/> Mr. Dean Fulmer	<input type="checkbox"/>
NASA AMES	<input type="checkbox"/> Mr. Michael Dudley	<input type="checkbox"/>	<input type="checkbox"/>
DLR	<input type="checkbox"/> Dr. Juergen Drescher	<input type="checkbox"/>	<input type="checkbox"/>
Spaceport Sweden	<input type="checkbox"/> Ms. Karin Nilsson	<input type="checkbox"/>	<input type="checkbox"/>

0.1 Executive Committee Meeting Information

- Dial-In #: 712-432-0075, Participant Access Code: 381319#
- Yellow Highlighted attendance above from 8 June 2015 telecon
- The next telecon is scheduled for 10 August 2015, 1-2PM EST
- Orion America - teleconference recording & distribution

**1. AGENDA ITEMS**

---

1.0 AAM5 Final Actions

- Two committees established at AAM5
- External Relations : Tristan Fiedler will Chair the committee. Additional volunteers to serve on the committee are Warren Ostergren and Pat Hynes.
- Planning Committee : Pat Hynes will chair the committee. Members include Pat Hynes, Andrei Zagrai, Scott Benjamin, and Norm Fitz-Coy.

- 1.1 Annual Technical Meeting – October 27-28, 2015 at the Westin in Crystal City (Fred & Carol)
  - Potentially will have the actual sessions at the Lockheed Martin Global Vision Center
- 1.2 Annual Report
  - Volumes 1, 2 & 3 – Final Review (Carol)
- 1.3 Research Roadmap Activity (Jonah Zimmerman & Roadmap PIs)
- 1.4 Website (Fred)
  - Beta web <http://66.116.208.14/> (please provide any feedback to Fred)
- 1.5 Budget & Research Reporting (Ken Davidian & Carol Gregorek)
  - FY15Q3: April - June, Reports due 31 July 2015 (Carol)
  - Finances and Funding update (Ken)
  - Decisions on funding tasks for 2015 have been made and distributed

## **2. EXTERNAL RELATIONS COMMITTEE**

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- Chair – Tristian Fiedler
- Members – Warren Ostergren and Pat Hynes.
- Additional volunteers notify Jim of interest in serving on the committee

## **3. PLANNING COMMITTEE**

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- Chair – Pat Hynes
- Members – Andrei Zagrai, Scott Benjamin, Norm Fitz-Coy.
- Additional volunteers notify Jim of interest in serving on the committee

## **3. AFFILIATE MEMBERS COORDINATION**

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- Tristan Fiedler has volunteered to track and coordinate the Affiliate Members
- Active Affiliates – in OMIS
  - NMSU – ERAU (Task 306)
  - FIT – McGill Univ. (301, 302, 304)
  - NMSU – SatWest (Task 307)
- Potentials
  - Arizona State poc Scott Smas & Jim Bell – Stanford
  - Lincoln Labs – Stanford
- New
  - Apr 2015 Persistence Mining – NM Tech Van Romero & Colleen Guengerich
  - Apr 2015 Simpson College poc Christopher Draper – SU Juan Alonso - 2 Tasks request funding ??
  - Mar 2015 Univ Vienna poc Irmgard Marboe – Stanford poc ?
- Pending
  - Baylor College of Medicine poc John Clark (space safety & medicine)– revised MOU & Task into OMIS (Tarah Castelberry - UTMB)
  - Danish Technical Univ - Ken Davidian
  - U. Nebraska – possible host NMSU
  - USC (Greg Autry), UC-Berkeley (Jasenka Rakas, spaceports) – TJF pinged 1-9-15

o

## 5. ANY OTHER BUSINESS

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- 2015 COE CST EC Telecons
- Jan 12
- Feb 09
- Mar 09
- Apr 13
- May 11
- Jun 08
- Jul 13
- Aug 10
- Sep 14
- Oct 13 (moved to Tuesday/Columbus Day)
- Nov 09
- Dec – No Telecon



**FAA AST COE CST EXECUTIVE COMMITTEE  
TELECON #37 - MONDAY, 10 August, 2015**

SCHOOL	PRIMARY	SECONDARY	ADDITIONAL
CU	<input type="checkbox"/> Dr. David Klaus	<input type="checkbox"/> Dr. Penina Axelrad	<input type="checkbox"/> Dr. George Born <input type="checkbox"/> Dr. Tim Fuller-Rowell <input type="checkbox"/> Dr. Dan Scheeres <input type="checkbox"/> Mr. Brad Cheatham
FIT	<input type="checkbox"/> Dr. Tristan Fiedler	<input type="checkbox"/> Dr. Scott Benjamin	<input type="checkbox"/> Dr. Dan Kirk <input type="checkbox"/> Dr. Sam Durrance <input type="checkbox"/> Dr. Nat Villaire
FSU	<input type="checkbox"/> Dr. Farrukh Alvi	<input type="checkbox"/> Dr. Emmanuel Collins	<input type="checkbox"/> Dr. Billy Oates <input type="checkbox"/> Dr. Rajan Kumar
NMSU	<input type="checkbox"/> Dr. Patricia Hynes	<input type="checkbox"/> M. Bowers	<input type="checkbox"/> Ms. Kristi Burden <input type="checkbox"/> JoyLynn Watkins
NMT	<input type="checkbox"/> Dr. Warren Ostergren	<input type="checkbox"/> Dr. Dave Westpfahl	<input type="checkbox"/> Dr. Keith Miller <input type="checkbox"/> Dr. Andrei Zagrai
SU	<input type="checkbox"/> Prof. Scott Hubbard	<input type="checkbox"/> Dr. Juan Alonso <input type="checkbox"/> Andrew Ow	<input type="checkbox"/> Dr. Sigrid Close <input type="checkbox"/> Dr. Steve Rock <input type="checkbox"/> Dr. Mykel Kochenderfer
UCF	<input type="checkbox"/> Dr. Jay Kapat	<input type="checkbox"/> Dr. Jan Gou <input type="checkbox"/> Dr. Subith Vasu	<input type="checkbox"/> Dr. Ali Gordon <input type="checkbox"/> Dr. Lin An
UF	<input type="checkbox"/> Dr. Norm Fitz-Coy	<input type="checkbox"/> Dr. Mark Sheplak	<input type="checkbox"/>
UTMB	<input type="checkbox"/> Dr. Jim Vanderploeg	<input type="checkbox"/> Dr. Tarah Castleberry	<input type="checkbox"/> Dr. Charles Mathers
CESTAC	<input type="checkbox"/> TBD	<input type="checkbox"/> Ms. Carissa Christensen	<input type="checkbox"/>
OAT	<input type="checkbox"/> Ms. Carol Gregorek	<input type="checkbox"/> Mr. Fred Bowen	<input type="checkbox"/>
FAA AST	<input type="checkbox"/> Mr. Ken Davidian	<input type="checkbox"/> Ms. Evelina Bern	<input type="checkbox"/> Larry.Scott@faa.gov <input type="checkbox"/> Nick Demidovich <input type="checkbox"/> Henry Lampazzi <input type="checkbox"/> Steph Earle
FAA	<input type="checkbox"/> Dr. Patricia Watts	<input type="checkbox"/>	<input type="checkbox"/> John Reinhart (UAS COE)
NASA	<input type="checkbox"/> Mr. Alex MacDonald	<input type="checkbox"/> Dr. Dan Rasky	<input type="checkbox"/> Mark Redlinger
CSF	<input type="checkbox"/> Mr. Eric Stallmer	<input type="checkbox"/> Ms. Sirisha Bandla	<input type="checkbox"/> Tommy Sanford Exec Dir
McGill	<input type="checkbox"/> Ms. Andrea DiPaolo	<input type="checkbox"/>	<input type="checkbox"/>
MITRE	<input type="checkbox"/> Mr. Zheng Tao	<input type="checkbox"/> Mr. Dean Fulmer	<input type="checkbox"/>
NASA AMES	<input type="checkbox"/> Mr. Michael Dudley	<input type="checkbox"/>	<input type="checkbox"/>
DLR	<input type="checkbox"/> Dr. Juergen Drescher	<input type="checkbox"/>	<input type="checkbox"/>
Spaceport Sweden	<input type="checkbox"/> Ms. Karin Nilsson	<input type="checkbox"/>	<input type="checkbox"/>
NASTAR Center	<input type="checkbox"/> Ms. Brie Henwood	<input type="checkbox"/>	<input type="checkbox"/>

0.1 Executive Committee Meeting Information

Dial-In #: 712-432-0075, Participant Access Code: 381319#

Yellow Highlighted attendance above from 13 July 2015 telecon

The next telecon is scheduled for 14 September 2015, 1-2PM EST

Orion America - teleconference recording & distribution

**1. AGENDA ITEMS**

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1.0 Tech Monitor Briefing: Yvonne Tran

Introduction by Ken Davidian or Evelina Bern

1.1 Annual Technical Meeting (ATM5) – October 27-28, 2015 at the Westin Crystal City in Alexandria, VA.

Agenda preparation (Fred)

Travel and lodging costs to be covered by each PI's technical tasks.

Direct meeting costs covered by separate task.

1.2 Research Roadmap Activity (awaiting final document)

1.3 Budget & Research Reporting (Ken Davidian & Carol Gregorek)

Finances and Funding update. Status of PLA execution? (Ken)

Status of new or renewal submissions to grants.gov (Ken & PIs)

FY15Q3: April - June, Reports **were due 31 July 2015** (Carol)

Decisions on funding tasks for 2015 have been made and distributed

1.4 Status of Phase 2 Cooperative Agreements (Pat Watts)

1.5 OMIS & Website (Fred)

New version of OMIS

Beta web <http://66.116.208.14/> (please provide any feedback to Fred)

## **2. EXTERNAL RELATIONS COMMITTEE**

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Chair – Tristan Fiedler

Members – Warren Ostergren, Pat Hynes, and Dave Klaus.

Status of memberships in CSF (Tristan)

Status of COE relationship with CSF to replace CESTAC (Tristan)

## **3. PLANNING COMMITTEE**

---

Chair – Pat Hynes

Members – Andrei Zagrai, Scott Benjamin, Norm Fitz-Coy.

## **3. AFFILIATE MEMBERS COORDINATION**

---

Tristan Fiedler has volunteered to track and coordinate the Affiliate Members

Each core university is asked to update Tristan with current approved Affiliate Members and potential new Affiliate Members in work.

## **5. ANY OTHER BUSINESS**

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2015 COE CST EC Telecons

Jan 12

Feb 09

Mar 09

Apr 13

May 11

Jun 08

Jul 13

Aug 10

Sep 14

Oct 13 (moved to Tuesday/Columbus Day)

Nov 09

Dec – No Telecon



**FAA AST COE CST EXECUTIVE COMMITTEE  
TELECON #38 - TUESDAY, 13 October, 2015**

SCHOOL	PRIMARY	SECONDARY	ADDITIONAL
CU	<input type="checkbox"/> Dr. David Klaus	<input type="checkbox"/> Dr. Penina Axelrad	<input type="checkbox"/> Dr. George Born <input type="checkbox"/> Dr. Tim Fuller-Rowell <input type="checkbox"/> Dr. Dan Scheeres <input type="checkbox"/> Mr. Brad Cheetham
FIT	<input type="checkbox"/> Dr. Tristan Fiedler	<input type="checkbox"/> Dr. Scott Benjamin	<input type="checkbox"/> Dr. Dan Kirk <input type="checkbox"/> Dr. Sam Durrance <input type="checkbox"/> Dr. Nat Villaire
FSU	<input type="checkbox"/> Dr. Farrukh Alvi	<input type="checkbox"/> Dr. Emmanuel Collins	<input type="checkbox"/> Dr. Billy Oates <input type="checkbox"/> Dr. Rajan Kumar
NMSU	<input type="checkbox"/> Dr. Patricia Hynes	<input type="checkbox"/> M. Bowers	<input type="checkbox"/> Ms. Kristi Burden <input type="checkbox"/> JoyLynn Watkins
NMT	<input type="checkbox"/> Dr. Warren Ostergren	<input type="checkbox"/> Dr. Dave Westpfahl	<input type="checkbox"/> Dr. Keith Miller <input type="checkbox"/> Dr. Andrei Zagrai
SU	<input type="checkbox"/> Dr. Juan Alonso	<input type="checkbox"/> Andrew Ow	<input type="checkbox"/> Dr. Sigrid Close <input type="checkbox"/> Dr. Steve Rock <input type="checkbox"/> Dr. Mykel Kochenderfer
UCF	<input type="checkbox"/> Dr. Jay Kapat	<input type="checkbox"/> Dr. Jan Gou <input type="checkbox"/> Dr. Subith Vasu	<input type="checkbox"/> Dr. Ali Gordon <input type="checkbox"/> Dr. Lin An
UF	<input type="checkbox"/> Dr. Norm Fitz-Coy	<input type="checkbox"/> Dr. Mark Sheplak	<input type="checkbox"/>
UTMB	<input type="checkbox"/> Dr. Jim Vanderploeg	<input type="checkbox"/> Dr. Charles Mathers	<input type="checkbox"/> Dr. Tarah Castleberry
CESTAC	<input type="checkbox"/> TBD	<input type="checkbox"/> Ms. Carissa Christensen	<input type="checkbox"/>
OAT	<input type="checkbox"/> Ms. Carol Gregorek	<input type="checkbox"/> Mr. Fred Bowen	<input type="checkbox"/>
FAA AST	<input type="checkbox"/> Mr. Ken Davidian	<input type="checkbox"/> Ms. Evelina Bern	<input type="checkbox"/> Larry.Scott@faa.gov <input type="checkbox"/> Nick Demidovich <input type="checkbox"/> Henry Lampazzi <input type="checkbox"/> Yvonne Tran
FAA	<input type="checkbox"/> Dr. Patricia Watts	<input type="checkbox"/>	<input type="checkbox"/> John Reinhart (UAS COE)
NASA	<input type="checkbox"/> Mr. Alex MacDonald	<input type="checkbox"/> Dr. Dan Rasky	<input type="checkbox"/> Mark Redlinger
CSF	<input type="checkbox"/> Mr. Eric Stallmer	<input type="checkbox"/> Ms. Sirisha Bandla	<input type="checkbox"/> Tommy Sanford Exec Dir
McGill	<input type="checkbox"/> Ms. Andrea DiPaolo	<input type="checkbox"/>	<input type="checkbox"/>
MITRE	<input type="checkbox"/> Mr. Zheng Tao	<input type="checkbox"/> Mr. Dean Fulmer	<input type="checkbox"/>
NASA AMES	<input type="checkbox"/> Mr. Michael Dudley	<input type="checkbox"/>	<input type="checkbox"/>
DLR	<input type="checkbox"/> Dr. Juergen Drescher	<input type="checkbox"/>	<input type="checkbox"/>
Spaceport Sweden	<input type="checkbox"/> Ms. Karin Nilsson	<input type="checkbox"/>	<input type="checkbox"/>
NASTAR Center	<input type="checkbox"/> Ms. Brie Henwood	<input type="checkbox"/>	<input type="checkbox"/>
Lincoln Labs	<input type="checkbox"/> Rod Cole	<input type="checkbox"/>	<input type="checkbox"/>

Executive Committee Meeting Information

Dial-In #: 712-432-0075, Participant Access Code: 381319#

Yellow Highlighted attendance above from 10 August 2015 telecon

Scheduled telecon on September 14 was cancelled

The next telecon is scheduled for 9 November 2015, 1-2PM EST

Orion America - teleconference recording & distribution

## **1. AGENDA ITEMS**

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1.1 Annual Technical Meeting (ATM5) – October 27-28, 2015 at the Westin Crystal City in Alexandria, VA.

- Final Agenda (Fred – attached)
- Reception October 26th at 6 PM at Westin
- New banners – if any, send to Fred by Oct. 15th
- Travel and lodging costs to be covered by each PI's technical tasks.
- Direct meeting costs covered by separate task.

1.2 Budget & Research Reporting (Carol Gregorek)

- Quarterly reports due October 31st

## **2. EXTERNAL RELATIONS COMMITTEE**

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- Updates about new affiliates – in work and new applications (Tristan Fiedler)

## **3. PLANNING COMMITTEE**

---

- Any updates? – (Pat Hynes)

## **4. ANY OTHER BUSINESS**

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2015 COE CST EC Telecons

Jan 12

Feb 09

Mar 09

Apr 13

May 11

Jun 08

Jul 13

Aug 10

Sep 14

Oct 13 (moved to Tuesday/Columbus Day)

Nov 09

Dec – No Telecon





**FAA AST COE CST EXECUTIVE COMMITTEE  
TELECON #39 - MONDAY, 9 November, 2015**

SCHOOL	PRIMARY	SECONDARY	ADDITIONAL
CU	<input type="checkbox"/> Dr. David Klaus	<input type="checkbox"/> Dr. Penina Axelrad	<input type="checkbox"/> Dr. George Born <input type="checkbox"/> Dr. Tim Fuller-Rowell <input type="checkbox"/> Dr. Dan Scheeres <input type="checkbox"/> Mr. Brad Cheetham
FIT	<input type="checkbox"/> Dr. Tristan Fiedler	<input type="checkbox"/> Dr. Scott Benjamin	<input type="checkbox"/> Dr. Dan Kirk <input type="checkbox"/> Dr. Sam Durrance <input type="checkbox"/> Dr. Nat Villaire
FSU	<input type="checkbox"/> Dr. Farrukh Alvi	<input type="checkbox"/> Dr. Emmanuel Collins	<input type="checkbox"/> Dr. Billy Oates <input type="checkbox"/> Dr. Rajan Kumar
NMSU	<input type="checkbox"/> Dr. Patricia Hynes	<input type="checkbox"/> M. Bowers	<input type="checkbox"/> Ms. Kristi Burden <input type="checkbox"/> JoyLynn Watkins
NMT	<input type="checkbox"/> Dr. Warren Ostergren	<input type="checkbox"/> Dr. Dave Westpfahl	<input type="checkbox"/> Dr. Keith Miller <input type="checkbox"/> Dr. Andrei Zagrai
SU	<input type="checkbox"/> Dr. Juan Alonso	<input type="checkbox"/> Andrew Ow	<input type="checkbox"/> Dr. Sigrid Close <input type="checkbox"/> Dr. Steve Rock <input type="checkbox"/> Dr. Mykel Kochenderfer
UCF	<input type="checkbox"/> Dr. Jay Kapat	<input type="checkbox"/> Dr. Jan Gou <input type="checkbox"/> Dr. Subith Vasu	<input type="checkbox"/> Dr. Ali Gordon <input type="checkbox"/> Dr. Lin An
UF	<input type="checkbox"/> Dr. Norm Fitz-Coy	<input type="checkbox"/> Dr. Mark Sheplak	<input type="checkbox"/>
UTMB	<input type="checkbox"/> Dr. Jim Vanderploeg	<input type="checkbox"/> Dr. Charles Mathers	<input type="checkbox"/> Dr. Tarah Castleberry
CESTAC	<input type="checkbox"/> TBD	<input type="checkbox"/> Ms. Carissa Christensen	<input type="checkbox"/>
OAT	<input type="checkbox"/> Ms. Carol Gregorek	<input type="checkbox"/> Mr. Fred Bowen	<input type="checkbox"/>
FAA AST	<input type="checkbox"/> Mr. Ken Davidian	<input type="checkbox"/> Ms. Evelina Bern	<input type="checkbox"/> Larry.Scott@faa.gov <input type="checkbox"/> Nick Demidovich <input type="checkbox"/> Henry Lampazzi <input type="checkbox"/> Yvonne Tran
FAA	<input type="checkbox"/> Dr. Patricia Watts	<input type="checkbox"/>	<input type="checkbox"/> John Reinhart (UAS COE)
NASA	<input type="checkbox"/> Mr. Alex MacDonald	<input type="checkbox"/> Dr. Dan Rasky	<input type="checkbox"/> Mark Redlinger
CSF	<input type="checkbox"/> Mr. Eric Stallmer	<input type="checkbox"/> Ms. Sirisha Bandla	<input type="checkbox"/> Tommy Sanford Exec Dir
McGill	<input type="checkbox"/> Ms. Andrea Harrington	<input type="checkbox"/>	<input type="checkbox"/>
MITRE	<input type="checkbox"/> Mr. Zheng Tao	<input type="checkbox"/> Mr. Dean Fulmer	<input type="checkbox"/>
NASA AMES	<input type="checkbox"/> Mr. Michael Dudley	<input type="checkbox"/>	<input type="checkbox"/>
Lincoln Labs	<input type="checkbox"/> Rod Cole	<input type="checkbox"/>	<input type="checkbox"/>
Solstar/Sat West	<input type="checkbox"/> Brian Barnett	<input type="checkbox"/>	<input type="checkbox"/>
Simpson	<input type="checkbox"/> Chris Draper	<input type="checkbox"/> Christina Smith	<input type="checkbox"/>

Executive Committee Meeting Information

Dial-In #: 712-432-0075, Participant Access Code: 381319#

Yellow Highlighted attendance above from 13 October 2015 telecon

The next telecon is scheduled for 11 January 2016, 1-2PM EST  
Orion America - teleconference recording & distribution

## 1. AGENDA ITEMS

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### 1.0 Information Items:

- Assemble cumulative list of publications, reports, presentations, youtube videos, etc. from Phase 1 of COE for Year 5 Executive Summary Report
- AAM6 date –targeting the last week of March or first week of April. Possibly hosted at UTMB in Houston/Galveston.
- ATM6 – October 2016 in conjunction with ISPCS in Las Cruces, NM
- Research HUB (Fred)
- Research Roadmap – final comments and edits due to Ken by November 20, 2015.
- New Affiliate possibility – University of Texas – Arlington. Reference email from Tristan Fiedler about project by Ph.D. student (Sheila Neumann)
- SpaceCom 2015, November 17 - 19

### 1.1 Annual Technical Meeting (ATM5) – held October 27-28, 2015 at the Westin Crystal City in Alexandria, VA.

- Wrap up comments (everyone)
- Minutes and summary (Carol)

### 1.2 Budget & Research Reporting (Carol)

- Quarterly reports were due into OMIS by October 31st

## 2. EXTERNAL RELATIONS COMMITTEE

---

- Updates about new affiliates – in-work and new applications (Tristan Fiedler)

## 3. PLANNING COMMITTEE

---

- Any updates? – (Pat Hynes)

## 4. ANY OTHER BUSINESS

---

Dec 2015 – No Telecon

2016 COE CST EC Telecons: Second Monday (1 :00 – 2 :00 Eastern time zone)

Jan 11

Feb 08

Mar 14

Apr 11

May 09

Jun 13

Jul 11

Aug 08

Sep 12

Oct 10 (Columbus Day celebrated, date may change dependent on ATM6)

Nov 14

Dec – no telecon

# "Applied" Research Ideas

- “Safe and Efficient Integration” Research Ideas
  - • Improving integration of launch and reentry sites into the NAS and its system of airports, including sites in the vicinity of major airports or complex airspace.
  - • Exploring the development of separation standards for improved airspace management of launch/reentry vehicles during non-explosive phases of flight.
  - • Improving approaches to monitor launch/reentry vehicle operations for airspace integration, to decrease the amount of airspace closed to regular air traffic operations and expedite response to off-nominal scenarios.
  - • Developing and validating improved noise models for commercial space launch operations at inland launch sites, including spaceports co-located with airports.
  - • Improving methods for launch and reentry collision avoidance analysis to produce more efficient launch and reentry planning and NAS integration.
- “Advanced Safety Assessment Methods” Research Ideas
  - • Exploring advanced commercial human space flight data sharing and mining capabilities to inform safety assessments and identify emerging safety issues.
  - • Improved safety analysis methods to assess and manage hazards to dynamic population clusters, such as for the public in recreational areas and on roads and rail.
  - • Improved understanding of aircraft vulnerability to space-vehicle-breakup debris, including model development and refinement to reduce over-conservatism applied to airspace “keep out” areas used to protect against a launch or reentry vehicle failure.
  - • Improved methods to evaluate failure probabilities for launch and reentry vehicles.
  - • Improved methods to evaluate debris generated by launch and re-entry vehicle failures
- “Advanced Vehicle Safety Technologies and Methodologies” Research Ideas
  - • Exploring the repetitive use considerations for high utilization reusable space vehicles, to include assessing the use of integrated vehicle health monitoring technologies and reentry breakup recorders when applicable.

- • Improved understanding of emerging autonomous flight safety systems and exploring mitigation factors to address their potential vulnerabilities.
- “Human Space Flight Safety” Research Ideas
  - • Identifying best practice considerations for crew human factors for small winged commercial spaceflight vehicles.

# New Space Journal New Research's Paper Competition

- Mary Ann Liebert, Inc., publishers and the New Space journal (NSJ) editors are pleased to announce the establishment of a competition that will award an annual purse of U.S.\$1,500.00 as part of a new program entitled the “Best Paper by an Early Career Researcher” (BP) prize.
- The intent of the prize is to encourage NSJ submissions by researchers who are 35 years old or younger, and who have never before published in a peer-reviewed journal. The BP prize will recognize their exemplary effort as judged by the NSJ reviewers and editorial board. The rules of the competition are detailed below.
- Rules of the Best New Research Prize Competition
- Eligibility
  - 1. The competition is open to anyone who has never published in a peer-reviewed journal before, and is 35 years or younger at any time during the entirety of the calendar year for which the award is given (also known as the “award year” or “AY”). Applicants will be required to sign a statement attesting to this fact.
  - 2. The competition is open to individuals or teams from academia, industry, and government as well as students and private groups.
  - 3. The following individuals, even if part of a group of coauthors, may not apply: (1) current employees or volunteers of Mary Ann Liebert, Inc., publishers or the NSJ (including current members of the editorial board), or (2) current employees, interns, or volunteers of the U.S. Federal Aviation Administration.
  - 4. If the winning author or any of the winning authors comes from a country subject to an embargo or sanction by the U.S. government at the time of the award, written verification regarding the legality of purse payment will be required from the appropriate U.S. government agency before the award can be issued.
- Submission
  - 5. The paper must be submitted to the NSJ via normal manuscript submission processes and meet all submission requirements. Instructions for authors and manuscript submission are available in every issue of the NSJ and on the web at the following URL: [www.liebertpub.com/manuscript/space](http://www.liebertpub.com/manuscript/space)

- 6. Before the paper is accepted for publication, the corresponding author must notify the NSJ editor or associate editor that the manuscript is a submission to the BP prize competition.
- Content
  - 7. The language of all submissions must be English.
  - 8. The paper must include original, unpublished content and research. Papers presented at conferences but not published in any other journal are eligible to compete in this competition.
  - 9. In order to be considered eligible for the award offered in a given year, the paper must meet all criteria for acceptance and be published in the NSJ during the AY.
- Judging
  - 10. Judging in the competition will be performed using a 5-point scale (1 is “poor” and 5 is “excellent”) and the following criteria and weighting factors:
    - • Scientific content and detail (40%)
    - • Originality (40%)
    - • Description of concept (20%)
  - 11. An overall score can be calculated based on the ratings and weighting factors described above. Each reviewer will be asked to judge at least two or more papers, depending on the number of submissions received before the deadline.
- Payment of Award
  - 12. The total purse of U.S.\$1,500.00 per year will be awarded as a single prize to the winning author(s) of the BP prize.
  - 13. The award will be paid out no later than 60 days after the winning paper has been selected.
  - 14. There is no limit to the number of authors on a single paper submission. However, the prize purse will be evenly split between all eligible authors of the winning paper, regardless of how many people collaborated on the paper.
  - 15. In the case that the winning author or any of the winning authors are forbidden from receiving the financial award due to U.S. embargo or sanction,

noneconomic recognition will be provided and no prize purse will be awarded for that AY.

- Permissions
  - 16. By submitting an entry, authors agree to permit NSJ and the Center of Excellence for Commercial Space Transportation to use their names, affiliations, and headshot pictures in informational materials or publicity messaging connected to the competition.
  - 17. Authors will select from and abide by the standard set of copyright claims used for all NSJ publications.
- Schedule
  - 18. The prize would be awarded follow a repeating schedule with a 12-month cycle, beginning in the AY.
    - • Papers appear in NSJ during the AY: January 1–December 31, AY
    - • Judging of submissions in the March issue: April 1–May 1, AY
    - • Judging of submissions in the June issue: July 1–August 1, AY
    - • Judging of submissions in the September issue: October 1–November 1, AY
    - • Judging of submissions in the December issue: January 1–February 1, AY+1
    - • Final tally of submission scores: February 1–15, AY+1
    - • Public announcement of winning author/paper: March 1, AY+1
- All questions and comments regarding the Best Paper by an Early Career Researcher prize competition can be sent to [ken.davidian@faa.gov](mailto:ken.davidian@faa.gov)

# Application Form to Become a COE CST Affiliate Member

---

Please fill in the following fields on this form and send it to Dr. Tristan Fiedler at [fiedler@fit.edu](mailto:fiedler@fit.edu).

## 1. Organization Information

University of Texas at Arlington  
Dept. of Civil Engineering  
Box 19308  
Arlington, TX 76019

## 2. Organization Point of Contact

Melanie Sattler, Ph.D., P.E.  
Associate Professor  
817/272-5410  
[sattler@uta.edu](mailto:sattler@uta.edu)

## 3. Expression of Interest

TRUE  FALSE (check one): My organization is interested in becoming a COE CST Affiliate Member.

## 4. Research Goals & Activities

As an Associate Professor in Environmental Engineering, my research interests include life cycle analysis of environmental impacts of products and processes. One of my current Ph.D. students, Shelia Neumann, P.E., is beginning her dissertation work on life cycle assessment (LCA) of commercial space activities, which prompted UTA's interest in joining the COE CST. Her dissertation objectives are to:

- 1) Conduct a base-case LCA for commercial space activities in the United States,
- 2) Identify risk in impacts due to uncertainty in model inputs,
- 3) Conduct additional preliminary LCAs incorporating "green technologies" using base-case LCA to identify potential strategies for reducing environmental impacts in commercial space activities.

POC info for PhD Student:  
Shelia S. Neumann, P.E. (LtCol, USAF, Retired)  
PhD student, environmental engineering  
University of Texas, Arlington  
240-210-0264 (cell); [shelia.neumann@mavs.uta.edu](mailto:shelia.neumann@mavs.uta.edu)



**5. Relevance to COE CST Research Areas**

Assessing environmental impacts of commercial space activities, and recommending methods to mitigate those impacts, can help ensure long-term viability of the commercial space enterprise. This work is thus a cross-cutting topic related to Space Transportation Industry Viability.

**6. Type and Degree of Organization’s Research**

UT Arlington is just starting to conduct the research described in #4 above. Faculty members in other departments may be conducting additional research related to commercial space. These additional activities can be inventoried and described at a later date if desired.

**7, Type and Degree of Industry Support of Organization’s Research**

Since the research is just starting, we do not yet have industrial support. We will be seeking industrial support and will keep COE CST informed of any resulting industrial collaboration.

**8. Host University**

UT Arlington is willing to work with the COE CST to find a Host University.

**9. General Terms of an Affiliate Member MOU**

TRUE  FALSE (check one): Our organization understands and agrees to the COE CST Affiliate Member MOU general terms with the Host University (see other side).

**10. Letters of Support**

N/A

## AFFILIATE MEMBER MOU AGREEMENT TERMS

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General Terms of the MOU are as follows:

- The Affiliate Member, the Host University and FAA AST will work together to develop a research task Statement of Work (SOW) that is satisfactory to all parties.
- There will be no exchange of funds between the Affiliate Member and the FAA AST.
- The Affiliate Member will be responsible for all costs associated with the research being conducted and participation in COE CST meetings or activities.

The COE CST will receive the following from the Affiliate Member:

- Timely submission of publicly-available results (products) of the Affiliate Member research activity in the form of papers and presentations given at meetings and conferences, journal articles, and any other publicly-available deliverables depending on the specific SOW.
- Permission to refer to the Affiliate Member as such in its reports, executive summaries, and other instruments of information dissemination regarding COE CST-related research or activities.

The Affiliate Member will receive the following from the COE CST:

- Official recognition of the Affiliate Member as such.
- Technical guidance upon request.
- A presentation slot at the COE CST Annual Technical Meeting for the Affiliate Member Principal Investigator and/or student to present the COE CST-related research.
- Permission for the Affiliate Member to refer to itself as such in reports, executive summaries and other instruments of information dissemination regarding COE CST-related research or activities.

The Affiliate Member will receive the following from the Host University:

- Sponsorship (non-fiscal) as an Affiliate Member into the COE CST through an executed agreement.

The Host University will receive the following from the COE CST:

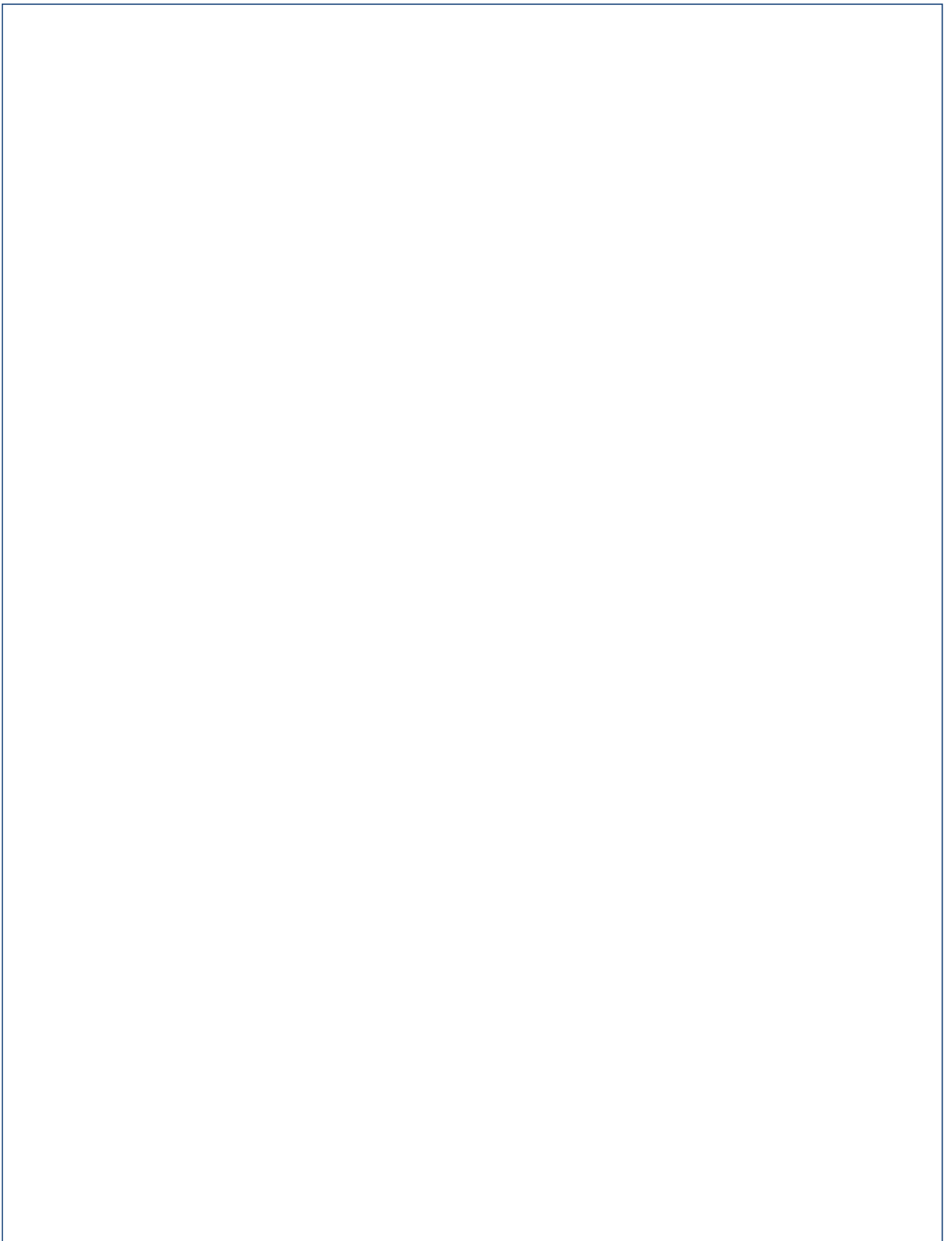
- Official recognition as a Host University of the Affiliate Member.

The COE CST will receive the following from the Host University:

- Entry of relevant data into the COE CST research task database.
- Timely submission of required forms to account for matching funds provided by Affiliate Member.
- Timely fulfillment of annual reporting requirements associated with the research task performed by the Affiliate Member.

The Host University will receive the following from the Affiliate Member:

- The value of all costs associated with the COE CST research being conducted by the Affiliate Member or its participation in COE CST meetings or activities to be credited toward the matching funds requirement of the Host University. The value of these costs may be carried to future years if not needed in the current fiscal year.





Center of Excellence for  
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