American Society for
Precision Engineering

Invitation for ASPE members to participate in Technical Leadership Committees
31st ASPE Annual Meeting, Portland, Oregon, October 23-28, 2016

Dear ASPE members and participants in the ASPE Annual Meeting,

Warm welcome to Portland!

Our Annual Meeting in Portland is a wonderful opportunity to nurture technologies that enable us to accomplish our work and bring us intellectual vitality. This can range from a *deep-dive* on a particular topic to integrating many topics into a broader systems view. In my career, I have enjoyed both focused and systems-level perspectives of precision engineering. A common theme in my work has been the commitment to deliver hardware, instruments, fabrication processes, or metrology pursued with the *spirit of determinism*. Whether we are suppliers, customers, students, or teachers, the commitment to deliver *stuff that works* is a common thread for ASPE members.

ASPE has initiated a new approach for tracking and reporting on the progress in our precision engineering subjects. The most exciting outcome of this is an opportunity for all members, ranging from the newest to the most senior, to regularly discuss interesting and relevant technology. In particular, our youngest members can take a leadership role.

All ASPE members are invited to join one or more of six Technical Leadership Committees (TLCs). These committees are listed here along with their current leaders. As we progress into the future, all of the committees will be chaired by Directors-at-Large who are elected to these roles. The overall objectives of the committees are also listed. Each committee will develop its own personality and its own way of meeting these needs. Committee membership is anticipated to span our full membership: industry, academia, and national labs.

Technical Leadership Committee	Leaders
Precision Manufacturing	John Ziegert, Deepak Ravindra
Metrology Systems	Jimmie Miller, Vivek Badami
Characterization	Chris Evans, John S. Taylor
Precision Design	Mark Stocker, Mark Kosmowski
Micro & Nano Technologies	Robert Panas, Michael Cullinan
Controls and Mechatronics	Dannis Brouwer, Stephen Ludwick

Committee Deliverables
1. Understand and report on the state-of-the-art (SOTA)
2. Advise the Annual Meeting Chairperson
3. Recommend Topical Meetings & assist the Chairperson
4. Solicit qualified conference speakers and papers
5. Prepare a review paper for *Precision Engineering*

At this year's meeting in Portland:

- Each TLC has formulated a session to represent their topic, drawing mainly from submitted abstracts, but also proactively seeking presentations in key areas of development
- The committee leaders are presenting overview papers that describe state-of-the-art developments
- **Please attend the special TLC meeting: Wednesday at 7:00PM after the Extended Commercial Exhibit**

One meeting is not likely sufficient to learn about the TLCs. Please contact me or one of the TLC chairs to learn more. Enclosed is a set of white papers that outline the basic goals of each committee. I encourage every ASPE member to join a Technical Leadership Committee.

Very truly yours,

John S Taylor

John S. Taylor
Chair, 31st ASPE Annual Meeting
jstaylor.precision@gmail.com

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ASPE Precision Manufacturing Technical Leadership Committee

September 21, 2015

Background

The American Society for Precision Engineering (ASPE) has constituted a number of Technical leadership Communities (TLCs) in an effort to enhance the technical strength of the society and promote increased participation of the members in charting the Society's technical directions. In the future, these TLCs will be chaired by individual Board members with responsibility for particular technology areas. At the present time, the committees will be headed by one serving member of the Board and one appointed chair to facilitate an orderly transition. Six technical areas have been identified with Precision Manufacturing being one of them.

Technical Scope

The Precision Manufacturing Technical Leadership Committee (PMTLC) will serve as a focal point and technical resource for ASPE members interested in the full range of processes and machinery employed in the manufacture of precision components, devices, and systems. The goal is to create and provide a vibrant technical community where members can discuss topics of mutual interest, learn from the expertise and experience of other members, and contribute ideas and knowledge to help solve technical challenges and questions faced by fellow members. Topical areas addressed by the Committee will include, but are not limited to:

- Mechanical material removal, including cutting and abrasives processes
- Forming, molding, casting, and additive processes
- Non-mechanical material removal, including electro-chemical, electro-discharge, and directed energy processes
- Coatings and surface treatments
- Manufacturing machinery, including system design and modeling, machine metrology and performance verification, performance enhancement, and auxiliary systems
- Material handling, including workholding, alignment and registration, and automation
- Process control
- Assembly, including automation and tolerances and alignment

Responsibilities and Deliverables

The responsibilities and deliverables of the PMTLC include:

- Keep abreast of and understand the state-of-the-art (SOTA)
- Advise the Annual Meeting Chair on the SOTA, including
    - Suggestions of relevant topics for conference sessions
    - Recommendations for Keynote Speakers and Invited Talks
    - Organize a technical session in each Annual Meeting; and solicit qualified conference papers and speakers, in consultation with the Annual Meeting Chair, that reflect and advance the SOTA

- Recommend topical meetings in the area and assist the Topical Meeting Chair
- Prepare review papers on a regular basis (approximately one every three years) on selected topics of interest for publication in Precision Engineering
- Report to the ASPE Membership each year on the activities, plans, and learnings of the PMTLC

Committee Governance and Structure

The PMTLC will have a Chair and Vice-chair who will be responsible for coordinating the activities of the group, recruiting new members, and ensuring the vitality and continuity of the Committee. Once the Committee is in full operation, the Chair will be a Member of the ASPE Board of Directors who has relevant expertise in one or more aspects of Precision Manufacturing, and is elected to this post (and a seat on the BOD) by the ASPE membership. The Vice-chair will be selected by the Chair and approved by the TLC membership for a term of two years. In addition, the Committee may, at their discretion, identify members to be responsible for one or more of the periodic responsibilities and deliverables. During the initial organizational period, the Chair of the Committee will be John Ziegert, and the Vice-Chair will be John Taylor. They will serve until a regularly elected BOD Member is available to fill these roles.

Committee Operations

The PMTLC membership will convene at the Annual Meeting to monitor progress on the deliverables to the Society, plan for future activities, and conduct discussions among the membership on topics of interest, emerging technologies, and future directions. In addition, the officers may elect to conduct web-based meetings that are open to the membership (approximately quarterly) to discuss Committee business and plans. It is expected that service on the various activities and deliverables of the TLC will become an entry point and stepping stone for new members interested in future leadership roles in the Society.

Interactions with the Society

The PMTLC will report to the ASPE Executive Committee on a regular basis to keep them apprised of PMTLC activities and plans, and ensure coordination with the activities of the other TLCs.

Membership

Once the PMTLC is fully functioning it is expected to consist of members with a broad range of interests and expertise in various aspects of precision manufacturing processes and equipment, and broad representation from industry, government, and academia. Committee members will be encouraged to actively solicit and recruit new members, and if sufficient interest exists to create new sub-committees and special interest groups.

Members

John Ziegert, *Chair* (jziegert@uncc.edu)
John Taylor, *Co-chair*
Bradley Jared
Eric Marsh
John Bradford

ASPE Metrology Systems Technical Leadership Committee

October 1, 2015

Background

The American Society for Precision Engineering (ASPE) has constituted a number of Technical leadership Committees (TLCs) in an effort to enhance the technical strength of the society and promote increased participation of the members in charting the Society's technical directions. In the future, these TLCs will be chaired by individual Board members with responsibility for particular technology areas. At the present time, the committees will be headed by one serving member of the Board and one appointed chair to facilitate an orderly transition. Six technical areas have been identified with Metrology Systems being one of them.

Technical Scope

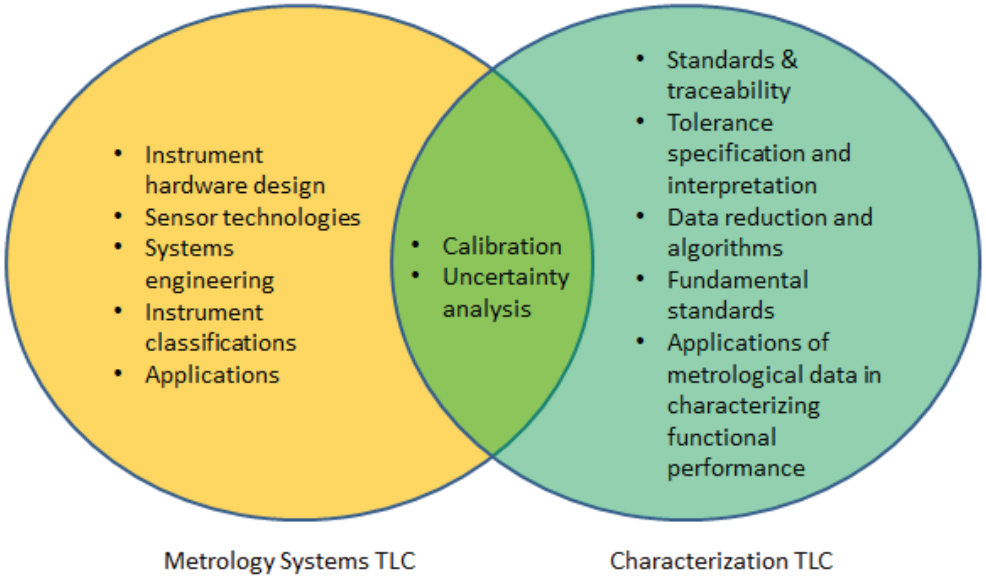
The primary subject area of the Metrology Systems TLC (MSTLC) includes (but is not limited to) instruments, methods and techniques of dimensional metrology, i.e., the measurement of size, form and finish. Additional topic areas may include machine tool metrology, force, mass, etc. More specifically, the areas under the purview of the Committee address the hardware aspects of measurement instruments and will include sub-topics such as:

- Instrument hardware design
- Sensor technologies
- Systems engineering
- Instrument classifications
- Applications

Responsibilities and deliverables

The responsibilities and deliverables of the TLC are

- Keep abreast of and understand the State-of-the-Art (SOTA)
- Advise the Annual Meeting chair on SOTA, relevance of topics, proposals for Keynote speakers and invited/special papers.
- Recommend topical meeting(s) and assist the meeting Chair
- Solicit qualified conference papers and speakers in consultation with the Annual Meeting Chair to deliver an appropriate description of the SOTA
- Prepare a review paper for publication in Precision Engineering
- Oral presentation at the ASPE Annual Meeting reporting the learning of the Committee



Purview of the MSTLC

The technical area of the MSTLC is closely related to the topic area of another TLC, i.e., the Characterization TLC (CTLC), currently co-chaired by Chris Evans. It is therefore important to distinguish between the technical areas under the purview of the two committees to avoid duplication of effort and provide the broadest coverage possible. The figure above attempts to clarify the areas of responsibility and overlap between the two committees.

Proposed organization of the technical areas for the MSTLC

The technical area under the purview of the MSTLC is vast and will need an overarching structure to guide the organization of the information and the division of effort. Two such structures are proposed below to help organize an ongoing survey of the various measurement technologies

- Organization by the various measurement technologies by measuring principle, e.g., optical, capacitance, etc. and their application to the measurement of key dimensional characteristics, e.g., dimension, form and finish. Each of these characteristics will be the focus of an annual review paper.
- Organization by the various measurement technologies by measuring principle and their application at various size scales, e.g., micro, macro and large scale. Annual review papers will focus on a particular size scale.

The structures proposed above could potentially result in a review paper on each measurement characteristic or size scale on a three year cycle. The purview of the MSTLC may also extend to other quantities of interest, such as force, mass, etc. Dedicated review papers may be produced on special topics as needed, e.g., gear metrology.

Committee interactions

The Committee will meet periodically (at least every 3 months) to provide updates, discuss progress and coordinate efforts. . Periodic meetings will be held using web-based teleconferencing tools. Face-to-face

meetings will be held when a sufficiently large portion of the group is physically present at a single geographic location, e.g., ASPE Annual or Topical Meeting. Members who are unable to attend may attend via web-based teleconference.

Committee Governance & Structure

This committee will be headed by Vivek Badami and Marcin Bauza, serving as co-chairs. A vice-chair will be identified so to establish continuity. It is anticipated that the position of the appointed chair will be phased out as the transition to the new structure takes hold. The committees will then be headed by the responsible member of the Board and a vice-chair elected from amongst the Committee's membership. The expectation is that the vice-chair will succeed the current chair to ensure continuity.

The committee will have members with expertise in different areas of metrology. Part of the committee formation process will be to identify these areas and recruit people with the appropriate expertise. Overlapping areas of expertise are to be expected and are welcomed. Sub-committees in each technical area are also a possibility.

Interaction with the Society

The MSTLC will interact with the Executive Committee of the ASPE on a regular basis through the committee chair(s). Frequency of this interaction is TBD.

Membership

Once the MSTLC is fully functioning it is expected to consist of members with a broad range of interests and expertise in various aspects of metrology systems, and broad representation from industry, government, and academia. Committee members will be encouraged to actively solicit and recruit new members, and if sufficient interest exists to create new sub-committees and special interest groups.

Members

Vivek Badami Co-*Chair (vivek.badami@ametek.com)*
Marcin Bauza *Co-Chair (marcin.bauza@zeiss.com)*

Jonathan Ellis	Xiangzhi Yu	Niels Bosmans
Jimmie Miller	Bala Muralikrishnan	Robert Grejda
Robert Smythe	Richard Leach	

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ASPE Characterization Technical Leadership Committee

September 29, 2015

Background

The American Society for Precision Engineering (ASPE) has constituted a number of Technical Leadership Communities (TLCs) in an effort to enhance the technical strength of the society and promote increased participation of the members in charting the Society's technical directions. In the future, these TLCs will be chaired by individual Board members with responsibility for particular technology areas. At the present time, the committees will be headed by a combination of elected and senior members. "Characterization" is one of six technical areas that have been identified; this TLC should complement the Metrology Systems TLC.

Technical Scope

The Characterization Technical Leadership Committee (CTLC) will serve as a focal point and technical resource for ASPE members interested in conversion of dimensional metrology ranging from raw data to estimates of well-defined measurands that can be compared meaningfully with specifications. CTLC will also consider the relationship between specifications, tolerances and function.

The goal is to create and provide a vibrant technical community where members can discuss topics of mutual interest, learn from the expertise and experience of other members, and contribute ideas and knowledge to help solve technical challenges and questions faced by fellow members. Examples of topical areas addressed by the Committee include, but are not limited to:

- Specification and conformance evaluation of wear surfaces on mechanical components
- Mid-spatial frequencies (waviness) in optical systems
- Characterization of point clouds of data with variable spacing
- Affective engineering and the specification of surfaces for human interaction
- Evaluation of uncertainty in data maps
- Knowledgeable and critical awareness of relevant international specifications
- Functional significance of surface derivatives (slope, curvature)
- Extension of our characterization emphases to specifying and characterizing 3D features

Responsibilities and Deliverables

The responsibilities and deliverables of the CTLC include:

- Keep abreast of and understand the state-of-the-art (SOTA)
- Advise the Annual Meeting Chair on the SOTA, including
    - Suggestions of relevant topics for conference sessions
    - Recommendations for Keynote Speakers and Invited Talks
    - Organize technical sessions for future Annual Meeting; and solicit qualified conference papers and speakers, in consultation with the Annual Meeting Chair, that reflect and advance the SOTA
    - Recommend topical meetings in the area and assist the Topical Meeting Chair

- Prepare review papers on a regular basis (approximately one every three years) on selected topics of interest for publication in Precision Engineering
- Report to the ASPE Membership each year on the activities, plans, and learnings of the CTLC

Committee Governance and Structure

The CTLC will have a Chair and Vice-chair who will be responsible for coordinating the activities of the group, recruiting new members, and ensuring the vitality and continuity of the Committee. Once the Committee is in full operation, the Chair will be a Member of the ASPE Board of Directors (BoD who has relevant expertise in one or more aspects of Characterization, and is elected to this post (and a seat on the BoD) by the ASPE membership. The Vice-chair will be selected by the Chair and approved by the TLC membership for a term of two years. In addition, the Committee may, at their discretion, identify members to be responsible for one or more of the periodic responsibilities and deliverables. During the initial organizational period, the Chair of the Committee will be Chris Evans. The Vice-Chair will be identified following the ASPE Annual Meeting in Austin, TX. They will serve until regularly elected BoD Members are available to fill these roles.

Committee Operations

The CTLC membership will convene at the Annual Meeting to monitor progress on the deliverables to the Society, plan for future activities, and conduct discussions among the membership on topics of interest, emerging technologies, and future directions. In addition, the officers may elect to conduct web-based meetings or teleconferences that are open to the membership (approximately quarterly) to discuss Committee business and plans. It is expected that service on the various activities and deliverables of the TLC will become an entry point and stepping stone for new members interested in future leadership roles in the Society.

Interactions with the Society

The CTLC will report to the ASPE Executive Committee on a regular basis to keep them apprised of CTLC activities and plans, and ensure coordination with the activities of the other TLCs.

Membership

Once the CTLC is fully functioning it is expected to consist of members with a broad range of interests and expertise in various aspects of precision manufacturing processes and equipment, and broad representation from industry, government, and academia. Committee members will be encouraged to actively solicit and recruit new members, and if sufficient interest exists, to create new sub-committees and special interest groups.

Members

Chris Evans, *Chair* cevans52@uncc.edu
TBD, *Vice-chair*
Jay Raja

ASPE Precision Machine Design Technical Leadership Committee

October 15, 2015

Background

The American Society for Precision Engineering (ASPE) has constituted a number of Technical leadership Communities (TLCs) in an effort to enhance the technical strength of the society and promote increased participation of the members in charting the Society's technical directions. In the future, these TLCs will be chaired by individual Board members with responsibility for particular technology areas. At the present time, the committees will be headed by one serving member of the Board and one appointed chair to facilitate an orderly transition. Six technical areas have been identified with Precision Machine Design being one of them.

Technical Scope

The Precision Machine Design Technical Leadership Committee (PMDTLC) will serve as a focal point and technical resource for ASPE members interested in the full range of precision machine design principles and techniques employed in the design, development and production of precision machines and systems. The goal is to create and provide a vibrant technical community where members can discuss topics of mutual interest, learn from the expertise and experience of other members, and contribute ideas and knowledge to help solve technical challenges and questions faced by fellow members. Topical areas addressed by the Committee will include, but are not limited to:

- Fundamentals principles of Precision Machine Design
- Error budgeting techniques
- Precision Machine and systems analysis techniques
    - Finite element analysis, computational fluid dynamics and heat transfer tailored for precision machine design
- Design challenges to match static and dynamic performance to the error budget and process requirements and the project's budget
- Project management
    - Technical specification, scope management and the interaction with commercial considerations
- Machine component design, selection, and optimization
    - Machine structure
    - Flexure systems
    - Drives
    - Kinematic couplings
    - Actuators
    - Sensors
    - Servo control
    - External disturbance rejection
    - Component handling and loading
- Mounting and actuation of optical elements

- Linear and rotary bearing design, fabrication, and testing
    - Hydrodynamic
    - Air (gas) hydrostatic
    - Oil (liquid) hydrostatic
    - Rolling element
    - Lubrication
- Design techniques for achieving the typical requirements of:
    - High stiffness (static and dynamic)
    - Low moving mass
    - High servo bandwidth
    - All within budget and timescale requirements
- Design synthesis
    - Topology optimization
    - Synthetic materials, e.g. micro lattice structures
- Thermal management
    - Issues and SOTA in minimizing their effects
    - Conformal cooling channels, i.e. as enabled by additive manufacturing
- Materials selection and development
    - Thermo-mechanical properties
    - Damping properties
    - Metallurgy
    - Polymer systems
    - Glasses and ceramics
- Process development tools and modelling (e.g. cutting and abrasives processes)
- Metrology: In-situ component measurement and machine stability/position measurement
- Design, specification, and testing of machine environments (thermal, acoustic and floor-borne vibrations)
- Machine system safety

Responsibilities and Deliverables

The responsibilities and deliverables of the PMDTLC include:

- Keep abreast of and understand the state-of-the-art (SOTA)
- Advise the Annual Meeting Chair on the SOTA, including
    - Suggestions of relevant topics for conference sessions
    - Recommendations for Keynote Speakers and Invited Talks
    - Organize a technical session in each Annual Meeting; and solicit qualified conference papers and speakers, in consultation with the Annual Meeting Chair, that reflect and advance the SOTA
    - Recommend topical meetings in the area and assist the Topical Meeting Chair
    - Prepare review papers on a regular basis (approximately one every three years) on selected topics of interest for publication in Precision Engineering
    - Report to ASPE Membership each year: activities, plans, and learnings of the PMDTLC
    - Develop and maintain on-line resources (web sites, blogs etc.) to promote Precision Machine Design and provide discussion forums.

Committee Governance and Structure

The PMDTLC will have a Chair and Vice-chair who will be responsible for coordinating the activities of the group, recruiting new members, and ensuring the vitality and continuity of the Committee. Once the Committee is in full operation, the Chair will be a Member of the ASPE Board of Directors who has relevant expertise in one or more aspects of Precision Machine Design, and is elected to this post (and a seat on the BOD) by the ASPE membership. The Vice-chair will be selected by the Chair and approved by the TLC membership for a term of two years. In addition, the Committee may, at their discretion, identify members to be responsible for one or more of the periodic responsibilities and deliverables. During the initial organizational period, the Co-chairs will be Mark Stocker and Mark Kosmowski.

Committee Operations

The PMDTLC membership will convene at the Annual Meeting to monitor progress on the deliverables to the Society, plan for future activities, and conduct discussions among the membership on topics of interest, emerging technologies, and future directions. In addition, the officers may elect to conduct web-based meetings that are open to the membership (approximately quarterly) to discuss Committee business and plans. It is expected that service on the various activities and deliverables of the TLC will become an entry point and stepping stone for new members interested in future leadership roles in the Society.

Interactions with the Society

The PMDTLC will report to the ASPE Executive Committee on a regular basis to keep them apprised of PMTLC activities and plans, and ensure coordination with the activities of the other TLCs.

Membership

Once the PMDTLC is fully functioning it is expected to consist of members with a broad range of interests and expertise in various aspects of precision manufacturing processes and equipment, and broad representation from industry, government, and academia. Committee members will be encouraged to actively solicit and recruit new members, and if sufficient interest exists to create new sub-committees and special interest groups.

Members

Mark Stocker, *Co-Chair*
mark.stocker@fivesgroup.com

Mark Kosmowski, *Co-Chair*
kosmowskim@esi.com

Eric Buice
Byron Knapp
Brian O'Connor

Alex Slocum
Stuart Smith

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ASPE Micro- and Nano-Technologies Technical Leadership Committee

October 1, 2015

Background

The American Society for Precision Engineering (ASPE) has constituted a number of Technical leadership Communities (TLCs) in an effort to enhance the technical strength of the society and promote increased participation of the members in charting the Society's technical directions. In the future, these TLCs will be chaired by individual Board members with responsibility for particular technology areas. At the present time, the committees should be headed by one serving member of the Board and one appointed chair to facilitate an orderly transition. Six technical areas have been identified with Micro- and Nano-Technologies being one of them.

Technical Scope

The Micro- and Nano-Technologies Technical Leadership Committee (PMTLC) will serve as a focal point and technical resource for ASPE members interested in the full range of precision engineering work occurring on the micro and sub-micro scale. This includes devices, materials and systems whose important features scales are on this scale. The goal is to create and provide a vibrant technical community where members can discuss topics of mutual interest, learn from the expertise and experience of other members, and contribute ideas and knowledge to help solve technical challenges and questions faced by fellow members. Topical areas addressed by the Committee will include, but are not limited to:

- MEMS/MOEMS
    - Micromirrors
    - Energy collectors
- Micro/Nano manufacturing processes, scaling challenges
- Micro-additive Manufacturing
- CNT-based devices
- Mechanical metamaterials

Responsibilities and Deliverables

The responsibilities and deliverables of the PMTLC include:

- Keep abreast of and understand the state-of-the-art (SOTA)
- Advise the Annual Meeting Chair on the SOTA, including
    - Suggestions of relevant topics for conference sessions
    - Recommendations for Keynote Speakers and Invited Talks
    - Organize a technical session in each Annual Meeting; and solicit qualified conference papers and speakers, in consultation with the Annual Meeting Chair, that reflect and advance the SOTA
    - Recommend topical meetings in the area and assist the Topical Meeting Chair

- Prepare review papers on a regular basis (approximately one every three years) on selected topics of interest for publication in Precision Engineering
- Report to the ASPE Membership each year on the activities, plans, and learnings of the MNTLC

Committee Governance and Structure

The MNTLC will have a Chair and Vice-chair who will be responsible for coordinating the activities of the group, recruiting new members, and ensuring the vitality and continuity of the Committee. Once the Committee is in full operation, the Chair will be a Member of the ASPE Board of Directors who has relevant expertise in one or more aspects of Micro- and Nano-Technologies, and is elected to this post (and a seat on the BOD) by the ASPE membership. The Vice-chair will be selected by the Chair and approved by the TLC membership for a term of two years. In addition, the Committee may, at their discretion, identify members to be responsible for one or more of the periodic responsibilities and deliverables. During the initial organizational period, the Chair of the Committee will be Robert Panas, and the Vice-Chair will be Michael Cullinan. They will serve until a regularly elected BOD Member is available to fill these roles.

Committee Operations

The MNTLC membership will convene at the Annual Meeting to monitor progress on the deliverables to the Society, plan for future activities, and conduct discussions among the membership on topics of interest, emerging technologies, and future directions. In addition, the officers may elect to conduct web-based meetings that are open to the membership (approximately quarterly) to discuss Committee business and plans. It is expected that service on the various activities and deliverables of the TLC will become an entry point and stepping stone for new members interested in future leadership roles in the Society.

Interactions with the Society

The MNTLC will report to the ASPE Executive Committee on a regular basis to keep them apprised of MNTLC activities and plans, and ensure coordination with the activities of the other TLCs.

Membership

Once the MNTLC is fully functioning it is expected to consist of members with a broad range of interests and expertise in various aspects of micro- and nano-technologies, and broad representation from industry, government, and academia. Committee members will be encouraged to actively solicit and recruit new members, and if sufficient interest exists to create new sub-committees and special interest groups.

Members

Robert Panas (panas3@llnl.gov)	*Chair*
Michael Cullinan	*Co-chair*
Jonathan Hopkins	
Sourabh Saha	

ACTIVITY PLAN FOR THE ASPE CONTROLS AND MECHATRONICS TECHNICAL LEADERSHIP COMMITTEE

Background

The American Society for Precision Engineering (ASPE) is constituting a number of Technical Leadership Committees (TLC's) in an effort to increase the involvement of the Board of Directors (BoD) in the technical direction of the Society. In the future, these TLCs will be chaired by individual Board members with responsibility for particular technology areas. At the present time, the committees will be headed by one serving member of the Board and one appointee in order to facilitate an orderly transition. Six technical areas have been identified with Mechatronics and Control being one of them.

Mission Statement

The Controls and Mechatronics TLC aims to develop and promote a broader understanding of the precision engineering principles of determinism for use in the architecture design and control of high-performance mechatronic systems.

Subject Area

The primary subject area of the Controls and Mechatronics TLC includes (but is not limited to):

- Precision positioning systems
- Multi-degree-of-freedom control
- Advances in sensors, actuators, and drives
- Modeling techniques and model-based mechatronic design
- System identification and data-based design
- Control of friction induced systems
- Feedforward control
- Iterative learning control
- Disturbance estimation and control
- Autotuning and self-tuning techniques
- Active and passive strategies for vibration control
- Thermal management and control
- Dynamic error budgeting

Responsibilities and Deliverables

The responsibilities and deliverables of the TLC are

- Gather and disseminate the State-of-the-Art (SOTA) in Precision Mechatronics and Controls.
- Advise the Annual Meeting Chair on the SOTA, relevance of topics, proposals for Keynote speakers and invited/special papers.
- Recommend topical meeting(s) and assist the topical meeting Chair.
- Solicit qualified conference papers and speakers in consultation with the Annual Meeting Chair to deliver an appropriate description of the SOTA.
- Prepare a review paper for publication in Precision Engineering. This is typically once each three year term unless developments suggest a more-frequent review.
- Deliver an oral presentation at the ASPE Annual Meeting reporting the learning of the Committee in support of the review paper.

Committee Interactions

The Committee will meet periodically (at least every 3 months) to provide updates, discuss progress and coordinate efforts. Periodic meetings will be held using web-based teleconferencing tools. Face-to-face meetings will be held when a sufficiently large portion of the group is physically present at a single geographic location, e.g., ASPE Annual or Topical Meeting. Members who are unable to attend may attend via web-based teleconference.

Committee Governance & Structure

This committee will be headed by Steve Ludwick and Dannis Brouwer, serving as co-chairs. A vice-chair will be identified so to establish continuity. It is anticipated that the position of the appointed chair will be phased out as the transition to the new structure takes hold. The committees will then be headed by the responsible member of the Board and a vice-chair elected from amongst the Committee's membership. The expectation is that the vice-chair will succeed the current chair to ensure continuity.

The committee will have members with expertise in different areas of mechatronics and control. Part of the committee formation process will be to identify these areas and recruit people with the appropriate expertise. Overlapping areas of expertise are to be expected and are welcomed. Sub-committees in each technical area are also a possibility.

Interaction with the Society

The Controls and Mechatronics TLC will interact with the Executive Committee of the ASPE on a regular basis through the committee chair(s). Frequency of this interaction is TBD.

Membership

The Controls and Mechatronics TLC is expected to consist of members with a broad range of interests and expertise in various aspects of mechatronic system design and control. It should also maintain broad representation from industry, government, and academia. Committee members will be encouraged to actively solicit and recruit new members, and if sufficient interest exists, to create new sub-committees and special interest groups where appropriate.

Members

Dannis Brouwer, *Co-Chair*
d.m.brouwer@utwente.nl

Steve Ludwick, *Co-Chair*
sludwick@aerotech.com

Gorka Aguirre	Ton Peijnenburg
Kaan Erkorkmaz	Joshua Tarbutton
Gregory Holst	John Taylor
Dan Luttrell	David Trumper
Fabrice Matichard	Jan van Eijk
Chinedum Okwudire	

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