

Monday September 24, 2018

7:30 AM	Continental Breakfast - Emerald Ballroom, 3rd floor						
8:00 AM	Opening Plenary Lecture: Aerospace And Composites: Together, We Change The World - Dr. Greg Hyslop - Emerald Ballroom, 3rd floor						
Rooms	Seattle 1	Seattle 2	Seattle 3	Belltown	Pioneer	Capitol Hill	First Hill
Parallel Sessions 1	1A	1B	1C	1D	1E	1F	1G
Track	I2: Impact Dynamic Response 1	P1: Processing & Manufacturing 1	P2: Progressive Damage and Failure Analysis of Composites 1	I1: ICME of Composites 1	T1: Test and Characterization Methods 1	M3: Molecular Modeling of Nanomaterials and Nanocomposites 1	N3: Next Generation Composites: Constituents and Microstructures 1
9:00 AM	Paper# 163 3D Progressive Failure Modeling of Drop-Weight Impact on Composite Laminates <i>Dinh Chi Pham, Jim Lua* and Dianyun Zhang</i>	Keynote Integrated Process Models for Predicting Residual Stress and Geometrical Variations in Resin Transfer Molded Composite Structures <i>Dianyun Zhang*, Weijia Chen, and James Roach</i>	Paper# 74 Computationally Efficient Damage and Residual Strength Predictions using Progressive Damage Failure Analysis (PDFA) with an Enriched Shell Element <i>Tyler Goode*, Mark McElroy, Nathan Sesar and Mark Pankow</i>	Paper# 122 NASA's 2040 Vision Roadmap Study: A Framework for Integrated Computational Materials Engineering (ICME) <i>Steven Arnold*</i>	Paper# 342 Characterizing Fiber Reinforced Polymer Composites Shear Behavior with Digital Image Correlation <i>Qi An*, Matthias Merzkirch and Aaron Forster</i>	Paper# 133 Molecular Dynamics Simulations of Fiber-Sizing Interphase <i>Sanjib Chowdhury*, Robert Elder, Timothy Sirk, David Hartman, John Gillespie Jr. and Ethan Wise</i>	Paper# 382 A Vision for the Next Generation Composites <i>Dwayne D. Arola, Xiasong Li, C. Luscombe, F. Ohuchi, T. Okabe, M. Salviato</i>
9:25 AM	Paper# 246 Low Velocity Impact Simulation of CFRP Laminates Considering Microscopic Damage Interaction <i>Masaya Ebina*, Akinori Yoshimura, Yuichiro Aoki and Kenichi Sakaue</i>	Keynote - continued	Paper# 63 Computationally efficient interface modeling in fiber-reinforced composites through displacement-based component-wise approach <i>Ibrahim Kaleel*, Marco Petrolo and Erasmo Carrera</i>	Paper# 262 Prepreg Platelet Molded Composites Process and Performance Analysis <i>Benjamin Denos*, Sergii Kravchenko, Drew Sommer, Anthony Favaloro, R. Byron Pipes and William Avery</i>	Paper# 131 Characterization of Mode I Interlaminar Fracture Toughness in Composite Materials Using Wedge Loaded DCB Specimens <i>Sota Oshima*, Akinori Yoshimura, Yoshiyasu Hirano and Toshio Ogasawara</i>	Paper# 156 Atomistic scale simulation for the inter-diffusion of Epon 828 and Jeffamine <i>Jejoon Yeon*, Sanjib Chowdhury, Chaitanya Daksha and John Gillespie Jr.</i>	Paper# 348 Novel Engineered Composite Materials for Protection Inspired by Natural Dermal Armors <i>Anqi Lin*, Sean S. Ghods. and Dwayne Arola</i>
9:50 AM	Paper# 309 Prediction of delamination area of laminated composite under low velocity impact based on experimentally validated finite element modeling and machine learning methods <i>Shiyao Lin, Kuo Tian and Anthony Waas*</i>	Paper# 271 Deployable Structures Constructed from Composite Origami <i>James O'Neil*, Antonio Alessandro Deleo, Hiromi Yasuda, Marco Salviato and Jinkyu Yang</i>	Paper# 92 Progressive Failure Mechanism of FRP Composite Laminates with Discrete Element Method <i>Lei Wan*, Dongmin Yang and Yong Sheng</i>	Paper# 145 Effects of Manufacturing-induced Residual Stress on the Strength of an L-Shaped Textile Composite Flange <i>James Roach, Weijia Chen and Dianyun Zhang*</i>	Paper# 114 Micro Punch Shear Testing of Unidirectional Composites: A New Test Method <i>John Gillespie Jr.*, Malla Ali, Daniel O'Brien, Chian Yen and Bazle (Gama) Haque</i>	Paper# 207 Molecular Dynamics for the Prediction of the Interfacial Shear Stress and Interface Dielectric Properties of Carbon Fiber Epoxy Composites <i>Rajni Chahal*, Ashfaq Adnan, Kenneth Reifsnider, Rassel Raihan, Yuan Ting Wu, Vamsee Vadlamudi and Muthu Ram Prabhu Elenchezian</i>	Paper# 302 Long-term Stress Rupture Limitations of Unidirectional High Strain Composites in Bending <i>Kamron Medina*, TJ Rose and Will Francis</i>
10:15 AM	Networking Break - 4th floor foyer						

Rooms	Seattle 1	Seattle 2	Seattle 3	Belltown	Pioneer	Capitol Hill	First Hill
Parallel Sessions 2	2A	2B	2C	2D	2E	2F	2G
Track	I2: Impact Dynamic Response 2	P1: Processing & Manufacturing 2	P2: Progressive Damage and Failure Analysis of Composites 2	I1: ICME of Composites 2	T1: Test and Characterization Methods 2	M3: Molecular Modeling of Nanomaterials and Nanocomposites 2	S2: Solvay Student Competition
	Paper# 161	Paper# 2	Keynote	Paper# 13	Paper# 230	Paper# 57	Paper# 339
10:30 AM	Validation of Compression-after-Impact experiments using ABAQUS simulations <i>Arun Krishnan*, Shenal Perera and Waruna Seneviratne</i>	In-Situ Co-Extrusion: Additive Manufacturing of Continuous Reinforced Thermoplastic Composites <i>James Garofalo* and Daniel Walczyk</i>	Hierarchical, Concurrent, and Synergistic Multiscale Modeling of Progressive Damage and Inelasticity in Composites <i>Evan Pineda*, Brett A. Bednarczyk, Subodh K. Mital, Steven M. Arnold</i>	Conjugate Stress/Strain Pair Approach for Anisotropic Materials <i>Veysel Erel*, Mingliang Jiang, Alan D. Freed</i>	Computational Study for Size Effect in Composites and Nanocomposites <i>Antonio Alessandro Deleo* and Marco Salviato</i>	Reactive Molecular Dynamics Simulation of Accelerated Cross-linking and Disintegration of Bisphenol F/DETD Polymer using ReaxFF <i>Aniruddh Vashisth*, Chowdhury Ashraf, Charles Bakis and Adri van Duin</i>	Effect of Consolidation Pressure on the Transverse Compressive Strength of UHMWPE Composites at High Strain-rates <i>Jason Parker* and K.T. Ramesh</i>
	Paper# 83	Paper# 71	Keynote - continued	Paper# 67	Paper# 165	Paper# 363	Paper# 49
10:55 AM	Evaluation of Compression Strength after Low Velocity Impact <i>Nathan Sesar*, Mark Pankow and Greyson Hodges</i>	Producibility Considerations for Carbon Fiber/Epoxy Prepregs for Use in Aerospace Propulsion Structures <i>Allison Horner* and Kevin Obrachta</i>		CT data based multiscale virtual material characterization of textile composites in ESI Virtual Performance Solution (VPS) <i>Patrick de Luca*, Sebastian Mueller, Benjamin Boniface and Sylvain Genot</i>	A Double Compliances Method for Measuring the Mode I Interlaminar Fracture Toughness of Composite: Theory and Applications <i>Wu Xu*, Zhuangzhuang Guo, Yin Yu, Xiaojing Zhang and Xinying Lv</i>	Atomistic Design of Carbon Nanotube Junctions of Arbitrary Junction Geometry <i>Vikas Varshney, Vinu Unnikrishnana, Jonghoon Lee, Sangwook Sihm and Ajit Roy*</i>	Length-Scale Effect On Fracture Behavior Of Nano-Composites <i>Anubhav Roy* and Samit Roy</i>
	Paper# 46	Paper# 41	Paper# 327	Paper# 359	Paper# 11	Paper# 234	Paper# 268
11:20 AM	A Material Model Development and Validation for Dynamic Response of a Composite Intrusion Beam <i>Ali Seyed Yaghoubi and Venkat Aitharaju*</i>	A Multi-Scale Viscoelastic Processing Model for Predicting Residual Stress Buildup in Thermoset Composites <i>Weijia Chen* and Dianyun Zhang</i>	Effect of Edge Distance to Diameter Ratio on Progressive Failure of Bolted Joints in Laminated Composites <i>Pranav Borwankar*, Andrea Fontanelli and Satchi Venkataraman</i>	Material Simulation's Advantage: An illustration with 3D Woven <i>Anthony Cheruet and Bobby Cook*</i>	A novel test method to induce bi-axial stress states in thin-ply carbon composites under combined longitudinal tension and transverse compression <i>Tamas Rev*, Gergely Czél and Michael R. Wisnom</i>	Molecular Dynamics Study for Self-Sensing/Self-Healing Materials to Simulate Damage Detection and Repair in Thermoset Polymer Matrix <i>Bonsung Koo*, Ryan Gunckel, Aditi Chattopadhyay and Lenore Dai</i>	Material Characterization and Finite Element Modeling for the Forming of Highly Oriented UHMWPE Thin-Film and Unidirectional Cross-ply Composites <i>Kari White*, Michael Yaeger, James Sherwood, Travis Bogetti and Julia Cline</i>

Monday - continued

Rooms	Seattle 1	Seattle 2	Seattle 3	Belltown	Pioneer	Capitol Hill	First Hill
11:45 AM	Paper# 146 Verification and Validation of a Generalized Orthotropic Material Model MAT213 Implemented in LS-DYNA <i>Loukham Shyamsunder*, Bilal Khaled, Nathan Holt, Canio Hoffarth, Subramaniam Rajan, Robert Goldberg, Kelly Carney, Paul DuBois and Gunther Blankenhorn</i>		Paper# 9 A blended damage and fracture mechanics model for progressive damage analysis of notched composite structures <i>Alexander van Oostrum, Bjorn van Dongen and Dimitrios Zarouchas*</i>		Paper# 62 Effect of Temperature and Strain Rate on Damage Accumulation Behavior of Unidirectional CFRP <i>Takenobu Sakai*, Satoru Abe and Kensuke Kageyama</i>		Paper# 109 Optimization and polynomial chaos-based uncertainty analysis of additively manufactured polymer composites <i>Easir Arafat Papon*, Sameer B. Mulani and Anwarul Haque</i>
12:10 PM	Luncheon Speaker: Automotive Composites - 30 Years of Challenges, Collaborations, Innovations and Advanced Developments - Dr. Khaled Shahwan - Emerald Ballroom, 3rd floor						
Parallel Sessions 3	3A	3B	3C	3D	3E	3F	3G
Tracks	I2: Impact Dynamic Response 3	N3: Next Generation Composites: Constituents and Microstructures 2	P2: Progressive Damage and Failure Analysis of Composites 3	I1: ICME of Composites 3	T1: Test and Characterization Methods 3	M3: Molecular Modeling of Nanomaterials and Nanocomposites 3	F1: Fatigue of Composites 1
1:30 PM	Paper# 123 Shadowed Delamination Area Estimation in UT C-Scans of Impacted Composites Validated by X-Ray CT <i>Andrew Ellison* and Hyonny Kim</i>	Keynote Dynamic manipulation of structural responses via mechanical metamaterials <i>Jinkyu Yang*, Hiromi Yasuda, Rajesh Chaunsali, Hryunryung Kim, Chun-Wei Chen, Xiaotian Shi, Miyazawa Yasuhiro</i>	Paper# 370 Peridynamics for Progressive Failure Analysis of Composites <i>Erdogan Madenci*, Mehmet Dorduncu and Nam Phan</i>	Paper# 365 Modeling-Driven Damage Tolerant Design of Graphene Nanoplatelet/Carbon Fiber/Epoxy Hybrid Composite Panels for Full-Scale Aerospace Structures <i>Julie Tomasi, William Pisani, Sorayot Chinkanjanarot, Aaron Krieg, Evan Pineda*, Brett Bednarczyk, Sandi Miller, Julie King, Ibrahim Miskioglu and Gregory Odegard</i>	Paper# 58 Double-Bubble Fuselage Subcomponent Experimental Testing to Support the D8 Composite Fuselage Design <i>Jeffrey Chambers*, Deborah Hoffman, Abraham Oonnoony, Clinton Church, Brian Yutko and Larry Wirsing</i>	Paper# 315 From addition reactions to cross-linked network formation <i>Jing Li*, Sakamoto Junpei, Hiroki Waizumi, Yue Huang, Yutaka Oya, Naoki Kishimoto and Tomonaga Okabe</i>	Paper# 215 Scaling of Fatigue Crack Growth in Pristine Epoxy <i>Kevin Guo*, Yao Qiao and Marco Salviato</i>
1:55 PM	Paper# 171 Visualization of Fiber/Matrix Interfacial Transverse Debonding <i>Jou-Mei Chu*, Benjamin Claus, Boon Him Lim, Daniel O'Brien, Tao Sun, Kamel Fezzaa and Wayne Chen</i>	Keynote - continued	Paper# 54 Multiscale Failure Analysis for Prediction of Matrix Crack Formation in Polymer-Matrix Composites <i>Yuta Kumagai*, Yoshiteru Aoyagi and Tomonaga Okabe</i>	Paper# 210 Prediction of Fiber Reinforced Composite Material Properties Using Collaborative Filtering Techniques <i>Jonathan Buck, David Najera*, Doug Melville and Eric Jayson</i>	Paper# 249 Time and Temperature Dependent Stress-Strain Behavior of Unidirectional Carbon Fiber/Polyimide Composites under On-axis and Off-axis Tensile Loading <i>Ryuunosuke Minegishi*, Toshio Ogasawara, Takuya Aoki, Yuki Kubota, Yuichi Ishida</i>	Paper# 188 Changes in micro-phase separation of diblock copolymer melts induced by a circle fiber <i>Yutaka Oya*, Naofumi Umemoto and Tomonaga Okabe</i>	Paper# 96 Improvement of durability property by using low diameter glass chopped strands <i>Yosuke Nukui*, Shunsuke Harashima, Akane Takenaga and Tatsuya Mochizuki</i>

Rooms	Seattle 1	Seattle 2	Seattle 3	Belltown	Pioneer	Capitol Hill	First Hill
2:20 PM	Paper# 60	Paper# 340	Paper# 97	Paper# 341	Paper# 160		Paper# 129
	Numerical Simulation of Failure Behavior under Impact Loading for Cylindrical Carbon Fiber Reinforced Polymer <i>Yusuke Sawamura*, Yuta Yamazaki, Jun Koyanagi, Satoru Yoneyama</i>	Mechanics of Edge-Cracking and Toughness Determination for Strain Locking Composite Materials <i>Nicholas Payne* and Kishore Pochiraju</i>	Prediction for Stiffness Reduction and Progressive Damage of Composite Laminate Including Ply Cracks <i>Sota Onodera* and Tomonaga Okabe</i>	Microscale Analysis of Virtually Cured Polymer Matrix Composites Accounting for Uncertainty in Matrix Properties During Manufacturing <i>Sagar Shah and Marianna Maiaru*</i>	3-D X-ray Tomography for In-Situ Characterization of Progressive Damage Response of Carbon Fiber Laminates Subject to Mechanical Loadings <i>Joseph Favata*, Dianyun Zhang and Sina Shahbazmohamadi</i>		Stiffness Degradation Model for Fatigue Life Prediction of GFRPs under Random Ocean Current Loading <i>Takuya Suzuki* and Hassan Mahfuz</i>
2:45 PM	Paper# 282	Paper# 264	Paper# 226	Paper# 169	Paper# 181		Paper #378
	Quantifying the Delamination of L-Shaped Composite Laminates Under Low Velocity Impact Using X-Ray Computed Tomography <i>Kenan Cinar, Ibrahim Guven*, Fatih Oz and Nuri Ersoy</i>	Investigating Flexural Failure in Carbon Fiber Reinforced Polymer Composites Interleaved with Carbon Nanotube Sheets <i>Pratik Koirala, Nekoda van de Werken, Xuemin Wang, Monica J. De Andrade, Raquel Ovalle, Ray Baughman, Hongbing Lu and Mehran Tehrani*</i>	Spectral Stiffness Microplane Model for Unidirectional Composite <i>Sean Phenisee*, Sung Lin Tien and Marco Salviato</i>	An efficient multiscale virtual testing platform for composite via component-wise models <i>Ibrahim Kaleel, Manish Nagaraj*, Marco Petrolo, Erasmo Carrera and Anthony M Waas</i>	A dielectric resonant cavity method for monitoring of damage progression in moisture-contaminated composites <i>Ogheneovo Idolor*, Rishabh Guha and Landon Grace</i>		A Continuum Damage Model for Fatigue and its Integration Scheme <i>Zhenyuan Gao, Liang Zhang, Robert A. Haynes and Wenbin Yu*</i>
3:10 PM	Networking Break - 4th floor foyer						
Parallel Sessions 4	4A	4B	4C	4D	4E	4F	4G
Tracks	I2: Impact Dynamic Response 4	P1: Processing & Manufacturing 4	P2: Progressive Damage and Failure Analysis of Composites 4	I1: ICME of Composites 4	T1: Test and Characterization Methods 4	M2: Model-based Design for Manufacturing 1	F1: Fatigue of Composites 2
3:25 PM	Paper# 99	Paper# 98	Paper# 254	Paper# 119	Paper# 335	Paper# 290	Paper# 31
	Modelling of lightning strike-induced shock wave damage in CFRP composites <i>Lin Ye* and Kunkun Fu</i>	Examination of pre-gelation behavior in AS4/8552 prepreg composites <i>Caitlin Duffner*, Navid Zobeiry and Anoush Poursartip</i>	Characterization of Cohesive Zone Laws Using Digital Image Correlation <i>Bastiaan C.W. van der Vossen*, Andrew Makeev</i>	3D Continuum Damage Mechanics model with permanent strain <i>James Dorer* and Xinran Xiao</i>	A Method for Rapid Determination of Fiber Orientation in Reinforced Composites at Lab and Component Scale <i>Matthew Kant* and Dayakar Penumadu</i>	Integrated AFP Manufacturing and Stress Analysis/Design Process <i>August Noever* and Craig Collier</i>	A Cohesive Fatigue Model based on the S-N Diagram <i>Carlos Davila*</i>

Monday - continued

Rooms	Seattle 1	Seattle 2	Seattle 3	Belltown	Pioneer	Capitol Hill	First Hill
3:50 PM	Paper# 44	Paper# 151	Paper# 288	Paper# 84	Paper# 55	Paper# 244	Paper# 214
	Impact Performance and Flexural Behavior of Composite Sandwich Structures in Low Temperature Arctic Conditions <i>K.T. Tan* and M.H. Khan</i>	Development of composite leaf springs made by 4D printing <i>Suong Van Hoa*</i>	Direct Numerical Simulation of 3D Woven Textile Composites Subjected to Compressive Loading: A Multiscale Approach <i>Deepak Patel* and Anthony M. Waas</i>	Multi-scale analysis of joints in hybrid metal/composite structures in ESI Virtual Performance Solution (VPS) <i>Alexandre Dumon*, Sebastian Mueller, Patrick De Luca and Alain Trameçon</i>	Modeling Turf Through Discrete Element Analysis <i>Justin Rittenhouse* and Peter Gustafson</i>	Predicting the influence of manufacturing parameters on curing generated deformations using thermo-mechanical modelling <i>Kristof Vanclooster*, Jim Gilbert, Frederic Pascon and Stepan V. Lomov</i>	Multi-axial Fatigue Behavior of Notched Composite Structures <i>Yao Qiao*, Antinio Alessandro Deleo, Kuotian Liao and Marco Salviato</i>
4:15 PM	Paper# 314	Paper# 50	Paper# 281	Paper# 379	Paper# 23	Paper# 220	Paper# 261
	Dynamic Impact Behavior of Syntactic Foam Core Sandwich Composites <i>Peter Breunig, Vinay Damodaran, Kiran Shahapurkar, Sunil Waddar, Mrityunjay Doddamani, P Jeyaraj, G C Mohan Kumar and Pavana Prabhakar*</i>	Draping Behavior of Non-Crimp Fabrics <i>William Rodgers*, Praveen Pasupuleti, Selina Zhao, Arnaud Dereims, Mark Doroudian and Venkat Aitharaju</i>	Experimental Characterization of Mode I and Mode II Peridynamic Critical Stretch Parameter <i>Forrest Baber*, Vipul Ranatunga and Ibrahim Guven</i>	Powering NASTRAN with SwiftComp for Multiscale Modeling of Composites <i>Xin Liu, Federico Gasco, Johnathan Goodsell and Wenbin Yu*</i>	Contamination Transfer from Processing Aid Materials to Prepreg <i>Akihito Suzuki*, Noriko Yamazaki and Shoichi Aoki</i>	Symmetrical and Antisymmetrical Sequenced Fibers with Epoxy Resin on Rectangular Reinforced Structures under Axial Loading <i>Reza Moheimani*, Reza Sarayloo and Hamid Dalir</i>	Effect of manufacturing-induced voids on the fatigue performances of multidirectional laminates <i>Lucio Maragoni, Paolo Andrea Carraro and Marino Quaresimin*</i>
4:40 PM	Paper# 157	Paper #45	Paper# 224		Paper# 82	Paper# 135	Paper# 277
	Dynamic behavior of carbon fiber reinforced polymer (CFRP) composites at higher strain rates <i>Muhammad Hashim, David Roux and Alireza Amirkhizi*</i>	A novel and sustainable approach to recycle prepreg trim waste via sheet molding compound (SMC) technique <i>Sanzida Sultana, Pete George, Jonathan Colton and Kyriaki Kalaitzidou*</i>	Effects of out of plane stress on progressive kinking in internal zero plies <i>Paul Davidson* and Anthony Waas</i>		Pseudo-ductility of Unidirectional Thin Ply Hybrid Composites in Longitudinal Compression <i>Putu Suwarta*, Gergely Czel, Mohamad Fotouhi, Jakub Rycerz and Michael Wisnom</i>	A Numerical Model to Simulate Void Dynamics During Processing of Honeycomb Core Sandwich Structures with Prepreg Face-Sheets <i>Navid Niknafs Kermani*, Pavel Simacek, Merve Erdal and Suresh G. Advani</i>	Damage evolution in U-shaped composite beams loaded in fatigue <i>Ritika Singh* and Mark Tuttle</i>
5:05 PM	Networking Break - 4th floor foyer						
5:15 PM	General Session - Emerald Ballroom, 3rd floor						
6:00 - 7:30 PM	Welcome Reception - Emerald Ballroom, 3rd floor						

Tuesday September 25, 2018

7:30 AM	Continental Breakfast - Emerald Ballroom, 3rd floor						
8:00 AM	Plenary Session: Integrated In-Process Monitoring of High-Rate Production CFRP Structures for Material Quality Assurance - Dr. Nobuo Takeda- Emerald Ballroom, 3rd floor						
Rooms	Seattle 1	Seattle 2	Seattle 3	Belltown	Pioneer	Capitol Hill	First Hill
Parallel Sessions 5	5A	5B	5C	5D	5E	5F	5G
Track	I2: Impact Dynamic Response 5	P1: Processing & Manufacturing 5	N2: NASA ACC Predictive Capabilities for Impact, PDA and AFP 1	M1: Micromechanics 1	M2: Model-based Design for Manufacturing 2	N4: Non-Traditional Laminate Applications in AFP Rate Optimization 1	N1: Nanostructured Composites 1
9:00 AM	Paper# 352	Paper# 212	Paper# 47	Paper# 179	Paper# 159	Paper# 372	Paper# 354
	Multiscale Modeling of the Impact Response of Triaxially Braided Polymer Matrix Composites, Including Effects of Adiabatic Heating <i>Christopher Sorini*, Aditi Chattopadhyay and Robert Goldberg</i>	Delamination Resistance and Size Effect in Discontinuous Fiber Composites <i>Rohith Jayaram*, Seunghyun Ko, Jinkyu Yang and Marco Salviato</i>	Validation of a Mesoscale Fiber Kinking Model through Test and Analysis of Double Edge Notch Compression Specimens <i>Andrew Bergan* and Wade Jackson</i>	Discrete Damage Modeling for a Transverse Compression Experiment of a Polymer Matrix Composite <i>Mark Flores*, Nathan Sesar, Bob Wheeler, Andrew Sharits and David Mollenhauer</i>	Statistical Machine Learning and Sampling for Composite Fabrication and Performance <i>Loujaine Mehrez, Ziad Ghauch, Venkat Aitharaju, William Rodgers, Praveen Pasupuleti, Arnaud Dereims and Roger Ghanem*</i>	Fiber Angle Optimization and Tow Path Planning on 3D Curved Surfaces Using the Multiple Mesh Approach <i>Floris-Jan van Zanten*, Caleb Pupo, Darun Barazanchy and Michel van Tooren</i>	Interfacial Thermal Resistance Based Effective Thermal Properties of Nanocomposite systems at Various Strain States: A multiscale Computational Approach <i>Sushan Nakarmi, Vinu U. Unnikrishnan*</i>
9:25 AM	Paper# 286	Paper# 239	Paper# 116	Paper# 174	Paper# 295	Paper# 100	Paper# 245
	Modeling Impact and Mechanical Response of Carbon-Fiber Reinforced Polymer Composites <i>Alexander Carpenter*, Sidney Chocron, Rory Bigger, Nikki Scott and Kyle Warren</i>	Experimental Study of In-plane Shear Response of Interface Toughened Carbon Fiber Composites <i>Minh Nguyen*, Avinkrishnan Vijayachandran, Paul Davidson and Anthony Waas</i>	A Benchmark Example for Delamination Propagation Predictions Based on the Single Leg Bending Specimen under Quasi-static and Fatigue Loading <i>Ronald Krueger*, Lyle Deobald and Haozhong Gu</i>	Failure in Unidirectional Composites With Nonuniform Fiber Distribution Under Combined Transverse Tension and Axial Shear <i>Sarah Elnekhaily and Ramesh Talreja*</i>	Techno-Economic Model and Simulation for Wind Blade Manufacturing <i>Stephen Johnson*, Matteo Polcari and James Sherwood</i>	Manufacturing and evaluation of an optimized composite panel with a cut-out <i>Yuichiro Aoki*, Sunao Sugimoto, Yutaka Iwahori and Toshiya Nakamura</i>	Quantitative Microscopic Investigation of Mode I Fracture Surfaces of Nanosilica-Filled Epoxies <i>Aniruddh Vashisth, Todd Henry and Charles Bakis*</i>
9:50 AM	Paper# 22	Paper# 316	Paper# 150		Invited Paper	Paper# 371	
	Dynamic response and validation of a flexible matrix composite <i>Daniel Whisler*, Rafael Consarnau and Ezequiel Buenrostro</i>	Automated Construction and Insertion of Layer-by-Layer Finite Element Sub-Models of Damaged Composites <i>Stephen Holland*, Adarsh Krishnamurthy, Onur Bingol and Robert Grandin</i>	A Multiscale Two-Way Thermomechanically Coupled Micromechanics Analysis of the Impact Response of Thermo-Elastic-Viscoplastic Composites <i>Brett Bednarczyk, Steven Arnold*, Evan Pineda and Jacob Aboudi</i>		Composite Free-Size Design Optimization Method for Efficient and Manufacturable Anisotropic Designs <i>Jeff Wollschlager*</i>	Strength Prediction of Non-Conventional Laminates by Incorporating Intralaminar Shear Stresses <i>Darun Barazanchy* and Michael van Tooren</i>	
10:15 AM	Networking Break - 4th floor foyer						

Tuesday - continued

Rooms	Seattle 1	Seattle 2	Seattle 3	Belltown	Pioneer	Capitol Hill	First Hill
Parallel Sessions 6	6A	6B	6C	6D	6E	6F	6G
Track	I2: Impact Dynamic Response 6	P1: Processing & Manufacturing 6	T1: Test and Characterization Methods 5	M1: Micromechanics 2	S3: Special Session Honoring Dr. T Kevin O'Brien 1	N4: Non-Traditional Laminate Applications in AFP Rate Optimization 2	N1: Nanostructured Composites 2
	Paper# 39	Paper# 243	Paper# 213	Paper# 265	Keynote	Paper# 240	Paper# 78
10:30 AM	The impact resistance of thermoplastic fiber-metal laminates based on glass and basalt fibers <i>Fabrizio Sarasini*, Jacopo Tirillò, Luca Ferrante, Claudia Sergi, Pietro Russo, Giorgio Simeoli and Andrea Calzolari</i>	Micromechanical prediction of a composite failure under longitudinal compression <i>Zheng-Ming Huang* and Y. Zhou</i>	Modeling the microbond test of different sizes of droplets to quantify the failure properties of fiber-matrix interface <i>Taichi Yamaguchi*, Gaku Hashimoto and Hiroshi Okuda</i>	Multiscale Progressive Damage Analyses for Fiber Reinforced Composites Subjected to Biaxial Loading <i>Eyass Massarwa*, Ido Meshi, Jacob Aboudi and Rami Haj-Ali</i>	Study of Skin-Stringer Separation in Postbuckled Composite Aeronautical Structures <i>Chiara Bisagni, Luc Kootte, Carlos Dávila and Vipul Ranatunga</i>	Buckling Performance Optimization of Steered Composite Panels while Accounting for Manufacturing Constraints <i>Avin Krishnan Vijayachandran*, Minh Nguyen, Paul Davidson, Andrew Purvis, John Nancarrow and Anthony Waas</i>	Modeling of Polymer/Carbon Nanotube Nanocomposite to Estimate Structural Damping in a Rotorcraft Blade <i>Keerti Prakash*, Edward Smith and Charles Bakis</i>
	Paper# 310	Paper# 70	Paper# 143	Paper# 138	Keynote - continued	Paper# 187	Paper# 33
10:55 AM	Micromechanical Progressive Failure Analyses of Composite Materials Using Continuum Decohesive Finite Element <i>Shiyao Lin* and Anthony Waas</i>	Simulation on kink-band formation based on X-ray computed tomography modeling <i>Takuya Takahashi*, Masahito Ueda, Keisuke Iizuka and Akinori Yoshimura</i>	Carbon Unidirectional Composite Flexure Strength Dependence on Laminate Thickness <i>TJ Rose*, Ajay Sharma, Andrew Seamone, Francisco López Jiménez and Tom Murphey</i>	Coupled Thermo-mechanical Micromechanics Modeling of the Influence of Thermally Grown Oxide Layer in an Environmental Barrier Coating System <i>Trenton Ricks*, Steven Arnold and Bryan Harder</i>		Optimization of fiber arrangement around circular hole considering curve shaping by AFP <i>Kenta Mitsui*, Ryosuke Matsuzaki, Yoshiyasu Hirano, Akira Todoroki and Yoshihiro Suzuki</i>	Improving the Interlaminar Strength of Carbon Fiber Reinforced Polymer Composite Laminates using Cellulose Nanocrystals <i>Annuatha Kumar, Anjali Budhani, Minh Tran and Amir Asadi*</i>
	Paper# 180	Paper# 328	Paper# 85	Paper# 343	Paper# 137	Paper# 89	Paper# 305
11:20 AM	Modeling and Simulation of Carbon Composite Blast Behavior <i>Chian-Fong Yen*, Robert Kaste, Charles Chih-Tsai Chen and Nelson Carey</i>	A Machine Learning Technique to Predict Biaxial Failure Envelope of Unidirectional Composite Lamina <i>Faisal Bhuiyan*, Lars Kotthoff and Ray Fertig</i>	Numerical and experimental assessment of a modified Transverse Cut Tension (TCT) specimen for in-situ loaded X-ray computed tomography of Mode II dominated composite damage progression <i>Alex Harman*, David Mollenhauer, P. Frezza, Waruna Seneviratne, John Wang and Paul Chang</i>	Meso-Scale Strain Measurements in Fiber Reinforced Composites <i>Behrad Koohbor*, Christopher Montgomery, Scott White and Nancy Sottos</i>	VCCT with Progressive Nodal Release for Simulating Mixed-Mode Delamination: Formulation, Algorithmic Improvements and Implications <i>Gerald Mabson*, Nelson De Carvalho and Ronald Krueger</i>	Optimum design of lay-up configuration and ply drop-off placement for tapered composite laminate <i>Shinya Honda*, Kosuke Takahashi, Tetsuya Higuchi and Ryotaro Takeuchi</i>	Experimental Evaluation of Carbon Nanotubes for High-Stiffness Damping Augmentation in Carbon/Epoxy Composites <i>Jeffrey Kim*, Charles Bakis and Edward Smith</i>

Rooms	Seattle 1	Seattle 2	Seattle 3	Belltown	Pioneer	Capitol Hill	First Hill
11:45 AM	Paper# 194 Effect of transverse compression on the residual tensile strength of UHMWPE yarns <i>Karan Shah*, Suraj Ravindran, Subramani Sockalingam and Addis Kidane</i>	Paper# 35 Creating Flexible Structures out of MDF Plates <i>Renzhe Chen, Mingliang Jiang, Negar Kalantar, Michael Moreno and Anastasia Muliana*</i>	Paper# 103 Determination of Full Elastic Constants of Carbon Fiber in Carbon Fiber Reinforced Plastic Composites <i>Go Yamamoto*, Shogo Kurisak, Satoshi Atobe and Tomonaga Okabe</i>	Paper #36 Tensile and compressive failure behaviors of triaxially braided composite <i>Zhenqiang Zhao*, Chao Zhang, Yulong Li</i>	Paper# 72 Benchmarking Mixed Mode Matrix Failure in Progressive Damage and Failure Analysis Methods <i>Frank Leone*, Madhavadas Ramnath, Imran Hyder, Joseph Schaefer and Gerald Mabson</i>		
12:10 PM	Luncheon Speaker: Digital Manufacturing Composites: Past, Present, and Future - Dr. Anoush Poursartip - Emerald Ballroom, 3rd floor						
Parallel Sessions 7	7A	7B	7C	7D	7E	7F	7G
Track	O1: ONR Sponsored Session 1	E1: Effects of Defects 1	T1: Test and Characterization Methods 6	M1: Micromechanics 3	N2: NASA ACC Predictive Capabilities for Impact, PDA and AFP 2	S4: Stochastic Modeling and Analysis of Composites 1	N1: Nanostructured Composites 3
1:30 PM	Paper# 128 Multiscale Modeling of Crack Formation in Composite Laminates with Manufacturing Defects <i>Ramesh Talreja*</i>	Paper# 237 Effect of Automated Fiber Placement (AFP) Manufacturing Induced Imperfections on Composite Performance <i>Minh Nguyen*, Avinkrishnan Vijayachandran, Paul Davidson, Damon Call, Dongyeon Lee and Anthony Waas</i>	Paper# 81 Characterization of Polymer Matrix Composite Ply Thickness <i>Megan Imel*, Amanda K. Criner and Mark Flores</i>	Paper# 61 XIGA based intralaminar and translaminar fracture analysis of unidirectional CFRP laminate <i>Vikas Kaushik* and Anup Ghosh</i>	Paper# 193 Implementation of a Matrix Crack Spacing Parameter in a Continuum Damage Mechanics Finite Element Model <i>Imran Hyder*, Frank Leone, Brian Justusson, Joseph Schaefer, Andrew Bergan and Steven Wanthal</i>	Paper# 43 Survey of Sensitivity Analysis Methods During the Simulation of Residual Stresses in Simple Composite Structures <i>Stacy Nelson*, Alexander Hanson, Brian Werner, Kevin Nelson and Timothy Briggs</i>	Paper# 272 Variability of Mechanical and Dielectric Properties in Testing Electrospun PAN Nanofiber Mat <i>Blesson Isaac, Robert Taylor*, Kenneth Reifsnider, Rassel Raihan and Ashfaq Adnan</i>
1:55 PM	Paper# 257 Identification of the Dynamic Behavior of Composites using the Virtual Fields Method <i>Leslie Lamberson*, Xavier Cadot, Lody Fletcher and Fabrice Pierron</i>	Paper# 130 Effect of stacking sequence on compressive strength reduction of aircraft composite structures <i>Kosuke Oka*, Masahiro Kashiwagi, Kazuhiro Miura, Yukihiko Sato, Toshio Abe and Kiyoka Takagi</i>	Paper# 8 In situ X-CT Observation of Crack Initiation and Propagation in CFRP with X-ray Microscopy <i>Masao Kimura*, Yasuo Takeichi, Yasuhiro Niwa and Toshiki Watanabe</i>	Paper# 307 Progressive, Large-Scale Damage Modeling in Ultra Short Fiber Tailorable Feedstock Composite Materials <i>Garrett Nygren, Ryan Karkkainen*, Young Kim</i>	Paper# 124 Discrete Damage Modelling of Clamped Tapered Beam Specimen under Fatigue Loading <i>Hari K. Adluru*, Endel V. larve, and Kevin H. Hoos</i>	Paper# 280 Analysis of Open Hole Tensile Strength in a Prepreg Platelet Molded Composite with Stochastic Meso-Structure <i>Sergii Kravchenko*, Drew Sommer, Benjamin Denos, Anthony Favoloro, William Avery and Byron Pipes</i>	Paper# 152 Nanocomposites: Manufacturing, Microstructural Characterization and Mechanical Testing <i>Petar Dotchev, Eric Steinmetz, Seyed Sanei* and Jason Williams</i>

Tuesday - continued

Rooms	Seattle 1	Seattle 2	Seattle 3	Belltown	Pioneer	Capitol Hill	First Hill
2:20 PM	Paper# 325	Paper# 242	Paper# 27	Paper# 208	Paper# 105	Paper# 347	Paper# 186
	Intraply Fracture in Fiber-Reinforced Composites: a Peridynamic Analysis <i>Florin Bobaru*, Javad Mehrmashhadi, Ziguang Chen, and Sina Niazi</i>	Ply-Orientation Dependence of Notched Strength of Multidirectional CFRP Laminates and Prediction Using a Finite Fracture Mechanics Model <i>Masamichi Kawai* and Masato Suzuki</i>	Nano mechanical testing for in situ X-CT observation of CFRP <i>Toshiki Watanabe*, Yasuo Takeichi, Yasuhiro Niwa and Masao Kimura</i>	Thermal Failure of Composites under Heat Flow <i>Seiichi Nomura* and Behrooz Karimi</i>	Discrete Damage Modeling of Matrix Dominated Failure Including Random Spatial Variation of Strength <i>Kevin Hoos* and Endel larve</i>	Comparison of Fiber Microstructural Characteristics for Two Grades of Carbon Fiber Composites <i>Scott Stapleton*, Michael Uchic, Craig Przybyla, Helga Krieger, Lars Appel, Simon Zabler and Mathew Shey</i>	Fabrication of Cellulose Nanofiber/Glass Fiber-reinforced Composites and Their Bending Behavior Evaluation <i>Yingmei Xie*, Risa Honda, Kenichi Katabira, Hiroki Kurita and Fumio Narita</i>
2:45 PM	Paper# 90	Paper# 236	Paper# 189	Paper# 94	Paper# 241		
	A New Approach to Alleviating Mesh Size Independence in Multiscale Fatigue Life Prediction in Composites <i>Caglar Oskay* and Chengzhi Tian</i>	Multiscale Analysis of CFRP Laminates Including the Effect of Fiber Waviness <i>Akinori Yoshimura*</i>	Study of Skin-Stringer Separation in Postbuckled Composite Aeronautical Structures <i>Luc Kootte*, Chiara Bisagni, Carlos Dávila and Vipul Ranatunga</i>	Analytical Prediction of Tensile Strength Prediction for Two-Dimensional Triaxially Braided Composite <i>Haoyuan Dang*, Zhenqiang Zhao, Yulong Li and Chao Zhang</i>	Bmanc—A versatile software for failure analysis of a composite structure essentially upon original constituent properties <i>Zheng-Ming Huang*, J.J. Gu and Y.C. Wang</i>		
3:10 PM	Networking Break - 4th floor foyer						
Parallel Sessions 8	8A	8B	8C	8D	8E	8F	8G
Track	O1: ONR Sponsored Session 2	E1: Effects of Defects 2	N3: Next Generation Composites: Constituents and Microstructures 3	C3: Crashworthiness	N2: NASA ACC Predictive Capabilities for Impact, PDA and AFP 3	S4: Stochastic Modeling and Analysis of Composites 2	N1: Nanostructured Composites 4
3:25 PM	Paper# 115	Paper# 118	Keynote	Paper# 80	Paper# 166	Paper# 312	Paper# 125
	Atomistically-informed continuum modeling of damage mechanisms in radially-grown CNT nanocomposites <i>Karthik Rajan Venkatesan*, Nithya Subramanian and Aditi Chattopadhyay</i>	Global Prediction of Discrete Local Damage Interactions Using Broadband Dielectric Spectroscopy <i>Vamsee Vaclamudi*, Muthu Ram Prabhu Elenchezian, Rauhon Ahmed Shaik, Aishwarya Nandini, Rassel Raihan Md., Kenneth Reifsnider and Endel larve</i>	Next generation composites in aerostructures <i>Tia Benson-Tolle*</i>	Progressive Axial Crushing of Composite Laminates: A Comparison between LS-DYNA Continuum Damage Models <i>Johannes Reiner and Reza Vaziri*</i>	High Rate Testing of Composite Fastener Joints with and without Clamp-up <i>Suresh Keshavanarayana, Adrian Gomez, Akhil Bhasin, Aswini Kona*, Luis Castillo, Akhil Bhasin, Jenna Pang, Matt Molitor and Mostafa Rassaian</i>	Stochastic Process Modeling of a Prepreg Platelet Molded Composite Bracket <i>Drew E. Sommer*, Anthony J. Favaloro, Sergii G. Kravchenko, Benjamin R. Denos and R. Byron Pipes</i>	Dispersion and Properties of Graphene Oxide and Reduced Graphene Oxide in Nanocomposites <i>Melanie Schneider, Pouria Khanbolouki, Nekoda van de Werken, Elijah Wade, Reza Foudazi and Mehran Tehrani*</i>

Rooms	Seattle 1	Seattle 2	Seattle 3	Belltown	Pioneer	Capitol Hill	First Hill
3:50 PM	Paper# 136	Paper# 101	Keynote - <i>continued</i>	Paper# 56	Paper# 134	Paper# 190	Paper# 53
	Multi-functional Nano-porous Ceramics <i>Namiko Yamamoto*, Jingyao Dai and Jogender Singh</i>	Effect of intralaminar failure properties on compressive strength of CFRP structure after edge-on impact <i>Yukihiro Sato*, Masahiro Kashiwagi, Kazuhiro Miura, Yoshinori Nonaka, Toshio Abe and Kiyoka Takagi</i>	Next generation composites in aerostructures <i>Tia Benson-Tolle*</i>	Numerical modelling of impact damage in fibre-reinforced plastic composites with smoothed particle hydrodynamics <i>Tomonaga Okabe*, Shohei Natsui and Sota Onodera</i>	A Nonlocal Progressive Damage Model for Composite Materials <i>Karan Kodagali* and Subramani Sockalingam</i>	Experimental and Numerical Characterization of the Intra-Laminar Fracturing Behavior in Discontinuous Fiber Composite Structures <i>Seunghyun Ko*, Kenrick Chan, Reed Hawkins, Rohith Jayaram, Christopher Lynch, Reda El Mamoune, Minh Nguyen, Nicolay Pekhotin, Natania Stokes, Daniel N. Wu, Mark Tuttle, Jinkyu Yang and Marco Salviato</i>	Cycloaliphatic epoxy –silica nanocomposite provided from perhydropolysilazane <i>Reiko Saito*, Tetsuo Sakaguchi and Akio Takasugi</i>
4:15 PM	Paper# 107	Paper# 289	Paper# 167	Paper# 64	Paper# 211	Paper# 158	Paper# 172
	Material State Monitoring using Embedded Sensors for Validating Models for Detecting Process-Induced Damages in Polymer Composites <i>Waruna Seneviratne*, John Tomblin, Shakya Liyanage and Hemal Shah</i>	Effects of Localized Manufacturing-Induced Defects in Wind Turbine Blades <i>Juan Su*, Scott Stapleton, Stephen Johnson, Stephen Nolet, Nicholas Althoff and James Sherwood</i>	Ply Curving Termination for Suppressing Delamination in Composite Ply Drop-Off <i>Shu Minakuchi*</i>	Mechanisms of Energy Absorption in Hybrid Material Systems consisting of Sheet Metal and Advanced Composites under Bending Load <i>Thomas Soot*, Michael Dlugosch, Jens Fritsch and Dirk Lukaszewicz</i>	Non-Local Damage Modeling for Composite Laminates: Application to Isogeometric Analysis for Impact Simulations <i>Marco Simone Pigazzini, David Kamensky*, Dennis van Iersel, Joris Remmers and Yuri Bazilevs</i>	Fabrication to Performance: A Comprehensive Multiscale Stochastic Predictive Model for Composites <i>Roger Ghanem*, Ziad Ghauch, Venkat Aitharaju, William Rodgers, Praveen Pasupuleti, and Arnaud Dereims</i>	Manufacturing Process of CNT/BMI Composites and CF/CNT Hybrid Composites with Continuously-spun CNT Prepregs Synthesized by FCCVCD <i>Liyu Dong*, Branden Leonhardt, Meagan Raley, Songlin Zhang, Ayou Hao, Jin Gyu Park and Richard Liang</i>
4:40 PM	Paper# 153		Paper# 168	Paper# 29	Paper# 175	Paper# 75	
	Effect of Geometrical Imperfections on Structural Integrity of Laminated Composite Structures: Experimental Approach and Characterization <i>Mark Gurvich*, Patrick Clavette, SeungBum Kim, George Zafiris, Nam Phan and Anisur Rahman</i>		Microscale Simulation of Composites with Various Microstructures by Using eXtended Finite Element Method (XFEM) <i>Ryo Higuchi*, Tomohiro Yokozeki, Tomonaga Okabe, Toshio Nagashima and Takahira Aoki</i>	Crush Response of Prepreg Platelet Molding Compound Tubes <i>Rebecca Cutting*, Varna Sharma and Johnathan Goodsell</i>	Experimental investigation into the failure of CFRP T-joints under ice impact and quasi-static loadings <i>Huawen Zhang*, Huifang Liu, Zhenqiang Zhao, Yulong Li, Chao Zhang</i>	Uncertainty Quantification of Simulated Residual Stresses in Multi-Material Composite Structures <i>Alexander Hanson*, Stacy Nelson, Brian Werner and Timothy Briggs</i>	
5:05 - 6:00 PM	No-Host Social - 3rd floor foyer						
5:15 - 6:00 PM				ASC Technical Division Meeting Analysis & Testing Division	ASC Technical Division Meeting Durability & Damage Tolerance Division	ASC Technical Division Meeting Emerging Composites Technologies Division	ASC Technical Division Meeting Design & Manufacturing Division
6:00 - 8:00 PM	Awards Banquet Speaker: Steve Chisholm, Vice President and Senior Chief of Structures Engineering, Boeing Commercial Airplanes (BCA) - Emerald Ballroom, 3rd floor						

Wednesday September 26, 2018

7:15 AM									Continental Breakfast - Emerald Ballroom, 3rd floor								
7:45 AM									Wayne W. Stinchcomb Memorial Lecture: Crashworthiness: The Next Frontier in Composite Mechanics - Dr. Daniel O. Adams - Emerald Ballroom, 3rd floor								
Rooms	Seattle 1	Seattle 2	Seattle 3	Belltown	Pioneer	Capitol Hill	First Hill	Blue Mouse Boardroom									
Parallel Sessions 9	9A	9B	9C	9D	9E	9F	9G										
Track	O1: ONR Sponsored Session 3	E1: Effects of Defects 3	A1: Adhesive Joints 1	S3: Special Session Honoring Dr. T Kevin O'Brien 2	N2: NASA ACC Predictive Capabilities for Impact, PDA and AFP 4	S4: Stochastic Modeling and Analysis of Composites 3	T2: Textile Composites 1	ASTM Committee D30									
8:45 AM	Paper# 87	Paper# 251	Paper# 42	Paper# 91	Paper# 191	Paper# 377	Paper# 48	8:50–10:00 AM ASTM Committee D30.04 Lamina and Laminate Test Methods									
	Multiscale Modeling of Bonded T-Joints using Atomistically Informed Method of Cells <i>Ashwin Rai* and Aditi Chattopadhyay</i>	Matrix Crack Formation and Growth in the Presence of Nonuniform Fiber Distribution and Matrix Voids <i>Aswathi Sudhir* and Ramesh Talreja</i>	State Variable Methods of Assessment, Prognosis, and Control of Composite and Bonded Structures <i>Kenneth Reifsnider*, MD Rassel Raihan, Vamsee Vadlamudi and Muthu Ram Prabhu Elenchezian</i>	Closed-Form Mixed-Mode Strain Energy Release Rate Expressions for Unidirectional Laminate Configurations <i>Patrick Enjuto* and Gerald Mabson</i>	Quantification of Error Associated with Using Misaligned Meshes in Continuum Damage Mechanics Material Models for Matrix Crack Growth Predictions in Composites <i>Brian Justusson*, Imran Hyder, Stewart Boyd and Frank Leone</i>	The Influence of Variability and Defects on the Performance of Discontinuous Composites <i>James Finley*, Joël Henry, Soraja Pimenta and Milo S.P. Shaffer</i>	Conforming Element Mesh for Realistic Textile Composite Micro-Geometry <i>Agniprobho Mazumder*, Youqi Wang and Chian Fong Yen</i>										
9:10 AM	Paper# 263	Paper# 164	Paper# 147	Paper# 126	Paper# 21	Paper# 155	Paper# 270										
	A stabilized finite element formulation remedying traction oscillations in cohesive interface elements <i>Gourab Ghosh, Chandrasekhar Annavarapu and Ravindra Duddu*</i>	Progressive Damage and Failure Prediction of Interlaminar Tensile Specimen with Initial Fabrication Induced Defects <i>Xiaodong Cui, Anand Karuppiah, Dinh Chi Pham, Jim Lua*, Caleb Saathoff and Waruna Seneviratne</i>	Enhancing Damage Tolerance of Composite T-joint Using Fiber-Reinforcement-Based Crack Arrester <i>Shinsaku Hisada*, Shu Minakuchi and Nobuo Takeda</i>	The Importance of Energy Release Rates in Failure of Composites <i>Michael Wisnom*</i>	An Engineering Approach to Analyze Damage Initiation Modes in Tapered Composite Structures <i>Prabhakar Rao*, Mark Gurvich, Upul Palliyaguru and Waruna Seneviratne</i>	Stochastic Finite Element Analysis of Composites <i>Courtney Cole*, Randall Doles and Seyed Hamid Reza Sanei</i>	Compressive strength prediction of 3D Woven textile composites: Single RVE multiscale analysis and imperfection sensitivity study <i>Deepak K. Patel* and Anthony M. Waas</i>										

Rooms	Seattle 1	Seattle 2	Seattle 3	Belltown	Pioneer	Capitol Hill	First Hill	Blue Mouse Boardroom
9:35 AM	Paper# 225	Paper# 337	Paper# 250	Paper# 381		Paper# 346	Paper# 284	8:50–10:00 AM ASTM Committee D30.04 Lamina and Laminate Test Methods
	A Comparative Study on Pin Bending Effect Under Bearing Static and Fatigue Failure <i>Hyonny Kim and Mimi Ngo*</i>	Effect of defects on the mechanical properties of virtually cured composite structures <i>Jared Mendez, Eric J. Carey* and Marianna Maiaru</i>	Experimental and Computational Investigations of Process-Induced Stress Effects on the Interlaminar Fracture Toughness of Hybrid Composites <i>Brian Werner* and Stacy Nelson</i>	Progress in Failure”: Toward Reliable Failure Predictions in Composites <i>Erian Armanios, Guillaume Seon, Yuri Nikishkov, and Andrew Makeev*</i>		Meso-Scale Computational Simulation of Mechanical Response of Carbon Nanotube Yarns <i>Akbar Pirmoz*, Jude C. Anike and Jandro L. Abot</i>	Applicability of Two-Step Homogenization in High-Crimp Woven Composites <i>Higor Silva and Borys Drach*</i>	
10:00 AM	Networking Break - 4th floor foyer							
Parallel Sessions 10	10A	10B	10C	10D	10E	10F	10G	ASTM Committee D30
Track	O1: ONR Sponsored Session 4	S1: Sandwich Composites 1	A1: Adhesive Joints 2	A3: Automotive Composites 1	M4: Multifunctional Composites 1	S4: Stochastic Modeling and Analysis of Composites 4	T2: Textile Composites 2	
10:10 AM	Paper# 183	Paper# 324	Keynote	Paper# 218	Paper# 308	Paper# 73	Paper# 69	10:15-11:30 AM ASTM Committee D30.06 Interlaminar Properties
	Optimization of Carbon Fiber Surfaces for Reinforcement in Advanced Polymer Composites <i>Luke Henderson*, Russell Varley, Filip Stojcevski, James Randall, Daniel Eyckens, Baris Demir and Tiffany Walsh</i>	Low-Velocity Impact Damage of Woven Carbon Sandwich <i>Alejandra Castellanos* and Pavana Prabhakar</i>	Adhesively bonded joints: an industry perspective <i>Lyle Deobald</i>	Application of Laminated Composite Grids as a Reinforcing Element for Automotive Components <i>Amir Ehsani* and Hamid Dalir</i>	Micro-mechanics based modeling of Joule Heating Induced Damage Propagation in Carbon Composite Laminates <i>Hong Yu*, Dirk Heider and Suresh Advani</i>	Multi-objective optimization for coupled mechanics-dynamics analyses of composite structures <i>Alyssa Skulborstad* and Stacy Nelson</i>	Interesting properties of 3D warp Interlock fabrics as fibrous reinforcement for composite material <i>Axel Kececi, Francois Boussu* and Damien Soulat</i>	

Wednesday - continued

Rooms	Seattle 1	Seattle 2	Seattle 3	Belltown	Pioneer	Capitol Hill	First Hill	Blue Mouse Boardroom
10:35 AM	Paper# 198	Paper# 178	Keynote - continued	Paper# 278	Paper# 366	Paper# 323	Paper# 300	
	Multifunctional MENs Doped Adhesives for Bond Quality Evaluation <i>Ping Wang, Daniela Gil, Mauricio Pajon, Brian Hernandez, Juliette Dubon, Benjamin Boesl, Sakhrat Khizroev, Dwayne McDaniel* and Bassim Arkook</i>	Debonding of sandwich panels and solid laminates exhibiting fiber bridging <i>Daniel Höwer*, Kumar Jois, Brett A. Bednarczyk, Evan J. Pineda, Stefanie Reese and Jaan-Willem Simon</i>	Adhesively bonded joints: an industry perspective <i>Lyle Deobald</i>	Development of a One-Step Analysis for Preforming of Tri-axial Fiber Reinforced Prepregs <i>Danielle Zeng*, Xinhai Zhu, Houfu Fan, Zachary Pecchia, Matthew Rebandt and Jeff Dahl</i>	Anisotropic Soft Composite Based Hyperelastic Model <i>Arnab Chanda and Vinu Unnikrishnan*</i>	Reliability-Based Approach for Sandwich Composite Structural Applications <i>Sadra Emami*, Elias Toubia and Kellie Schneider</i>	Pseudo-ductile Composites with Micro-wrapped Hybrid Tow <i>Mohammad Islam, Vivek Koncherry, Prasad Potluri* and Michael Wisnom</i>	
11:00 AM	Paper# 197	Paper# 34	Paper# 15	Paper# 296	Paper# 65	Paper# 113	Paper# 267	10:15-11:30 AM ASTM Committee D30.06 Interlaminar Properties
	Hybrid Structured Phenylethynyl Silsesquioxane Resin Composites <i>Andre Lee*, David Vogelsang, Jonathan Dannatt and Robert Maleczka</i>	Modeling Nonlinear and Time-Dependent Behaviors of Polymeric Sandwich Composites at Various Environmental Conditions <i>Bentolhoda Davoodi, Antonio Gomez, Brian Pinto, Anastasia Muliana* and Valeria La Saponara</i>	Residual Tensile Strength of Adhesively Bonded Double Lap Joints after Transverse Impact <i>Aakash Paul*, Xiaodong Xu, Michael R. Wisnom and Takayuki Shimizu</i>	Basalt Fiber based Sheet Molding Compound and Composites for Automotives <i>Dayakar Penumadu*, Stephen Young and Hendrik Mainka</i>	On The Use of Multifunctional Z-Pins For Sensing Internal Damage in Composite Laminates Based on Electrical Resistance Measurements <i>Robert Hart*</i>	Micromechanical Finite Element Modeling of Micro Punch Shear Experiments on Unidirectional Composites <i>Bazle (Gama) Haque*, Molla Ali, Raja Ganesh, Sandeep Tamrakar, Daniel O'Brien, Chian Yen and John Gillespie Jr.</i>	Measurement of intrinsic residual stresses in 3D woven composites using measurement of the displacement fields from hole drilling by electronic speckle pattern interferometry and digital image correlation <i>Todd Gross*, Hilary Buntrock, Igor Tsukrov, Borys Drach, Kostiantyn Vasylevskyi and Nicholas Chagnon</i>	

Rooms	Seattle 1	Seattle 2	Seattle 3	Belltown	Pioneer	Capitol Hill	First Hill	Blue Mouse Boardroom	Emerald Ballroom 3
11:25 AM	Paper# 206 Full-Field Strain Patterns of Sandwich Beams of Different Length under Three-Point Bending <i>Fu-pen Chiang*, Lingtao Mao, Rui Guo and Austin Giordano</i>	Paper# 117 In-Plane Thermal Characterization of Fiberglass/Phenolic Honeycomb Core through an Experimental-Numerical Approach <i>Hooman Shahverdi*, Suresh Keshavanarayana, Aakash Kothare, Ping Teoh, Charles Yang and Allison Horner</i>	Paper# 203 Experimental Approach to Investigate Facesheet Delamination of Honeycomb Sandwich Panels under Ground-Air-Ground (GAG) Pressurization <i>Hrishikesh Pathak* and Mark E. Tuttle</i>		Paper# 127 Computational Study of Major Loop Hysteresis in Active Fiber Composites <i>Amir Sohrabi* and Anastasia Muliana</i>		Paper# 184 Investigation of Mode I Crack Growth of VARTM Carbon Composites using Optical Fibers <i>Daniel Drake*, Rani Sullivan, Kevin Brown and Stephen Clay</i>		
11:50 AM	Luncheon Speaker: Design, manufacture and testing of an in-situ consolidated, out-of- autoclave, blended, integrated-stiffener, variable stiffness, thermoplastic composite wingbox <i>Dr. Paul Weaver</i> Emerald Ballroom, 3rd floor								
Parallel Sessions 11	11A	11B	11C	11D	11E	11F	11G		
Track	O1: ONR Sponsored Session 5	S1: Sandwich Composites 2	E2: Environmental Effects	A3: Automotive Composites 2	M4: Multifunctional Composites 2	S4: Stochastic Modeling and Analysis of Composites 5	S5: Structural Health Monitoring of Composite Structures 1	ASTM Committee D30	Posters + 10 minute Presentations
1:15 PM	Paper# 68 1D-Patterned Nanocomposites Structured Using Oscillating Magnetic Fields <i>Namiko Yamamoto*, Mychal Spencer, Shreya Trivedi and Melissa Rudolph</i>	Paper# 106 Effects of Density and Cell Rise Ratio on 3D Failure Strengths of Rigid PVC Foam in different Loading Modes and Loading Directions <i>Akira Miyase*, King-Him Lo and Su-Su Wang</i>	Paper# 173 Finite Element Analysis of Moisture Diffusion into Sandwich Composite using Thermal-Mass Diffusion Analogy <i>Balakumaran Gopalarethinam* and Mark E. Tuttle</i>	Paper# 283 Improvements in the structural analysis of a composite material T-joint structure <i>Carlo Boursier Niutta*, Ermias Gebrekidan Koricho and Giovanni Belingardi</i>	Paper# 221 Effectively reduced damages with increased through-thickness electrical conductivity of CFRPs against artificial lightning strike <i>Vipin Kumar*, Tomohiro Yokozeki, Santwana Pati and Takao Okada</i>	Paper# 120 A Stochastic Structural Finite Element Model for Trabecular Bone and other Structural Foams <i>Saif Alrafeek*, James Jastifer and Peter Gustafson</i>	Paper# 232 Process and Health Monitoring of FRP by Rayleigh-Scattering Based Distribution Optical Fiber Sensors <i>Tatsuro Kosaka*, Yuki Handa and Kazuhiro Kusukawa</i>	1:00-1:30 PM ASTM Committee D30.03 Constituent/Precursor Properties	

Wednesday - continued

Rooms	Seattle 1	Seattle 2	Seattle 3	Belltown	Pioneer	Capitol Hill	First Hill	Blue Mouse Boardroom	Emerald Ballroom 3
1:40 PM	Paper# 199	Paper# 142	Paper# 202	Paper# 299	Paper# 235	Paper# 162	Paper# 32	1:00-1:30 PM ASTM Committee D30.03 Constituent/ Precursor Properties	Poster Papers #24 & #28
	A Cohesive Zone Modeling Study on the Fracturing Behavior of Thermoset Polymer Nanocomposites <i>Yao Qiao* and Marco Salviato</i>	A methodology for the analysis of the initiation of inter-fiber failure and local delamination in wind turbine blade shell sandwich structures <i>Linqi Zhuang*, Luis Maily, Lars Hedegaard and Yongxin Huang</i>	Coupled Diffusion/Large-Deformation Behavior of Epoxy Matrix Resin in Corrosive Environments <i>Jonathon Tanks*, Yoshihiko Arao and Masatoshi Kubouchi</i>	Crashworthiness analysis of short fiber reinforced composite bumper beam using multiscale modeling and FE Simulation <i>Ermias Koricho*, Giovanni Belingardi and Brunetto Martorana</i>	In-situ Damage Precursor Detection in Fiber Reinforced Composites using Mechanochemical Materials <i>Bonsung Koo*, Jack Miller, Ryan Gunckel, Aditi Chattopadhyay and Lenore Dai</i>	Defects Characterization, Damage Mapping, and Property Evaluation of Composites <i>Jim Lua*, Alireza Sadeghirad, Xiaodong Cui, Anand Karuppiyah, Caleb Saathoff and Waruna Seneviratne</i>	Repeatability of Non-autonomous Self-Healing with Thermoplastic Healing Agent in Fiber Reinforced Thermoset Composite <i>Bodiuzzaman Jony, Mishal Thapa, Sameer Mulani* and Samit Roy</i>		#24-Fabrication of Lightweight Cu/Untwisted MWCNT Yarn Composite with High Current Capacity Value #28-Failure Prediction Using Viscoelastic/plastic Constitutive Equation Considering Entropy Damage for Polyimide
2:05 PM		Paper# 14	Paper# 231		Paper# 252	Paper# 182	Paper# 238	1:30-3:00 PM ASTM Committee D30.09 Sandwich Construction	Poster Papers #38 & #88
		Efficient manufacturing method of CFRP corrugation by using electro-activated deposition resin molding <i>Kazuaki Katagiri*, Shinya Honda, Shimpei Yamaguchi, Takuya Ehiro, Sonomi Kawakita, Hirosuke Sonomura, Tomoatsu Ozaki, Yayoi Yoshioka, Mamoru Takemura, Sayaka Minami and Katsuhiko Sasaki</i>	Erosion of Uni-Directional Carbon-Fiber Reinforced Polymer Composite - A Micromechanical Approach <i>Deliwala Ajaz Ahmed* and Yerramalli Chandra Sekher</i>	Additive Processing of Sacrificial Polymers to Enable Pressure Sensing in Structural Composites <i>Gyaneshwar Tandon*, Andrew Abbott, Thao Gibson and Jeffery Baur</i>	A Visco-hyperelastic Constitutive Model for Fiber-Reinforced Rubber Composites <i>Rui Li* and Dianyuan Zhang</i>	3D Printed Continuous Fibre Composites: Exploiting Design Flexibility to Achieve Application Specific Properties <i>Mathew Joosten*, Matt Alizzi, Corben Wiles and Russell Varley</i>	#38-Evaluation of Giga-cycle Fatigue Characteristics of CFRP Cross-ply Laminates Using Ultrasonic Fatigue Testing #88-Multi-Scale Evaluation for Effect of Reinforcements on Viscoelasticity of Shape-Memory Polymer Composites		

Rooms	Seattle 1	Seattle 2	Seattle 3	Belltown	Pioneer	Capitol Hill	First Hill	Blue Mouse Boardroom	Emerald Ballroom 3
2:30 PM							Paper# 7	1:30-3:00 PM ASTM Committee D30.09 Sandwich Construction	Poster Papers #93 & #108
							Temporal enhanced Ultrasound as a novel NDT technique for characterization of defects in composites <i>Navid Zobeiry*, Sharareh Bayat, Emran Anas, Parvin Mousavi, Purang Abolmaesumi and Anoush Poursartip</i>		#93-Thermoplastic Composites for Wind Turbine Blade Manufacturing #108-Effective Diameter of Added Glass Fiber into Matrix of Carbon Fiber Reinforced Thermo-Plastics for Improving Mechanical Properties
2:55 AM	Networking Break - 4th floor foyer								
Parallel Sessions 12	12A	12B	12C	12D	12E	12F	12G	ASTM Committee D30	Posters + 10 minute Presentations
Track	C2: Composites in Extreme Environments	B3: Buckling and Post-Buckling of Composite Structure	M1: Micromechanics 4	A3: Automotive Composites 3	M4: Multifunctional Composites 3	B1: Bio-based Composites	S5: Structural Health Monitoring of Composite Structures 2		
3:10 PM	Paper# 37	Paper# 229	Paper# 52	Paper# 247	Paper# 322	Paper# 16	Paper# 144	3:15-4:15 PM ASTM Committee D30.10 Composites for Civil Structures	Poster Papers #154 & #177
	Long-Term Durability of Unidirectional CFRP Subjected to Tensile Loading <i>Jun Koyanagi*, Saori Murata, Yasuyuki Kondo, Fumihito Matsuda and Hironobu Yamashita</i>	Optimal design of composite shells with multiple cutouts based on POD and machine learning methods <i>Kuo Tian*, Shiyao Lin, Jiaxin Zhang, Anthony M. Waas</i>	Failure Mode Transition in Transverse Tensile of UD-CFRP Under Various Temperatures and Strain rates <i>Mio Sato*, Sakie Shirai, Jun Koyanagi and Yuichi Ishida</i>	Designing Composite Leaf Spring with a Validated Finite Element Method <i>Abdullah Erdi Onut*, Semih Cakil, Yunus Emre Ozcelik, Mehmet Akif Unal and Sedef Cift Karagul</i>	Damage and Delamination Modeling of Multifunctional Composite Structural Batteries <i>Daniel Perez* and Ryan Karkkainen</i>	Impact damage behavior of basalt fibers composite laminates: comparison between vinyl ester and nylon 6 based systems <i>Pietro Russo*, Ilaria Papa and Valentina Lopresto</i>	Damage Detection of Textile Composite Structures Using the Piezoelectric Impedance Method <i>Sazid Ahmed, Pei Cao, Dianyun Zhang* and Jiong Tang</i>		#154-Development study of Thin Aligned Carbon Nanotube Sheet Reinforced Poly(vinyl alcohol) Composites #177-Estimation of Physical Properties of Composite Materials by Data Assimilation and Multi-Objective Optimization of Heating Method

Wednesday - continued

Rooms	Seattle 1	Seattle 2	Seattle 3	Belltown	Pioneer	Capitol Hill	First Hill	Blue Mouse Boardroom	Emerald Ballroom 3
3:35 PM	Paper# 149	Paper# 185	Paper# 368	Paper# 349	Paper# 17	Paper# 140	Paper# 233	3:15-4:15 PM ASTM Committee D30.10 Composites for Civil Structures	Poster Papers #248 & #276
	Temperature-dependent effective electrical conductivity of carbon nanotube-epoxy nanocomposites: A semi-analytical model <i>Antonio Avila* and Olesya Zhupanska</i>	An Examination On The Applicability Of Compressive Buckling Allowable Design For Composite Panels And Analysis For Strength Calculations <i>Minoru Kobayashi*</i>	Micromechanics Model for Wavy CNT Nanocomposites with Weakened Interface <i>Feiyun Zhu and Gunjin Yun*</i>	Pull-out Strength of Fiberglass/Epoxy Composite Rebar Manufactured Using a Three-Dimensional Braiding Process <i>David Jensen* and Tari Machanzi</i>	Nonlinear Aeroelastic Analysis of Composite Morphing Wing with Corrugated Structures <i>Natsuki Tsushima*, Tomohiro Yokozeki, Weihua Su and Hitoshi Arizono</i>	Progressive Damage Analysis of a Bioresorbable Composite Subject to Three-Point Bending <i>Haotian Sun*, Bryant Heimbach, Mei Wei and Dianyun Zhang</i>	Influence of Local Bending of Fresnel-Based Optical Fiber Sensors on Measuring Degree of Cure of FRP <i>Genko Fujioka*, Tatsuro Kosaka and Kazuhiro Kusakawa</i>		#248-Experimental and Analytical Studies on the Solvent Volatilization Behavior of Carbon Fiber/Phenylethynyl Terminated Polyimide Prepreg during Molding #276-Structural Adhesion of Thermoplastic Composites for Wind Turbine Blades
4:00 PM	Paper# 30	Paper# 205	Paper# 51	Paper# 317	Paper# 273	Paper# 111	Paper# 139		3:15-4:15 PM ASTM Committee D30.10 Composites for Civil Structures
	A coupled thermo-chemo-mechanical model for high temperature oxidations in polymers and polymer composites <i>Trisha Sain* and Shabnam Konica</i>	An Investigation of Inner Flange Buckling in Furlable Composite Booms <i>Kevin Cox* and Kamron Medina</i>	Rapid Generation of Representative Volume Elements with Non-uniformly Dispersed Reinforcements for High Volume Fraction Composites <i>John Montesano*, Geng Li, Farzad Sharifpour and Aram Bahmani</i>	Buckling Stability of Additively Manufactured Isogrid <i>Sirija Ananth, Thomas Whitney* and Elias Toubia</i>	Alignment of Nickel Coated Carbon Fibers by Magnetic Field during Cure of Polymer Composites <i>Maya Pishvar*, Mehrad Amirkhosravi and M. Cengiz Altan</i>	Enhancing the Interface in Glass Fiber/Epoxy Composites with Nanocellulose <i>Ejaz Haque*, Joyanta Goswami, Robert Moon and Kyriaki Kalaitzidou</i>	Analysis of damaged laminated composite plate under Dynamic and Aeroelastic Environment <i>Prasant Kumar Swain*, Dipak Kumar Maiti and Bhrigu Nath Singh</i>	#298- Environmental Fatigue Properties of Graphene Nanocomposites #344-Investigation of Platelet Size Effect on Fracturing Behavior of Discontinuous Fiber Composite	
4:25 PM	Paper# 141	Paper# 216	Paper# 195		Paper# 345	Paper# 222			
	Elevated-Temperature Thermal and Mechanical Behavior of Carbon Fiber/Graphite/PTFE/PEEK Composite <i>Shuren Qu* and Su-Su Wang</i>	Finite Element Based Buckling Cross-Sectional Optimization for Composite Arrows <i>Anirudh Srinivas* and D.Stefan Dancila</i>	Damping Properties of Polymer Lattice Materials <i>Lisa Dangora*</i>		Development of robust electrically Insulated carbon nanotube yarns for sensing in conductive composites <i>Jude Anike*, Binita Saha and Jandro Abot</i>	Advanced Manufacturing of Mycological Bio-Based Composites <i>Sonia Travaglini* and CKH Dharan</i>			