

Conference Program Schedule-at-a-Glance

September 12, 2010

4:30 p.m.-6:00 p.m. Opening Plenary Session
Liberty Ballroom AB, p. 13

Welcome

Patricia S. Steeg, Conference Co-Chairperson and President, Metastasis Research Society
Bruce R. Zetter, Conference Co-Chairperson and Past-Chairperson, Tumor Microenvironment Working Group of the AACR

Special Presentation

Healthcare Reform: Implications for Cancer Research

S. Ward Casscells, University of Texas Health Science Center, Houston, TX

Keynote Presentation

New Insights into Tumor Cell Drug Resistance

Joan S. Brugge, Harvard Medical School, Boston, MA

6:00 p.m.-8:30 p.m. Plenary Session 1

The Influence of the Niche

David C. Lyden, Chairperson, Liberty Ballroom AB, p. 14

8:30-10:00 pm Opening Reception
Liberty Ballroom Foyer

September 13, 2010

7:00 a.m.-7:45 a.m. Meet-the-Expert Sessions 1-2

Funding Paradigms in the Tumor Microenvironment

Dinah S. Singer, Presenter, Liberty Ballroom AB, p. 15

Hypoxic Tumor Microenvironment: Validation of Novel Metabolic Targets

Jacques Pouyssegur, Presenter, Liberty Ballroom D, p. 15

7:45 a.m.-10:15 a.m. Plenary Session 2

Translational Targets 1

George W. Sledge, Chairperson, Liberty Ballroom AB, p. 16

10:15 a.m.-10:45 a.m. Break
Liberty Ballroom Foyer

10:45 a.m.-12:15 p.m. Concurrent Sessions 1-2

TME: Stroma

Zena Werb, Chairperson, Liberty Ballroom D, p. 17

MRS: Genomics of Primary Tumors and Metastases

G. Steven Bova, Chairperson, Liberty Ballroom AB, p. 17

12:15 p.m.-1:15 p.m. Lunch Break (on your own)

1:15 p.m.-2:30 p.m. Controversy Session:

Antiangiogenesis: Hot or Not?

Lee M. Ellis and Robert S. Kerbel, Presenters, Liberty Ballroom AB, p. 18

2:30 p.m.-4:30 p.m. Plenary Session 3:

Novel Molecular Pathways

Joan Massagué, Chairperson, Liberty Ballroom AB, p. 19

4:30 p.m.-4:55 p.m. Break
Liberty Ballroom Foyer

4:55 p.m.-6:30 p.m. Concurrent Sessions 3-4

TME: Inflammation and Immunity

Alberto Mantovani, Chairperson, Liberty Ballroom D, p. 20

MRS: Metastatic Colonization

Carrie W. Rinker-Schaeffer, Chairperson, Liberty Ballroom AB, p. 20

6:30 p.m.-8:30 p.m. Poster Session A
Freedom & Independence Ballrooms, p. 21

Genomics of Primary Tumors and Metastases

Inflammation and Immunity

The Influence of the Niche

Metastasis and the Matrix

Novel Molecular Pathways

Site Specific Metastasis

Stem Cells

Stroma

Translational Targets

Conference Program Schedule-at-a-Glance

September 14, 2010

7:00 a.m.-8:00 a.m. Meet-the-Expert Sessions 3-4

Neuroendocrine Regulation of Metastasis:

Targeting the Tumor Microenvironment

Steve Cole, Presenter, Liberty Ballroom D, p. 31

Metastasis Assays *in vivo* and 'Metastasis Assays' *in vitro*: What Do They Mean?

Danny R. Welch, Presenter, Liberty Ballroom AB, p. 32

8:00a.m.-10:00 a.m. Plenary Session 4

Dormancy

Ann F. Chambers, Chairperson, Liberty Ballroom AB, p. 32

10:00 a.m.-10:30 a.m. Break

Liberty Ballroom Foyer

10:30 a.m.-12:00 p.m. Generation X Session

The Future of Tumor Progression

Yves A. DeClerck, Chairperson, Liberty Ballroom AB, p. 33

12:00 p.m.-1:30 p.m. Lunch Break (on your own)

12:00 p.m.-1:30 p.m. Metastasis Research Society Meeting

(open to members only)
Liberty Ballroom D

1:30 p.m.-3:30 p.m. Concurrent Sessions 5-6

Metastasis and the Matrix

Valerie M. Weaver, Chairperson, Liberty Ballroom D, p. 34

MRS: Site Specific Metastasis

Andrea M. Mastro, Chairperson, Liberty Ballroom AB, p. 34

3:30 p.m.-4:00 p.m. Break

Liberty Ballroom Foyer

4:00 p.m.-5:00 p.m. Paget-Ewing Award Lecture

microRNA-mediated Regulation of the Tumor Angiogenic Switch

David A. Cheresh, Presenter, Liberty Ballroom AB, p. 35

5:30 p.m.-7:30 p.m.

Poster Session B

Freedom & Independence Ballrooms, p. 36

Dormancy

Genomics of Primary Tumors and Metastases

Metastasis and the Matrix

Metastatic Colonization

Novel Molecular Pathways

Site Specific Metastasis

Stroma

Translational Targets

Other

7:30 p.m.-10:30 p.m. Conference Banquet

Liberty Ballroom CD

September 15, 2010

7:00 a.m.-7:45 a.m. Meet-the-Expert Sessions 5-6

Cancer Micrometastasis and Circulating Tumor Cells

Klaus Pantel, Presenter, Liberty Ballroom AB, p. 46

Natural Products Lead Discovery in the Molecular Targets Laboratory

James B. McMahon, Presenter, Liberty Ballroom D, p. 46

7:45 a.m.-10:00 a.m. Plenary Session 5

Stem Cells

Max S. Wicha, Chairperson, Liberty Ballroom AB, p. 47

10:00 a.m.-10:30 a.m. Break

Liberty Ballroom Foyer

10:30 a.m.- 12:00 p.m. Plenary Session 6

Translational Targets 2

Patricia S. Steeg, Chairperson, Liberty Ballroom AB, p. 48

12:00 p.m. Departure

4:30 p.m.

Opening Plenary Session

Liberty Ballroom AB

Welcome

Patricia S. Steeg, Conference Co-Chairperson and President, Metastasis Research Society
Bruce R. Zetter, Conference Co-Chairperson and Past-Chairperson, Tumor
Microenvironment Working Group of the AACR

Special Presentation

Healthcare Reform: Implications for Cancer Research

S. Ward Casscells, University of Texas Health Science Center, Houston, TX

Keynote Address

New Insights into Tumor Cell Drug Resistance

Joan S. Brugge, Harvard Medical School, Boston, MA

The Influence of the Niche

Liberty Ballroom AB

Chairperson: David C. Lyden, Cornell University Weill Medical College, New York, NY

- 6:00** ***ALK: An exploitable new target in non-small cell lung cancer**
Mace L. Rothenberg, Pfizer Inc., New York, NY
- 6:30** **The pre-metastatic niche: Adapting the foreign soil**
David C. Lyden, Cornell University Weill Medical College, New York, NY
- 7:00** **Seed and soil hypothesis revisited**
Rakesh K. Jain, Massachusetts General Hospital, Boston, MA
- 7:30** **Hypoxia-induced genes that promote metastasis: New targets for therapy**
Amato J. Giaccia, Stanford University School of Medicine, Stanford, CA
- 8:00** ****Slow cycling self renewing JARID1B-positive cells are essential for long-term maintenance of malignant melanoma**
Meenhard Herlyn, The Wistar Institute, Philadelphia, PA

Opening Reception

Liberty Ballroom Foyer

Sunday, September 12, 8:30 p.m.-10:00 p.m.

*An extended abstract for this presentation is available in the Invited Abstracts section of the *Proceedings*.

**An extended abstract for this presentation is available in the Proffered Abstracts section of the *Proceedings*.

7:00

Funding Paradigms in the Tumor Microenvironment

Liberty Ballroom AB

Dinah S. Singer, National Cancer Institute, Division of Cancer Biology, Rockville, MD

7:00

***Hypoxic Tumor Microenvironment: Validation of Novel Metabolic Targets**

Liberty Ballroom D

Jacques Pouyssegur, Institute of Signaling, Developmental Biology & Cancer Research,
Nice, France

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Translational Targets 1

Liberty Ballroom AB

Chairperson: George W. Sledge, Indiana University Cancer Center, Indianapolis, IN

- 7:45** ***Is the micrometastatic cell a clinical target?**
George W. Sledge, Indiana University Cancer Center, Indianapolis, IN
- 8:15** ***Targeting TGF-beta to suppress metastasis**
Lalage M. Wakefield, National Cancer Institute, Bethesda, MD
- 8:45** ***The role of tumor endothelin-1 in metastatic colonization of the lung**
Dan Theodorescu, University of Colorado Comprehensive Cancer Center, Aurora, CO
- 9:15** ***Bone metastasis of lung cancer and its molecular-targeted therapy in the organ microenvironment**
Saburo Sone, University of Tokushima Graduate School, Tokushima, Japan
- 9:45** ****14-3-3 ζ cooperates with ErbB2 to promote ductal carcinoma *in situ* progression to invasive breast cancer by inducing epithelial-mesenchymal transition**
Dihua Yu, UT M. D. Anderson Cancer Center, Houston, TX
- 10:00** ****Chemotherapy promotes lung metastasis formation in mouse models via a VEGFR-1-dependent mechanism**
Laura G.M. Daenen, University Medical Centre, Utrecht, The Netherlands

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Concurrent Session 1:

TME: Stroma

Liberty Ballroom D

Chairperson: Zena Werb, University of California,
San Francisco, CA

Concurrent Session 2:

**MRS: Genomics of Primary Tumors
and Metastases**

Liberty Ballroom AB

Chairperson: G. Steven Bova, Johns Hopkins University
School of Medicine, Boston, MA

**10:45 *Targeting stromal proteases as therapy
for cancer**

Samuel R. Denmeade, Johns Hopkins
Kimmel Comprehensive Cancer Center,
Baltimore, MD

**10:45 Exploring clonality in lethal metastatic
prostate cancer: Potential value in
reducing complexity**

G. Steven Bova, Johns Hopkins University
School of Medicine, Boston, MA

**11:15 *Adult stromal cells for the targeted
therapy of gastrointestinal cancers**

Pierre Cordelier, Institut Louis Bugnard,
Toulouse, France

**11:15 Comparing genomics of primary tumors
and metastases for targets identification
and biomarkers development in lung
cancer**

Ignacio I. Wistuba, UT M. D. Anderson
Cancer Center, Houston, TX

**11:45 *Role of the tumor microenvironment in
breast cancer progression and response
to therapy**

Zena Werb, University of California,
San Francisco, CA

**11:45 *Epigenetic and microenvironmental
regulation of metastatic dispersal in
childhood malignancy**

Stefan Burdach, Technische Universität
München, Munich, Germany

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Antiangiogenesis: Hot or Not?

Liberty Ballroom AB

1:15

***The biology behind the successes and failures of VEGF-targeted therapies**

Lee M. Ellis, UT M. D. Anderson Cancer Center, Houston, TX

1:55

***Preclinical modeling of adjuvant and metastatic antiangiogenic (and other drug) therapies**

Robert S. Kerbel, University of Toronto Sunnybrook Health Sciences Centre, Toronto, ON, Canada

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Novel Molecular Pathways

Liberty Ballroom AB

Chairperson: Joan Massagué, Memorial Sloan-Kettering Cancer Center, New York, NY

- 2:30** ***Correlative biomarkers for antiangiogenic therapy**
Jeffrey W. Clark, Massachusetts General Hospital Cancer Center, Boston, MA
- 3:00** ***Metastasis meets microenvironment: Survival signals from the soil**
Joan Massagué, Memorial Sloan-Kettering Cancer Center, New York, NY
- 3:30** ***Necdin regulation by Nm23-H1 and EBNA3C: Insights from a virus**
Erle S. Robertson, Abramson Cancer Center of University of Pennsylvania, Philadelphia, PA
- 4:00** ****A novel population of neuropilin-1-expressing mononuclear cells (NEMs) contributes to tumor vessel stabilization and normalization**
Alessandro Carrer, International Centre for Genetic Engineering and Biotechnology, Trieste, Italy
- 4:15** ****The KISS1 metastasis suppressor appears to reverse the 'Warburg Effect'TM by increasing mitochondrial number**
Kyle P. Feeley, University of Alabama, Birmingham, AL

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Concurrent Session 3:

TME: Inflammation and Immunity

Liberty Ballroom D

Chairperson: Alberto Mantovani, Istituto Clinico Humanitas, University of Milan, Milan, Italy

Concurrent Session 4:

MRS: Metastatic Colonization

Liberty Ballroom AB

Chairperson: Carrie W. Rinker-Schaeffer, University of Chicago, Chicago, IL

4:55 *Chemokines in tumor progression and metastasis

Alberto Mantovani, Istituto Clinico Humanitas, University of Milan, Milan, Italy

4:55 Using metastasis suppressors to dissect cancer cell-microenvironmental interactions during metastatic colonization

Carrie W. Rinker-Schaeffer, University of Chicago, Chicago, IL

5:20 *Inflammation and cancer: Reprogramming the immune microenvironment as an anticancer therapeutic strategy

Lisa M. Coussens, University of California, Helen Diller Family Comprehensive Cancer Center, San Francisco, CA

5:20 *Novel mediators of tumor-stroma crosstalk in breast cancer bone metastasis

Yibin Kang, Princeton University, Princeton, NJ

5:45 *Stem cells, inflammation, and tumor immunity: From bedside to the bench

Madhav V. Dhodapkar, Yale School of Medicine, New Haven, CT

5:45 **A mutant of the metastasis susceptibility gene Brd4 promotes EMT, stem cell-like conversion and metastatic progression in a mouse mammary tumor model

Jude Alsarraj, National Cancer Institute, Bethesda, MD

6:10 **Spatial and temporal regulation of CXCR3 chemokine production and CD8 T cell infiltration in the metastatic melanoma microenvironment

David W. Mullins, University of Virginia, Charlottesville, VA

6:00 Can we screen for anti-metastatic agents?

Bruce R. Zetter, Children's Hospital Boston and Harvard Medical School, Boston, MA

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**An extended abstract for this presentation is available in the Proffered Abstracts section of the *Proceedings*.

Genomics of Primary Tumors and Metastases

A1 Two germline variants of the TGF β R1 gene are associated with initiation, progression and clinical outcome of surface epithelial ovarian cancers. James P. Schaeper, James A. Deddens, Bruce M. Colligan, Jessica L. DeBrosse, Robert J. Shields, Denise M. Lucas, Jackson O. Pemberton, Larry E. Douglass, [Julia H. Carter](#).

A2 14-3-3 ζ cooperates with ErbB2 to promote ductal carcinoma *in situ* progression to invasive breast cancer by inducing epithelial-mesenchymal transition. [Dihua Yu](#).

This abstract is being presented as a short talk in Plenary Session 2. A full abstract is printed in the Proffered Abstracts section (PR2) of the Conference *Proceedings*.

A3 Upregulation of leptin during malignant progression of fibrosarcoma and other soft tissue sarcoma. [Sagarika Kanjilal](#).

A4 Intrinsic subtype and tumor differentiation status are robust predictors of metastasis site. [J. Chuck Harrell](#), [Aleix Prat](#), [Joel S. Parker](#), [Cheng Fan](#), [Charles M. Perou](#).

A5 A functional genomics screen for discovery of microRNAs that regulate breast cancer progression and metastasis. [Cameron N. Johnstone](#), [Erin Lucas](#), [Leonard Kusdra](#), [Andrei Goga](#), [Robin L. Anderson](#).

A6 The role of S100P expression in metastatic pancreatic ductal adenocarcinoma. [Kalnisha Naidoo](#), [Wasfi Al-rawashdeh](#), [Richard Jones](#), [Nilukshi Wijesuriya](#), [Hemant M. Kocher](#), [Ian R. Hart](#), [Tatjana Crnogorac-Jurcevic](#).

A7 The alpha receptor for platelet-derived growth factor confers bone-metastatic potential to prostate cancer cells and regulates the expression of a specific set of genes. [Qingxin Liu](#), [Mike R. Russell](#), [Alessandro Fatatis](#).

A8 Arid4b: A candidate breast cancer progression modifier gene. [Scott F. Winter](#), [Kent W. Hunter](#).

A9 Nkx2-1 constrains lung adenocarcinoma malignancy. [Monte M Winslow](#), [Caroline Kim-Kiselak](#), [Talya L. Dayton](#), [Roel G. Verhaak](#), [Eric L. Snyder](#), [David M. Feldser](#), [Matthew Meyerson](#), [Tyler Jacks](#).

A10 Dissecting mechanisms of metastasis using a mouse model of cancer. [Rebecca D. Dodd](#), [Jeff Mito](#), [Will Eward](#), [Brian Brigman](#), [Leslie Dodd](#), [Sayan Mukherjee](#), [David Krisch](#).

A11 Dissecting molecular mechanisms of metastasis in a primary mouse model of soft tissue sarcoma. [Jeffrey K. Mito](#), [Rebecca D. Dodd](#), [Brian E. Brigman](#), [Zhizhong Li](#), [William C. Eward](#), [Sayan Mukherjee](#), [David Kirsch](#).

A12 TM4SF5 accelerates G1/S phase progression via cytosolic p27Kip1 expression and RhoA activity. [Hyeonjung Kim](#), [Jung Weon Lee](#).

Inflammation and Immunity

A14 Organ-specific biodistribution and expansion of MDSCs in tumor bearing mice. [Ibrahim H. Younos](#), [Alicia Dafferner](#), [Holly Samson](#), [Traci Hoke](#), [Sherry Westphal](#), [Moses Donkor](#), [Fuminori Abe](#), [James E. Talmadge](#).

A15 sTNFR shedded by breast tumor cells influences macrophage cell migration. [Stephen Rego](#), [Muthulekha Swamydas](#), [Krista Ricci](#), [Didier Dréau](#).

A16 Spatial and temporal regulation of CXCR3 chemokine production and CD8 T cell infiltration in the metastatic melanoma microenvironment. [David W. Mullins](#), [Sarah J. Conine](#), [Eleanor Clancy-Thompson](#).

This abstract is being presented as a short talk in Concurrent Session 3. A full abstract is printed in the Proffered Abstracts section (PR6) of the Conference *Proceedings*.

A17 The indirect interaction between CCL5 and orphan chemokine receptor CCRL2 induced prostate cancer cell migration. Ya-Ju Hsiao, Hui-Wen Chang, Li-Chin Wu, Chia-Ling Hsieh, Leland W. K. Chung, [Shian-Ying Sung](#).

A18 Myeloid-derived suppressor cells direct fibroblast migration and mammary carcinoma cell invasion. [Aubie K. Shaw](#), Sergey Novitskiy, Harold L. Moses.

A19 Tumor-recruited neutrophils and their TIMP-free MMP-9 determine coordinately the levels of tumor angiogenesis and efficiency of malignant cell dissemination. [Elena I. Deryugina](#), Erin M. Bekes, Bernhard Schweighofer, Tatyana A. Kupriyanova, James P. Quigley.

A20 Macrophage infiltration and expression of cathepsin B in the tumor microenvironment of inflammatory breast cancer patients correlates with lymph node metastasis . [Mona Mostafa Mohamed](#), Mohamed El-Shinawi, Mohamed Akram Nouh, Dora Cavallo-Medved, Bonnie F. Sloane.

A21 Colon carcinoma cell interaction with liver sinusoidal endothelium inhibits organ-specific anti-tumor immunity via IL-1-induced mannose receptor. [Beatriz Arteta](#), Nerea Lasuen, Aritz Lopategi, Baldur Sveinbjornsson, Bard Smedsrod, Fernando Vidal-Vanaclocha.

A22 CCL2 recruits inflammatory monocytes to facilitate breast tumor metastasis. [Bin-Zhi Qian](#), Jiufeng Li, Hui Zhang, Linda A. Snyder, Jeffrey W. Pollard.

A23 Indoleamine 2,3-dioxygenase (IDO) supports metastatic outgrowth of the 4T1 breast cancer mouse model. [Courtney Smith](#), James DuHadaway, Alexander J. Muller, George C. Prendergast.

A24 The role of prostaglandin E2 receptor EP1 in breast cancer metastasis. [Jocelyn Reader](#), Xinrong Ma, Namita Kundu, Olga Goloubeva, Amy Fulton.

A25 A novel population of Neuropilin-1-expressing mononuclear cells (NEMs) contributes to tumor vessel stabilization and normalization. [Alessandro Carrer](#), Mauro Giacca, Serena Zacchigna, Silvia Moimas, Giulia Ruozi, Milena Sinigaglia, Miguel Mano, Lorena Zentilin, Enrico Giraudo, Federico Bussolino.

This abstract is being presented as a short talk in Plenary Session 3. A full abstract is printed in the Proffered Abstracts section (PR4) of the Conference *Proceedings*.

A26 Wogonin sensitizes cancer cells to tumor necrosis factor-induced apoptosis through catalase suppression-mediated hydrogen peroxide accumulation and consequent NF- κ B blockage. Ian Yang, Xuelian Zheng, Hong Sun, Yingjia Zhong, Qiong Wang, Yong Lin, Lin Zhang , [Xia Wang](#) .

A27 Inflammation linked to the deficiency of tissue inhibitor of metalloproteinase-2 accelerates tumorigenesis of Lewis-Lung carcinoma. [Liliana Guedez](#), Clifford J. Kwitny, William G. Stetler-Stevenson.

A28 Monocyte mobilization by metastatic tumors promotes metastasis. [Agnieszka Swierczak](#), Andrew D. Cook, Christina M. Restall, Robin L. Anderson, John A. Hamilton.

A29 BMP4 – a metastasis suppressor gene in breast cancer. [Yuan Cao](#), Bedrich Eckhardt, Robin L. Anderson.

A30 Tumor microenvironment of colorectal cancer: Toll like receptor 4 (TLR4) as a marker of progression. [Adriana Albini](#), Douglas McCain Noonan, Rosaria Cammarota, Valentina Bertolini, Giuseppina Pennesi, Eraldo Oreste Bucci, Cecilia Garlanda, Luigi Laghi, Massimo Costanzo Barberis, Fausto Sessa.

The Influence of the Niche

A31 Peripheral neural activation enhances distant metastasis from primary breast cancer. Erica K. Sloan, Saul J. Priceman, Matthew A. Pimentel, Jesusa M. Arevalo, Lily Wu, Anil K. Sood, Steve W. Cole.

A32 Gene expression signatures at acidic extracellular pH in metastatic melanoma cells. Yasumasa Kato, Shigeyuki Ozawa, Yojiro Maehata, Toyonobu Maeda, Eiro Kubota, Mamoru Tsukuda, Kaoru Miyazaki, Ryu-Ichiro Hata.

A33 Aminobisphosphonates regulate cell proliferation, viability and gene expression in human osteoblasts and affect osteoblast-tumor interactions. Tatjana Kaiser, Konstanze Geiger, Diethelm Wallwiener, Gerd Klein, Tanja Fehm.

A34 Epithelial-mesenchymal plasticity dictates proliferative control pathways in breast cancer. Honor J. Hugo, Yvette Drabsch, Thomas J. Gonda, Tony Blick, Robert G. Ramsay, Erik W. Thompson.

A35 Bone marrow stem cell niche damage by chemotherapy. Stephanie Rellick, Donald Primerano, Jeffery Vos, Nathanael Bailey, Laura F. Gibson, Heather O'Leary, Debra Piktel, Cheryl Walton, James Fortney, Stephen Akers, Karen Martin, James Denvir, Goran Boskovic.

A36 Type I collagen enrichment at the metastatic site: The 'soil' triggering the transition from tumor dormancy to metastatic growth. Dalit Barkan, Jack Gauldie, Jeffrey E. Green, Lara H. El Touny, Aleksandra M. Michalowski, Jane Ann Smith, Isabel Chu, Anne Sally Davis, Joshua D. Webster, Shelley Hoover, Mark R. Simpson.

A37 Changes in bone marrow microenvironment over time during breast cancer metastatic colonization of bone. Donna M. Sosnoski, Venkat Krishnan, Andrea M. Mastro.

A38 Low ascorbate levels are associated with high hypoxia-inducible factor-1 activity and a more aggressive tumor phenotype in endometrial cancer. Caroline Kuiper, Ilona G.M. Molenaar, Gabi U. Dachs, Margaret J. Currie, Peter H Sykes, Margreet C.M. Vissers.

A39 The prognostic significance of PDGF β R in pancreatic ductal adenocarcinoma and its association with cancer stem cells. Carina Strell, Janna Paulsson, Julia S Johansen, Rainer Heuchel, Nicolai A. Schultz, Lars Egevad, Matthias Löhner, Arne Östman.

A40 Osteoblasts change the expression of dysadherin and chemokine (C-C motif) ligand 2 in renal carcinoma cells and increase their motility. Yvonne Schueler, Wilhelm K. Aicher, Gerd Klein.

A41 Tumor entrained neutrophils inhibit seeding in the pre-metastatic niche. Zvi Granot, Robert Benezra.

Metastasis and the Matrix

A42 MT1-MMP in cancer invasion and metastasis: Migration toward treatment and prevention. Hoang-Lan Nguyen, Antony Dufour, Kevin Zarrabi, Stanley Zucker, Jian Cao.

A43 Autophagy promotes tumor cell migration/invasion in vitro and metastasis in vivo in a mouse model of metastatic breast cancer. Hong Chen, Stephanie Mui, Chris Collier, Kristin Tracy, Kay F. Macleod.

A44 Regulation of E-cadherin and cell-cell adhesion by the metastasis suppressor tetraspanin KAI1/CD82. Cindy K. Miranti, Electa Park.

A45 Inhibition of TGF β 1 with losartan but not 1D11, an anti-TGF β antibody, extends survival and curtails metastasis of pancreatic carcinoma in SPARC-null mice. Shanna A. Arnold, Lee B. Rivera, Juliet G. Carbon, Chi-Lun Chang, Amy D. Bradshaw, Rolf A. Brekken.

A46 An automated high-content assay for tumor cell migration through 3-dimensional matrices. Victoria Echeverria, Ivar Meyvantsson, Allyson Skoien, Casey Lamers, Steven Hayes.

A47 MicroRNAs regulating breast cancer stem cells and metastasis. Huiping Liu, Yohei Shimono, Jessica Bockhorn, Funmi Olopade, Geoffrey Greene, Michael F. Clarke.

A48 Melanoma-derived tenascin-C maintains a stem cell-like phenotype, increases pulmonary metastases and creates resistance to conventional therapies. Mizuho Fukunaga-Kalabis, Ademi Santiago-Walker, Alex Roesch, Meenhard Herlyn.

A49 Differential roles of SPARC in bladder carcinogenesis and metastasis. Neveen Said, Nidhi Chandra, Rolf Brekken, Henry F. Frierson, Dan Theodorescu.

A50 Activation of pro-uPA facilitates angiogenesis, escape from the primary tumor, and intravasation of prostate carcinoma cells. Erin M Bekes, Kenneth A. Boetkjaer, Peter A. Andreasen, Elena I Deryugina, James P. Quigley.

A51 SIAH-dependent proteolysis modulates focal adhesion, cell junction and cell motility in response to oncogenic K-RAS activation in human cancer cells. Yang Liao, Rebecca L. Schmidt, Zandra E. Walton, Amy H. Tang.

A52 Possible evidences of a protease-independent invasion mechanism in colon cancer liver metastases with "pushing" growth pattern. Martin Illemann, Nigel Bird, Ali Majeed, Keld Danø, Boye S. Nielsen, Ole D. Laerum.

A53 Effects of cyclic hypoxia on the expression of metastatic genes in cervical carcinoma. Naz Chaudary, Richard P. Hill.

A54 Androgen receptor-enhanced integrin $\alpha\beta 1$ regulation of prostate tumor survival and invasion on laminin. Laura E. Lamb, Jelani C. Zarif, Cindy K. Miranti.

A55 Activation of FAK-ERK signaling by MT-SP2 during invasion and epithelial-mesenchymal transition. Semi Kim, Hee Young Kang, Eun-Hee Nam, Xue-Feng Zhao, Chang Soo Hong, Jae Hyuk Lee, Young-Kyu Park.

A56 EMT-related transcription factors promote spatially patterned invasion of mammary epithelial tissues. KangAe Lee, Celeste M. Nelson.

A57 A novel, ligand independent activation of c-Met by $\alpha 5\beta 1$ -integrin regulates ovarian cancer invasion and metastasis. Anirban K. Mitra, Kenjiro Sawada, Payal Tiwari, Keeley Mui, Katja Gwin.

A58 Redox signaling regulates invadopodia formation in human cancer cells. Begoña Diaz, Gidon Shani, Ian Pass, Diana Anderson, Manuela Quintavalle, Christine Gould, Sara A. Courtneidge.

A60 Engaging the tetraspanin CD151 leads to matrix-dependent inhibition of cell migration and metastasis through a novel mechanism involving cell-cell contact. Trenis D Palmer, Antonio Mazzocca, Amanda G. Hansen, Andries Zijlstra.

A61 Glucosamine treatment-mediated O-GlcNAc modification of paxillin depends on adhesion state of rat insulinoma INS-1 cells. Tae Kyoung Kwak, Jung Weon Lee.

A62 The role of the extracellular matrix protein nephronectin/POEM in breast cancer metastasis.

Richard P. Redvers, Bedrich L. Eckhardt, Normand Pouliot, Tim Adams, Keith K. Stanley, Louis F. Reichardt, Cameron Johnstone, Smith Yvonne, Robin L. Anderson.

A63 Influence on the physiological functions of mouse hepatocarcinoma Hca-F cell line after blockade of CLIC1 by shRNA. Rongkuan Li, [Jianwu Tang](#), Jun Zhang.**Novel Molecular Pathways****A64 Slow cycling self renewing JARID1B-positive cells are essential for long-term maintenance of malignant melanoma.** [Meenhard Herlyn](#), Alexander Roesch, Mizuho Fukunaga-Kalabis.

This abstract is being presented as a short talk in Plenary Session 1. A full abstract is printed in the Proffered Abstracts section (PR1) of the Conference *Proceedings*.

A65 The KISS1 metastasis suppressor appears to reverse the 'Warburg Effect' by increasing mitochondrial number. Benjamin H. Beck, [Kyle P. Feeley](#), Anne R. Diers, Kedar S. Vaidya, Kevin T. Nash, John W. Thomas, Aimee Landar, Scott W. Ballinger, Danny R. Welch.**A66 The KISS1 metastasis suppressor mediates its anti-metastatic effects by paracrine signaling through macrophages.** [Benjamin H. Beck](#), Kyle P. Feeley, John W. Thomas, Kedar S. Vaidya, Jason W. Ashley, Danny R. Welch.**A67 Roles for tumor- and stroma-encoded SSeCKS/AKAP12 in suppressing metastasis.** Shin Akakura, Bing Su, Yahao Bu, [Irwin H Gelman](#).**A68 Regulation of breast cancer metastasis by thromboxane A₂ receptor signaling.** [Zhang Xuejing](#), Wang Man-Tzu, Chen Yakun, Tang Yong, Nie Daotai.**A69 Heat shock factor 1 as a multifaceted regulator of breast cancer progression and metastasis.**

Michelle M. Kouspou, Chau Nguyen, Benjamin Lang, Ryan Chai, Jessica Vieusseux, [John T Price](#).

A70 The metastasis suppressor NM23-H1 promotes genomic stability through its 3'-5' exonuclease and nucleoside diphosphate kinase activities. Stuart G. Jarrett, Marian Novak, Nathan Harris, Isabel Mellon, Sandrine Arnaud-Dabernat, Jean-Yves Daniel, [David M. Kaetzel](#).**A71 Mdm2 is induced as cells undergo EMT and correlates with invasive late-stage breast cancer.** Jacob Eitel, Shinako Akaki, Karen Pollok, David Boothman, [Lindsey D. Mayo](#).**A72 N-Myc interactor causes MET by downregulating Wnt/ β -catenin signaling.** [Rajeev S. Samant](#), Rebecca Fillmore, Aparna Mitra, Devine Daniel, Mitchell E. Menezes, Lalita A. Shevde.**A73 The tumor suppressor C/EBP delta (CEBPD) promotes metastasis of MMTV-Neu mouse mammary tumors and augments mTOR/AKT/HIF-1 activity through inhibition of FBXW7 expression.** Kuppusamy Balamurugan, Tapasree Roy Sarkar, Ju M. Wang, Shikha Sharan, Miriam M. Anver, Robert Leighty, [Esta Sterneck](#).**A74 c-Crk proto-oncogene and TGF- β signaling pathway contribute to transcriptional repression of p120ctn in non-small cell lung cancer cells.** [Fariborz \(Fred\) Mortazavi](#), Steven M. Dubinett, Matthew B. Rettig.**A75 The LKB1-STRAD α axis regulates vimentin to control cancer cell metastasis.** [Erik R. Kline](#), Katherine Hales, Adam I. Marcus.**A76 Analysis of sequences required for BRMS1 mediated metastasis suppression.** [Douglas R. Hurst](#), Yi Xie, Mick D. Edmonds, Danny R. Welch.

A77 Epidemiology of hypertension and ovarian cancer tumor progression and metastasis. Sharon Hensley Alford, Xiao-Ping Yang, Adnan Munkarah.

A78 The noncanonical Wnt pathway regulates breast cancer cell motility. Valbona Luga, Liang Zhang, Abiodun A. Ogunjimi, Alicia M. Vilorio-Petit, Jeffrey L. Wrana.

A79 ATF3, a hub of the stress-response network, promotes a systemic environment that enhances cancer metastasis. Christopher Wolford, Xin Yin, Tsonwin Hai, Swati Jalgaonkar, Steve McConoughey, Yiseok Chang, Johnna Dominick, Marino Leon, Sandra O'Toole, Rob Sutherland, Charles Shapiro.

A80 Forkhead Box m1 transcription factor is required for the cross talk between endothelial cells and tumor cells during lung tumor formation. David Balli, Vladimir Kalinichenko, Yufang Zhang, Jonathan Snyder, Tanya Kalin.

A81 p16Ink4a enhances the migration and metastasis phenotype of hepatocellular carcinoma cells. Ya-Wen Chen, Hsiao-Chein Chu, Brian C. Lewis.

A82 Identification of novel regulators of anoikis using a genome-wide RNA interference screen. Nadia Godin-Heymann, Nik Matthews, Stuart Horswell, Julian Downward.

A83 NDRG1 pleiotropically suppresses tumor metastasis through modulation of Wnt- β catenin pathway. Wen Liu, Bo Xia, Kounosuke Watabe, Megumi Iizumi, Puspita Pandey, Shigeru Hirota, Aya Kobayashi, Misako Watabe, Sudha K. Pai, Hiroshi Okuda, Fei Xing.

A84 EMT and metastasis in a murine model of NSCLC is dependent upon the Notch ligand Jagged2 activation of a GATA3-miR-200 feedback loop . Don L Gibbons, Yanan Yang, Young-Ho Ahn, Chad J. Creighton, Alexander Pertsemilidis, Philip A. Gregory, Wei Lin, Zain H. Rizvi, Jonathan M. Kurie.

A85 The adhesion molecule MCAM/MUC18 (CD 146) regulates the expression of Id-1 and contributes to melanoma metastasis. Maya Zigler, Gabriel J. Villares, Andrey S. Dobroff, Russel R. Braeuer, Hua Wang, Vlada Melnikova, Huang Li, Renduo Song, Alani M. Rhoda, Menashe Bar-Eli.

A86 Regulation of ER-associated degradation and ER stress in metastasis: Insights from studies on an ER ubiquitin ligase. Yien Che Tsai, Rhyann Maditz, Allan M. Weissman.

A88 Redox regulation of anchorage-independence. Mana Mirza, Georg F. Weber.

Site Specific Metastasis

A89 Syndecans in breast cancer brain metastasis. Liang Mu, Madhavi Puchalapalli, Meghan Bliss-Moreau, David Finkelstein, Chevaunne Edwards, Jennifer E Koblinski.

This abstract is being presented as a short talk in Concurrent Session 6. A full abstract is printed in the Proffered Abstracts section (PR14) of the Conference *Proceedings*.

A90 A role for oncostatin M in breast cancer metastasis to bone. Ken Tawara, Celeste Bolin, Caleb Sutherland, Robin L. Anderson, Cheryl L. Jorcyk.

A91 Application of nanoparticle quantum dot as a unique tool for identification of high risk cancer cells for metastasis. Jing Xu, Donghai Huang, Yuxiang Wang, Clifford C. Hoyt, Xianghong Peng, Dongsheng Wang, Hongzheng Zhang, Dong M. Shin, Zhuo (Georgia) Chen.

A92 HER-2 up-regulation is necessary for ER+ breast cancer bone metastasis. Kathleen C. Day, Kathleen M.W. Ignatoski, Celina Kleer, Lauren P. Wallner, Whitney Chadwick, Scott J. Dawsey, Christopher L. Hall, Erin E. Sargent, Stephen P. Ethier, Mark L. Day.

A93 Analysis of the extravasation and establishment of breast cancer micrometastases in the liver. Michelle D. Martin, Gert-Jan Kremers, Kurt W. Short, Jon V. Rocheleau, Lei Xu, David W Piston, Lynn M. Matrisian, D. Lee Gorden.

A94 Chronic consumption of a high fat diet increases solid tumor growth and metastasis of 4T1 murine mammary carcinoma cells in a BALB/c mouse xenograft model. Eun Ji Kim, Mi-Ran Choi, Heesook Park, Ji Eun Hong, Jae-Yong Lee, Jung Han Yoon Park.

A95 Host-derived cathepsin K enhances progression of prostate tumors in the skeleton: Distinct effects on tumor- and host-initiated proteolytic pathways. Izabela Podgorski, Mackenzie Herroon, Deborah Rudy, Anju Mukundan, Craig Giroux.

A96 The chemokine fractalkine and its receptor CX3CR1 are directly involved in the arrest of circulating breast and prostate cancer cells to the skeleton. Yun Zhang, Whitney L. Jamieson, Alessandro Fatatis.

A97 Discoidin Domain Receptor 2 deficiency predisposes hepatic tissue to colon carcinoma metastasis. Elvira Ojaso, Iker Badiola, Fernando Vidal-Vanaclocha.

A98 Pazopanib reveals a role for B-Raf in tumorigenesis, angiogenesis and prevention of brain metastatic colonization of HER2+ breast cancer cells. Brunilde Gril, Diane Palmieri, Yong Qian, Lilia Ileva, David J. Liewehr, Seth M. Steinberg, Patricia S. Steeg.

A99 Molecular imaging and genetic studies reveal selective homing of human brain metastatic cells to various organs in NOD/SCID mice. Inderjit Daphu, Heike Immervoll, Ingvild Wendelbo, Rolf Bjerkgvig, Frits Thorsen.

A100 Full Length L1CAM is overexpressed on brain-seeking MDA-MB-231 breast cancer cells and may play a role in binding Tenascin C and colony formation *in vitro*. Lynda M. Evans, Diane Palmieri, Patricia S. Steeg.

A101 Genetic studies in murine/xenograft models of breast cancer brain metastasis. Daniel Patrick Fitzgerald, Diane Palmieri, Yongzhen Qian, Eleazar Vega-Valle, Sean Davis, Paul Meltzer, Patricia S. Steeg.

A102 Sequential treatment with zoledronic acid and doxorubicin has no additive effects in a mouse model of established bone metastasis. Mari I. Suominen, Rami Käkönen, Jukka P. Rissanen, Sanna-Maria Käkönen, Jussi M. Halleen.

Stem Cells

A103 *In vivo* imaging of the differential malignancy and chemosensitivity of interacting cancer stem and non-stem cells. Atsushi Suetsugu, Yosuke Osawa, Masahito Nagaki, Hisataka Moriwaki, Shigetoyo Saji, Michael Bouvet, Robert M. Hoffman.

A104 Essential role of Nanog in initiating breast cancer metastasis. Man-Tzu Wang, Wen Liu, Kounosuke Watabe, Daotai Nie.

A105 Identification of tumor-initiating-cells in late events of hepatic metastases. Idoia G Zubeldia, Anne-Marie Bleau, Carmen Gil-Puig, Javier Dotor, Fernando Vidal-Vanaclocha, Alfonso Calvo, Jon Lecanda.

This abstract is being presented as a short talk in the Generation X Session. A full abstract is printed in the Proffered Abstracts section (PR11) of the conference *Proceedings*.

A106 Comparing stem cell markers expression between primary and metastatic lymph node tumors of NSCLC. Omid Rouhi, John Coon, Jeffrey A. Borgia, Marlene Gallegos, Kelly A. Kaiser-Walters, Diana Escarzaga, Danielle Steker, Sanjib Basu, Michael J. Liptay, Paolo Gattuso, Philip Bonomi.

A107 Effects of hMSCs on ER-positive human breast carcinoma cells are mediated through ER-SDF-1/CXCR4 crosstalk. Lyndsay V Rhodes, James W. Antoon, Shannon E. Muir, Steven Elliott, Barbara S. Beckman, Matthew E. Burow.

A108 Long term treatment with TGF β pathway inhibitor LY2109671 leads to a paradoxical increase in TGF β signaling and possible expansion of the stem cell compartment. [Erin C. Connolly](#), Elise Saunier, David Quigley, Rosemary Akhurst.

A109 Six1 increases breast cancer stem cell activity in part through activation of non-canonical TGF- β signaling. [Ritsuko Iwanaga](#), Chu-An Wang, Douglas S. Micalizzi, Erica L McCoy, Heide L. Ford.

A110 Microenvironment enriched metastatic cancer stem cells mediate prostate cancer metastasis. [Mahipal V. Suraneni](#), Hangwen Li, John Moore, Da Yang, Wei Zhang, Dean G. Tang.

This abstract is being presented as a short talk in Plenary Session 5. A full abstract is printed in the Proffered Abstracts section (PR16) of the Conference *Proceedings*.

A111 Endogenous genetic variation at *Tgfbm3* regulates embryonic vascular development, adult pathological angiogenesis and tumor biology. [Kyoko Kawasaki](#), Michael Benzinou, Marie M. Lee, Rosemary J. Akhurst.

A112 Hematopoietic cell spheres (HCS): Growth, description, and potential. [Audrey N. Jajosky](#), Michael Craig, Karen Martin, Laura F. Gibson.

A113 CD 146 positive bone marrow mesenchymal stem cells in advanced stages of untreated lung and breast cancer patients. [Valeria Beatriz Fernandez Vallone](#), Hooson Choi, Vivian Labovsky, Leandro Martinez, Horacio Bordenave, Leonardo Feldman, Norma Alejandra Chasseing.

A114 Mesenchymal stem cells and breast tumor cells. [Leandro M. Martinez](#), Vivian Labovsky, Valeria Beatriz Fernandez Vallone, Horacio Bordenave, Leonardo Feldman, Norma Alejandra Chasseing.

Stroma

A115 4D MAME models for live-cell imaging of interactions between tumor cells and microvascular blood and lymphatic endothelial cells. [Bonnie F. Sloane](#), Mansoureh Sameni, Arulselvi Anbalagan, Raymond R. Mattingly.

A116 Malignant tumor and host tissue CXCR2 expression promotes mammary tumor growth, angiogenesis, and progression. Kalyan C. Nannuru, Bhawna Sharma, Michelle L. Varney, [Rakesh K. Singh](#).

A117 Molecular profile of the stroma from human ovarian carcinoma xenografts equipped with different angiogenic phenotypes. Antonietta Silini, Carmen Ghilardi, Giovanna Chiorino, Regine Dhase, Sara Figini, Barbara Pedley, Raffaella Giavazzi, [Maria Rosa Bani](#).

A118 Blockade of PDGFR signaling impairs the tumor promoting effect of bone marrow-derived mesenchymal stem cells in colon cancer. [Yasuhiko Kitadai](#), Kei Shinagawa, Miwako Tanaka, Tomonori Sumida, Michiyo Kodama, Shinji Tanaka, Kazuaki Chayama.

A119 Image-guided sampling reveals increased stroma and lower glandular complexity in mammographically-dense breast tissue. Suling J. Lin, Jenifer Cawson, Prue Hill, Izhak Haviv, Dexing Huang, Mark Jenkins, John L. Hopper, Ian G. Campbell, Melissa Southey, [Erik W. Thompson](#).

A120 Murine and human lymphatic endothelial cells show similar marker profiles and migratory properties. Sanja Coso, [Elizabeth D. Williams](#).

A121 Membrane type 1-matrix metalloproteinase cooperates with K-rasG12D to generate pancreatic tumors with pronounced fibrosis. Seth B. Krantz, Dangi-Garimella Surabhi, Paul J. Grippo, David J. Bentrem, [Hidayatullah G. Munshi](#).

A122 Secretion from stellate cells induces epithelial-mesenchymal transition in pancreatic cancer. Ivy Chung, Atsushi Masamune, Nabeel Bardeesy, Bruce Zetter.

A123 The role of stroma and STAT1 in radioresistance of breast cancer. Mirjam C. Boelens, Tony J. Wu, Taewon Yoon, Andy J. Minn.

This abstract is being presented as a short talk in the Generation X Session. A full abstract is printed in the Proffered Abstracts section (PR9) of the Conference *Proceedings*.

A124 Cancer cell and nucleus size and the tumor microenvironment. Julia Rastelli, Lucas Jae, Ferenc Reinhardt, Sandra S. McAllister, Robert A. Weinberg.

A125 Separate analysis of the cancer and stroma cell populations from orthotopically implanted tumor biopsies in eGFP scid mice. Hege Karine Jacobsen, Rolf Bjerkvig, Per Øyvind Enger, Aly Dicko, Jian Wang, Kristian Storli, Sabine Leh, Frits Alan Thorsen, Tina Pavlin, Karl Søndena, Donald Gullberg.

A126 Specific inhibition of VEGF-A activation of VEGFR2 is sufficient to block lymphangiogenesis *in vitro* and *in vivo*. Michael T. Dellinger, Rolf A. Brekken.

Translational Targets

A127 B7-H3: A novel metastasis-promoting protein and translational target. Christina Tekle, Marit K. Nygren, Oystein Fodstad.

A128 The role of β 1 integrins in pancreatic cancer metastasis. John J. Grzesiak, Michael Bouvet, Hop S. Tran Cao, Douglas W. Burton, Sharmeela Kaushal, Fabian Vargas, Paul Clopton, Cynthia S. Snyder, Leonard J. Deftos, Robert M. Hoffman.

A129 Metronomic gemcitabine in combination with sunitinib inhibits multisite metastasis and increases survival in an orthotopic model of pancreatic cancer. Hop S. Tran Cao, Matthew H.G. Katz, Michael Bouvet, Sharmeela Kaushal, Alex Keleman, Eric Romney, Ginna Kim, John Fruehauf, David K. Imagawa, Robert M. Hoffman.

A130 Targeting of XIAP in combination with systemic mesenchymal stem cell-mediated delivery of sTRAIL blocks metastatic growth of pancreatic carcinoma cells. Andrea Mohr, Stella Maris Albarenque, Laura Deedigan, Rui Yu, Mairead Reidy, Simone Fulda, Ralf Zwacka.

A131 Impact of UFT, CTX and UFT/CTX metronomic chemotherapy on tumor markers of local invasion and distant metastasis in an orthotopic breast cancer xenograft model. Raquel Munoz, Shan Man, Geoffrey Wood, Ping Xu, Christopher Jedeszko, Alicia Viloria-Petit, Robert S Kerbel.

A132 Engineered bacterial strategies to overcome therapeutic resistance in solid tumors. Neil S. Forbes.

A133 Recombinant human erythropoietin (rHuEPO) in combination with chemotherapy increases breast cancer metastasis in pre-clinical mouse models. Benjamin Hedley, Jenny Chu, David George Ormond, Mich Beausoleil, Alexandra Boasie, Alison Allan, Anargyros Xenocostas.

This abstract is being presented as a short talk in the Generation X Session. A full abstract is printed in the Proffered Abstracts section (PR10) of the Conference *Proceedings*.

A134 Fibroblast activation protein alpha (FAP): Targeting the reactive stroma as a novel prodrug therapy for cancer. W. Nathaniel Brennen, D. Marc Rosen, Samuel R. Denmeade.

A135 Omega 3 fatty acids as therapeutic ligands for PPAR γ in renal cell carcinoma. Mary Taub, Facundo Cutuli.

A136 Targeting α V integrins decreased metastasis and increased survival in a nude rat breast cancer brain metastasis model. Y. Jeffrey Wu, Seymour Gahramanov, Leslie L. Muldoon, Seth Lewin, Deborah J. Marshall, Edward A. Neuwelt.

A137 Bone marrow-derived hematopoietic progenitor cells mark metastatic progression. Rosandra N. Kaplan, Daniel Rutigliano, Lauren E. Rotman, Elan Bomsztyk, Kendra Kadas, Elisa Port, Allyson Ocean, Leonard Wexler, David Lyden.

A138 Soluble receptor activator of nuclear factor- κ B ligand and proteases: the involvement in osteolysis and its significance as therapeutics for bone metastasis of breast or prostate cancer. Mitsuru Futakuchi, Thomas J. Wilson, Kalyan C. Nannuru, Katsumi Fukamachi, Masumi Suzui, Rakesh K. Singh.

A139 A new therapeutic candidate for breast cancer: Laminin-332 overexpressing myofibroblast formation via epithelial-mesenchymal transition in the interface zone. Baek Gil Kim, Suki Kang, Nam Hoon Cho.

A140 Reduction of breast cancer metastasis by the non-toxic inhibitor of Id-1, cannabidiol. Sean D. McAllister, Darryl Lau, Rigel T. Christian, Arash E. Pakdel, Jasmine Lee, Dan H. Moore, Pierre-Yves Desprez.

A143 The role of S100A2 in the transition to the invasive phenotype as identified and characterized by the human 21T series 3D model of breast cancer progression. Lesley H. Souter, Carl O. Postenka, Joseph D. Andrews, David I. Rodenhiser, Ann F. Chambers, Alan B. Tuck.

A144 Cyclic nucleotide-regulated vasodilator-stimulated phosphoprotein controls metastatic cell morphology. Joshua Pelta-Heller, Mehboob Ali, Giovanni M. Pitari.

A145 Quantitative high resolution genomic analysis of single cancer cells. Juliane Hannemann, Sönke Meyer-Staekling, Simon A. Joosse, Iris Alpers, Sabine Riethdorf, Dirk Kemming, Klaus Pantel, Burkhard Brandt.

7:00 ***Neuroendocrine Regulation of Metastasis: Targeting the Tumor Macroenvironment**
Liberty Ballroom D
Steve Cole, University of California, Los Angeles, CA

7:00 **Metastasis Assays *in vivo* and 'Metastasis Assays' *in vitro*: What Do They Mean?**
Liberty Ballroom AB
Danny R. Welch, University of Alabama, Birmingham, AL

*An extended abstract for this presentation is available in the Invited Abstracts section of the *Proceedings*.

Dormancy

Liberty Ballroom AB

Chairperson: Ann F. Chambers, London Regional Cancer Center, London, ON, Canada

- 8:00** ***Disseminated tumor cells in prostate cancer: Insights into bone metastases, epithelial to mesenchymal transition (EMT) and tumor cell dormancy**
Robert L. Vessella, University of Washington Medical Center, Seattle, WA
- 8:30** ***Imaging experimental models of tumor metastasis and dormancy**
Ann F. Chambers, London Regional Cancer Center, London, ON, Canada
- 9:00** ***Stress signaling mechanisms and dormancy of disseminated tumor cells**
Julio A. Aguirre-Ghiso, Mount Sinai School of Medicine, New York, NY
- 9:30** ***An LPA1 antagonist, Debio 0719, acts as a metastasis suppressor in breast cancer**
Jean-Claude A. Marshall, National Cancer Institute, Bethesda, MD

*An extended abstract for this presentation is available in the Invited Abstracts section of the *Proceedings*.

The Future of Tumor Progression

Liberty Ballroom AB

Chairperson: Yves A. DeClerck, University of Southern California/Children's Hospital Los Angeles, Los Angeles, CA

- 10:30** **Introduction**
Generation X: The 13th wave of scientists?
 Yves A. DeClerck, University of Southern California/Children's Hospital Los Angeles, Los Angeles, CA
- 10:40** ****A novel role of Notch signaling in breast cancer bone metastasis**
 Nilay Sethi, Princeton University, Princeton, NJ
- 11:00** ****The role of stroma and STAT1 in radioresistance of breast cancer**
 Mirjam C. Boelens, Abramson Family Cancer Research Institute, University of Pennsylvania, Philadelphia, PA
- 11:20** ****Recombinant human erythropoietin (rHuEPO) in combination with chemotherapy increases breast cancer metastasis in pre-clinical mouse models**
 Benjamin Hedley, London Health Sciences Centre, London, ON, Canada
- 11:40** ****Identification of tumor-initiating-cells in late events of hepatic metastases**
 Jon Lecanda, Center for Applied Medical Research, Pamplona, Spain

**An extended abstract for this presentation is available in the Proffered Abstracts section of the *Proceedings*.

Concurrent Session 5:

Metastasis and the Matrix

Liberty Ballroom D

Chairperson: Valerie M. Weaver, University of California, San Francisco, CA

1:30 The force journey of a tumor cell
Valerie M. Weaver, University of California, San Francisco, CA

2:00 Microenvironments of carcinoma cell dissemination and metastasis: Insights derived *in vivo*
John S. Condeelis, Albert Einstein College of Medicine, Bronx, NY

2:30 Title to be announced
Linda G. Griffith, Massachusetts Institute of Technology, Cambridge, MA

3:00 **Role of versican in bladder cancer metastasis to the lungs
Neveen Said, University of Virginia, Charlottesville, VA

3:15 **Microtentacles arising from imbalanced cytoskeletal forces promote the reattachment of circulating breast tumor cells in lung capillaries
Stuart S. Martin, University of Maryland School of Medicine, Baltimore, MD

Concurrent Session 6:

MRS: Site Specific Metastasis

Liberty Ballroom AB

Chairperson: Andrea M. Mastro, Penn State University, University Park, PA

1:30 *An *in vitro* model of the vicious cycle of breast cancer metastasis in the bone
Andrea M. Mastro, Penn State University, University Park, PA

2:00 *Translational leads for the treatment of breast cancer brain metastasis
Diane Palmieri, National Cancer Institute, Bethesda, MD

2:30 *The tumor microenvironment at different stages of the hepatic metastasis process
Fernando Vidal-Vanaclocha, CEU-San Pablo University School of Medicine and Madrid Hospital Foundation, Madrid, Spain

3:00 **Syndecans in breast cancer brain metastasis
Jennifer E. Koblinski, Northwestern University, Chicago, IL

3:15 **Vascular co-option in brain metastasis
Ruth Muschel, University of Oxford, Oxford, United Kingdom

*An extended abstract for this presentation is available in the Invited Abstracts section of the *Proceedings*.

**An extended abstract for this presentation is available in the Proffered Abstracts section of the *Proceedings*.

microRNA-mediated Regulation of the Tumor Angiogenic Switch

Liberty Ballroom AB

David A. Cheresh, University of California, San Diego, La Jolla, CA

Excellence in the metastasis field is recognized by the Paget-Ewing Award. The Paget-Ewing Award is named after Sir Stephen Paget and Dr. James Ewing, pioneers in metastasis research in the late 19th and early 20th centuries who proposed the two major theories to explain organ selectivity of metastasis. The Paget-Ewing Award is the highest honor bestowed by the Metastasis Research Society and honors a person's scientific excellence and substantial contributions to the understanding and/or control of cancer metastasis.

Dormancy

B1 Tumor dormancy specific microRNAs inhibit tumor progression and induce perturbations in tumor-stroma interactions. [Nava Almog](#), Lili Ma, Lynn Hlatky, Amir Abdollahi.

B2 BMP7 regulates dormancy and recurrence of prostate cancer stem cell in bone. [Aya Kobayashi](#), Kounosuke Watabe, Hiroshi Okuda, Sudha K. Pai, Puspa R. Pandey, Fei Xing, Misako Watabe, Shigeru Hirota, Wen Liu, Bo Xia.

B3 The function of extracellular matrix in breast cancer dormancy. [Ori Maller](#), Traci R. Lyons, Jeffrey E. Green, Pepper J. Schedin.

Genomics of Primary Tumors and Metastases

B4 Integrated genomics reveals metastatic drivers of ovarian cancer. Andrew Fischer, Katrin Kristjansdottir, Daniel H. Miller, Ana Lapuk, Shannon MacLaughlan, Colin Collins, Margaret Steinhoff, Laurent Brard, [Alexander S. Brodsky](#).

B5 Transcriptional distinctions between A2B5-defined human glial progenitor cells and those derived from glial tumors at all stages of gliomagenesis. [Romane Melanie Auvergne](#), Kevin Walter, Mahlon Johnson, Pragathi Achanta, Alfredo Quinones-Hinojosa, Sridaran Natesan, Steven A. Goldman, Fraser Sim, Su Wang, Devin Chandler-Militello, Jaclyn Burch, Xiaojie Li, Andrew Bennett, Nimish Mohile, Webster Pilcher.

B6 High-resolution genotyping of colorectal cancer in association with the detection of circulating tumor cells. Simon A. Joosse, Lutz Riethdorf, Sabine Riethdorf, Klaus Pantel, [Juliane Hannemann](#), Catherine Alix-Panabières, Eric Denève, Christin Beneken, Marja Nieuwland, Ron M. Kerkhoven, Jeanne Ramos, Harriet Wikman.

B7 Functional genomic screen for metastasis suppressor genes controlling breast cancer metastasis to lungs and bone. [Richard P. Redvers](#), Izhak Haviv, Joshy George, Normand Pouliot, Nicole Kusuma, Rebecca Pelzer, Tina Restall, Robin L. Anderson.

B8 Comparative gene expression profiling of ovarian cancer and stromal cells suggests the existence of functionally significant variability in tumor microenvironments. [Loukia N. Lili](#), L. DeEtte Walker, Lilya Matyunina, Nathan J. Bown, John F. McDonald.

B9 Identification of candidate microRNAs regulating breast cancer metastasis. [Natalie E. Goldberger](#), Bao Tran, Kent Hunter.

B10 The bHLH/PAS transcription factor, Single-minded-2s (Sim2s), promotes breast tumor cell differentiation and inhibits metastasis. [Kelly C. Scribner](#), Weston W. Porter.

B11 Expression and localization of CLIC1 in hepatocarcinoma cell lines with high and low lymphatic metastasis potential. Meiyong Song, [Jianwu Tang](#), Mingzhong Sun, Shuqing Liu, Bo Wang.

B12 The role of activator E2Fs in mediating breast cancer metastasis. [Inez Yuwanita](#), Eran Andrechek.

B13 The Ron receptor is required for prostate tumor growth in the TRAMP mouse model. [Devikala Gurusamy](#), Megan N. Thobe, Jerilyn K. Gray, Purnima K. Wagh, Peterson Pathrose, Alex B. Lentsch, Susan E. Waltz.

B14 Genetic tests of genomic predictions for E2F involvement in tumor progression and metastasis. [Eran R. Andrechek](#).

B15 Evaluation of epithelial-to-mesenchymal transition markers and CXCR4 in primary and metastatic lymph node tumors of NSCLC. [Omid Rouhi](#), Philip Bonomi, John Coon, Jeffrey A. Borgia, Patri Marconi, Marlene Gallegos, Kelly A. Kaiser-Walters, Diana Escarzaga, Danielle Steker, Sanjib Basu, Michael J. Liptay, Paolo Gattuso.

B16 Estrogen receptor alpha deletion alters the metastatic phenotype in MMTV-Ron driven tumorigenesis. Aaron M. Marshall, Rebecca J. McClaine, Jerilyn K. Grey, Susan E. Waltz.

Metastasis and the Matrix

B17 Role of annexin A2 in ovarian cancer metastasis. Carmela Ricciardelli, Noor A. Lokman, Miranda P. Ween, Peter Hoffman, Martin K. Oehler.

B18 The podosome marker protein Tks5 regulates macrophage invasive behavior. Karen L. Burger, Darren F. Seals.

B19 Loss of PTEN permits CXCR4-mediated metastasis through the ERK1/2 pathway in prostate cancer cells. Mahandranauth A. Chetram, Cimona V. Hinton.

B20 Decreased tumor invasiveness after inhibition of VEGF and c-Met in RIP-Tag2 tumors. Beverly L. Falcon, Jeyling Chou, Stuart Thomson, David M. Epstein, Donald M. McDonald.

B21 Loss of the $\alpha 2\beta 1$ integrin regulates squamous cell carcinoma metastasis by altering lymphangiogenesis. Thuy Tran, Lynda O'Rear, Brenda Jarvis, Zhengzhi Li, William Dupont, Brittney Barlow, Mary Zutter.

B22 p120 regulates tumor growth of metastatic lobular carcinoma through Rock1-mediated anoikis resistance. Ron Schackmann, Miranda van Amersfoort, Judith Haarhuis, Annelieke Jaspers, Petra van der Groep, Paul van Diest, Jos Jonkers, Patrick W.B. Derksen.

B23 K-ras and EGF synergistically upregulate proliferation and MMP1/TIMP1-mediated invasion in immortalized human pancreatic cells by an ERK2 specific pathway. Gregory P. Botta, Mauricio Reginato, Anil K. Rustgi, Peter I. Lelkes.

B24 Role of Cox-2 expression on metastatic potential in breast cancer cells resistant to chemotherapy. Ju-Hee Kang, Ki-Hoon Song, Kyung-Chae Jung, Changsun Choi, Chang Hoon Lee, Seung Hyun Oh.

B25 The scribble polarity complex regulates tumor cell invasion by regulation of Zeb1 and dampening of $\beta 1$ -integrin signaling. Zain H Rizvi, Young-Ho Ahn, Chad J. Creighton, Ana Maria Cabanillas, Philip A Gregory, Gregory J. Goodall, Jonathan M. Kurie, Don L. Gibbons.

B26 Mechanisms of rho-regulation in response to matrix stiffness in breast epithelial cells. Suzanne M. Ponik, Jessica N. Heck, Steve M. Trier, David R. Inman, Kevin W. Eliceiri, Patricia J. Keely.

B27 EphA2 overexpression in ER-negative metastatic breast cancer cells. Stephanie A. Erzinger, Hui Liu, Galina Kiriakova, Janet E. Price.

B28 The dual function of SIRP α in mediating cross-talk between the prolactin receptor and integrins in breast cancer cells. Traci Galbaugh, Yvonne Feeney, Charles Clevenger.

B29 VEGF inhibition has anti- and pro-tumorigenic effects in a transgenic model of pancreatic ductal adenocarcinoma. Lee B. Rivera, Juliet G. Carbon, Jason Toombs, Diego Castrillon, Rolf A. Brekken.

B30 shRNA mediated inhibition of MMP-1 attenuates breast cancer growth and metastasis to brain. Hui Liu, Kato Yukinari, Stephanie A. Erzinger, Galina M. Kiriakova, Diane Palmieri, Patricia S. Steeg, Janet E. Price.

B31 A role of ADAM9 in breast tumor cell invasion. Kelli Cristina Micocci, Ana Carolina B. Moreno Martin, Marcia Regina Cominetti, Heloisa Sobreiro Selistre-de-Araújo.

B32 Ionizing radiation promotes an invasive phenotype in ErbB2-expressing mammary epithelial cells. Diane M. Keene, Mauricio Reginato, Jane Azizkhan-Clifford.

B33 TGF- β induces the PI3-kinase/AKT pathway and invasive behavior in prostate cancer cells. [Lindsey D. Walker](#), Ana Cecilia Millena, Shafiq Khan.

B34 Osteoclastogenesis process in bone marrow of untreated advanced breast cancer patients. [Valeria Beatriz Fernandez Vallone](#), Hooson Choi, Leandro Martinez, Vivian Labovsky, Emilio Batagelj, Federico Dimase, Leonardo Feldman, Horacio Bordenave, Norma Alejandra Chasseing.

B35 Molecular features and clinical relevance of circulating tumour cells (CTC) and circulating tumor microemboli (CTM) in patients with small cell lung cancer (SCLC). [Jian-Mei Hou](#), Matthew Krebs, Robert Sloane, Tim Ward, Lynsey Priest, Fiona Blackhall, Caroline Dive.

B36 TM4SF5-mediated FAK activation for an enhanced migration and invasion. [Osiun Jung](#), Jung Weon Lee.

B37 Targeting MMP13 in human breast cancer metastasis to bone. Manisha Shah, Tony Blick, Dexing Huang, Larry A. Reiter, Joel R. Hardink, [Erik W. Thompson](#), Mark Waltham.

Metastatic Colonization

B38 A significant subpopulation of tumor cells in sentinel lymph nodes from breast cancer patients express mesenchymal characteristics and are not detected by conventional methods. Siri Tveito, Rolf Kaaresen, Kristin Andersen, [Oystein Fodstad](#).

B39 Vascular co-option in brain metastasis. [Ruth Muschel](#), W. Shawn Carbonell, Sebastien Serres, Spela Ferjancic, Lukxmi Balasthan, Robin Choudhury, Nicola Sibson.

This abstract is being presented as a short talk in Concurrent Session 6. A full abstract is printed in the Proffered Abstracts section (PR15) of the Conference *Proceedings*.

B40 MicroRNA-1258 suppresses breast cancer brain metastasis by targeting heparanase. Lixin Zhang, Peggy Sullivan, Preethi Gunaratne, [Dario Marchetti](#).

B41 Effects of dietary fat on spontaneous metastasis of Lewis lung carcinoma and changes in plasma cytokine concentrations in mice. [Lin Yan](#).

B42 Mechanisms of the creation of a pre-metastatic niche in the liver by elevated systemic TIMP-1 levels. [Achim Krüger](#).

B43 Soy isoflavones promote metastasis through regulation of protein synthesis. Elisa Otero-Franqui, Columba De La Parra, Michelle Martinez-Montemayor, [Suranganie Dharmawardhane](#).

B44 TGF β signaling is a metastasis suppressor. [Neka A.K. Simms](#), Michael G. Brattain.

B45 PDGFR signaling blockade in marrow stroma impairs lung cancer bone metastasis . [Raúl Catena](#), Diego Luis-Ravelo, Iker Antón, Carolina Zanduetta, Pablo Salazar-Colocho, Leyre Larzábal, Alfonso Calvo, Fernando Lecanda.

B46 Selectin-mediated activation of endothelial cells promotes metastasis by the recruitment of monocytic cells and modulates metastatic microenvironment. [Lubor Borsig](#), Heinz Läubli.

B47 *In vivo* imaging of orthotopic human tumor models in NOD/SCID Mice: Preclinical evaluation of metastases and inhibition by anti-DLL4 treatment. [Lucia Beviglia](#), Pete Yeung, Steven C. Miller, Gilbert O'Young, Marcus Fisher, Wang-Ching Yen, Tim Hoey, Ann M. Kapoun.

B48 Disruption of bone morphogenetic protein receptor 2 accelerates mammary carcinoma metastasis to the lung. Philip Owens, Michael W. Pickup, Sergey V. Novitskiy, Agnieszka E. Gorska, Mary E. Aakre, Harold L. Moses.

B49 Role of fractalkine/fractalkine receptor signaling in progression of epithelial ovarian carcinoma. Mijung Kim, Andre Kajdacsy-Balla, Lisa Rooper, Jamie Rayahin, Maria Barbolina.

B50 A mutant of the metastasis susceptibility gene Brd4 promotes EMT, stem cell-like conversion and metastatic progression in a mouse mammary tumor model. Jude Alsarraj, Renard C. Walker, Joshua D. Webster, R. Mark Simpson, Keiko Ozato, Kent W. Hunter.

This abstract is being presented as a short talk in Concurrent Session 4. A full abstract is printed in the Proffered Abstracts section (PR7) of the Conference *Proceedings*.

B51 Metastasis-associated fibroblasts facilitate metastatic colonization. Joyce C. Tse, Hikaru Sugimoto, Michael Zeisberg, Raghu Kalluri, Yingqi Teng, Vesselina G. Cooke, Brian A. MacDonald, Ankit I. Mehta, Valerie S. LeBleu, Rajan Dewar, Murray B. Resnick, Eric G. Neilson.

B52 The functional role of mixed lineage kinase 3 in breast cancer metastasis. Jian Chen, Eva M. Miller, Kathy A Gallo.

B53 Chemotherapy promotes lung metastasis formation in mouse models via a VEGFR-1-dependent mechanism. Laura G.M. Daenen, Jeanine M.L. Roodhart, Mantre Dehnad, Emile E. Voest.

This abstract is being presented as a short talk in Plenary Session 2. A full abstract is printed in the Proffered Abstracts section (PR3) of the Conference *Proceedings*.

B54 Lineage tracing of metastasis in a murine lung adenocarcinoma model. Chitra Thakur.

B55 CD11b+ myeloid lineage cells in the bone microenvironment contribute to cyclophosphamide-induced prostate cancer skeletal metastasis. Serk In Park, Fabiana N Soki, Sudha Sud, Kenneth J. Pienta, Laurie K. McCauley.

B56 The regulation of mitogen-activated kinase kinase 4 by microRNA-24 in prostate cancer cell lines. Robert J. Clark, Bernard Marasa, Kristen Otto, Myriam Gorospe, Carrie Rinker-Schaeffer.

Novel Molecular Pathways

B57 The Six1 homeoprotein is dependent on Eya2 to mediate TGF β signaling, EMT properties, and stem cell characteristics in breast cancer. Susan M. Farabaugh, Douglas S. Micalizzi, Alana L. Welm, Heide L. Ford.

B58 The role of the miR106b-25 cluster in Six1-mediated breast cancer metastasis. Anna L. Smith, David J. Drasin, Rebecca L. Vartuli, Douglas S. Micalizzi, Ritsuko Iwanaga, Heide L. Ford.

B59 The actin-binding protein Gelsolin as a potential binding partner of Nm23. Natascia Marino, Jean-Claude A. Marshall, Joshua Collins, Ming Zhou, Timothy Veenstra, Patricia S. Steeg.

B60 O-GlcNAc transferase is a novel regulator of prostate cancer invasion and angiogenesis via regulation of FoxM1. Thomas P. Lynch, S. RaElla Jackson, Kristina S. Shahriari, Michael Lazarus, Suzanne Walker, Keith Vosseller, Mauricio J. Reginato.

B61 N-cadherin-mediated signaling regulates MMP7 in a mouse model of pancreatic cancer. Yanrong Su, Jifen Li, Leeanne Griffith, Agnieszka Witkiewicz, Glenn Radice.

B62 Deletion of COX-2 in mouse mammary epithelial cells delays breast cancer onset through M1 macrophage infiltration. Nune Markosyan, Victoire Ndong, Christopher J. Sterner, Lewis A. Chodosh, Garret FitzGerald, Emer M. Smyth.

B63 Increased PTEN instability-mediated Akt activation confers acquired resistance to cetuximab and increased migration/invasion potentials in non-small cell lung cancer. Sun Mi Kim, Yun Kyoung Hong, Hyeyon Kim, Byoung Chul Cho.

B64 Role of the transcription factor forkhead box P3 in cancer metastasis. Tiziana Triulzi, Valentina Uva, Lucia Sfondrini, Patrizia Casalini, Piera Aiello, Monica Tortoreto, Andrea Balsari, Elda Tagliabue.

B65 Characterization of three novel splice variants of the RECK tumor and metastasis suppressor gene: Correlation with glioma progression. Marina T. Lima, Sheila M. B. Winnischofer, Ana C. O. Carreira, Marcos A. A. Demasi, Christian Colin, Sueli M. Oba-Shinjo, Suely K. N. Marie, Mari C. Sogayar.

B66 Identifying novel HIF-1 regulated genes in breast cancer progression and metastasis. Danielle L. Peacock, Luciana P. Schwab, Tiffany N. Seagroves.

B67 Optimal intracellular ascorbate concentrations suppress hypoxia-inducible factor-1 α and its transcriptional activity differentially in cancer and normal cells. Caroline Kuiper, Gabi U. Dachs, Margaret J. Currie, Margreet C.M. Vissers.

B68 AmotL2 linking hypoxia to tumor cell invasion. Mahdi Mojallal, Yajuan Zheng, Lars Holmgren.

B69 Functional analysis of the cytoplasmic domain of coxsackie and adenovirus receptor (CAR) in regulation of cancer cell migration and invasion. Hui Chen, Zakaria Orfi, Josephine Nalbantoglu.

B70 Regulation of breast cancer cell migration by Smurf2 and Prickle1 as components of the non-canonical WNT signaling pathway. Liang Zhang, Valbona Luga, Abiodun Ogunjimi, Alicia M. Vilorio-Petit, Jeffery L. Wrana.

B71 Mdm2 binding protein inhibits ACTN4-induced cell migration. Neeraj Agarwal, Amit S. Adhikari, Danny R. Welch, Tomoo Iwakuma.

B72 Activated HSF1 co-operates with oncogenic transformation and promotes cell biological features associated with a metastatic phenotype. Chau H. Nguyen, Michelle Kouspou, Benjamin Lang, Jessica Vieuxseux, Ryan Chai, John Price.

B73 FMNL2: A positive regulator of cell motility and metastasis of colorectal carcinoma via RhoA/ROCK signaling. Li Liang, Xiling Zhu, Yuanfeng Zeng.

B74 A novel transcriptional repressor controlled by Erk/p90RSK/14-3-3 signalling impacts on expression of PEA3 Ets transcription factors. Kumara Dissanayake, Rachel Toth, Olof Olsson, David Campbell, Alan Prescott, Carol MacKintosh.

B75 ErbB2 regulates cysteine cathepsins B and L in human breast cancer. Bo Rafn.

B76 TM4SF5-mediated epithelial-mesenchymal transition. Minkyung Kang, Jung Weon Lee.

B77 Axl is an essential epithelial-to-mesenchymal transition-induced regulator of breast cancer metastasis and patient survival. Crina Tiron, Bjørn Tore Gjertsen, David Micklem, Lars Akslen, Carlotta Glackin, James B Lorens, Christine Gjerdrum, Torrill Høiby, Hallvard Haugen, Ingunn Stefansson, Tone Sandal, Karin Collet, Shan Li, Emmet McCormack.

B78 Role of TAPP proteins in regulating the migration of leukemic B cells. Hongzhao Li, Aaron Marshall.

B79 Ezrin is essential for L1-mediated metastasis of colon cancer cells. [Amir Ben-Shmuel](#), Nancy S. Gavert, Thomas Brabletz, Avri Ben-Ze'ev.

B80 G protein-coupled networks in breast cancer. [Moshmi Bhatatcharya](#).

B81 Beta-catenin is required for Ron receptor induced mammary tumorigenesis. [Purnima K. Wagh](#), Jerilyn K. Gray, Glendon Zinser, Laura James, Monga Satdarshan, Susan Waltz.

Site Specific Metastasis

B82 Mapping metastatic addresses in breast cancer. [Bedrich L. Eckhardt](#), Wadih Arap, Robin Anderson, Renata Pasqualini.

B83 Interactions between breast cancer brain metastases and their microenvironment. [Mihaela Lörger](#), Brunhilde Felding-Habermann.

B84 Metastasis of a β -catenin driven mouse model of colon cancer. [Angela Bressel](#), M. Isabel Chiu, Murray O. Robinson, Joerg Heyer, Yinghui Zhou, Tong Zi, Carol Meeske, Samuel Farlow, William M. Rideout, Rebecca Rancourt, Qiurong Xiao, Josh Frederick.

B85 Tracking of disseminating tumor cells to determine the contribution of cells that traffic via the lymphatics to the development of metastases in vital organs. Nicole Grau, [Jonathan P. Sleeman](#).

B86 Characterization of a new pre-clinical mouse model for the study of spontaneous breast cancer metastasis to brain. [Normand Pouliot](#), Rebecca Pelzer, Allan Burrows, Robin Anderson.

B87 An immune-competent model of spontaneous breast cancer metastasis to the brain. [Giriaca Lorusso](#), François Kuonen, Qiang Lan, Curzio Ruegg.

B88 A novel and clinically relevant mouse model reflecting the disease progression in melanoma brain metastasis in patients. [Inderjit K. Daphu](#), Heike Immervoll, Rolf Bjerkvig, Frits Thorsen.

B89 SIX1 induces breast cancer associated lymphatic and distant metastasis by upregulating VEGF-C and stimulating lymphangiogenesis. [Chu-An Wang](#), Paul Jedlicka, Douglas S. Micalizzi, Kimberly L. Christensen, J. Chuck Harrell, Heide Ford.

B90 Identification of a 100-kDa protein that interacts with Metadherin and promotes *in vivo* lung metastasis. [M. Andres Blanco](#), Maša Alečković, Yuling Hua, Zhen Xu, Yong Wei, Yibin Kang.

B91 Molecules associated with melanoma brain metastasis. [Sivan Izraely](#), Anat Klein, Orit Sagi-Assif, Tsipi Meshel, Galia Tsarfati, Dave S.B. Hoon, Isaac P. Witz.

B92 Does competitive modulation of HGF signaling by accessory growth factors allow cells to select routes of metastasis? Jarom Y. Chung, John Davis, Braden Price, Davis Staley, Mark Wagner, Steven Warner, David Bearss, [Marc D.H. Hansen](#).

B93 Contribution of tumor cysteine cathepsin B to breast cancer metastasis to lung and bone. [Nimali P. Withana](#), Galia Blum, Bradley N Bidwell, Robin L. Anderson, Matthew S. Bogoy, Belinda S. Parker.

B94 Role of versican in bladder cancer metastasis to the lungs. [Neveen Said](#), Dan Theodorescu.

This abstract is being presented as a short talk in Concurrent Session 5. A full abstract is printed in the Proffered Abstracts section (PR12) of the Conference *Proceedings*.

B95 Real-time imaging of treatment-induced apoptosis of single cancer cells in the brain. Masashi Momiyama, Itaru Endo, [Robert M. Hoffman](#).

Stroma

B96 A novel role of Notch signaling in breast cancer bone metastasis. Nilay Sethi, Yibin Kang.

This abstract is being presented as a short talk in the Generation X Session. A full abstract is printed in the Proffered Abstracts section (PR8) of the Conference *Proceedings*.

B97 Staging of the stroma of renal cell carcinoma does not necessarily correlate with the collaborative tumor staging. Vivekanand Gupta, Jeffrey D. Simons, Daniel E. Bassi, Tahseen I. Al-Saleem, Robert G. Uzzo, Edna Cukierman.

B98 A role for adipocyte fatty acid binding protein in ovarian cancer progression. Kristin Nieman, Hilary Kenny, Marion Zillhardt, Payton Leonhardt, Andras Ladanyi, Katja Gwin, Ernst Lengyel.

B99 Antibody-mediated targeting of the uPA proteolytic activity neutralizes uPA functions *in vivo*. Ida K. Lund, Gunilla Høyer-Hansen, Annika Jögi, Birgitte Rønø, Morten G. Rasch, Leif R. Lund, Kasper Almholt, Henrik Gårdsvoll, Niels Behrendt, John Rømer.

B100 Tumor stroma interaction and radiation resistance in pancreatic cancer. Tine S. Mantoni, Serena Lunardi, Thomas B. Brunner.

B101 Functional contribution of pericytes in metastatic breast cancer. Doruk Keskin, Michael B. Duncan, Vesselina Cooke, Yingqi Teng, Valerie Lebleu, Raghu Kalluri.

B102 Visualization of the tumor microenvironment that drives invasion of mammary tumors cells. Laila Ritsma, Jacco van Rheenen.

B103 Response of mouse mammary tumors to loss of caveolin-1 in the tumor microenvironment. Christina M Restall, Anthony L. Natoli, Erica Sloan, Allan Burrows, Robin L. Anderson.

B104 Visualization of the tumor microenvironment that drives invasion of mammary tumor cells .

Laila M.A. Ritsma, Jacco van Rheenen.

B105 Lab on a chick: A novel *in vivo* angiogenesis assay. Shanna A. Arnold, Amanda G. Hansen, David K. Schaffer, William J. Ashby, John P. Wikswo, Andries Zijlstra.

B106 Prognostic and response-predictive roles of stromal PDGF β -receptor expression in human breast cancer. Janna Paulsson, Lisa Rydén, Tobias Sjöblom, Patrick Micke, Karin Jirström, Arne Östman.

B107 The effect of TGF β signaling in the prostate stroma: Support for cancer cell migration. Melanie J. Grubisha, Donald B. DeFranco.

B108 Microenvironment of tongue carcinoma: The profile of the inflammatory infiltrate and the cancer-associated fibroblasts are related to disease recurrence and patients' survival. Marilyna Vered, Irit Allon, Itay Levy, Dan Dayan.

B109 The activation of CCR5 by stroma-derived CCL-9 and CCL-5 promotes breast cancer cell migration. Muthulekha Swamydas, Krista Ricci, Didier Dréau.

B110 Visualizing the role of tumor vascular normalization in anti-angiogenic treatment of metastatic cancer . Qingbei Zhang, Vytas Bindokas, Jikun Shen, Hanli Fan, Robert M. Hoffman, H. Rosie Xing.

B111 Regulation of FAP, a surface protease involved in tumorigenesis. M. Jacob, L.A. Todd, E. Puré.

B112 IL-8 and lactate, secreted by tumor cells, facilitate metabolic exploitation of stromal cells in the tumor microenvironment. Brijesh B. Patel, Yanique I. Rattigan, John W. Glod, Debabrata Banerjee.

B113 The hypoxic tumor microenvironment in pancreatic adenocarcinoma: Correlation and prognostic significance of coexpressed proteins in tumor nests and tumor stroma. Galen Hostetter, Aprill Watanabe, Caroline Diep, Meraj Aziz, Clifford Whatcott, Haiyong Han, Garth Powis, Michael Demeure, Daniel Von Hoff.

B114 A novel interplay between Rap1, Epac, and PKA regulates induction of angiogenesis. Jyotsana Menon, Robert S. Doebele, Marsha Rich Rosner.

Translational Targets

B115 The investigation of high metastatic features and their modification in mouse metastatic osteosarcoma model. Yoshihiro Yui, Kiyoko Yoshioka, Norifumi Naka, Kazuyuki Itoh.

B116 A Met-derived peptide fused to target peptides acts as a powerful angiogenesis inhibitor. Rosaria Cammarota, AnnaRita Cantelmo, Monica Morini, Maria Prat, Paolo Maria Comoglio, Adriana Albini.

B117 Defining a novel mechanism of α -PD1 synergy with vaccine to induce potent anti-tumor effects. Mikayel Mkrtychyan, Yana G. Najjar, Estella C. Raulfs, Samir N. Khleif.

B118 Exploring the potential of epigallocatechin-3-gallate (EGCG) on recapitulation of ATM credentials in LNCaP cell line. Ammad Ahmed Farooqi, Shahzad Bhatti.

B119 Molecular marker development for characterizing CD44, M-30, and prostate-specific antigen on circulating tumor cells in metastatic cancer. Lori E. Lowes, Ben D. Hedley, Mike Keeney, Alison L. Allan.

B120 A spliced isoform of carboxypeptidase E drives tumor metastasis epigenetically and predicts future malignancy for different cancers. Saravana Radha Krishna Murthy, Terence Lee, Niamh Cawley, Peng Loh.

B121 An oncolytic adenovirus targeting TGF β signaling in the tumor microenvironment: A novel approach to treat breast cancer bone metastasis. Zebin Hu, Zhenwei Zhang, Theresa Guise, Prem Seth.

B122 Targeting heparanase for anti-metastatic therapy in myeloma. Vishnu Ramani, Joseph Ritchie, Annamaria Naggi, Giangiacomo Torri, Benito Casu, Sergio Penco, Pisano Claudio, Israel Vlodaysky, Ralph Sanderson.

B123 Siah2 controls breast cancer neo-angiogenesis. Christina S.F. Wong, Carleen Cullinane, David D. Bowtell, Andreas Moller.

B124 Identification of novel anticancer activities of glucosamine targeting the IGF-1R/Akt pathway. Ki-Hoon Song, Ju-Hee Kang, Jeong-Seok Nam, Ho-Young Lee, Seung-Hyun Oh.

B125 Pigment epithelium-derived factor induces neuroendocrine differentiation and suppresses proliferation in human pancreatic cancer cells. Margo A. Quinn, Lijun Huang, Philip S. Fitchew, Mona L. Cornwell, Mark S. Talamonti, Charles B. Brendler, Susan E. Crawford.

B126 Sorafenib tosylate and paclitaxel induce anti-angiogenic, anti-resorptive and anti-tumor effects in experimental breast cancer bone metastases. Maximilian Merz, Dorde Komljenovic, Wolfhard Semmler, Tobias Baeuerle.

B127 Inhibition of α v β 3/ α v β 5 inhibits proliferation, migration and invasion of breast cancer cells as well as the development of experimental bone metastases. Maren Bretsch, Maximilian Merz, Dorde Komljenovic, Wolfhard Semmler, Tobias Baeuerle.

B128 Studies on boswellic acid against breast cancer MCF 7 cells. S. S. Agrawal, Sarita Saraswati, Rajani Mathur.

B129 Zalutumumab-induced ADCC represents a potent mechanism of action for the inhibition of metastasis and is active against wild-type and mutated KRAS tumor cells. Marije B. Overdijk, [Sandra Verploegen](#), Jeroen H. van den Brakel, Jeroen J. Lammerts van Bueren, Gemma M. Rigter, Tom Vink, Jan G.J. van de Winkel, Paul W.H.I. Parren.

B130 The importance of relevant *in vitro* focal adhesion kinase (FAK) assays. [Kathryn Visser](#), John Parisot, Robin Anderson, Ian Holmes, Ian Street, Theresa Connor, Kurt Lackovic, Mark Devlin, Hendrik Falk, Anthony Natoli, Neil Choi, Wilco Kersten, Annelies Goeminne.

B131 Wnt5a effects on breast cancer metastasis. [Wen Jiang](#), Rosa Serra.

B132 Integrin $\beta 3$ as a therapeutic target for breast cancer metastasis. [Rachel Z. Carter](#), Robin L. Anderson, Heloisa S. Selistre-de-Adaujo, Carmen L.S. Pontes, Normand Pouliot.

B133 Osteopontin increases breast cancer cell sensitivity to specific signaling pathway inhibitors. [Jennifer C. Mutrie](#), Pieter H. Anborgh, Alan B. Tuck, Ann F. Chambers.

B134 A promising cancer progression marker. Mana Mirza, Elizabeth Shaughnessy, John K. Hurley, Kristie A. Vanpatten, Gary A. Pestano, G. Scott Lett, Ned C. Haubein, [Georg F. Weber](#).

B135 Effective therapeutic targeting of the overexpressed HER-2 receptor in a highly metastatic orthotopic model of esophageal carcinoma. Stephanie J. Gros, Jussuf T. Kaifi, Nina Kurschat, Thorsten Dohrmann, Uta Reichelt, Ana-Maria Dancau, Kersten Peldschus, Gerhard Adam, [Robert M. Hoffman](#), Jakob R. Izicki.

Other

B136 Mechanisms of breast cancer metastasis that are extrinsic to tumor cells. Henok Eyob, Kelsi L. Kretschmann, [Alana L. Welm](#).

B137 Microtentacles arising from imbalanced cytoskeletal forces promote the reattachment of circulating breast tumor cells in lung capillaries. Eric M. Balzer, Rebecca A. Whipple, Michele I. Vitolo, Keyata Thompson, Amanda E. Boggs, Jana Slovic, Jennifer R. Yoon, Jing Yang, [Stuart S. Martin](#).

This abstract is being presented as a short talk in Concurrent Session 5. A full abstract is printed in the Proffered Abstracts section (PR13) of the Conference *Proceedings*.

B138 Dietary resveratrol may promote cancer growth and metastasis via Rac activation. [Linette Castillo-Pichardo](#), Angélica Santos, Malika Flanagan, Suranganie Dharmawardhane.

B139 Towards scalable complexity: Four tools spanning *in vitro* to *in vivo* models of cancer migration. [William J. Ashby](#), Amanda Hansen, Shanna Arnold, Philip Samson, John Wikswow, Andries Zijlstra.

B140 Targeting hypoxic cells to inhibit tumor metastasis. [Nicole S. Bryce](#), Byung J. Kim, Trevor W. Hambley.

B141 Diverging effects of doxorubicin, paclitaxel and cyclophosphamide on 4T1 mouse breast cancer primary tumor and metastases. [Mari I. Suominen](#), Rami Käkönen, Sanna-Maria Käkönen, Jussi M. Halleen.

B142 Interaction of MCF7 breast cancer cell with human lymph node stromal cells enhances metastasis to lung and lymph nodes in NOD/SCID mice. [Chung-Gi Lee](#), Lee In Yong, Harold Sighler, Yong Sung Choi.

B143 Invasion of HLRCC tumors: Assessing the contribution of HIF, ROS, and lipids. Carole Sourbier, Yeong-Sang Kim, Sunmin Lee, Jane Trepel, Len Neckers, Marston Linehan.

B144 Colospheres in colorectal cancer: A 3D *ex vivo* model associated with tumor aggressiveness. Louis-Bastien Weiswald, Sophie Richon, Gérald Massonnet, Dominique Bellet, Jean-Marc Guinebretiere, Ivan Bieche, Virginie Dangles-Marie.

B145 Ids act as downstream effectors in the transforming growth factor- β pathway in prostate cancer cells. Nicole L. Strong, Cecille Millena, Mojgan Zavareh, Jaideep Chaudhary, Shafiq Khan.

B146 Plasmin-mediated fibrinolysis in hematopoietic stem cell mobilization. Birgitte Rønø, Andreas Hald, Leif R. Lund.

B147 A structural and functional analysis of BARD1 and RAD51 overexpression in the MCF10A cell line. Natasha M. Flores, George W. Sledge, Sunil Badve, Patricia Steeg, Diane Palmieri.

B148 CD49d (alpha-4 integrin)-mediated drug resistance in HCC-38 human breast cancer cell. Lee Kyung-Min, Shin Incheol, Noh Dong-Young.

7:00

Cancer Micrometastasis and Circulating Tumor Cells

Liberty Ballroom AB

Klaus Pantel, University Medical Center, Hamburg, Germany

7:00

***Natural Products Lead Discovery in the Molecular Targets Laboratory**

Liberty Ballroom D

James B. McMahon, National Cancer Institute, Frederick, MD

*An extended abstract for this presentation is available in the Invited Abstracts section of the *Proceedings*.

Stem Cells

Liberty Ballroom AB

Chairperson: Max S. Wicha, University of Michigan Comprehensive Cancer Center, Ann Arbor, MI

- 7:45** **Regulation of breast cancer stem cells by the tumor microenvironment**
Max S. Wicha, University of Michigan Comprehensive Cancer Center, Ann Arbor, MI
- 8:30** ***The role of developmental molecules and miRs in the induction of cancer stem cells and metastasis**
Heide L. Ford, University of Colorado School of Medicine, Aurora, CO
- 9:00** ***Solid tumors target the hematopoietic stem cell niche for metastasis**
Russell S. Taichman, University of Michigan, Ann Arbor, MI
- 9:30** ****Microenvironment enriched metastatic cancer stem cells mediate prostate cancer metastasis**
Mahipal V. Suraneni, UT M. D. Anderson Cancer Center, Smithville, TX

*An extended abstract for this presentation is available in the Invited Abstracts section of the *Proceedings*.

**An extended abstract for this presentation is available in the Proffered Abstracts section of the *Proceedings*.

Translational Targets 2

Liberty Ballroom AB

Chairperson: Patricia S. Steeg, National Cancer Institute, Bethesda, MD

10:30

Signaling pathways as targets for therapy

Suzanne A. Eccles, Cancer Research UK Centre For Cancer Therapeutics, McElwain Laboratories, Sutton, Surrey, United Kingdom

11:00

***The role of adipocytes in promoting metastasis**

Ernst R. Lengyel, University of Chicago, Chicago, IL

11:30

***Functional role of RANKL in metastasis and tumorigenesis:
Skeletal and extraskkeletal effects**

William C. Dougall, Amgen, Inc., Seattle, WA

*An extended abstract for this presentation is available in the Invited Abstracts section of the *Proceedings*.