

2004 ASMB Meeting

San Diego

PROGRAM

WEDNESDAY, NOVEMBER 10

SPECIAL INTEREST GROUPS

12:30 – 3:00 PM, Wednesday, Ballroom A

Instructive and Architectural Functions of Cellular Basement Membranes

Chair: Peter Yurchenco, <i>UMDNJ-RW Johnson Medical School</i>	Abstract No.
12:30 PM	Structural and Functional Properties of Usherin, a Novel Basement Membrane Protein Implicated in Usher Syndrome Pathogenesis; Dominic Cosgrove, <i>BTNRH-Genetics</i> 1
12:55 PM	Transgenic Approaches to Investigate Laminin Functions; Jeffrey H. Miner, <i>Washington University School of Medicine</i> 2
1:20 PM	Assembly and Stabilization of the NC1 Hexamer of Collagen IV Networks: Implications for Function and Pathogenesis; Bill G. Hudson, <i>Vanderbilt University</i> 3
1:45 – 2:10	Break
2:10 PM	Endothelial Expression of the $\alpha_6\beta_4$ Integrin Is Negatively Regulated during Angiogenesis; Susan E. LaFlamme, <i>Albany Medical College</i> 4
2:35 PM	Laminin-sulfatide Binding Initiates Assembly of a Basal Lamina and Associated Membrane Macrodome in Schwann Cells and Fibroblasts; Peter D. Yurchenco, <i>UMDNJ-RW Johnson Medical School</i> 5

12:30 – 3:00 PM, Wednesday, Ballroom C

Modulation of Angiogenesis by Matrix and Matrix-Derived Proteins

Chair: Renato Iozzo, <i>Thomas Jefferson University</i>	Abstract no.
12:30 PM.....	Regulation of Vascular Morphogenesis by Collagen Type I; Donald Senger, <i>Harvard University</i> 6
12:55 PM	The Complex Role of Thrombospondins in Regulation of Angiogenesis; Paul Bornstein, <i>University of Washington</i> 7
1:20 PM	Extracellular Matrix Degradome Contributes to a Novel Class of Tumor Suppressors; *Raghu Kalluri; Harvard University 8
1:45 – 2:10	Break
2:10 PM	Regulation of Angiogenesis by Endorepellin; Renato Iozzo, <i>Thomas Jefferson University</i> 9
2:35 PM	Cell-Extracellular Matrix Interactions in Vasculogenesis; Scott Argraves, <i>Medical University of South Carolina</i> 10

12:30 – 3:00 PM, Wednesday, Ballroom D

Dynamic Analysis of ECM Fiber Assembly and Organization *in vivo* and *in vitro*

Chair: Charles Little, <i>University of Kansas Medical Center</i>	Abstract no.
12:30 PM	Systems Analysis of ECM and Cell Dynamics during Vascular Morphogenesis; Charles Little, <i>University of Kansas Medical Center</i> 11
12:55 PM	Dynamic Analysis of Fibrillin Organization and Function During Avian Embryogenesis; Brenda Rongish, <i>University of Kansas Medical Center</i> 12
1:20 PM	Extracellular Matrix Assembly <i>in vivo</i>: Studies Using <i>Xenopus Laevis</i>; Bette Dzamba, <i>UVA Health System School of Medicine</i> 13
1:45 – 2:10	Break
2:10 PM	New Insights into Bone Extracellular Matrix Assembly from Dynamic Computational Imaging in Living Osteoblasts; Sara Dallas, <i>University of Missouri, Kansas City</i> 14

3:30 – 6:00 PM, Wednesday, Ballroom A**Role of Matrix in Disease Processes**

Chairs: Luisa Iruela-Arispe, <i>UCLA</i> and Pyong Woo Park, <i>Baylor College of Medicine</i>		Abstract no.
3:30 PM	Putting VEGF in Context: Diversification of Responses to Vascular Endothelial Growth Factor and its Dependency to Matrix; Luisa Iruela-Arispe, <i>University of California, Los Angeles</i>	15
3:55 PM	MMPs in Destructive and Obstructive Lung Diseases; Farrah Kheradmand, <i>Baylor College of Medicine</i>	16
4:20 PM	Domain-Specific Modification of Heparan Sulfate by Qsulf1 Modulates the Cellular Localization of the BMP Antagonist, Noggin; Scott Saunders, <i>Washington University School of Medicine</i>	17
4:45 – 5:10	Break	
5:10 PM	Heparan Sulfates – Key Modulators of Osteolytic Tumor Growth and Metastasis; Ralph Sanderson, <i>University of Arkansas Medical Science</i>	18
5:35 PM	Attenuation of Septic Inflammatory Responses by Syndecan-1; Pyong Woo Park, <i>Baylor College of Medicine</i>	19

3:30 – 6:00 PM, Wednesday, Ballroom C**Proteoglycans and Hyaluronan in Cell Biology**

Chairs: Thomas Wight, <i>The Hope Heart Institute</i> and Vincent Hascall, <i>Cleveland Clinic Foundation</i>		Abstract
3:30 PM	Endothelial Heparan Sulfate in Vascular Biology; Jeffrey Esko, <i>University of California, San Diego</i>	20
3:55 PM	Hyaluronan Matrices can Dialogue with Inflammatory Cells; Vincent Hascall, <i>Cleveland Clinic Foundation</i>	21
4:20 PM	Lipid Rafts – Hyaluronan, CD44, Vimentin and TGF-β Signalling; Anna H. Plass	22
4:45 – 5:10	Break	
5:10 PM	Hyaluronan Regulates Constitutive ErbB2 Signalling and Multidrug Resistance In Cancer Cells; Bryan Toole, <i>Medical University of South Carolina</i>	23
5:35 PM	Versican- Master Regulator of Vascular Cell Phenotype and Extracellular Matrix Assembly; Thomas N. Wight, <i>The Hope Heart Institute</i>	24

3:30 – 6:00 PM, Wednesday, Ballroom D**Development and Structural Integrity of Elastogenic Tissues: Lessons From Knock-Out Mice**

Chair: Elaine C. Davis, <i>McGill University</i>		Abstract no.
3:30 PM	Developmental and Structural Integrity of Elastogenic Tissues: Lessons From Knock-Out Mice – Special Interest Session; Elaine C. Davis, <i>McGill University</i>	25
3:55 PM	Fibrillin Microfibrils in Elastogenesis and Remodeling; Luca Carta, <i>Hospital of Special Surgery</i>	26
4:20 PM	Role of Lysyl Oxidase Like 1 in Elastic Fiber Maintenance; Tiansen Li, <i>Harvard Medical School</i>	27
4:45 – 5:10	Break	
5:10 PM	Fibulin-2 in Elastic Fiber Organization and Extracellular Matrix Remodeling; Mon-Li Chu, <i>Thomas Jefferson University</i>	28
5:35 PM	Mice That Lack MAGP-1 Display Subtle Connective Tissue and Bleeding Abnormalities; Claudio Werneck.....	29

WEDNESDAY EVENING, KEYNOTE LECTURE**7:00 – 8:00 PM, Keynote Lecture, Randle Ballroom**

Formation of Malignant Human Cancer Cells, Robert A. Weinberg, <i>Whitehead Institute</i>	30
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8:00 – 10:00 PM, Wednesday, RECEPTION, Ballroom Foyer

PROGRAM

THURSDAY, NOVEMBER 11

8:30 – 11:30 AM, Plenary Session, Thursday, Randle Ballroom
Regenerative Medicine and Organogenesis

Chair: Kenneth Yamada, <i>National Institute of Dental and Craniofacial Research</i>	Abstract no.
8:30 AM ASMB Senior Lectureship Award Sponsored by Genzyme; Integrin-Fibronectin Interactions in Three Dimensions: Roles in Adhesion, Matrix Assembly, Signaling, and Development; Kenneth Yamada, <i>National Institute of Dental and Craniofacial Research</i>	31
9:10 AM Stem cells and Their Niche in the Skin; Elaine Fuchs <i>Howard Hughes Medical Institute; The Rockefeller University, NY</i>	32
9:50 – 10:10 Break	
10:10 AM Branching Morphogenesis in the Kidney; Sanjay Nigam, <i>University of California, San Diego</i>	33
10:50 AM Integrin Signalling in Normal and Diseased Epidermis; Fiona Watt, <i>Keratinocyte Laboratory, London, UK</i>	34
11:30 PM Lunch Break	

1:30 – 5:00 PM, Thursday, Ballroom A
Morphogen Gradients

Chair: Dan Rifkin, <i>New York University School of Medicine</i>	Abstract no.
1:30 PM Latent TGF-β binding Proteins: Orchestrators of TGF-β action, Dan Rifkin, <i>New York University School of Medicine</i>	35
2:05 PM Establishment and Function of BMP Activity Gradients in Neural and Non-Neural Ectodermal Domains of the <i>Drosophila</i> Embryo; Ethan Bier, <i>University of California, San Diego</i>	36
2:40 – 3:00 Break	
3:00 PM Genetic Analysis of Basement Membranes in the Mouse, Jeff Miner, <i>Washington University</i>	37
3:35 PM Establishing Connective Tissue Pathways that Regulate Morphogenesis; Lynn Sakai, <i>Shriners Hospital</i>	38
4:10 PM Assembly of Amino-Terminal Region of LTBP-1; *Zenzo Isogai, <i>National Center for Geriatrics, Aichi, Japan</i>	39
4:25 PM Novel Basement Membrane Components Spatiotemporally Expressed in the Developing Hair Follicle; *Daiji Kiyozumi, ERATO Sekiguchi Pj, Aichi, Japan	40

1:30 – 5:00 PM, Thursday, Ballroom C
Vascular Biology and the Extracellular Matrix

Chair: Helene Sage, <i>Hope Heart Institute</i>	Abstract no.
1:30 PM Hevin and SPARC: Matricellular Counterparts in Tissue Responses to Injury; Helene Sage, <i>Hope Heart Institute</i>	41
2:05 PM Fibrin Matrices and the Inflammatory Response; Jay Degen, <i>Children's Hospital Research Foundation</i>	42
2:40 – 3:00 Break	
3:00 PM Reversal of Obesity by Targeted Ablation of Adipose Vasculature; Mikhail G. Kolonin, <i>UT, M. D. Anderson Cancer Center</i>	43
3:35 PM CCN1-Integrin Interactions in Vascular Biology and Cell Signaling; Lester Lau, <i>University of Illinois, Chicago</i>	44
4:10 PM A Novel Role of Fibulin-5 as a Negative Regulator of Vascular Remodeling; *Hiromi Yanagisawa, <i>UT Southwestern, Dallas, TX</i>	45
4:25 PM The Modulation of Skeletal Angiogenesis by Indian Hedgehog; *Jill Helms, <i>Stanford University</i>	46

PROGRAM

1:30 – 5:00 PM, Thursday, Ballroom D
Cell Adhesion and Migration

	Abstract no.
Chair: Rick Horowitz, <i>University of Virginia</i>	
1:30 PM Adhesion Dynamics during Cell Migration; Rick Horwitz, <i>University of Virginia</i>	47
2:05 PM Regulation of Integrin Dependent Functions by Laterally-Associated Proteins; Martin Hemler, <i>Dana Farber Cancer Institute, Harvard Medical School</i>	48
2:40 – 3:00 Break	
3:00 PM Calpain Proteolysis in Adhesion Regulation and Cell Migration; Anna Huttenlocher, <i>University of Wisconsin, Madison</i>	49
3:35 PM Cell Migration Without a Lamellipodium: Translation of Actin Dynamics Into Cell Movement Mediated by Tropomyosin; Clare Waterman-Storer; <i>Department of Cell Biology, The Scripps Research Institute</i>	50
4:10 PM CD98hc (SLC3A2) Mediates Integrin Signaling and Tumorigenesis; *Chloe C. Feral, <i>University of California, San Diego</i>	51
4:25 PM The Transmembrane Domain of CD98 Induces Integrin Beta1-Dependent Cell Migration in Polarized Epithelial Cells. *Roy Zent, <i>Vanderbilt Medical Center, Nashville, TN</i>	52

6:00 – 8:30 PM
Poster Session 1 (see page 33) and Reception

FRIDAY, NOVEMBER 12

8:30 – 11:30 AM, Plenary Session, Friday, Randle Ballroom
Genetics of Connective Tissues

	Abstract no.
Chair: Gerard Karsenty, <i>Baylor College of Medicine</i>	
8:30 AM Why ECM Mineralization Occurs Only in Bone; Gerard Karsenty, <i>Baylor College of Medicine</i>	53
9:10 AM Molecular Recognition by LARGE is Essential for Expression of Functional Dystroglycan; Kevin Campbell, <i>University of Iowa</i>	54
9:50 – 10:10 Break	
10:10 AM Glycan-Dependent Control of Immunity; John Lowe, <i>University of Michigan Medical School</i>	55
10:50 AM Novel Ligands and Unexpected Roles for the $\alpha_2\beta_1$ Integrin; Mary Zutter, <i>Vanderbilt University</i>	56

12:00 – 1:00 PM, Friday, Ballroom A
NIH Center for Scientific Review and Reorganization
Zakir H. Bengali, NIH

12:00 PM Choosing an Appropriate Study Section for Your Grant Application <i>Purchase a box lunch and join Dr. Bengali for a discussion on the new configuration of study sections at NIH</i>	
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PROGRAM

**1:30 – 5:00 PM, Friday, Ballroom A
Bio (Tissue) Engineering**

Chair: Linda Griffith, <i>Massachusetts Institute of Technology</i>		Abstract no.
1:30 PM	TBD; Linda Griffith, <i>Massachusetts Institute of Technology</i>	57
2:05 PM	Cartilage Tissue Engineering with Self Assembling Peptide Scaffolds: Importance of Mechanobiology; Alan Grodzinsky, <i>Massachusetts Institute of Technology</i>	58
2:40 – 3:00	Break (Sponsored by Hospital for Special Surgery)	
3:00 PM	Cell Instructive Materials for Tissue Regeneration; David Mooney, <i>University of Michigan</i>	59
3:35 PM	Alternative Mechanosensing Through the 3-D Matrix: Convection-Mediated Modulation of Extracellular Morphogen Distribution; Melody Swartz, <i>Swiss Federal Institute of Technology (EPFL)</i>	60
4:10 PM	Genetically Engineered Collagen-Like Proteins For Smart Biomaterials; Hidetoshi Ito, <i>Thomas Jefferson University</i>	61
4:25 PM	RGD Peptides and Adsorbed Serum Proteins Cooperatively Regulate Mesenchymal Stem Cell Attachment and Spreading on Hydroxyapatite; Amber A Sawyer, <i>UAB, Birmingham, AL</i>	62

**1:30 – 5:00 PM, Friday, Ballroom C
Tumor Microenvironment**

Vito Quaranta, <i>Vanderbilt University</i>		Abstract no.
1:30 PM	Microenvironment Cues from Laminins in Cancer Progression; Vito Quaranta, <i>Vanderbilt University</i>	63
2:05 PM	Driving the Matrix Remodeling Activity of Human Cancer Cells; Stephen Weiss, <i>University of Michigan</i>	64
2:40 – 3:00	Break	
3:00 PM	Regulation of Actin Dynamics and Apoptosis by Cell Adhesion Through Abl Tyrosine Kinase; Jean Wang, <i>University of California, San Diego</i>	65
3:35 PM	Targeting MT1-MMP in Cancer Cells for Therapy; Motoharu Seiki, <i>University of Tokyo</i>	66
4:10 PM	ASMB Junior Lectureship Award Sponsored by Genzyme; The ECM and Integrins as Metastasis Suppressors; Dwayne Stupack, <i>Scripps Research Institute</i>	67
4:45 PM	SIBLING Modulation of Matrix Metalloproteinases and Tumor Progression; Alka Jain, <i>Johns Hopkins University</i>	68

**1:30 – 5:00 PM, Friday, Ballroom D
Axon Guidance and Synapse Formation**

Chair: Joshua Sanes, <i>Washington University</i>		Abstract no.
1:30 PM	Matrix Molecules that Promote Synapse Formation; Joshua Sanes, <i>Washington University</i>	69
2:05 PM	Thrombospondins are Astrocyte-Secreted Proteins that Promote CNS Synaptogenesis; Ben Barres, <i>Stanford University</i>	70
2:40 – 3:00	Break	
3:00 PM	Integrin Functions in the Developing and Adult CNS; Ulrich Müller, <i>Scripps Research Institute</i>	71
3:35 PM	Mammalian Neural Development and Heparan Sulfate; Yu Yamaguchi, <i>The Burnham Institute</i>	72
4:10 PM	The Neural Induction of the Embryonic Stem Cells; *Jianhe Tang, <i>Dalian Medical University, Dalian 116027 P.R.China</i>	73
4:25 PM	Phosphodiesterase-Ialpha/Autotaxin's Matricellular Properties Facilitate Process Formation in Oligodendroglial Cells and Are Dependent on the Presence of the EF-Hand-Like Domain; *Jameel Dennis, <i>Virginia Commonwealth University, Richmond VA</i>	74

**6:00 – 8:30 PM
Poster Session 2, Friday (see page 67) and Reception**

PROGRAM

SATURDAY, NOVEMBER 13

8:30 AM – 12:00 PM, Saturday, Ballroom A
New Matrix Proteins and New Functions

Chair: Francesco Ramirez, <i>Hospital of Special Surgery</i>	Abstract no.
8:30 AM Osteopontin: Bridging Inflammation and Calcification ; Ceci Giachelli; <i>University of Washington</i>	75
9:05 AM Nidogen Functions in C. Elegans Development ; Jim Kramer; <i>Northwestern University</i>	76
9:40 – 10:00 Break (Sponsored by Hospital for Special Surgery)	
10:00 AM Multiple Roles of Vascular Endothelial Growth Factor in Skeletal Development ; Bjorn Olsen, <i>Harvard University</i>	77
10:35 AM C-type Natriuretic Signaling Pathway and Its Role in Prenatal and Postnatal Skeletal Growth ; Matthew Warman, <i>Case Western Reserve University</i>	78
11:10 AM Growth Differentiation Factor-11 Forms a non-covalent Latent Complex with its Cleaved Prodomain and is Activated by BMP-1-like proteinases . Daniel Greenspan, <i>University of Wisconsin, Madison, WI</i>	79
11:25 AM Characterization of Netrin-4 Binding Sites . Fiona Schneiders, <i>Center for Biochemistry, Cologne, Germany</i>	80

8:30 AM – 12:00 PM, Saturday, Ballroom C
Matrix Remodeling

Chair: James Quigley, <i>Scripps Research Institute</i>	Abstract no.
8:30 AM uPARAP/Endo180-dependent Intracellular Collagen Degradation - a Major Pathway of Pathophysiological Collagen Turnover ; Thomas Bugge; <i>National Institute of Dental and Craniofacial Research</i>	81
9:05 AM ADAMTS13, von Willebrand Factor, and Thrombotic Thrombocytopenic Purpura ; David Ginsburg, <i>Howard Hughes Medical Institute and Departments of Internal Medicine and Human Genetics, University of Michigan</i>	82
9:40 – 10:00 Break	
10:00 AM Metalloproteinases as Modulators of Inflammation ; William Parks, <i>University of Washington</i>	83
10:30 AM The Roles of Laminin γ1 in the Mammalian Peripheral Nervous System ; Sid Strickland; <i>Rockefeller University</i>	84
11:00 AM Tumor Metastasis/Angiogenesis Models that Hear Distinctly the Cross-Talk between Tumor MMPs and Stromal MMPs ; James Quigley, <i>Scripps Research Institute</i>	85
11:30 AM MMP9-null mice display altered responses to injury that are associated with abnormalities in matrix remodeling, keratinocyte migration, and macrophage function . *Themis R. Kyriakides, <i>University of Washington, Seattle, WA</i>	86
11:45 AM Fibronectin Proteolysis Promotes Alpha4beta1-Mediated Contraction of a Wound Matrix ; *Leyla V. Valenick, <i>Princeton University, Princeton, NJ</i>	87

PROGRAM

8:30 AM – 12:00 PM, Saturday, Ballroom D
Determinants of Matrix Structure and Function

		Abstract No.
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Chair: Jean Schwarzbauer, <i>Princeton University</i>		
8:30 AM	Control of Fibronectin Matrix Assembly by Cellular Microenvironment; Jean Schwarzbauer, <i>Princeton University</i>	88
9:05 AM	Elasticity of Fibronectin Matrix Fibrils Studied with FN-gfp; Harold Erickson, <i>Duke University</i>	89
9:40 – 10:00 Break		
10:00 AM	Time-Lapse Imaging of Elastic Fiber Formation: Developing a Paradigm for Matrix Assembly; Robert Mecham, <i>Washington University</i>	90
10:35 AM	Design of ECM-mimetic Polymers; Jennifer West, <i>Rice University</i>	91
11:10 AM	Drosophila SPARC (desparc) is Required for Type IV Collagen Deposition in Basal Laminae; *Nathalie N. Martinek, <i>University of Toronto, Zoology, Toronto, ON, Canada</i>	92
11:25 AM	Targeted Disruption of the Gene for the Procollagen C-Proteinase Enhancer Protein; *Barry Steiglitz, <i>University of Wisconsin, Madison, WI</i>	93

2:00 – 5:00 PM, Plenary Session, Saturday, Ballroom C
Mechanisms of Signaling and the Matrix

		Abstract no.
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Chair: Alan Rapraeger, <i>University of Wisconsin, Madison</i>		
2:00 PM	Activation of avb3 Integrin is Dependent on Syndecan-1 in Human Mammary Carcinoma Cells; Alan Rapraeger, <i>University of Wisconsin, Madison</i>	94
2:40 PM	Molecular Basis of Mechanotransduction in Endothelial Cells; Shu Chien, <i>University of California, San Diego</i>	95
3:20 – 3:40 Break		
3:40 PM	Integrin Signaling in Cell Proliferation and Migration; Mark Ginsberg, <i>University of California, San Diego</i>	96
4:20 PM	Signaling of the Intermediate Adhesive State by Thrombospondins: Implications for Cell Motility and Survival; Joanne Murphy-Ullrich, <i>Department of Pathology and the Cell Adhesion and Matrix Research Center, University of Alabama at Birmingham</i>	97

6:00 – 9:00 PM, Fiesta San Diego Style, Poolside
 Tickets are required.
