ASMB Workshop on Basement Membranes

July 12-14, 2017
Vanderbilt University Medical Center
Nashville, TN

Meeting Chairs: Roy Zent and Jeffrey Miner

All Abstracts Available ONLINE – www.asmb.net.

Wednesday, July 12th

5:00 - 6:00 pm Registration Open
Location: Light Hall North Lobby

6:00 – 7:30pm Welcome Remarks and Keynote Address
Location: Light Hall 214

Mechanisms of Cell/Matrix Interactions in Skeletal Muscle
Kevin Campbell, *University of Iowa College of Medicine, Iowa City, Iowa*

7:30pm Welcome Dinner
Location: Light Hall North Lobby

Thursday, July 13th

7:30-8:30 am Networking Breakfast
Location: Light Hall North Lobby

8:30-10:00 am Session I: New Tools for Studying Basement Membranes
Location: Light Hall 214
Chair: Rachel Lennon, *University of Manchester, Manchester, UK*

8:30 am **Interrogating Glomerular Barrier Injury with Proteomics and 3D Electron Microscopy,** Rachel Lennon, *University of Manchester, Manchester, UK*

9:00 am **Sculpting Collagen IV Triple Helical Fragments,** Sergey Budko, *Vanderbilt University Medical Center, Nashville, Tennessee* abstract #1

Thursday, July 13th *Continued*

9:15 am **Developing a novel cell-based tool for assembling type IV collagen α345,** Kohei Omachi, *Kumamoto University, Kumamoto, Japan,* abstract #2

9:30 am **Tissue-specific Targeting of Type IV Collagen to Growing Basement Membranes,** Ranjay Jayadev, *Duke University, Durham, North Carolina* abstract #3

9:45 am **Development of diagnostic and prognostic extracellular matrix signatures for human colon carcinoma,** Steffen Rickelt, *The Koch Institute for Integrative Cancer Research at the Massachusetts Institute of Technology, Cambridge, Massachusetts* abstract #4

10:00-10:30 am Coffee Break
Location: Light Hall North Lobby

10:30-12:00 pm Session II: Biophysics of Basement Membranes: Structure Matters
Location: Light Hall 214
Chair: Erhard Hohenester, *Imperial College London, UK*

10:30 am **Structural Basis of Cell Adhesion to Laminin,** Erhard Hohenester, *Imperial College London, UK*

11:00 am **Mechanistic basis for the recognition of laminin-511 by alpha6beta1 integrin**, Kiyotoshi Sekiguchi, *Osaka University, Osaka, Japan* abstract #5

11:30 am **Basement membrane is assembled in distinct stages from the protein toolkit.** Elena Pokidysheva, *Vanderbilt University, Nashville, Tennessee* abstract #6

Thursday, July 13th *Continued*

11:45 am **A novel AMACO-containing filamentous suprastructure originating at the basement membrane,** Raimund Wagener, *University of Cologne, Cologne, Germany* abstract #7

12:00-2:00 pm Poster Session I - Lunch
Location: TBA

2:00-3:30 pm Session III: Basement Membrane Synthesis, Assembly and Stability *Location: Light Hall 214*
Chair: Billy Hudson, *Vanderbilt University Medical Center, Nashville, Tennessee*

2:00 pm **Collagen IV Smart Scaffolds: A Key Innovation for Animal Multicellularity,** Billy Hudson, *Vanderbilt University Medical Center, Nashville, Tennessee*

2:30 pm **Establishing a model of BM damage and analyzing its repair,** Angela Howard, *Vanderbilt University, Nashville, Tennessee, USA* abstract #8

2:45 pm **Basement membrane repair occurs via a similar, but not identical, mechanism as de novo assembly,** William Ramos-Lewis, *Vanderbilt University, Nashville, Tennessee* abstract #9

3:00 pm **A moving source of matrix components is essential for de novo basement membrane formation,** Yutaka Matsubayashi, *King's College London, London, UK* abstract #10

3:15 pm **Lysyl Oxidase like-2 Proteolytic Processing is Required for Crosslinking of Basement Membrane Collagen IV,** Alberto Lopez-Jimenez, *Vanderbilt Medical Center, Nashville, Tennessee* abstract #11

3:30-4:00 pm Coffee Break
Location: Light Hall North Lobby

Thursday, July 13th *Continued*

4:00-4:30 pm Business Meeting
Location: Light Hall 214

4:30-6:00 pm Session IV: Cell-basement Membrane Communication
Location: Light Hall 214
Chair: David Sherwood, *Duke University, Durham, North Carolina*

4:30 pm **Adaptive Cell Invasion Through Basement Membrane in Vivo in the Absence of MMP's,** David Sherwood, *Duke University, Durham, North Carolina*

5:00 pm **Integrins α3 and α6 subunits cooperate in controlling epithelial cell adhesion and growth on laminin substrata**, Eugenia Yazlovitskaya, *Vanderbilt University, Nashville, Tennessee* abstract #12

5:15 pm **The role of Lu/B-CAM spectrin binding motif in cell migration on LM-511,** Yamato Kikkawa, *Tokyo University of Pharmacy and Life Sciences* abstract #13

5:30 pm **The role of Integrin β1-Talin interaction in ureteric bud development,** Sijo Mathew, *Vanderbilt University Medical Center, Nashville, Tennessee* abstract #14

5:45 pm **Epithelial β1 integrin is required for maintenance of alveolar homeostasis,** Erin Plosa, *Vanderbilt University, Nashville, Tennessee* abstract #15

7:15 pm Dinner at Local Restaurant *(included)*
P.F. Chang's is approximately a 12 minute walk. Meeting attendees are encouraged to walk together from campus. Maps are available at the registration desk. Please let staff know if you need transportation.
P.F. Chang's 2525 West End Ave Ste 2535, Nashville, TN 37203.

Friday, July 14th

7:30-8:30 am **Networking Breakfast**
Location: Light Hall North Lobby

8:30-10:00 am **Session V: Basement Membrane Genetics**
Location: Light Hall 214
Chair: Sally Horne-Badovinac, *University of Chicago, Chicago, Illinois*

8:30 am **Building It in the Right Place - Mechanisms Controlling Polarized Secretion of Basement Membrane Proteins,** Sally Horne-Badovinac, *University of Chicago, Chicago, Illinois,*

9:00 am **Pericytic laminin regulates blood brain barrier integrity,** Yao Yao, *University of Georgia, Athens, Georgia* abstract #16

9:15 am **Intron retention and alternative polyadenylation provides dual layers of laminin alpha3 control; regulating transcript abundance and modifying protein organization.** Kevin Hamill, *University of Liverpool, Liverpool UK* abstract #17

9:30 am **Pathogenicity of the Human Laminin β2 S80R Mutation Revealed by Its Impact on Alport syndrome,** Steven Funk, *Washington University, St. Louis, Missouri* abstract #18

9:45 am **Discoidin Domain Receptor-2 (DDR-2) is required for niche enwrapment in C. elegans,** Sara Payne, *Duke University, Durham, North Carolina* abstract #19

10:00-10:30 am **Coffee Break**
Location: Light Hall North Lobby

Friday, July 14th *Continued*

10:30-12:00 pm **Session VI: Therapeutics for Basement Membrane Diseases**
Location: Light Hall 214
Chair: Leena Bruckner-Tuderman, *University Hospital Freiburg*

10:30 am **Small Molecules as Disease Modifying Therapies for Epidermolysis Bullosa,** Leena Bruckner-Tuderman, *University Hospital Freiburg, Freiburg, Germany*

11:00 am **Laminin-521 protein therapy for glomerular basement membrane and podocyte abnormalities in a mouse model of Pierson syndrome,** Meei-Hua Lin, *Washington University in St. Louis, St. Louis, Missouri* abstract #20

11:15 am **Chimeric Linker Proteins and Laminin Polymerization,** Karen McKee**,** *Rutgers University, Piscataway, New Jersey* abstract #21

11:30 am **The chemical chaperone, PBA, reduces ER stress and autophagy and increases collagen IV α345 expression in cultured fibroblasts from men with X-linked Alport syndrome and missense mutations,** Judy Savige**,** *The University of Melbourne, Melbourne, Australia* abstract #22

11:45 am **Talin regulates Discoidin Domain Receptor 1-mediated cell migration,** Corina Borza**,** *Vanderbilt University, Nashville, Tennessee* abstract #23

12:00-2:00 pm **Poster Session II - Lunch**
Location: TBA

Friday, July 14th *Continued*

2:00-3:30 pm **Session VII: Mechanisms of Basement Membrane Degradation**
Location: Light Hall 214
Chair: Renato Iozzo, *Sidney Kimmel Medical College at Thomas Jefferson University, Philadelphia, Pennsylvania*

2:00 pm **Dual Regulation of Angiogenesis and Autophagy by Perlecan and Its Parts,** Renato Iozzo, *Sidney Kimmel Medical College at Thomas Jefferson University, Philadelphia, Pennsylvania* abstract #24

2:30 pm **Netrin-4: An extracellular-matrix protein with non-enzymatic disruptive and modulating activity on basement membranes,** Raphael Reuten, *University of Copenhagen, Copenhagen, Denmark* abstract #25

2:45 pm **Investigating Granzyme B involvement in dermo-epidermal separation in blistering skin conditions,** Valerio Russo, *University of British Columbia, Vancouver, Canada* abstract #26

3:00 pm **In vivo manipulation of the extracellular matrix induces vascular regression in a basal chordate,** Anthony De Tomaso, *University of California Santa Barbara, Santa Barbara, California* abstract #27

3:15 pm **Lysyl oxidase like-2 (LOXL2) regulates endothelial mechano-transduction and 3D vascular morphogenesis through scaffolding of basement membrane,** Laurent Muller, *Collège de France, Paris, France* abstract #28

3:30-4:00 pm **Coffee Break**
Location: Light Hall North Lobby

Friday, July 14th *Continued*

4:00-5:30 pm **Session VIII: Basement Membrane-associated Pathologies**
Location: Light Hall 214
Chair: Peter Yurchenco, *Rutgers-RW Johnson Medical School, Piscataway, New Jersey*

4:00 pm **Repair of Laminin-deficiency States with Linker Proteins,** Peter Yurchenco, *Rutgers-RW Johnson Medical School, Piscataway, New Jersey* abstract #29

4:30 pm **The systemic phenotype of col4a1 Drosophila mutants demonstrate chronic inflammation, intestinal dysfunction, premature aging and compromised secretory epithelia,** Matyas Mink, *University of Szeged, Csongrad, Hungary* abstract #30

4:45 pm **Modelling Alport syndrome in zebrafish,** Richard Naylor, *University of Manchester, Manchester, UK* abstract #31

5:00 pm **The Role of DDR1 in podocyte lipotoxicity and progression of Alport Syndrome,** Jinju Kim, *University of Miami, Miami, Florida* abstract #32

5:15 pm **Systematic Analysis of the Effects of Diabetes-relevant Stimuli on Human Retinal Cell Expression of Extracellular Matrix Constituents,** Meredith Giblin, *Vanderbilt University, Nashville, Tennessee* abstract #33

7:00 pm **Closing Dinner at a Local Restaurant *(included)***
B.B.Kings at 152 2nd Ave N, Nashville, TN 37201. Shuttle bus provided to the restaurant. Registration desk will provide details for the shuttle bus pick up location and time.