

2015 Collagen Gordon Research Conference

The Collagen Superfamily: From Genes to Organism Physiology

July 12-17, 2015

Colby-Sawyer College

New London, NH

Chair: **Sergey Leikin** (National Institutes of Health, USA)

Vice Chair: **Florence P. Ruggiero** (Institut de Génomique Fonctionnelle de Lyon, France)

SUNDAY

2:00 pm - 9:00 pm Arrival and Check-in

6:00 pm Dinner

7:30 pm - 7:40 pm Welcome / Introductory Comments by GRC Site Staff

7:40 pm - 9:30 pm **Expression and Regulation of Collagen Genes and Gene Network**

Discussion Leader: **Barbara Smith** (Boston University School of Medicine, USA)

7:40 pm - 7:50 pm Opening Remarks

7:50 pm - 8:00 pm Introduction by Discussion Leader

8:00 pm - 8:20 pm **Barbara Smith** (Boston University School of Medicine, USA)

"Myocardin Related Transcription Factor A (MRTF-A/MKL1): From Actin Dynamics to Epigenetic Activation of Collagen Transcription in Fibrotic Diseases"

8:20 pm - 8:30 pm Discussion

8:30 pm - 8:50 pm **George Bou-Gharios** (University of Liverpool, United Kingdom)

"Collagen Type I Regulation and Its Relationship to Fibrotic Disease"

8:50 pm - 9:00 pm Discussion

9:00 pm - 9:20 pm **Michael Czubryt** (University of Manitoba, Canada)

"Scleraxis: A Novel Transcriptional Regulator of Cardiac Fibroblast Phenotype and Extracellular Matrix Production"

9:20 pm - 9:30 pm Discussion

MONDAY

7:30 am - 8:30 am Breakfast

9:00 am - 12:30 pm **Structure and Function of Different Domains in Collagen Molecules**

Discussion Leader: **Barbara Brodsky** (Tufts University, USA)

9:00 am - 9:10 am Introduction by Discussion Leader

9:10 am - 9:30 am **Barbara Brodsky** (Tufts University, USA)

"Nature of the Interaction Between Collagen and Fibronectin and Its Disruption by Mutations"

9:30 am - 9:40 am Discussion

9:40 am - 10:00 am **Jean Baum** (Rutgers University, USA)

"The Collagen Triple Helix: Structural Features and Biological Implications"

10:00 am - 10:10 am Discussion

10:10 am - 10:30 am **Joshua Sakon** (University of Arkansas, USA)

"Structure, Targeting Mechanism and Preclinical Use of Clostridial Collagen Binding Proteins"

10:30 am - 10:40 am Discussion

10:40 am - 11:10 am Coffee Break

11:10 am - 11:30 am **Erhard Hohenester** (Imperial College London, United Kingdom)

"Structural Insights into Collagen Uptake by C-Type Mannose Receptors"

11:30 am - 11:40 am Discussion

11:40 am - 12:20 pm Short Talks Selected from Poster Abstracts

12:20 pm - 12:30 pm General Discussion

12:30 pm Lunch

1:30 pm - 4:00 pm Free Time

4:00 pm - 6:00 pm	<u>Poster Session</u>
6:00 pm	Dinner
7:30 pm - 9:30 pm	Collagen Homeostasis
	Discussion Leader: Karl Kadler (University of Manchester, United Kingdom)
7:30 pm - 7:40 pm	Introduction by Discussion Leader
7:40 pm - 8:00 pm	Karl Kadler (University of Manchester, United Kingdom) "Rhythmic Control of Collagen Synthesis and Degradation"
8:00 pm - 8:10 pm	Discussion
8:10 pm - 8:30 pm	Johanna Myllyharju (University of Oulu, Finland) "Prolyl 4-Hydroxylases, Key Enzymes in Synthesis of Collagens and Regulation of Hypoxia Signaling"
8:30 pm - 8:40 pm	Discussion
8:40 pm - 9:00 pm	Alberto Luini (Institute of Protein Biochemistry, CNR, Italy, Italy) "Signaling Circuits Regulate Procollagen Exit from the Endoplasmic Reticulum: Implications for the Therapy of Collagenopathies"
9:00 pm - 9:10 pm	Discussion
9:10 pm - 9:30 pm	Short Talks Selected from Poster Abstracts

TUESDAY

7:30 am - 8:30 am	Breakfast
9:00 am - 12:30 pm	Collagens in Basement Membranes
	Discussion Leader: Taina Pihlajaniemi (University of Oulu, Finland)
9:00 am - 9:10 am	Introduction by Discussion Leader
9:10 am - 9:30 am	Taina Pihlajaniemi (University of Oulu, Finland) "Collagen XVIII: Isoforms with Distinct Roles at the Basement Membrane-Cell Interphase"
9:30 am - 9:40 am	Discussion
9:40 am - 10:00 am	Leena Bruckner-Tuderman (University of Freiburg, Germany) "Molecular Defects of Epidermal Basement Membrane: Mechanisms and Therapeutic Targets"
10:00 am - 10:10 am	Discussion
10:10 am - 10:30 am	Antonio Santos (Center for Genomic Regulation, Spain) "TANGO1 Recruits ERGIC Membranes to ER Exit Sites to Allow Bulky Procollagen VII Secretion"
10:30 am - 10:40 am	Discussion
10:40 am - 11:10 am	Coffee Break
11:10 am - 11:30 am	Sally Horne-Badovinac (University of Chicago, USA) "Spinning the Matrix: Basement Membrane Secretion and Remodeling During Organ Morphogenesis"
11:30 am - 11:40 am	Discussion
11:40 am - 12:20 pm	Short Talks Selected from Poster Abstracts
12:20 pm - 12:30 pm	General Discussion
12:30 pm	Lunch
1:30 pm - 4:00 pm	Free Time
4:00 pm - 6:00 pm	<u>Poster Session</u>
6:00 pm	Dinner
7:30 pm - 9:30 pm	Collagens in Cell Niche and Cell Signaling
	Discussion Leader: Valerie Weaver (University of California, San Francisco, USA)
7:30 pm - 7:40 pm	Introduction by Discussion Leader
7:40 pm - 8:00 pm	Valerie Weaver (University of California, San Francisco, USA) "Dynamic Interplay Between ECM Tension, Tissue Inflammation and Malignancy"
8:00 pm - 8:10 pm	Discussion
8:10 pm - 8:30 pm	Paolo Bonaldo (University of Padova, Italy) "Collagen VI Is a Key Component of Satellite Cell Niche Required for Muscle Regeneration"
8:30 pm - 8:40 pm	Discussion

- 8:40 pm - 9:00 pm **Veronique Van De Bor** (Institute of Biology Valrose, University Nice Sophia-Antipolis, France)
"Companion Blood Cells Control Ovarian Stem Cell Niche Microenvironment and Homeostasis"
- 9:00 pm - 9:10 pm Discussion
- 9:10 pm - 9:30 pm Short Talks Selected from Poster Abstracts

WEDNESDAY

- 7:30 am - 8:30 am Breakfast
- 9:00 am - 12:30 pm **Collagens in Organism Physiology**
- Discussion Leader: **Daniel Greenspan** (University of Wisconsin, USA)
- 9:00 am - 9:10 am Introduction by Discussion Leader
- 9:10 am - 9:30 am **Daniel Greenspan** (University of Wisconsin, USA)
"Type V Collagen Microenvironments Instruct the Behavior of Highly Specialized Cells"
- 9:30 am - 9:40 am Discussion
- 9:40 am - 10:00 am **Tomoko Wakabayashi** (University of Tokyo, Japan)
"Roles in Neuromuscular Development of CLAC-P/Collagen Type XXV: A Molecule Originally Identified in Alzheimer Brains"
- 10:00 am - 10:10 am Discussion
- 10:10 am - 10:30 am **Michael Fox** (Virginia Tech Carilion Research Institute, USA)
"Collagen XIX Contributes to Inhibitory Synapse Formation and Complex Brain Disease"
- 10:30 am - 10:40 am Discussion
- 10:40 am - 11:10 am Coffee Break
- 11:10 am - 11:30 am **Keith Blackwell** (Harvard Medical School, USA)
"Importance of Collagen Remodeling for Lifespan Extension"
- 11:30 am - 11:40 am Discussion
- 11:40 am - 12:00 pm **Christopher Cummings** (Vanderbilt University Medical Center)
"Dual Halide Mechanism for the Assembly of Collagen IV Scaffolds in Basement Membranes"
- 12:00 pm - 12:10 pm Discussion
- 12:10 pm - 12:25 pm **Marion Gordon** (Rutgers University, Ernest Mario School of Pharmacy, USA)
"Collagen XXIV in Bone"
- 12:25 pm - 12:30 pm Discussion
- 12:30 pm Lunch
- 1:30 pm - 4:00 pm Free Time
- 4:00 pm - 6:00 pm Poster Session
- 6:00 pm Dinner
- 7:00 pm - 7:30 pm Business Meeting
Nominations for the Next Vice Chair; Fill in Conference Evaluation Forms; Discuss Future Site and Scheduling Preferences; Election of the Next Vice Chair
- 7:30 pm - 9:30 pm **Collagens in Pathology**
- Discussion Leader: **Bjorn Olsen** (Harvard School of Dental Medicine, USA)
- 7:30 pm - 7:40 pm Introduction by Discussion Leader
- 7:40 pm - 8:00 pm **Bjorn Olsen** (Harvard School of Dental Medicine, USA)
"Novel Insights into Regulatory Mechanisms in Connective Tissues"
- 8:00 pm - 8:10 pm Discussion
- 8:10 pm - 8:30 pm **Shireen Lamande** (Murdoch Childrens Research Institute, Australia)
"A New Collagen I Phenotype and a Novel Recessive COL1A1 Mutation Identified by Next Generation Sequencing"
- 8:30 pm - 8:40 pm Discussion
- 8:40 pm - 9:00 pm **Stefan Schulte-Merker** (Hubrecht Institute, Germany)
"The Key Role of a Collagen-Repeat Domain in Hennekam Syndrome Patients"
- 9:00 pm - 9:10 pm Discussion
- 9:10 pm - 9:30 pm Short Talks Selected from Poster Abstracts

THURSDAY

- 7:30 am - 8:30 am Breakfast
- 9:00 am - 12:30 pm **Collagen Based Materials and Bioengineering**
Discussion Leader: **Rocky Tuan** (University of Pittsburgh, USA)
- 9:00 am - 9:10 am Introduction by Discussion Leader
- 9:10 am - 9:30 am **Rocky Tuan** (University of Pittsburgh, USA)
"Biomimetic Scaffolds for 3-Dimensional Tissue Engineering and Modeling"
- 9:30 am - 9:40 am Discussion
- 9:40 am - 10:00 am **Jean Chmielewski** (Purdue University, USA)
"Hierarchical Assembly of Collagen Peptide-Based Materials for Use in Regenerative Medicine"
- 10:00 am - 10:10 am Discussion
- 10:10 am - 10:30 am **Ronald Raines** (University of Wisconsin, USA)
"Longer, Stronger Synthetic Collagens for Nanotechnology and Biomedicine"
- 10:30 am - 10:40 am Discussion
- 10:40 am - 11:10 am Coffee Break
- 11:10 am - 12:30 pm Short Talks Selected from Poster Abstracts
- 12:30 pm Lunch
- 1:30 pm - 4:00 pm Free Time
- 4:00 pm - 6:00 pm Poster Session
- 6:00 pm Dinner
- 7:30 pm - 9:30 pm **Keynote Session: Collagenopathies of Skeletal Muscle / Late-Breaking Topics**
Discussion Leader: **Shireen Lamande** (Murdoch Childrens Research Institute, Australia)
- 7:30 pm - 7:35 pm Introduction by Discussion Leader
- 7:35 pm - 8:15 pm **Carsten Bonnemann** (National Institutes of Health, USA)
"Muscle Meets Its Matrix: Collagenopathies of Skeletal Muscle"
- 8:15 pm - 8:30 pm Discussion
- 8:30 pm - 9:30 pm Late-Breaking Topics

FRIDAY

- 7:30 am - 8:30 am Breakfast
- 9:00 am Departure