



2022 Winter Newsletter

Dear Members,

Winter is not for everyone. While some associate it with hot chocolate and ice skating, others associate it with short, dark, and cold days. Fear not, the ASMB has plenty in store to brighten your winter days and help you start 2022 on a high note, from the launch of our image contest, to inspiring new DEI initiatives and exciting upcoming meetings!

Thank you to all the contributors and to our executive director extraordinaire, Kendra LaDuca, for helping me prepare this e-Newsletter that I hope you will enjoy reading!

Alexandra Naba - Editor-in-chief



Welcome New Council Members!

This January, ASMB welcomes a new President-Elect, Secretary-Treasurer, and two new council members. Read more about each of these invaluable volunteers!

President-Elect, Ambra Pozzi



Ambra Pozzi is a professor in the Department of Medicine at Vanderbilt University School of Medicine. Ambra received a Master Degree in Biochemistry from the University of Milan and a PhD in Experimental Pathology from the University of Florence, Italy. After receiving postdoctoral training at The Scripps Research Institute, La Jolla, CA, Ambra joined the Division of Nephrology at Vanderbilt University in 2000.

Ambra is highly involved with the ASMB and its mission. She has been a member of the ASMB council (2010-2013) and has served as Secretary-Treasurer for 9 years (2013-2021.) and has organized the 12th biennial ASMB meeting (2012) as well as several Basement Membrane workshops. Dr. Pozzi has participated in the organization of national and international meetings including the American Society of Nephrology (2013) and she was elected the 2021 Chair of the 'Fibronectin, Integrin and Related Molecules' Gordon Research Conference.

At Vanderbilt Medical Center, she serves as the Associate Director of the Vanderbilt Center for Matrix Biology, the Vanderbilt O'Brien Kidney Center and the Vanderbilt Center for Kidney Disease. She is also the Associate Director of the Medical Scientist Training Program at Vanderbilt University. She is a funded investigator at the Middle Tennessee Veterans Affairs hospital where she also serves as the Deputy Associate Chief of Staff for Research. Dr. Pozzi oversees an active research laboratory looking at how matrix receptors regulate collagen homeostasis in kidney injury and at identifying new targets for anti-fibrotic therapy. She has mentored more than 100 individuals including undergraduate and graduate students, postdoctoral fellows, and junior investigators. She has more than 130 publications including peer reviewed articles, invited reviews, and book chapters with major focus on mechanisms of fibrosis. Her studies are currently supported by NIH, VA, and ADA funding.

Her stature and knowledge in the field of matrix biology is demonstrated by the fact that she has served as member and/or chair on numerous NIH, ASN, DOD, AHA and VA study sections and she currently serves as

an associate editor for Matrix Biology, Matrix Biology Plus, and eLIFE. She is also on the editorial board of Kidney International.

Dr. Pozzi is looking forward to serving the ASMB scientific community and promoting the ASMB mission. She intends to enhance visibility of junior investigators studying various aspects of matrix biology; to promote diversity and inclusion; to endow outreach programs to spark interest and awareness of the mission of the ASMB; and to support the growth and professional development of the matrix research community.

Secretary-Treasurer, Karen Posey



Karen La'Shea Posey is an Associate Professor at the McGovern Medical School at UTHealth in the Department of Pediatrics. She is a member of the Texas Bone Disease Program, a multi-institution consortium which support extracellular matrix research through academic engagement and shared resources. Karen served on ASMB Council 2016-2019 and is now returning for this important role within the society.

She earned a PhD in Biochemistry from the University of Houston. During her post-doctoral work at Texas A&M Institute of Biotechnology, she employed an engineered molecular switch in addition to mutational analysis to understand the function of homing endonucleases.

Since her faculty appointment, her research interests have focuses on cartilage pathologies and the function of extracellular matrix proteins. She characterized the collective action of thrombospondin (TSP)-1, TSP-3, cartilage oligomeric matrix protein (COMP/TSP-5), and type IX collagen (Col9) in the growth plate using a quad-knock-out. Her team developed an inducible mouse model that recapitulates human pseudoachondroplasia (PSACH) phenotype. This model was used to understand a complex molecular mechanism in chondrocytes which leads to short stature and joint degeneration. The results of her investigations described a mechanism by which unrelenting ER stress from mutant-COMP accumulation

drives inflammation and oxidative stress resulting in a self-perpetuating pathological stress loop. Mutant-COMP accumulation is not cleared as it is resistant to proteasomal clearance and autophagy is blocked through a TNF α /TRAIL driven mechanism. This stress triggers premature death of growth plate chondrocytes limiting long-bone growth and generates a pro-degradative environment leading to premature joint degeneration. To identify potential PSACH therapeutics, she took a mechanism driven approach targeting COMP mRNA, ER stress, inflammation, oxidative stress and autophagy. Resveratrol, the best performing therapeutic, was shown to promote autophagy clearance of mutant-COMP thereby increasing limb length and preventing mutant-COMP joint degeneration.

Ambra Pozzi, the secretary/treasurer for the last 9 years, has been invaluable to ASMB organizing records and establishing a system for institutional tax return, bill payment and maintenance of non-profit status of ASMB. If elected to the secretary/treasurer position, I plan to maintain the ASMB financial matters, membership and meeting records in excellent condition with the goal of supporting young scientists' participation in ASMB

Councilor, Ryan Petrie



Ryan Petrie is currently an Associate Professor in the Department of Biology at Drexel University in Philadelphia.

Ryan started his research career earning a Masters degree in Immunology at the University of Calgary in Alberta, Canada. Once he looked at fluorescently labeled B lymphocytes under a microscope, he was hooked on Cell Biology. Ryan then headed to the lab of Nathalie Lamarche-Vane at McGill University in Montreal to investigate how localized Rho family GTPase signaling governed neurite formation and axon guidance. After receiving his PhD from McGill, Ryan joined the laboratory of Dr. Ken Yamada at the National Institute of Dental and Craniofacial Research. While in Ken's lab, Ryan discovered that a cell in 3D

can act as a biological machine in which the tight-fitting nucleus is pulled forward through the cytoplasm by the cytoskeleton like a piston in a cylinder to elevate the intracellular pressure and drive the plasma membrane forward. Further, he found that the degree of matrix cross-linking activates Rho GTPase signaling to dictate whether the cell moves using lamellipodial or pressure-based protrusions.

Since joining Drexel University in 2015, his lab has received R01 support to continue investigating how human cells respond to their extracellular matrix environment. The focus of their current research is to 1) understand how the matrix structure physically stresses the nucleus to activate the piston mechanism, 2) determine how the generation of pressure by actomyosin contractility is mechanistically distinct from the generation of traction force, and 3) to identify the molecular connections between the nucleus and the actomyosin machinery that are essential for generating intracellular pressure in 3D matrices. The ultimate goal of his research is to uncover regulatory differences between cancer and normal cell 3D migration to aid in future identification of drug targets to selectively mitigate cancer invasion and metastasis. Ryan has published over 28 peer reviewed articles and received invitations to speak at forty international and national institutions and conferences, including his first ASMB meeting in 2010 in Charleston, SC. In addition, he has served as an ad hoc reviewer for over 22 journals, participated as an early career reviewer for an NIH study section and, acted as an ad-hoc reviewer for the Agence Nationale de la Reserche and the Sir Henry Wellcome Fellowships.

Ryan has been an active member of the ASMB, joining the Membership Committee in 2018 and the Communication and Outreach Committee in 2020. Along with Joan Chang and Davy Vanhoutte, Ryan helped to create the ASMB E-symposium series that aimed to keep matrix researchers connected during the pandemic. If elected to the council of the ASMB, Ryan will continue to leverage the new networking and communication tools that made the E-symposiums possible to connect our Society with a diverse array of matrix researchers across the world. Ryan will also focus on using these approaches to help increase the membership of our Society by being proactive in connecting with populations of researchers that have not encountered the ASMB before, but whose work fits with our mission. Finally, he feels joining the ASMB and attending the biennial meetings were essential for the success of his post-doc. He would appreciate the opportunity to give his time and energy back to the ASMB to mentor trainees and help the Society continue to thrive and promote the fascinating dynamic reciprocity between cells and the matrix.

Councilor, Jessica Wagenseil



Jessica Wagenseil is a Professor of Mechanical Engineering and Materials Science and the Vice Dean for Faculty Advancement at the McKelvey School of Engineering at Washington University in St. Louis. You may recognize Jessica as a featured speaker at the ASMB Biennial Meeting in St. Louis where she received the 2020/2021 Iozzo Award.

Professor Wagenseil obtained her B.S. in Bioengineering at the University of California, San Diego. She obtained her D.Sc. in Biomedical Engineering at Washington University in St. Louis with Dr. Ruth Okamoto, focusing on controlling the mechanical properties of bio-artificial vessels composed of fibroblasts and collagen. She did a postdoctoral fellowship in Cell Biology and Physiology at the Washington University School of Medicine with Dr. Robert Mecham, focusing on the mechanical effects of reduced elastin in the large arteries during development and disease. She started her own laboratory at Saint Louis University in the Department of Biomedical Engineering in 2009 and returned to Washington University in St. Louis in 2013.

Professor Wagenseil's laboratory continues to study large artery mechanics in development and disease, specifically focusing on the effects of reduced amounts or improper assembly of elastin and elastic fiber proteins. She integrates experimental and computational methods that build on her background in engineering and biology. Her work has advanced mechanistic understanding of diseases such as arterial stiffening and hypertension, thoracic aortic aneurysms, arterial stenosis, and in developmental arterial growth and remodeling. Her work is important for determining clinical interventions for elastin-related diseases and for designing better protocols for building tissue engineered blood vessels. Her work has been funded by the National Institutes of Health, the National Science Foundation, the American Heart Association, and the Marfan Foundation.

Professor Wagenseil started attending ASMB meetings as a postdoctoral fellow in 2004 and has attended most meetings since that time. She has participated actively in the meetings, including serving on mentoring panels. She received the ASMB Iozzo Award for Mid-Career Investigators in 2020/2021. Dr. Wagenseil is excited to see the increased interaction between engineers and extracellular matrix biologists at recent meetings and hopes to facilitate interactions between these groups as a member of the Council. Dr.

Wagenseil is also the Associate Chair of the Diversity, Equity, and Inclusion Committee at the McKelvey School of Engineering and would like to use her experience in that area to promote increased diversity, equity, and inclusion within ASMB.



ASMB 2021 Biennial Meeting Review is PUBLISHED!

- We are delighted to announce the publication of this article in [Biology Open](#). The ASMB Meeting article is also indexed in [PubMed](#). (DOI: [10.1242/bio.059156](https://doi.org/10.1242/bio.059156)) Check out this great work by the Communication and Outreach Committee!

The ASMB Biennial Meeting was also featured in the City Academy Newsletter!

Read about it here:

<https://mailchi.mp/cityacademystl/monthly-minute-september-2021?e=b15a99725f>

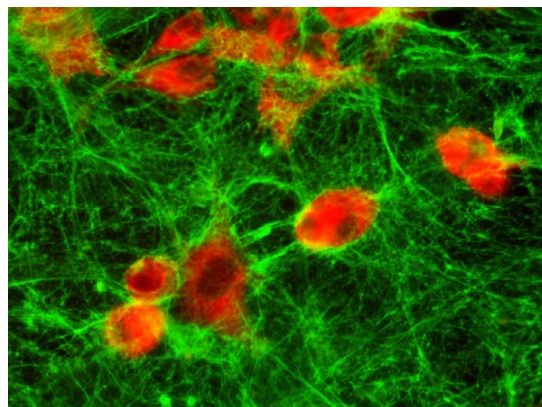


Image Contest Now Open!

Back by popular demand, the ASMB image contest has returned! Get ready to submit your beautiful matrix images! To participate you must be a member of ASMB or ISMB (its a great time to join or renew!) and you must have full rights to the image. A panelist of ASMB Council and Committee members will serve as contest judges. Winning images will be showcased on the ASMB website. Top awardees will be featured in the rotating banner on the ASMB homepage for the coming year. Start gathering your images now! [Visit the ASMB website for full details.](#)

Deadline to enter is February 4.



Update from the DEI Working Group

The ASMB Membership and Diversity, Inclusion, and Equity (DEI) committee has been active this past year. Based on input from trainees at Meharry Medical College in Nashville, ASMB offered complementary registration to URM trainees (per the NIH definition) to attend the September 2021 ASMB meeting in St. Louis. Nine trainees took advantage of this opportunity and several elected to participate on the ASMB DEI working group.

The working group met by zoom in November and identified several areas to improve the value and outreach of ASMB to URM trainees. We are in the process of reviewing ASMB by-laws and the website to ensure that our language and content is inclusive. We are also in process of establishing an ASMB mentoring platform to link ASMB faculty level members with trainees, either through formal or informal interactions. Currently we are developing the specifics of this platform. You will hear more on this in late February. We hope you will seriously consider participating in this important outreach activity and support the next generation of matrix biologists! In addition, the committee recommended complementary registration for graduate student (MS or PhD) trainees in situations with limited lab and/or personal resources. Applicants would need to provide a statement of need to

determine eligibility. This is in the final stages of approval. As always, your input and suggestions are most welcome.



Did you know many ASMB members and leaders are on the *Matrix Biology* editorial board? Also read a New Year's update from John Whitelock, *Matrix Biology* Editor-in-Chief



Dear Fellow Matrix Biologists,

Welcome to 2022, I hope that you were able to enjoy some relaxing time with families and friends over the holidays. In reflection, 2021 was another challenging year for all of us particularly students, new investigators and early to mid-career researchers due to restricted access to laboratories impacting progression of research projects.

I would like to extend a warm welcome to Hiromi Yanagisawa, Karl Kadler and Roy Zent on their recent appointments as Editors of both Matrix Biology and Matrix Biology Plus. They join Sylvie Ricard-Blum, Joanne Murphy-Ullrich and Suneel Apte who were appointed at the end of 2021. I would like to thank the Editors for their enthusiasm and commitment guiding the strategic direction of the journals.

In 2021, 319 manuscripts were submitted to Matrix Biology, of which 46 were accepted for publication. The number of submissions in 2021 was similar to that received in 2020, there was a decrease in the number of accepted publications, down from 62 in 2020. For Matrix Biology Plus, there were 54 manuscripts submitted in 2021 with 36 accepted, this represents an increase in the number of submissions, up from 29 in 2020 with 27 published.

For both journals, our aim is to increase the number of high-quality submissions received and published. To support this, we plan to grow the number of editorial board members with expertise across the fields of research and discipline areas relevant to matrix biology research. One of our focus areas in 2022 is the growth of Matrix Biology Plus, and we are aiming to generate an impact factor, which will support the future increase of submissions and growth of this journal. Therefore, we would like to encourage everybody, particularly our senior matrix biology colleagues and mentors to support this aim for Matrix Biology Plus by submitting high-quality papers that may not necessarily fit the scope for Matrix Biology.

As we embark on this new year, I would like to encourage everybody to continue sending your manuscripts to Matrix Biology and Matrix Biology Plus as well as encouraging your colleagues and collaborators to submit their work for review. Keep an eye out for our 2022 Special Issues, focusing on the Glycocalyx, the Supramolecular Structure of the ECM, and the Matrisome. We encourage ideas for future Special Issues by sending your suggestions to the Editors for consideration. Finally, I would like to extend my best wishes to you all for your on-going good health and productive research activities, hoping to see you all in person at a Matrix conference in 2022.

Best of regards,

John Whitelock

Editor-in-Chief

Matrix Biology and Matrix Biology Plus

Exciting Things Coming This Year

Experimental Biology 2022

Join ASMB at EB2022!

ASMB will present a Guest Society Session on Tuesday, **April 5, 2022**.

Genetic and Acquired Diseases Reveal Pathological Processes Involving the Extracellular Matrix

April 5, 2022

Philadelphia, PA

[See the full program on the ASMB website](#)

2022 ASMB Fibroblast Workshop

The Many Faces of Fibroblasts

October 16-18, 2022

University of Virginia

Charlottesville, Virginia.

Organized by ASMB members

Thomas Barker, University of Virginia and **Merry Lindsey**, University of Nebraska Medical Center

Save the date and look for more information coming soon!

e-Symposia will be back!

Coming in March - ASMB will host the image contest winners to talk about the science behind their images.

Later in the spring, look for a Call for Organizers. You could design your own session: present your work or invite speakers around a theme. More details coming to the website.



2022 PHILADELPHIA
APRIL 2-5



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