The Matrix Letter

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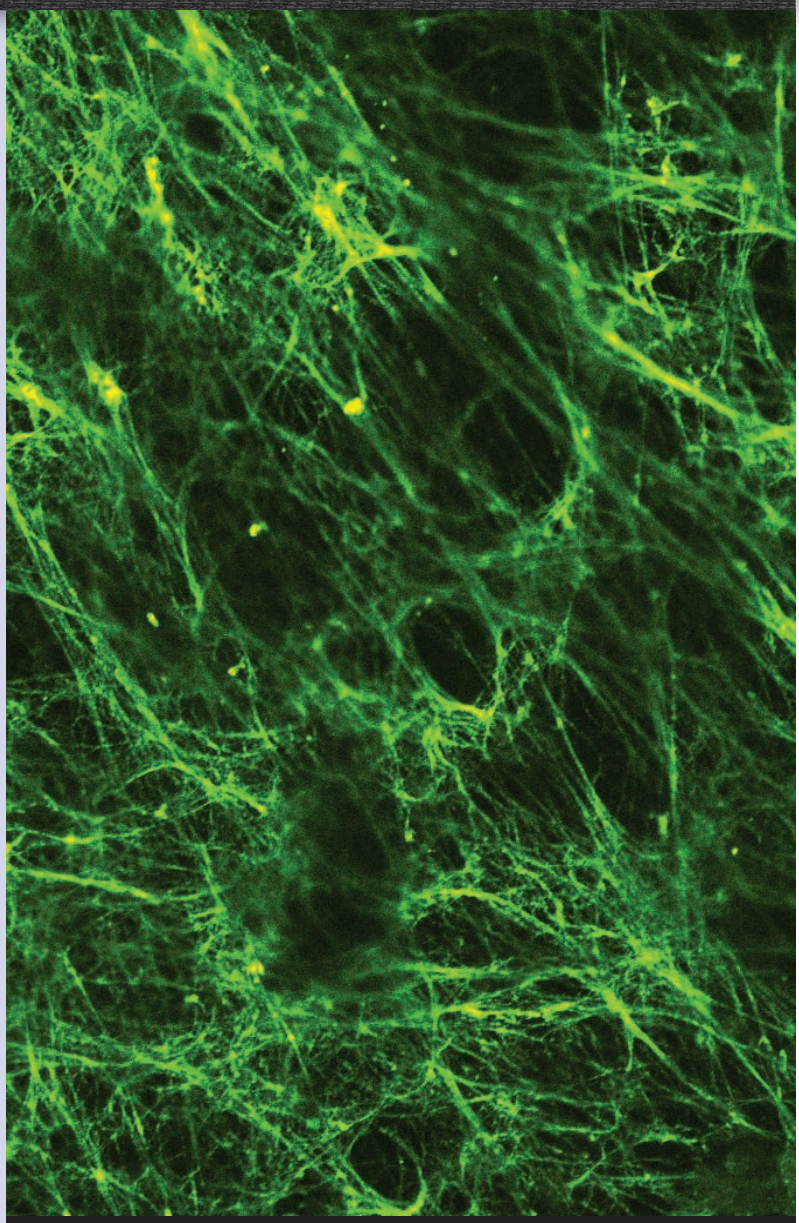

Decellularized Matrix

Contents

Letter from the President

Dear Fellow Matrix Biologists,

Congratulations to our membership on robust participation in the recent ASMB election. As I start my first of two years as ASMB President, I am looking forward to working with the newly elected officers: Joanne Murphy-Ullrich, our new President-Elect, plus Adam Engler and Michelle Tallquist, who will join ASMB council. Joanne previously served ASMB as its Treasurer for many years, whereas this is a new experience for Michelle and Adam. Thank you your willingness to serve ASMB.

Thanks are also due to our outgoing President, Jeff Davidson, and outgoing Past-President, Jean Schwarzbauer for their numerous years of dedicated service to ASMB. As Past-President, Jeff will stay on the ASMB Executive Committee for another two years. My stint organizing our 2014 conference as President-Elect was therefore just the start of 6 years of commitment to ASMB, which is not a tall order for someone, who like you all, wishes the matrix field to thrive in all respects.

Our biennial conference, held this year in Cleveland, OH, is THE event that brings together all matrix and cell-matrix sub-specialties and accommodates diverse interests- in various organs and diseases, development and aging, genetics, biochemistry, cell biology and bioengineering. Thank you to those who attended and contributed to its success. This year, we had 320 registrants from 14 different countries, and most importantly, a large number of students and post-docs, with 174 posters presented. I hope your work benefited from your attendance and that you formed new collaborations, made new friends, broadened your horizons, and enjoyed the banquet at the Rock and Roll Hall of Fame. In the next two years, you may attend more focused meetings, such as Gordon and FASEB conferences but I hope you will always put the ASMB on your calendar as well. The small meetings bring you the latest in a specific field, ASMB seeks to expand and challenge our "comfort zone". One of our goals is to consistently bring in new areas relevant to our field, as the talks by our keynote speaker, Jack Dixon, and some of the plenary speakers exemplified.

We do not yet know when and where the 2016 conference will be. As per our usual timeline, ASMB will make a locale decision in the spring of 2015, and soon thereafter, begin to seek sponsorship and assemble the scientific program. As she organizes the 2016 conference, Joanne will benefit, as I did, from the exceptional professionalism and experience of Kendra LaDuca, ASMB Executive Director. Many of you responded to the post-2014 meeting survey she sent out with overwhelmingly favorable comments on your conference experience, but more importantly, you also provided constructive suggestions. From among these, we have already made a decision to ensure that the 2016 venue will have sufficient space for all posters to stay up for the entire duration of the conference. We will also make available a list of conference attendees and their contact information. ASMB officers "meet' quarterly via teleconference and we welcome your continued input.

My main appeal to you in this newsletter is to not let your ASMB membership lapse. Membership has numerous benefits, chief among which is a discounted conference registration fee. As a member, you are eligible for nomination for the Junior, Iozzo or Senior Investigator awards. All member abstract submissions are considered for travel awards to support presentation at the conference. Another perk is the ASMB Newsletter, edited by Dwayne Stupack, which we email to all members on a quarterly basis. Please send us content for inclusion, including upcoming conferences, relevant information from other professional societies, job opportunities, exciting new developments or publications from your lab, and stunning images from your work. We hope that the conference and newsletter will continue to help build a strong camaraderie among matrix biologists.

Although ASMB is a national society, its outlook and membership are international. We very much want our colleagues outside the US to contribute to our biennial conference. We have international colleagues on the ASMB council and we find their insights and advice to be very helpful. As you may know, ASMB is participating in planning an International Matrix Conference to be held in 2018. We hope that this conference will finally break the deadlock on same-year conferences by ASMB and Matrix Biology Europe, giving us more/annual opportunities to meet, learn and collaborate. Please look to your newsletters for frequent updates.

Helping young matrix biologists with their professional development is one of the ASMB's major goals. You may have noticed that almost all the talks in the concurrent sessions were by trainee scientists. From the 2016 conference onward, a part of the conference will be organized, planned and run by graduate students and post-docs working with the program committee, in the manner of the successful Gordon Research Seminars. We want to provide scientists-in-training with a stake in ASMB to help the long-term growth of the matrix biology community. The feedback from you is that the mentoring breakfasts at the last two ASMB conferences were very helpful, and we will strive to make them more so, especially in terms of the diversity of career choices represented.

The matrix biology field could always use more visibility, promotion and collaboration. ASMB was formed with these goals in mind, and greater participation in the society's activities by all members would be transformative in this regard. Best wishes for your work in 2015.

Suneel S. Apte, ASMB President

Wecome to the New President Elect!

Joanne Murphy-Ullrich comes well qualified to lead ASMB into the future. She received her PhD in Pathology from the University of Wisconsin. She did post-doctoral work at Wisconsin with Dr. Deane Mosher and at UAB with Dr. Magnus Hook. She has been a faculty member in Department of Pathology at UAB since 1991. Her lab has focused on the functions of matricellular proteins, with an emphasis on thrombospondin-1. Her lab identified the roles of thrombospondin-1, tenascin-C, and SPARC in focal adhesion disassembly and her group discovered that thrombospondin-1 is an activator of latent TGF-beta in disease. The current focus of her research is on therapeutic development of thrombospondin-1-TGF-beta antagonists and on elucidating the role of the ER stress protein calreticulin in diabetic renal fibrosis. She has served as director or co-director of the UAB Cell Adhesion and Matrix Research Center and the UAB BioMatrix Engineering and Regenerative Medicine Center. She is a past Established Investigator of the American Heart Association. She has serves on the editorial boards of the Journal of Biological Chemistry, Matrix Biology, and the Journal of Cell Communication and Signaling. She was recently a guest editor of the Matrix Biology special issue on Matricellular Proteins and she served as Chair of the FASEB Scientific Research Conference on Matricellular Proteins in Development, Health, and Disease in 2013. She has served on peer review panels including NIH, the American Cancer Society, and the Arthritis Foundation and is Chair of the American Heart Association Established Investigator Basic Science 2 Peer Review panel. Herwork has been funded by NIH, the Department of Defense, the AHA, the American Cancer Society, the Juvenile Diabetes Research Foundation, the Arthritis Foundation, and the American Society for Hematology. Joanne served on the original Council of ASMB (2004) and then again as ASMB Secretary-Treasurer from 2008-2012. She has served on the programming/organizing and fund raising committees for multiple ASMB meetings. Also an ISMB member, she is well poised to engineer an outstanding ASMB meeting in 2016.

/ds

2014 Meeting Sponsorship

Thank-you from the membership of the ASMB to all of our generous sponsors. They make our meeting possible.

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Matrix Interactions

ASMB News and Announcements in Brief

Adam Engler, Michelle Tallquist Elected

Congratulations to Adam Engler and Michelle Tallquist, the newest council members of ASMB to be elected, and will serve for 4 years. Adam is featured in this issue of ***The Matrix Letter****, while Michelle will be featured in the next.*

and a big THANK YOU to those who served

PYONG WOO PARK JEAN SCHWARZBAUER

Pyong retires his position as a council member of the ASMB executive board, and Jean steps away as the past president after many years of service, including the organization of the very successful Charleston, South Carolina Meeting.

Your Feedback

Email us as ***asmb@faseb.org*** *to let us know your thoughts on this past meeting in Cleveland.*

The 2016 meeting planning committee has started meeting, so ***now is the time*** *to let us know if there was something that you particularly liked, or, might change.*

Upcoming Events

July 20-21, 2015
The Collagen Superfamily:
From Genes to Organism Physiology
Paris, France
http://waset.org/conference/2015/07/paris/ICTERM

July 12-17, 2015
The Collagen Superfamily:
From Genes to Organism Physiology
Colby-Sawyer College **New London, NH**
https://www.grc.org/programs.aspx?id=12175

August 2-7, 2015
From the Organism to the Atom:
An Interdisciplinary Exploration of Metalloproteinase Regulation in Development and Disease
Sunday River, Newry, ME
https://www.grc.org/programs.aspx?id=12358

August 27-29, 2015
9th International Conference on Proteoglycans/10th Pan Pacific Connective Tissue Societies Symposium
http://www..asmb.net/2014_meeting.php

September 8-10, 2015
The 2015 Tissue Engineering Congress
London, UK
https://www.regonline.co.uk/builder/site/Default.aspx?EventID=1563575

September 24-29, 2015
Matrix Pathobiology, Signaling and Molecular Targets
Rhodes, Greece
http://www.febs-mpst2015.upatras.gr/

Pan Pacific Meeting and other ISMB Travel Awards

*ISMB is currently funding four international travel grants for young scientists to attend the 9th International Conference on Proteoglycans/10th Pan Pacific Connective Tissue Societies Symposium to be held in Seoul, Korea from August 23 to 27, 2015 (****see http://icp-ppctss2015.org/index.php****).*

In addition, members of ISMB are entitled to reductions of 50 euros (full registration) or 20 euros (student registration) from the costs of registration at this meeting. Note that the deadline for early bird registration is **April 10.**

*ISMB is also funding international travel grants for several other international meetings in matrix biology (****see http://ismb.org/meetings/****).*

*In all cases, applications for international travel grants should go direct to the conference organisers. See the travel grants page (****http://ismb.org/travel-grants-2/****) for further information.*

Matrix Interactions

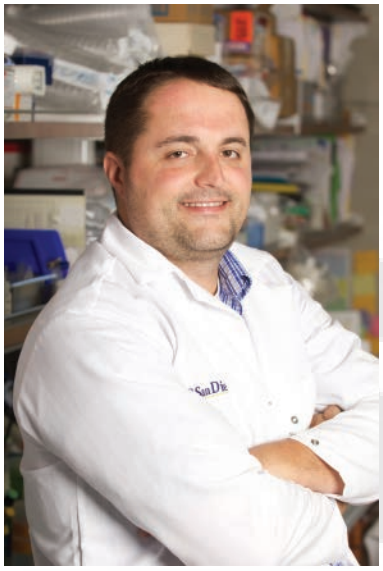
ASMB News and Announcements in Brief

2014 ASMB Meeting Awardees

The recipients of the International Society for Matrix Biology as well as the ASMB Junior, Senior and Iozzo awards were announced at ASMB in Cleveland. Congratulations to all recipients!

Iozzo Award

Adam Engler (photo)
University of California, San Diego, California



Senior Investigator

Vince Hascall (photo)
The Cleveland Clinic Foundation, Cleveland, Ohio

Junior Investigator

Sean E. Gill (photo)
Western University, London, Ontario, Canada

ISMB Distinguished Investigator

Leena Bruckner-Tuderman (Photo)
University Frieburg, Germany

Travel Awards

ASMB Awardees

Carolyn Dancevic, Deakin University
Vincent Fiore, Georgia Institute of Technology
Nadine Nagy, Benaroya Research Institute
Thomas Neill, Thomas Jefferson University
Alexandra Pastino, Princeton University

EDNF Awardees

Sanne D'hondt, Ghent University
Yoshihiro Ishikawa, Shriner's Hospital for Children
Gili Naveh, HarvardUniversity
Arick Park, University of Wisconsin- Madison
Mei Sun, University of South Florida

ASMB Diversity Awardees

Kristina Aguilera, UT Southwestern Medical Center
Michael Duncan, Georgia Regents University
Justin Parreno, University of Toronto

ISMB Awardees

Rushita Bagch, University of Manitoba
Ryoko Sato-Nishiuchi, Institute for Protein Research, Osaka University
Tim Van Damme, Ghent University Hospital

'On Site' Travel Award Winners

Andrew DiChiara, MIT
Carmen Halabi, Washington University School of Medicine
Alison Muir, University of Wisconsin, Madison
Chi-Ting Su, University of Pittsburgh
Yukimasa Taniguchi, Institute for Protein Research

Interview with Adam Engler

2014 Awardee of the Iozzo Prize

The Matrix Letter congratulates Adam Engler, the inaugural recipient of the Iozzo Prize. As the reader may know, the Iozzo prize celebrates mid career investigators who have proven to be both talented scientists and storng contributors to the field of Matrix Biology. We were able to sit down with Adam, not only to congratulate him, but also to find out why Matrix biology was important to him.

OVERVIEW:

Adam J. Engler is an Associate Professor of Bioengineering at UC San Diego, where he has been on the faculty since 2008. He also is a resident scientist at the Sanford Consortium for Regenerative Medicine. Dr. Engler previously trained with Dr. Dennis Discher at the University of Pennsylvania, where he earned his PhD studying how ECM stiffness regulated stem cell fate. He also did a postdoc with Dr. Jean Schwarzbauer at Princeton University's Department of Molecular Biology. His current research focuses on how physical and chemical properties of the niche influence stem cell function and misregulate muscle function and heart performance during disease and aging. His lab makes natural and synthetic matrices with unique spatiotemporal properties to mimic niche conditions to improve stem cell behavior and commitment in vitro for their therapeutic use in vivo. His lab also studies these processes in vivo with rapidly aging model systems including Drosophila. Dr. Engler is the 2008 recipient of the Rupert Timpl Award from the ISMB. He is also a recipient of an NIH Innovator Award and was the inaugural recipient of the Renato Iozzo Award from ASMB this year. He has previously served on the program committee for the 2010 ASMB meeting, is a standing member of the AHA study section on Regenerative Cell Biology, and edited two books on mechanobiology.

ML: The Iozzo prize is the newest prize offered by ASMB, and it certainly ranks as one of the most prestigious. I think I called it the flagship prize in another interview. How does it feel to be selected as the recipient for the debut award?

AE: I was extremely humbled by the selection for two reasons. First and foremost, just to be associated with Dr. Iozzo and his numerous contributions to the field of matrix biology is a tremendous honor. Dr. Iozzo is one of the pioneers of our field and to be associated with him in this way is very exciting.

The award is intended to honor mid-career individual, and so I believe that it's a testament to all of the outstanding students and postdoctoral fellows in my group. To be the inaugural recipient of the award is extremely humbling. For the society and Dr. Iozzo to honor me with this award is a wonderful surprise

ML: When did you first become interested in the matrix? Which mentors would you say were key to developing the interest?

AE: My first interest in extracellular matrix came while I was an undergraduate. While working in Dennis Discher's lab, I saw beautiful images of highly organized matrix in muscles, and to see how matrix organization was adversely affected by muscle diseases made a huge impression on me. That convinced me to stay in his lab for graduate school and pursue a research career in matrix.

After seeing how matrix could affect muscle and stem cells, I realized that I also wanted to better understand how matrix assembly and modification was regu- lated. That guided me to work with Jean Schwarzbauer for my postdoc. Not only did she help me develop that appreciation for the complexity of matrix assembly but she served as an outstandingmentor and role model. I often think "***what would jean do***?" when running my own lab.

ML: And would you say you still love working in this field as much as you have in the past?

AE: If anything as the field has grown larger and more inclusive of complimentary fields, so has my interest in it. If you look back at ASMB a decade ago, the number of matrix scientists originally trained as engineers was very small. If you look at the ASMB membership today, you'll find dozens of them, and that number is increasing. I believe that matrix biology has been extremely inclusive of new approaches, and that is where many new innovations are born. It's a very exciting time for matrix.

ML: Matrix biologists know that the matrix has both scaffolding are biochemical signaling function, but relatively few have attempted to look at the biomechanical properties of the matrix, as you have. Why do you think that is?

AE: In line with your question about why I still love matrix biology, I believe that this is a matter of complexity and incorporating new researchers into the field. Matrix biology has its roots in biochemistry and cell biology, so naturally that is where we have a wealth of information. The physical effects of matrix are still being determined, but more so than with chemistry, dimensionality plays a critical role. What works in 2D physically may not in 3D, and so these context-specific answers are sometimes difficult to reconcile. However if you compare the literature today with that of a decade ago, these physical properties-stiffness, topography, porosity, etc.- are now on everyone's radar. There is also a great migration of engineers and physicists into matrix biology, and I believe that they will help clarify these questions. So in another decade, I think that our understanding of physical properties will be dramatically improved.

Dr. Engler and Dr. Iozzo, captured together when both attended the career breakfast to mentor young scientists at ASMB 2014.

ML: I want to take a minute to ask you to take pride in something. I know that its not something scientists do very much. If you pause to reflect – what strikes you as one of the more clever or satisfying approaches you've used to study the matrix and its impact on cells?

AE: I link 'satisfying' to impact on the field. So, in this respect, of many unique tools I've used over the years, I would have to choose the development of engineered materials that mimic components of matrix biology. These second and third generation materials move beyond the static matrices of a decade ago to present cues to cells in a reductionist but dynamic manner. Since matrix is such a dynamic material itself–be it in vivo or a cell assembled matrix in vitro–developing a truly dynamic system to mimic its properties has been critical.

ML: Do you think there is still room for new innovations in matrix studies? Do you think manuscript or grant reviewers in other fields are appreciative of new approaches?

AE: First, there is absolutely room for innovation, and I would hope that reviewers feel that way as well. I think that you need look no further than the wealth of matrix-induced diseases where we know very little. They provide a tremendous number of matrix biology applications. Many of these, such as fibrosis have broad applicability. As the field becomes more inclusive and complimentary to other fields, I believe that there will also be significant innovations at the interface between matrix biology and engineering, high throughput science, "big data," and personalized medicine. The great thing about matrix is its diversity, complexity, and application in almost every solid tissue.

I don't believe that matrix biologists will be out of a job any time soon.

ML: If you could give one piece of advice to someone starting out in our field, what might it be?

AE: I would tell that person or anyone joining my lab to familiarize yourself with the "classic" matrix biology literature. Matrix biology did not start when journals started archiving issues online! There is a large body of work done by many pioneers in the field over the past several decades–you should know it and apply it to your studies. So put down this issue of ***Matrix Letter***, go to your institute's library, and read the literature.

Associate Editors Added to the Matrix Letter Team

Six new editorial staff appointed.

The Matrix Letter is pleased to announce that it has added new editors who will help with a variety of content-related matters. These investigators vary in their scientific experience, ranging from senior graduate students to junior faculty. All, are young, bright, and willing to help. Each provides a unique perspective on the field of matrix biology, and the world in general. (Zebrafish are well represented in this international panel). We are very happy to have them.

Carolyn Dancevic

I am a 3rd Year PhD Candidate, at Deakin University in Waurn Ponds, Australia. My research interests center around the ADAMTS proteoglycanases and their roles during development. I have worked on the biosynthesis, expression and substrate specificity of ADAMTS15, as well as discovering a novel role for ADAMTS5 in muscle development of the zebrafish, which is a versatile model that has enabled me to look more deeply at genetic interactions of ADAMTS5 with important cell signalling pathways.

Gili Naveh

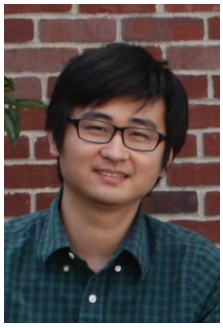
I am a research fellow (DMD & PhD) working in Bjorn Olsen's group at Harvard. I investigate the periodontal ligament (PDL) which has a vital role in controlling tooth movement and tooth survivability. My approach is to investigate the entire tooth-PDL-bone complex with different visualization methods such as microCT, 2 photon and 2nd harmonic-generation. The tools permit me to characterize the 3D distribution of the different collagen networks, their corresponding cellular surrounding and the effect of external forces on their organization.

Anurag Purushothaman

I am an Instructor in the Department of Pathology as well as an Associate Scientist at the University of Alabama, Birmingham Comprehensive Cancer Center.

My research focuses on the local microenvironment, or niche, of a cancer cell. This is an aggregate which consists of several other cell types and the extracellular matrix (ECM), and plays a critical role in the development and progression of many cancers. My long term goal is to understand how glycosaminoglycans, a major component of ECM, modulate the tumor-microenvironment to favor the survival of cancer/cancer stem cells and use that knowledge to develop new therapeutic interventions targeting the tumor niche.

Bo An



As a postdoctoral scholar in the laboratory of Barbara Brodsky and David Kaplan at Tufts University, my research focus is on the structural and functional characterizations of collagen. In particular, I am interested in the design of recombinant collagen-like proteins that are amenable to easy chemical and biological modifications, as well as large scale expression.

Yoshihiro Ishikawa

As a postdoctoral fellow in the lab of Hans Peter Bächinger at Shriner's Hospital Portland, I work on structure-function relationships of molecular chaperones, folding enzymes and post-translational modifiers for collagen biosynthesis, quality control, and trafficking. Understanding this ensemble of rough ER resident proteins is a focus of my current research.

Bryan Crawford

I am an associate professor in the Biology Department at the University of New Brunswick in Fredericton, Canada. My lab studies how cell-matrix interactions generate mesoscopic form in developing and/or healing tissues, and how matrix remodelling is regulated during these processes. This interest has focused my attention on the matrix metalloproteinases and their spatio-temporal regulation in vivo. My lab uses a variety of approaches to looking at the activation and activity of these protease in zebrafish.

The Editor's Page

The Matrix, Explained?

I might be wrong.
Certainly, I think I might be preaching to the choir.
But I happen to think scientific research is underfunded.

I would propose that this is, in large part, because the lives we save are distributed across the nation and the world, and are not lost in a single tragedy in a single place.

Since cancer is going to be in the news for the next couple of weeks (see the most recent cover of **Time magazine**, listen to **NPR,** or watch all 10 episodes of the ***Emperor of all Maladies*** on PBS), it seems like a good example, though its far from the only one.

As we approach the 45th anniversary of Nixon's declaration of war on cancer, I would submit to you that military comparisons also seem to become appropriate. The outspoken James Watson once laughed at this, of course – pointing out that people don't take weekends or holidays off during war! But if we assume that it is war, then we need a defense budget. In this respect, NATO countries are expected to spend ~2% of their GDP on the military, and we in the United States, as NATO leaders, generally double that spending in direct costs (not including private R&D). Our GDP in the 2014 was more than 17.5 trillion dollars.

It is interesting to consider what the impact of even a 0.1% reallocation (17.5 billion USD) from the military to medical research might be. Having just returned from a session with the congressionally directed medical research program, I can tell you that their total funding is 1 billion, with half dedicated directly to military research and the other half for disease related research (for example, 120 million for breast cancer in FY 2014 and again in 2015). Proposal success rates are around 7% for that half billion. *So what would an additional 17.5 billion do, I wonder? And how would we measure the benefit of increasing CDMRP from 0.5 to 18 billion?*

Real measures of impact could be measured in education and training, improved quality of life for patients, and with time, lives saved. They would also result in exportable technologies. However, none of this would be immediately visible to the average taxpayer, and visibility is critical for them to want to support our work.

We need to **show** them what we do. We have to make it accessible, even 'cool.' Warplanes are tangible objects that make a clear impact on the public. They have sleek lines and performance that is easy to see at 'air shows.' But we don't have 'air shows' in science.

Maybe it is time that we did.

There is irony in this plea for better out-reach efforts.

Communication is something we all train for, and even take mostly for granted. Successful research scientists write and lecture, give and take criticism, collaborate and seek funding. But the context of all this communication is limited; we train to communicate and share specifically with other scientists. Our largest potential audience is the public at large, and for the most part, they don't receive the attention that they should.

Outreach is not an easy task. Even within our institutions, speaking with the specialists in communications departments can be taxing. It can take a lot of time to explain the science involved in a key finding, simply to facilitate a press release.

That doesn't mean it is not worth doing. I would contend that we need to 'expose' ourselves (*brag about our work, if you will*) much more than we already do.

This is difficult – in general, we have an ingrained humility that is reinforced at all levels of our training. We foist it on ourselves and on others.

And yet, we live in an age of unparalleled media. The public is directly accessible to us. This seems to be an opportunity.

Pictured: F22 Raptor in flight. It has a very sleek look to it, but with a cost associated. The 2012 GAO estimate was 412 million per aircraft.* This would fund more than 200 labs for five years each. Money well spent?

*http://www.gao.gov/assets/320/317081.pdf

I'm not suggesting that ASMB, or even more affluent organizations such as AAAS, should engage publicity agents. But, I am also not saying that such a thing would be undesirable, either. We, as investigators, need publicity. In a wired age, an age of social media, our work is no longer constrained to medical or biological libraries which are that are poorly accessible to the public. They can be broadcast to a massive audience with little personal effort. How do we get public appreciation? I believe that we need to explain that what we do is valuable, from a very human perspective, and that we need to be accessible in at least two ways.

The first is to find time for outreach efforts. Lets talk about what we do. These can be lectures in community centers or in schools. Some scientists already do this, on an irregular basis (though often for charities, and perhaps with hopes of funding in mind.) We need to do this just for the sake of doing it and getting the word out. For the web-savvy, **Word Press** offers free websites for blogging. And, I could be wrong, but it seems to me that **YouTube** is not just a passing trend. It might well be a useful tool to let people know what we do. Your .ppt files can be converted to movies. A three to ten minute rundown on the significance of your latest results? Perhaps stressing exactly why they are not just important, but perhaps even cool? Explaining why your lab is at the cutting edge right now? Sounds perfect to me.

This leads to the second point. It can be a problem putting our work in terms that an average person can digest. The devil is in the details for scientists (yes, we love details), but not for the general public. For example, if your car is in an accident, one generally describes it as 'wrecked,' 'damaged' or 'under repair.' Most people do not detail the individual parts or precise repair methods. Similarly, consider that mutants and repair mechanisms can often be described without even mentioning DNA. Collagen diseases might be able to be described without talking about hydroxyproline. Signaling can look to the real (or cinematic) world for analogies. I imagine several people have used the Matrix films as a way to describe the idea that the ECM is not just around cells as structure – it holds a lot of information that constrains the cells and tissues of our bodies.

It is possible that if we put more of ourselves out into the world, we can begin to make a greater impact as to how the world sees us. And, how they value us.

Maybe, then, we can have our own 'air show.'

Some interesting You Tube videos...

Humans as monkeys (evolution).
https://www.youtube.com/watch?v=igq_niFmXNs&list=PLECC9B734DFC99776&index=14
This first Youtube video is great for scientists, and is intended for general audiences (or college students) but is much too complex for an average person.

Protein Synthesis
https://www.youtube.com/watch?v=tlPHBJ0z2AM
This PBS video presents some very complex ideas in a short period. It uses amusing concepts (Amoeba sisters) and cute animation of the cells and cell systems, but is probably still too complex for the average person in the street.

Vaccines
https://www.youtube.com/watch?v=lXMc15dA-vw
This one is from the series Nova. It is probably close to where we need to be, simplifying very complex concepts and even lumping together white blood cells as a single cell type (mostly because its not necessary to differentiate them for this concept).

As for that **Science Blog** idea...

Dan Koboldt can perhaps explain more elegantly than I. I've recommended word press, while he recommends having your own site. He points out the limitations of blogging, as well.
http://massgenomics.org/2013/05/how-to-start-science-blog.html

Why not write in to us at ASMB@FASEB.org and let us know why you think this type of outreach project is a good or bad idea, and how you might change things.

The Back Page

Postdoctoral Positions

POST-DOCTORAL FELLOWSHIP
SKELETAL BIOLOGY
MicroRNA Regulation of Chondrocyte Differentiation and Cartilage Homeostasis

The Department of Orthopaedic Surgery at Washington University School of Medicine in St Louis, Missouri will have an opening (beginning May 1, 2015) for a post-doctoral research associate in the field of microRNAs and skeletal (cartilage) biology. The motivated individual will work on an NIH-funded study to determine the function of microRNAs in regulating chondrogenesis and cartilage homeostasis. The long-term goals of these studies are to develop novel strategies to engineer new cartilage tissue or ameliorate cartilage breakdown resulting from conditions such as joint trauma and osteoarthritis.

The candidate should have a strong background in a range of molecular biology techniques (e.g. cloning and construct design/manipulation, cell transfection/infection), cell culture and isolation (stem cells, differentiated primary cells), protein analysis (immunohistochemistry/immunofluorescence, microscopy imaging, Western blot, immunoprecipitation) and animal (mouse) handling and dissection. Specific skills in RNA biology, lentiviral technology, bioinformatics analysis, stem cell (MSC, iPS) differentiation and/or cartilage/bone biology will be advantageous. There are also opportunities to be involved in studies developing animal models of joint trauma (e.g. murine knee joint loading and/or surgical procedures to induce osteoarthritis in the murine knee joint).

You will join a multidisciplinary orthopaedic research laboratory, which is part of the Musculoskeletal Research Center (http://www.musculoskeletalcore.wustl.edu/). There are excellent opportunities to interact and collaborate with other cartilage/bone biologists and biomechanical engineers in the Center as well as other established PIs in basic science departments at Washington University who specialize in RNA biology and stem cell differentiation.

Applicants must possess a Ph.D. in the field of molecular/cellular biology, biochemistry or closely-related field. Some experience in musculoskeletal research would be an advantage. The appointment is for a period of 3 years. Qualified candidates should apply by sending a cover letter, CV and the names of three references to:

Audrey McAlinden, Ph.D.
Associate Professor of Orthopaedic Surgery
Washington University School of Medicine
660 South Euclid Ave, BJCIH 11th Floor
Campus Box 8233
St Louis, MO, 63110.
Office: 314-454-8860
Email: ***mcalindena@wudosis.wustl.edu***
Lab: http://audreymcalinden.org

General information:
http://orthoresearch.wustl.edu and http://medschool.wustl.edu

Contributing Content

The content of ***The Matrix Letter*** includes both ASMB news items and also research-directed content that fosters the mission of the ASMB:

...to promote basic, translational, and clinical research on the extracellular matrix (ECM), cell-ECM interactions, and ECM-based therapies and devices, and to support the growth and professional development of the ECM research community...

From the perspective of this communication, connecting ASMB researchers with each other, based on their research focus or their approaches is the ultimate goal. The Matrix Letter currently publishes the following categories of lab-initiated content;

Matrix Mini-reviews
The Matrix Mini-review feature will be a focused summary the contribution of a particular lab in the context of the current state of knowledge in that field. Usually written by students, postdoctoral fellows or young faculty, the minireview runs about a single written page, with a single scientific illustration and a lab photo, and less than 10 references.

Matrix Essays
The purpose of a Matrix Essay is to promote a new or breaking hypothesis in the field of Matrix biology, with the expressed purpose of garnering supporting evidence and collaborators from the greater ASMB membership. Matrix essays are about one running page and may include a single illustration and up to 10 references.

Letters to the Editor
A letter to the editor should be short and succinct, and will focus on alerting the ASMB membership to recent advances or concerns in our, and related, fields. A letter to the editor is limited to 200 words and three references.

Matrix Images
These are submissions of particularly aesthetic or educational images that you are willing to share with the membership, along with a caption explaining the image.

We welcome your contributions.

Reference Format
1) Lewis R, Ravindran S, Wirthlin L, Traeger G, Fernandes RJ, McAlinden A. Disruption of the developmentally-regulated Col2a1 alternative splicing switch in a transgenic knock-in mouse model. Matrix Biol. 2012;31:214-26.