First and foremost, on behalf of our membership, I would like to send a message of support and solidarity to our members in Japan in the wake of the Earthquake and Tsunami. Given the great challenges the people of Japan are facing, we are particularly grateful that Dr. Konno, President of the Japanese Association for Metastasis Research (JAMR), was able to report on the activities of the JAMR in this newsletter (page 2).

I am delighted to report that the MRS has hit the ground running in 2011 and many of the initiatives we discussed at the last General Meeting (Philadelphia, 2010) are materializing! I am happy to announce that the 2012 MRS Congress will be held in Brisbane, Australia (September 3-6) (see above). This is particularly exciting, as it will enhance critical participation by our colleagues in Japan and China. Our next newsletter will feature a preview of the meeting — so stay tuned.

As evidenced by the new design of our newsletter, the MRS leadership is launching several new initiatives to reinvigorate and expand the society. These include the Website Enhancement Committee (led by Dr. Conor Lynch — see page 6) as well as new opportunities to engage our members that we hope to roll out in the next newsletter. Until then I hope that you enjoy this issue of MRS News and best wishes from Australia. – Best, Rik

We want your news! As you can see by our new look the MRS Newsletter is undergoing some important changes. Our goal is to make this newsletter and the MRS YOUR society. To this end we need your news and your input. Contacts for the Newsletter Production and Website Improvement are detailed on Page 6 of this newsletter. Please take a moment to share your news and views with us!

Consider Joining the MRS. The MRS leadership is working to reinvigorate the society and bring new people and ideas to the society. As part of this process we are sending out newsletters to a broader audience so more people can learn about the MRS. Please consider joining our efforts. Joining is really easy! Just follow the instructions for joining the society which are provided on our website (www.metastasis-research.org). We hope to hear from you soon!
Foundational Research – Our Japanese Family

News from the President of the Japanese Metastasis Research Society

By Hiroyuki Konno, M.D., Ph.D.
Chairman and Professor of 2nd Department of Surgery
Hamamatsu University School of Medicine

Our colleagues in Japan are undergoing a most distressful time following the tragic earthquake and tsunami. We have asked Professor Hiroyuki Konno, Chairman and Professor of the 2nd Department of Surgery, Hamamatsu University School of Medicine, Hamamatsu, Japan, to contribute a brief report on the current activities of the Japanese Association of Metastasis Research and its future plans. All members of the MRS send their best greetings and support to our Japanese colleagues. -Carrie Rinker-Schaeffer, Ph.D. Vice-President, MRS

As a Director of the Japanese Association of Metastasis Research (JAMR) and President of the 20th Annual Meeting of the JAMR, I would like to briefly report on the recent activities of the Society. In terms of collaboration between the MRS and JAMR, Prof. Saburo Sone successfully held the 11th International Congress of the MRS as a joint meeting with the 15th Annual Meeting of the JAMR in Tokushima, Japan (2006). This joint meeting had more than 450 participants. We now have 645 active members who are basic scientists, physicians, surgeons, and representatives of pharmaceutical companies. We are confident that the collaboration of these diverse members achieves the development of metastasis research and the effective treatment of cancer patients. The JAMR has held annual meetings, not only in the capital, but also in the provincial cities, such as Kanazawa, where the last meeting was Chaired by Professor H. Sato. The 20th Annual

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What’s News: Meeting Report

Keystone Symposium on Stem Cells, Cancer and Metastasis

By Jenny Chu, Alysha Croker, and Irene Ma, Graduate Students
University of Western Ontario, London, Ontario, Canada

Anyone who has previously attended a Keystone meeting will probably agree that the week of a Keystone Symposium is one of the best weeks of your year. Between standing in awe of the great mountains of the Rockies, skiing down some of the best runs in the world, experiencing “thin air” for the first time at 9400ft, and participating in discussions with some of the great minds in the field, how could we have asked for a better week?

The meeting was amazing covering topics including The controversy of Cancer Origins, Niches and the metastatic Cascade, Genomic Analyses, and Cancer Stems Cells, Metastasis and Therapy. There were many exciting lectures and a great deal to learn! Since we cannot cover everything we have chosen to focus on four talks that left a lasting impression on each of us.

**Keynote Address: Robert Weinberg, Ph.D.**

Of particular note to those of us focused on metastasis, Dr. Robert Weinberg started the meeting off with the keynote address. Fresh off publication of his updated “Hallmarks of Cancer” review, he spoke about the likely role that the epithelial-to-mesenchymal transition (EMT) plays in the metastatic process, suggesting that all steps of metastasis up to and

Continued on page 5
As part of the ongoing focus of introducing metastasis researchers to each other, this month we are introducing our colleague Dr. Paula Foster, who is developing and using amazing magnetic resonance imaging approaches to ‘watch’ steps in metastasis in mice.

Dr. Foster completed a BSc in Human Biology, an MSc in Nuclear Magnetic Resonance in the Department of Biomedical Sciences and a PhD in Magnetic Resonance Imaging (MRI) in the Department of Clinical Studies, all at the University of Guelph. Her postdoctoral training was conducted at the Centre for In Vivo Microscopy at Duke University. Dr. Foster is currently a Scientist at the Robarts Research Institute and Associate Professor in the Department of Medical Biophysics at the University of Western Ontario. She is also Co-Director of the 3 Tesla MRI Facility.

As the leader of the Cellular and Molecular Imaging program at Robarts, Dr. Foster is developing MRI and cell labeling technology to detect cells labeled with magnetic nanoparticles. In 2006, using this highly sensitive cellular MRI technology, Dr. Foster and her collaborators, were the first to demonstrate that single iron-oxide labeled cells could be detected in vivo. This advanced MRI technology has enormous potential, with limitless applications in a number of diseases and disorders. The Foster lab is a multi-disciplinary and highly collaborative lab. Her trainees come with backgrounds ranging from engineering, biophysics, biology, immunology and computer science. Her collaborators also come from many different areas of expertise.

The Foster laboratory is currently focused on the use of these techniques to track stem cells used for tissue repair and regeneration and to monitor cancer cell metastasis and immune cells used as cancer treatments. A major area of research is tracking the fate of breast cancer metastasis to the brain, a collaborative project with Drs. Ann Chambers and Patricia Steeg. Cellular imaging technology developed in our labs has allowed for tracking of the initial delivery and distribution of individual cancer cells into the mouse brain, as well as the development of brain tumors over time from the single cell level. Other metastasis imaging projects include: tracking breast cancer metastasis to lymph nodes, monitoring metastatic melanoma in the liver and brain and...
tracking the migration of dendritic cells and natural killer cells in a model of metastatic prostate cancer.

Dr. Foster is an elected member of the Governing Council for the Society of Molecular Imaging (SMI) and Chair of the Program Committee for the annual SMI Meeting, the World Molecular Imaging Congress.

**Selected Publications:**


**Featured Scientist: Paula Foster, Ph.D... Continued from Page 3**

![Fig 2. Single iron-labeled cells can be detected in vivo in the mouse brain by MRI. Left Panel: High resolution MRI of mouse brain demonstrates the presence of discrete signal voids (black arrow) throughout the mouse brain. Right Panel: High-resolution confocal microscopy revealed the signal voids to be solitary Dil (red) labeled cells with green fluorescence attributable to GFP expression (inset). From Heyn et al., 2006](image)

Meeting of the JAMR will be held in Hamamatsu, Japan, June 30 to July 1, 2011. Hamamatsu is located in the center of Japan between Tokyo and Osaka and is close to Mt. Fuji, the most beautiful mountain in Japan. There are some famous companies born in Hamamatsu, including Honda, Suzuki, and Kawai Co. Hamamatsu citizens often say, “Yaramaika!”, which means, “Do it first!” I hope that the Hamamatsu spirit of “Yaramaika”, with which the local factories developed into world-wide companies, will encourage and facilitate the JAMR members to drive the innovation in this field at the 20th Annual Meeting.

The concept of the meeting is to seek the fusion and cooperation of clinical and basic science. In the era of molecular targeting therapy and evidence-based medicine (EBM) in clinical and post-genomic science in basic research, it is important to encourage the crosstalk between clinical researchers and basic scientists to overcome cancer metastasis and improve therapy.

We must now unite and take action together as if everyone is a member of one big family to restore and build a new Japan under the difficult conditions caused by the terrible, disastrous earthquake and tsunami. As President of the meeting as well as a Japanese citizen, I hope that many researchers will come to Hamamatsu to discuss our future in the field of cancer metastasis and our home country, Japan. Simultaneously, international crosstalk is important to advance cancer metastasis research. Research leaders and special lecturers are scheduled for the meeting. It promises to be instructive to all attendees with active and highly scientific discussions. Non-member attendees from abroad are also welcome.

**Save the dates:**

**The 20th Annual Meeting of the JAMR**

Hamamatsu, Japan

June 30 – July 1, 2011
including micrometastasis growth fall within the EMT program. He suggested that forcing cells through EMT with the addition of specific growth factors caused the production of more stem-like cells and that the EMT pathway may be the main route to stem-cell entry. Additionally, he highlighted that the pre-transformation state of a cell will influence its metastatic and tumor-initiating potential upon transformation. He hinted at the plasticity of cancer cells, noting the de-differentiation capacity of non-stem-like cancer cells into more stem-like cells, and suggested that the main difference between aggressive and non-aggressive cancers lies in the cancer cells’ readiness to activate the EMT program.

Niches and the Metastatic Cascade: David Lyden, Ph.D., M.D.

Dr. David Lyden gave a stimulating talk on the pre-metastatic niche, and specifically the role the exosomes play in priming a secondary soil for metastatic lesions. He suggested that exosomes promote local gene changes in the lung, similar to what is observed during pre-metastatic niche formation. Tumors that are highly metastatic excrete 20 times more exosomes than regular cells in various cancer models. Exosomes can “educate” the bone marrow and promote pro-metastatic and pro-vasculogenesis genes, which may lead to more metastatic lesions. He also hypothesized that perhaps tumor exosomes are important in determining the switch between micro-metastases and macro-metastases.

Reading the Genome in Cancer Stem Cells and Metastatic Precursors: Joan Massagué, Ph.D.

Dr. Joan Massagué looked at metastasis from a slightly different angle, focusing on finding metastasis-associated genes, including tenascin-C (TNC) and vascular cell adhesion molecule (VCAM). A TNC niche can be found in lung metastases of breast cancer patients. In fact, a high TNC level has been shown to correlate with a low rate of lung metastases and survival in patients. VCAM, on the other hand, has been suggested to support the cancer cell once it has extravasated, rather than to facilitate the cancer cell to translocate into secondary sites, which is what most CAMs do.

Cancer Stem Cells in Metastasis: Insights and Controversies: Sean Morrison, Ph.D.

Finally, and probably most interesting and controversial of all, was Dr. Sean Morrison’s talk exploring whether all cancers are hierarchically organized. The session leader introduced Dr. Morrison as the man who brought us the Cancer Stem Cell (CSC) hypothesis and then took it away again, at least in melanoma. He suggested that after very careful experimentation, melanoma does not appear to follow the CSC model, and instead, tumor heterogeneity is driven by reversible phenotypic changes and irreversible genetic changes. He also noted that there were intrinsic differences among melanoma patients in terms of metastatic behavior. When patient tumor cells were injected into mice, some mice experienced a high amount of metastases (cells from stage 4 patients), some experienced a low number of metastases (stage 1-3 patients), and some experienced no metastases (stage 1-2 patients). Furthermore, this data correlated with what happened to the melanoma patients clinically, indicating that it might be possible to identify the melanoma patients that will metastasize vs. the patients that may not.

In conclusion, this Keystone Conference lived up to all of our expectations with excellent, thought-provoking speakers, amazing skiing, and great friends. We can’t wait to go again next year! ☺

1 For a listing of the complete program go to http://www.keystonesymposia.org/meetings/viewMeetings.cfm?MeetingID=1079

Hometown Boy Makes Good
Dr. Yibin Kang of Princeton University Wins Vilcek Foundation Prize

By Carrie Rinker-Schaeffer Ph.D., University of Chicago

When I first met Dr. Yibin Kang I was immediately impressed by his energy, enthusiasm and, to be quite frank his very youthful appearance! It was impossible not to get caught up in his passion for metastasis research and his love for discovery. Thus, I was delighted, but not surprised that Dr. Kang was recently awarded the Vilcek Foundation Prize for Creative Promise, which honors the outstanding achievements of immigrants who are working in the Arts and Sciences.

In my view this award could not be more appropriate as Dr. Kang’s research focuses on the identification of genes and pathways that control the propensity of cancer cells to metastasize to different organs. His work is innovative, multidisciplinary and has potential to contributing greatly to the general understanding of the molecular basis of cancer metastasis. Bravo Yibin!

If you have news about awards and/or achievements from your laboratory please send them to Amy Johnson at ajohnson13@uchicago.edu.
MEMBER IN THE SPOTLIGHT
Gone Fishin’: A Farewell to Dr. Janet Price
By Ken Van Golen, Ph.D., The University of Delaware

It is a major checkpoint in your life when your Ph.D. advisor retires. Such is the case for me as my mentor, Janet Price, D. Phil., recently entered a new and exciting phase of her life at the end of March. Her retirement leaves a major hole in the metastasis research community. I had the honor of being one of Janet’s very first trainees. In 1991 as a young graduate student thumbing through the description of 300 faculty affiliated with the University of Texas Graduate School of Biological Sciences, I gravitated to Janet’s work in melanoma and breast cancer metastasis. As a mentor she taught and imparted many of her distinctive qualities by example. She is highly regarded in the scientific community as a thoughtful and careful scientist and her expertise in animal models of metastasis is unmatched. Further, as the number of collaborations that she has taken part in over the years shows, she is an honest, supportive and interactive scientist of the highest caliber.

Through independent studies and collaborations Janet has made numerous contributions that have changed the landscape of metastasis and inspired others to join the field. She was one of the first investigators to carefully explore differences in the metastatic potential of heterogeneous tumor cell clones. She put forth tenacious effort to identify factors that effect metastasis of naturally occurring tumors and to uncover the influence of the tumor microenvironment as well as host-tumor interactions in metastatic progression. Finally, she developed and characterized important models of tumor metastases with a focus on the development of the use of nude mice. Findings from her laboratory are crucial threads that make the fabric of metastasis. It is amazing to think that her work has given us the knowledge and tools that as scientists, we tend to take for granted. Janet’s willingness to collaborate and to discuss projects with others is a hallmark of her amazing personality. Simply put, she is one of the most understated, kindest and pleasant people in science today. There is no question that she will be greatly missed by those that she has trained and are in their own independent careers in addition to the metastasis research community as a whole. Undoubtedly, her retirement will be filled with many activities that she has developed interest in over the years such as scuba diving and saltwater fishing. We wish Janet much joy in the years to come.

WEBSITE ENHANCEMENT INITIATIVE
Led by Conor Lynch, Ph.D. - Moffitt Cancer Center

In these days of instant information gratification, a society’s website first impression is key. Thanks to the hard work of volunteer webmasters, we have a functional website (www.metastasis-research.org). However, it’s time to make the official MRS website a “go-to” place for researchers, lay-people, consumers and advocates interested in all aspects of metastasis has come. The MRS web enhancement committee has been tasked with generating a plan of action to make this happen. We need as much feedback as possible as we begin the process. PLEASE SEND YOUR COMMENTS to me (conor.lynch@moffitt.org) or via survey (www.surveymonkey.com/s/DNVHD6J).

NEWSLETTER IMPROVEMENT INITIATIVE
Produced by Amy Johnson, Managing Editor, The University of Chicago

Greetings! I have really enjoyed working on this issue of the MRS News. It is very exciting for me to learn about all of the wonderful people involved in this critical area of research. My goal is to produce an informative, fun and visually appealing newsletter that people are excited to read. The key to a great newsletter is interesting news and information from society members. To achieve this, I need you to SEND ME YOUR NEWS AND COMMENTS at ajohnson13@uchicago.edu. I hope to hear from you soon!