PASPCR

December 2011
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Newsletter

The **PASPCR** ***Newsletter*** is published three times a year and is intended to serve as a regular means of communication for the members of our Society. The PASPCR Newsletter is distributed via e-mail, in pdf format, on the first of April, August and December and it will continue to be posted on the web site of the Society.

We hope you had a great time at the XXIst IPCC, held in Bordeaux, France and organized by Dr. Alain Taïeb. This year we are trying a new approach regarding the meeting report by inviting several members to share their personal and scientific thoughts on the IPCC meeting. This section can be found on pages 11-16.

The 17th PASPCR Meeting is scheduled to be held in Salt Lake City, Utah, from September 19th to September 22nd, 2012 and will be organized by Dr. Sancy Leachman.

In this issue, we continue the "***Laboratory Updates***" section with a column by Dr. Shosuke Ito. We also continue the "***Let me introduce…***" section with a column by Dr. Jakob Vinther.

We hope you enjoy this issue. We encourage you to send us your comments at our email address paspcr.newsletters@gmail.com. Let us know what you would like to see in the letters, suggest sections you think would be useful to include, and recommend any changes that you would like to see.

We also encourage you to let us know about meetings that you think would be of interest to members of the Society. If you attend a scientific meeting at which you heard about work which you think will be of interest to the membership of the PASPCR, please write a few paragraphs summarizing what was presented and share it with us. Also, keep us updated on any "***Members in the News***" so we can spread the word of your successes.

The PASCR Web Site can be found at:
http://www.paspcr.org

This is **your** ***Newsletter***, and we depend upon you to help us ensure it best serves the Society's needs. We look forward to hearing your ideas and suggestions and to continue working together to compile the Newsletters for our Society.

The PASPCR Newsletter Editorial Team would like to thank to all our contributors for their columns submitted to us for inclusion in the letters.

We wish you Happy Holidays and a great 2012!

PASPCR Newsletter Editorial Team

In this Issue . . . . .

The PanAmerican Society for Pigment Cell Research

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Vijayasaradhi Setaluri	(2011-2013)
Richard Spritz	(2010-2012)

IFPCS Representative:
Andrzej Slominski (*Secretary*)
Greg Barsh (*Council Member*)
Frank Meyskens (*Council Member*)

CALENDAR OF EVENTS

2011
The 51st Annual Meeting of American Society for Cell Biology
Date and place: December 3-7, Denver, CO, USA
Web-site: http://www.ascb.org

2012
5th ASPCR
Date and place: November 3-4, New Delhi, INDIA

2012
17th ESPCR
Date and place: September 11-14, Geneva, SWITZERLAND

2012
17th PASPCR
Date and place: September 19-22, Salt Lake City, UT, USA

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CORPORATE SPONSORS

By Dr. Andrzej Slominski

The PASPCR would like to acknowledge and thank our Sponsors. The list below reflects contributions made during the year of 2011. In the past, financial gifts from our Sponsors have allowed our Society to increase benefits to the membership far out of proportion to the actual dues collected from members. We gratefully acknowledge the contributions for the XXIst IPCC made through PASPCR as follows:

Johnson & Johnson Consumer Companies
Procter and Gamble
University of British Columbia

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MEMBERSHIP UPDATES

By Dr. Andrzej Slominski

Renewals (for 2011)

Sujit S. Nair
George Washington University
Medical Center
Washington, DC, USA

New Members

Pamela Cassidy
Huntsman Cancer Institute and
The University of Utah
Salt Lake City, UT, USA

Cristopher B. Kaelin
HudsonAlpha Institute of
Biotechnology and
Stanford University
Stanford, CA, USA

Kelly A. McGowan
HudsonAlpha Institute of
Biotechnology
Stanford, CA, USA

Paul Tanner
Huntsman Cancer Institute and
The University of Utah
Salt Lake City, UT, USA

PASPCR PRESIDENT'S CORNER

There are several items to cover with this newsletter, including a brief summary of administrative events in Bordeaux, an update about our next meeting, and results of PASPCR Council elections. In fact, I have been somewhat remiss in contributing to the PASPCR newsletter earlier this year, in part because there are only so many hours in the day, in part because I have an unfortunate tendency to procrastinate, and in part because of events beyond my control (like the April 27 tornados in the Southeast). A brief Alabama digression: the damage we sustained was relatively minor compared to many others; the entire area was without power for about 10 days during which time our research institute kept the freezers going with diesel-powered generators (2500 gallons of fuel per day x $3.85 per gallon x 10 days < the cost of replacing 30 freezers full of next-gen sequencing reagents). Positive outcomes of the disaster were the outpouring of community support and spirit of volunteerism across the state, and an opportunity to see Barack Obama and Robert Bentley working together, albeit (and thankfully) only for a brief period.

Back on point…

I think about one-third of our 119 members attended the IPCC in Bordeaux, which was a terrific opportunity to see colleagues from around the world, hear some interesting science, and, of course, drink a glass of wine (or two). The PASPCR held both a Council Meeting and a general membership meeting; thanks very much to Deb Lang for summarizing and stimulating the discussions there. A brief summary of issues and outcomes:

1) An Estela Medrano Young Investigator. As many of you know, there has been much discussion about the best mechanism to recognize and support young scientists in a way that honors Estela's contributions and relationships with all of us. These discussions were first initiated at our Vancouver meeting, and, with Council approval, we now plan to move forward in 2012, with the

first award to be given at the Salt Lake City meeting.

2) Health of the Society and how it can be improved. There is a general consensus that, like many specialized scientific Societies, the forces that drove establishment of these entities have changed. In particular, the motivations for young scientists (students, postdocs, and junior faculty members) to participate are no longer the same, and, while all of us enjoy seeing each other year after year, reinvigoration is important for a healthy (and happy) PASPCR. Along those lines, what can the Society offer to potential members? Some ideas that were offered include more opportunities for industry interaction, more opportunities for discussion and one-on-one interaction at meetings, new mechanisms to encourage a broader and more diverse membership and meeting participation, and web-based opportunities specific to the Society. I am especially excited about the latter area; the era of digital communication is the major factor that threatens the health of traditional Societies (and journals), but is also the major opportunity for us to grow and develop. In particular, there has been some discussion about enhancing the PASPCR website in a way that would allow member access to things like annotated reference lists, figures, presentations, and related content.

3) Future meetings. We know where we will be in 2012 (that's September 19 - 22, 2012), but what about 2013? We could continue along the present trend (and recruit a local organizer for a local 2013 meeting), or we could explore something different, like a joint meeting with SMR or another regional Society. There are advantages and disadvantages to either option; it's an area that will benefit from further discussion and feedback, so, bring it on!

4) We also welcomed our three new 2011 Council members: Deb Lang, John Pawelek, and Vijay Setaluri (of course, John pointed out that he's not really "new", but that he doesn't mind being referred to as "young").

Speaking of which, the results of the 2012 Council election are in. This year (in the spirit of digital communication), we tried something different, with an online process, and it seems to have worked well.

Our new Council members for 2012 are Gertrude-Emilia Costin, Sancy Leachman, and Glynnis Scott. Congratulations and welcome aboard. And, thanks to Gisela Erf, Tom Hornyak, and Miri Seiberg, who will be rotating off Council at the end of this year. Overall, a great group, and a step forward for a more balanced representation of X and Y chromosomes. Happy holidays to all!

Greg Barsh, Ph.D.
PASPCR President

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Elections Results

Dear members of the PASPCR,

After reconsidering the bylaws and rules in place for the PASPCR, a more streamlined and democratic process was instated for the 2011 Council elections. The current Awards and Nominations Committee consisting of Drs. Grichnik, Hornyak, Huizing, Zhou and myself first came up with a core list of nominees and subsequently solicited additional nominations from you, the PASPCR membership at large, and we received some great suggestions. Great candidates who recently joined the PASPCR and were not yet eligible for Council membership this year will hopefully find their names on the ballot next year. All but one of the remaining candidates accepted our request to be placed on a stellar ballot for this year's elections.

With support from Drs. Zbytek and Slominski, an electronic voting system was put in place, which greatly simplified the process and ensured anonymity to our voters. A big thank you to our highly qualified nominees for providing their time and energy in preparing for the elections and likewise to PASPCR members for taking the time to vote.

We are very pleased to welcome Drs. Sancy Leachman, Glynis Scott and Gertrude-Emilia Costin to the Council in 2012. Their contributions to pigment cell biology as well as to the Society are already immeasurable.

We thank Gisela Erf, Thomas Hornyak and Miri Seiberg for their service the past three years on the Council!

We look forward to another colorful year with you on board.

Caroline Le Poole, Ph.D.
President-elect

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LETTER FROM PASPCR SECRETARY/TREASURER

Dear PASPCR members,

I hope that everybody had a good time while attending the XXIst IPCC in Bordeaux, France, 21-24 September, 2011. The IPCC Chaired by Dr. Alain Taïeb was organized very well and provided excellent educational experience. The organizers were generous to the PASPCR in distributing IFPCS awards to Robert Cornell and Tsing Cheng and IPCC awards to Jeffrey Mosenson, Anne von Koschembarh, Tae-Kang Kim, and Ling Hou. Furthermore, the PASPCR was also able to support additional travel awards made to Deborah Lang, Jared Klarquist, Zorica Janjetovic, Zoran Pavicevic, Jason Belitsky, Ryan Dellinger, Cezary Skoboviat, and Lifang Xie.

The contribution of the PASPCR members to the field of pigment biology was recognized by awarding the Myron Gordon Award to Zalfa Abdel-Malek and Ruth Halaban, and the Seiji Memorial Lecture to Richard Spritz. Furthermore, Andrzej Slominski (Secretary/Treasurer of the PASPCR) was elected to serve as the Secretary of the IFPCS.

The PASCPR also participated in the 2011 International Melanoma Congress in Tampa Florida (November 9-13, 2011) through a joined SMR and PASPCR session on November 10th and entitled “Implications of melanocyte development for understanding and treating melanoma”, and chaired by Frank Meyskens and Andrzej Slominski.

Please mark your calendars for the next PASPCR Conference that will take place in Salt Lake City, Utah, September 19-22, 2012 and that will be chaired by Sancy Leachman.

Also please renew your membership in PASPCR for 2012. The dues have remained the same since 2008 and we offer a very attractive rate for students, postdoctoral fellows and other trainees. Already 46 members of our Society have renewed their membership for 2012.

On behalf of the Society I am also thanking Dr. William Oetting who is our Web manager and who is securing the space and proper format as well as performing updates on the our Society’s website http://paspcr.med.umn.edu/. Bill, thank you again for your time and contribution!

I am also pleased to inform our members that the check on the amount of $17,873.13 from the University of British Columbia was deposited on the PASPCR’s account. This was a surplus form PASPCR Conference held in 2010 in Vancouver, BC. We thank Dr. Youwen Zhou for his remarkable fundraising effort and transfer of the money to the PASPCR. We also acknowledge the support from Johnson & Johnson ($5,000 for A. B. Lerner Award, and $5,000 for the IFPCS Meeting) and Procter and Gamble’s contribution to the IFPCS Conference in Bordeaux ($4,500).

We greatly appreciate your support and participation in activities sponsored by the PASPCR and I wish you Happy Holidays in December 2011!

Andrzej Slominski, M.D., Ph.D.
Secretary/Treasurer of the PASCPR and Secretary of the IFPCS

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Membership Application

PanAmerican Society for Pigment Cell Research

Please see next page for description of membership categories and remittance required with application. Mail, fax or e-mail completed application and remittance to the Secretary/Treasurer's office.

Type or print.

Name _____ Degree(s) _____
last first middle

Faculty Title (if applicable) _____ Yr of Appt _____

Department _____

Institution _____

Street Address _____

City, state, zip _____ Phone (_____)_____

Fax (_____)_____ E-Mail _____

Please check category for which you are applying. *See next page for definitions and dues schedule.*

___ Regular ___ Student

Student Sponsorship: Sponsors of Students verify herewith that the applicant is a bona fide graduate student or postdoctoral fellow.

Sponsor signature _____ Printed name _____

Sponsor Institution _____

Area of Research: We would appreciate your providing the following information. Please check your research interests.

_____ Cell Biology	_____ Physics	_____ Comparative Biology
_____ Biochemistry/Chemistry	_____ Clinical	_____ Melanin
_____ Molecular Biology	_____ Melanoma	Other: _____

Please list the clinical areas in which you are certified: _____

_____

Signature and membership start date

I, the undersigned, wish my membership in the PanAmerican Society for Pigment Cell Research to begin January 1, 2012.

_____ _____
Applicant's Signature *Date*

-NEXT-

PANAMERICAN SOCIETY FOR PIGMENT CELL RESEARCH
2012 DUES

INVOICE DATE: November 1, 2011 **DUE DATE: December 31, 2011**

1. Contact Information *(Please be sure all contact information is current and correct, including e-mail address)*

Current Address

☐ **Corrections** ***(please print CLEARLY)***

_____
_____
_____
_____
_____
Phone: _____
FAX: _____
E-mail: _____

☐ **No Corrections Needed**

2. Dues *(Please mark the appropriate category below)*

☐ Regular ($224/yr) *($77 for PASPCR, $28 for International Federation of Pigment Cell Societies and $119 for both printed and electronic subscription to the journal Pigment Cell and Melanoma Research)*

☐ Regular ($154/yr) *($77 for PASPCR, $28 for International Federation of Pigment Cell Societies and $49 for an electronic subscription to the journal Pigment Cell and Melanoma Research)*

☐ Student ($40/yr) *($12 for PASPCR; $28 for International Federation of Pigment Cell Societies) [includes free electronic subscription to the journal Pigment Cell and Melanoma Research]*

☐ Second membership (if IFPCS dues are paid through another local Society) ($77/yr)

Members of the SMR are exempt from the mandatory subscription of the PCMR through PASCPR. After certifying that the subscription has been paid as a part of the dues to the SMR, they pay $105.

3. Method of Payment *(Please **mark the total amount** next to the preferred method of payment)*

$_____ **Check** Please send check or money order in U.S. funds drawn only on a U.S. bank. Checks drawn on a non-U.S. bank will be returned.
Make check payable to: **PanAmerican Society for Pigment Cell Research** or P**ASPCR**.

$_____ **VISA**** Card #: _____ Exp. Date _____
$_____ **MasterCard**** Card #: _____ Exp. Date _____
*****BE SURE TO SIGN*** Signature: _____

PLEASE SUBMIT YOUR DUES

Return to: Andrzej T. Slominski, M.D., Ph.D., Secretary/Treasurer, PASPCR, Department of Pathology and Laboratory Medicine, University of Tennessee Health Science Center, 930 Madison Avenue, Suite 599, Memphis, TN 38163; Phone: (901) 448-3741; Fax: (901) 448-2435; e-mail: aslominski@uthsc.edu

Please return this form with your payment

LETTER FROM THE EDITORS

Dear PASPCR members,

2011 was a challenging year for all of us around the globe as we faced several natural disasters. From the earthquake and tsunami in Japan, to the flooding and tornadoes in the United States, all of us experienced the rage of nature in one way or another this year and struggled to support each other and to recover the best we could. It is in the nature of this Society's membership to support its members in various ways and to help each other whenever needed and once again thank you for responding to aid those who asked for your help.

The year was also an extremely important one from the scientific standpoint as many of us met in Bordeaux for the XXIst IPCC. The meeting, wonderfully organized by Dr. Alain Taïeb, gathered scientists from around the globe. They enjoyed several great days in Bordeaux, communicated their newest research, met old friends and also made new connections. Needless to say, the meeting was a huge success due to the hard work of Dr. Taïeb and the organizing teams and we all are grateful to them for bringing us together for a great meeting! Thank you!

The editorial team of PASPCR Newsletters was hard at work again this year and continued to bring the latest news to you and to keep you up-to-date with all happening in our Society and in the pigmentation field. This year we transitioned the "***Let me introduce…***" column into our "Keeping the Pigmentation Community Connected" section, where it now joins the other two columns, "***Laboratory Updates***" and "***Industry Perspectives***". Our Society has many, many friends, some of whom may have been members at some point in the past, or who share our interest in pigmentation; therefore, we considered that having tighter connections would only be beneficial for all of us to share our research and connect and collaborate more.

Another change this year is related to the meetings reports. We are trying a new approach this year by inviting several members to share their thoughts (both personal and scientific) on the XXIst IPCC instead of the regular meeting report, which has been highly challenging to compile at times. Please let us know what you think of the change. If you enjoy our new approach, we will carry it over to the 2012 PASPCR Meeting and in the coming years. It is our hope that you will appreciate reading about our members' experiences at the IPCC in this issue and that will yourself consider contributing in the future.

We are heading into another great year for PASPCR in 2012. Dr. Sancy Leachman will organize the 17th PASPCR Meeting, scheduled to be held in Salt Lake City, Utah, from September 19th to September 22nd. We are going to hear from Dr. Leachman soon with new exciting details about the meeting, which we will bring to you in a timely manner. We are also looking forward to the XXIInd IPCC meeting that will take place in September 2014 in Singapore, and will be organized by Professor Boon-Kee Goh (ASPCR). In the upcoming issues we will invite members of ASPCR to share their thoughts about having their Society as part of IFPCS and about the important task of organizing the next IPCC.

We would like to take this opportunity to invite you all to submit articles for the newsletter or to send us suggestions for invitations. The editorial team of PASPCR Newsletters thanks all of you who contributed with columns for our issues this year and wishes you Happy New Year and a great, successful 2012!

PASPCR Newsletters Editorial Team

XXI[st] International Pigment Cell Conference (IPCC)
"Skin and Other Pigment Cells: Bridging Clinical Medicine and Science"

21-24 September 2011
Palais des Congrès, Bordeaux, France

Letter From the Organizer

Dear pigment cell colleagues and friends,

THANK YOU!

Michael Jackson's "Black or White" closed the XXI[st] IPCC in the Palais des Congrès of Bordeaux after Takahiro Kunisada's brilliant Fitzpatrick's Lecture.

On behalf of my colleagues of the Organizing Committee and of the ESPCR, I would like to thank all participants and invited speakers for making this meeting a remarkable success, especially for sharing new data and concepts. Hopefully this should translate soon into new treatment options for our patients. I would like also to thank our institutional and industrial sponsors for their generous help.



The photographs taken at the meeting and backstage are now available thanks to Dr. Lluis Montoliu, IFPCS webmaster, at http://www.ifpcs.org.

The next IPCC will be organized by Professor Boon-Kee Goh in 2014 on behalf of the ASPCR in beautiful Singapore. For more information visit http://www.ipcc2014.org or twitter: @ipcc2014.

Thanks again to all of you and best wishes,

Alain TAÏEB
IPCC President, September 27[th], 2011

XXI[st] IPCC Photos

Palais des Congrès – Sessions

Café Opéra, IPCC 2011 Speakers Dinner

Gala Dinner, Château Giscours

Gala Dinner, Château Giscours

Pictures courtesy of Mrs. Catherine Taïeb and Dr. Lluis Montoliu, and reproduced from http://www.ifpcs.org/Bordeaux/ *with permission from Dr. Alain Taïeb.*

XXI[st] IPCC Awards

Myron Gordon Awardees
***Zalfa Abdel-Malek* (PASPCR)**
***Ruth Halaban* (PASPCR)**
***Shin-ichi Nishikawa* (JSPCR)**

Seiji Memorial Lecturer
***Richard Spritz* (PASPCR)**

Takeuchi Medal Awardee
***Yasushi Tomita* (JSPCR)**

The H. S. Raper Medal Awardee
***Marco D'Ischia* (ESPCR)**

The Aaron B. Lerner Lecture
"Signalling and transcription in melanoma stem-like cells"
***Colin Goding* (ESPCR)**

The Fitzpatrick Lecture
"Functionally distinct melanocyte populations revealed in mice: noncutaneous and dermal melanocytes versus epidermal melanocytes"
***Takahiro Kunisada* (JSPCR)**

Travel Awards: the complete list of the 39 applicants funded via IPCC specific fund raising, PASPCR P&G grant, and IFPCS funding can be found at http://ipcc2011.org/award.

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XXI[st] IPCC Impressions

By Dr. Tsing Cheng, New York University School of Medicine

Allow me to introduce myself: my name is Tsing Cheng and I am a postdoctoral scientist at the Department of Dermatology, New York University School of Medicine, where I have been working with Dr. Prashiela Manga and Dr. Seth Orlow for the past 18 months. I have earned my Ph.D. in the field of skin biology, studying terminal differentiation of keratinocytes, and now that I am working with a different cell type, the melanocyte, it opens up a new field of research for me, broadening my knowledge in skin biology and skin disease. Before I started at NYU I only knew the basics about the melanocyte, but I quickly found out that there are many interesting facets to pigment cell biology. The melanocyte deserves its own international conference, the IPCC, and I am glad I had the opportunity to attend the latest meeting in Bordeaux, France, partly made possible by an IFPCS travel award (many thanks again). The IPCC covered research in all major topics in pigment cell biology including melanin biochemistry and biophysics, photoprotection, (population) genetics, stem cells, pigmentation biology, and stress responses. Not only fundamental research into understanding (pathological) mechanisms in melanocyte biology was presented, but studies on therapy development and clinical studies in disorders such as melanoma, vitiligo, and oculocutaneous albinism also made up a large portion of the sessions.

For young scientists, new to the field, the IPCC is an amazing way to learn a lot about pigment cell biology, to see what is going on, what is new, and what the hot topics are. Also, it is a great opportunity to present your own research and get feedback from other scientists all over the world, many very renowned in the field. Personally, this meeting was about getting to know the pigment cell field, both the research as well as the people, and letting the community get to know me. I actually had the pleasure of presenting my work during one of the plenary sessions, which not only was an excellent way to showcase my research, but was also a great experience in presenting to a large group of people. I have met some great people, both in science and in personality, during the conference, working at academic institutions and in the industry, but I am not going to name-drop. For a postdoc, networking is an important part of the conference, because you know you are not staying in the same lab forever. If only the list of participants was available during the conference or the name tags provided more information, it would have made networking a lot easier! Another interesting part of the conference was the PASPCR assembly, which was helpful in

identifying who's who in pigment cell research (everybody introduced themselves). It also gives you a glimpse of the workings of a scientific Society. It may not sound interesting to a graduate student or postdoc, but joining a Society could be very helpful for your career, even if you do not decide to stick in the same research field. It comes with its perks such as this newsletter (with laboratory updates, industry perspectives, and open positions) and the availability of travel grants that support young scientists to attend these great conferences (and they are good for your CV and make your PI very happy!).

Overall, I think the IPCC was a great success: the presented research was of high quality; everybody enjoyed the food, wine, and each other's company; and the beautiful city of Bordeaux and the fantastic summer weather charmed everyone into thinking they were on an actual vacation.

By Dr. Deborah Lang, University of Chicago

I was very fortunate to attend the recent IFPCS Development Group Meeting at the IPCC on September 20th, 2011. This workshop, organized by Drs. Bill Pavan, Robert Kelsh, Hiroaki Yamamoto, and Lidia Kos, was during the very first day of the conference, and the audience participants were noticeably tired and jet-lagged. Lidia started by laying out the plan for the event, where talks by Robert Kelsh and Heinz Arneiter would introduce neural crest and melanocyte topics, while Lionel Larue would follow with a second session focused on melanocyte development and cancer. Lidia then said that we would split into discussion groups after each section, and this elicited some groans from the audience. However, this meeting evolved into a very successful event, due to the great work of the organizers and presenters. Robert, Heinz, and Lionel gave a brief introduction to their topics, and raised some ongoing questions and controversies in the field, without bias towards one theory or another. It was very impressive how the speakers managed to give such a wide overview, yet keep their discussions general, focused, and short.

Robert and Heinz discussed pigment cell precursors, in terms of the different theories of their developmental origins, their plasticity, and the model systems employed in the study of these cells. In terms of theories, Robert gave a brief overview of two, the direct fate theory (where the neural crest cell gives rise to cells of specific fates) and the progression model (where a neural crest cell gives rise to multipotent cells that can produce different cell types), and there is a good body of work to support both of these models. Heinz touched on how the anatomic location of origin may influence the cell fate of the neural crest. There have been some recent challenges to the very clean classical model of neural crest fate that we have all become comfortable with, most notably that the crest migrating on a dorsal lateral course are fated to become pigment cells, while crest migrating on a dorsal median path gives rise to other neural crest derived cell types. The recent body of work concerning the discovery of Schwann cell precursors that can give rise to melanocytes (Adameyko et al., 2009) somewhat muddy this very classic view of neural crest migration and cell type determination. There was also a brief overview of different models that are utilized to study pigment cell precursors, and the advantages and shortcomings of these models. Robert gave an overview of some zebrafish models, the SOX10-EOS model (Curran et al., 2010), the LTK-GFP model (Greenhill et al.,) and the MITFa-GFP model (Budi et al., 2011), that show overlapping but not identical findings.

Evolving from the talks of Robert and Heinz, as well as our small group discussions, several questions were raised. Some examples of questions include:

- Are neural crest cells specified depending on where they migrate, or do they migrate on a particular path because they are specified?
- Are fate map experiments indicative of fate restrictions?

- What is the plasticity of neural crest progenitors, and how much of this plasticity is maintained as the cell migrates?
- What are the signals determining the cell fates within the dorsal neural tube, and are these signals the same for all axial levels or different?
- Are there significant differences in the pigment cell precursors between species?
- On a pragmatic level, why are these questions important, and how do these findings relate to the fields of stem cell therapy and neurocristopathies?
- Do we need more techniques for single cell profiling methods to answer questions on cellular origins and plasticity?
- Are stem cells multi- or bipotent, and how are these cell fate decisions linked to cell division?
- How much overlap/redundancy is there in the dorsal lateral and dorsal median migrating crest, and if the dorsal lateral crest were ablated would the other population be able to compensate?

Our next session began with a presentation by Lionel. He started with an overview of the very argued about subject of melanoma stem cells. While I have seen quite a few arguments on the topic of if there are melanoma stem cells or not, Lionel managed to give a summary of the work in this field like a diplomat. There have been several papers that have claimed to find melanoma stem cell markers, including CD20 (Fang et al., 2005), CD133 and ABCG2 (Monzani et al., 2007), ABCB2 (Schatton et al., 2008), the H3K4 demethylase JAR1D1B (Roesch et al., 2010), and either p75NTR/NGFR expression, or the lack of it, depending on who you ask (Boiko et. al., 2010; Held et al., 2010). There are also data that suggest that there are no melanoma stem cells at all, or that all cells in the tumor are capable of acting like a tumor initiating cell (Quintana et al., 2008; Quintana et al., 2010). There may be various reasons for the differences seen in these studies, in terms of the functional assays, technical variables (such as the use of trypsin), and the model systems employed to test each cell population. In addition, Lionel briefly discussed transgenic models of melanoma, including his own impressive models that utilize transgenic manipulation of the beta-catenin and N-ras genes. This presentation, as well as the subsequent group discussions, led to a number of questions, including:

- Are there melanoma stem cells, and how is a tumor stem cell defined?
- What is the cell of origin of melanoma, and is this different in relation to the type of melanoma?
- What other animals are susceptible to melanoma, and what are the differences between species?
- What parallels are there between the melanocyte stem cell, and the melanoma stem cell?

Overall, the attendees that I spoke to after the workshop said that they really enjoyed this event. Scientifically, it was a great way to get an overview of several topics, and to discuss the controversies and unanswered questions of these subjects. Personally, I had an added benefit of interacting with other scientists in the field that I had not met prior. One of the major reasons to attend these conferences in general is to meet others and foster collaborations. Here was a rare opportunity to meet researchers from all over the world, and actually have some time to talk with them about scientific ideas. I am truly grateful that I had this excellent opportunity.

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By Dr. Manpreet Randhawa, Johnson & Johnson Consumer Products

Sharpening the cutting edge in pigmentation biology and unraveling the science puzzle behind melanoma, the IPCC encourages the exchange of ideas and data and enhances the collaboration between scientists from different arenas. The IPCC is an ideal place to find out what's hot in the pigmentation field, and I personally looked forward to seeing old friends and meeting new ones.

The meeting was very well organized starting with interesting keynote speaker lectures (a huge effort to make sure that all the attendees should be at the conference early in the morning, managing their jet lags) followed by concurrent sessions covering the topics with a common theme of interest. To me, the concurrent sessions provided more of a self-directed, facilitated learning environment. They gathered attendees with the same interests, and focused more on current and emerging issues, best practices and the challenges that we are facing today. The level of professionalism of the presenters was astounding. Thank you to all who put a lot of effort throughout the years to create such incredible pieces of data! Being an Asian and part of the skincare world, I was more interested in talks on skin of color and hyper pigmentation aspects. To my surprise, the new ideas around curbing hyperpigmentation aspects by taking tranexamic acid orally was fascinating. I thoroughly enjoyed the interesting conversations that helped me to establish alliances with scientists and clinicians marching toward the same goal.

Last but not the least, the gala dinner organized by the IPCC Committee was icing on the cake. This unforgettable experience started with tasting very famous Bordeaux wines with deep down knowledge about the process of wine tasting, which was more like straightforward adventure that will deepen one's appreciation for both wines and winemakers.

My personal gratitude to Dr. Alain Taïeb and his fellow colleagues for providing such a professional and friendly environment, where scientists from different arena were able to come together to discuss old and new paradigms and emerging trends in science. I personally feel very proud and happy to be part of Pigment Cell Community and I am looking forward to coming back to the meetings year after year.

By Dr. Julio Valencia, NIH/NCI

Every four years researchers from all over the world studying pigmentation and melanoma meet at the International Pigment Cell Conference. This meeting represents the opportunity to unite ideas, learn new concepts and inspire new generations of researchers in to our field of expertise. This year the meeting's XXIst edition in Bordeaux, France organized by Dr. Alain Taïeb, prepared a unique experience combining the charm of an iconic city and the latest advances in the fields of Pigmentation and Melanoma research. The following lines are intended to summarize our group's journey to the meeting.

Our group headed by Dr. Vincent Hearing started planning the attendance and scientific work well in advance. It required a delicate preparation so everyone in our group that had an abstract accepted for presentation could have the opportunity to attend the meeting. In the face of economic slowdown that in itself represented a formidable challenge. As with many other things in life, careful planning and hard work paid off. Nevertheless, life itself throws us a curved ball that we missed in the last inning. Vince gave us the news that he would not attend the meeting and we had to go on as planned. Our journey started with the registration and the test to navigate a somewhat different webpage. I am sure it was not familiar with the intricate ways of paying for government sponsored travel. Fortunately, all those early endeavors were solved with patience and assistance from the Organizing Committee. Our group was ready for departure.

Bordeaux is a major cultural center and a transportation hub between southern France and Spain. As my travel guide reads: "the region of Bordeaux and the Atlantic coast is frequently ignored by North Americans". I can assure all of you that there is nothing to ignore about this beautiful region of the Garonne River where a magnificent wine industry thrives and pleases visitors with superb hospitality and world class wines. Our group's hotel was located downtown near the historic center where colorful and lively restaurants are located. This convenience required us to ride a modern and convenient tram system, sort of a futuristic trolley car, and then take a bus (provided by the organizers) to the congress venue, which was located north of the city.

The scientific program reflected the diversity and the complexity of pigment cells from developmental biology to pigmentary disorders, including a special day for melanoma. Every single one of these areas gave us a closer look at the different trends related to that topic(s) and were preceded strategically by an introductory plenary lecture. A special mention must be made to the honorary lectures. Those lectures are a well-deserved recognition to some of the most iconic leaders, all with significant contributions, in our field, such as Dr. Kunisada, Dr. Shibahara, and Dr. Spritz. Between a tight agenda and concurrent sessions, we had the pleasure to meet friends and colleagues. Current and former members of our lab had a chance to meet each other. Our fellows discovered the invisible bond between us and learned how life is after training in our lab. Thus, many of them are starting their own labs, have their own labs in search of new projects and some are already retiring. Therefore, it was a time to remember the past, analyze the present and prepare for the future. As a physician and scientist, I praise the organizers for including clinically oriented sessions and inviting patient support groups that serve as a reminder that our efforts are dedicated to learn science for the well-being of humanity.

The Gala Dinner on Thursday evening took place at Chateau Giscours, an impressive 18th century state. The event represented the camaraderie among all attendees to the XXIst IPCC. It was an enjoyable night that had a rocky start for a group of us. My colleague Dominik and I were running late for the 6:30 p.m. buses, but we were able to catch the last bus leaving the meeting place. After some sighs of relief, we were talking about our busy day and prepared for the evening. We figured that the chateau was far from the city and it would have been impossible for us getting there without the busses. Then we noted that the night was coming fast and the

driver stopped. There was an accident on the road and we needed to take a detour. No problem, we waited some time and continued our trip. Sometime later, the driver stopped again and started making phone calls. It was clear, he lost his way! Fortunately, it gave us a first look at the scenery of the vines and different chateaus (big and small) in this beautiful countryside and we arrived just before the start of the dinner. The remaining part of the evening included live music, wine tips and tasting, a splendid dinner, and numerous awards for the members of the different Societies.

As with everything in life, the last day of the meeting arrived and I was grateful to chair the closing session. Despite the light audience, everybody was happy and enthusiastic. As the wine color, which depends on the color of the drupe of the grape variety, this meeting's final "color" was the sum of all the experiences collected from a diverse audience coming from all over the world, top science and great friendship. I realize it is time to prepare for the next IPCC where a new generation of researchers and colleagues will gather and discuss the challenges of a rapidly changing world. Arriving at Washington DC and looking at the yellow lights of the city approaching fast, I remembered the lyrics of the good-bye song for the XXIst IPCC, "Black and White" from Michael Jackson... "It's not about races just places where your blood comes from…"

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2011 HUSCRI SYMPOSIUM - IMPRESSIONS

By Dr. Valerie Harvey

Researchers, clinicians and students came together at the Hampton University Skin of Color Research Institute (HUSCRI) Symposium 2011: Benchtop to Bedside - Future Directions held on October 7-9, 2011 in Hampton, Virginia. This was the second symposium hosted by HUSCRI and Eastern Virginia Medical School focused on dermatologic disease in populations with skin of color. Sessions topics included Health Disparities in Dermatology, Cutaneous Manifestations of Systemic Disease, Focus: Lupus Erythematosus, Keloids/Wound Healing, Advanced Imaging and Optical Properties of the Skin, and Aging. Presenters included top basic researchers who spoke about advances in areas such as structure and development of keloids, and frontiers in infrared imaging as well as physicians who covered such diverse topics as the burden of Central Centrifugal Cicatricial Alopecia, cutaneous lupus and differences across ethnic groups, treatment of keloids and scars, and new understanding of skin physiology and skin lightening.

A special session was focused on melanocytic disorders. Dr. Mark Shriver, Ph.D., Penn State University spoke about genetic regulation of skin color, Dr. Richard Spritz, M.D from the University of Colorado School of Medicine, and Dr. Amit Pandya, M.D. of the Southwestern Medical Center who spoke about genetic and biological mechanisms of vitiligo and pathomechanisms of melasma, respectively. In addition, Dr. Henry Chan, visiting faculty at the Wellman Center for Photomedicine presented the latest in the use of lasers in the treatment of pigmentary conditions. Dr. Meena Katdare, HUSCRI Scientific Director and Co-Chair of this session stated, "*Gaining an understanding of melanocytic disorders at the most basic level is critical to developing new and more effective therapies. That is what makes the HUSCRI Meeting so valuable, because it brings together bench researchers, medical doctors and others from varying related fields in a forum that encourages dialogue that can raise new questions and lead to new answers*."

Details of the meeting can be accessed at http://symposium.huscri.com/agenda/.

PCMR JOURNAL CORNER

PCMR Table of Contents – Volume 24, Issue 6, December 2011

Editorial

Research - endure (p 1077)
Ze'ev Ronai

News and Views

NrF2/Keap1 as gatekeepers of redox homeostasis – do they prevent or cause cancer? (p 1078-1079)
Kenneth D. Tew

Microphthalmia-associated transcription factor, melanoma, and renal carcinoma: the small ubiquitin-like modifier connection (p 1079-1080)
Edward T. H. Yeh

A new mutation with staggering effects (p 1081-1082)
J. W. Harbour

Glutamate receptors: emerging players in melanomagenesis (p 1082-1083)
Janet Wangari-Talbot and Suzie Chen

Is proteomics starting to deliver on biomarkers discovery (p 1084-1085)
Arie Admon

P-REX1, a Rac guanine exchange factor, links melanocyte development and melanoma progression (p 1086-1087)
Graeme Walker

Melanin Chemistry & Pigmentation

Review
The three M's: melanoma, microphthalmia-associated transcription factor and microRNA (p 1088-1106)

Rachel E. Bell and Carmit Levy

Signaling & Cell Biology

Perspectives

Oncogene-induced senescence and melanoma: where do we stand? (p 1107-1111)
Daniel S. Peeper

***PHGDH* amplification and altered glucose metabolism in human melanoma (p 1112-1115)**
Edouard Mullarky, Katherine R. Mattaini, Matthew G. Vander Heiden, Lewis C. Cantley and Jason W. Locasale

Review Articles

The gluttonous side of malignant melanoma: basic and clinical implications of macroautophagy (p 1116-1132)
Agnieszka Checinska and Maria S. Soengas

A spoonful of sugar makes the melanoma go: the role of heparan sulfate proteoglycans in melanoma metastasis (p 1133-1147)
M. P. O'Connell and A. T. Weeraratna

Perspectives

CSPG4, a potential therapeutic target, facilitates malignant progression of melanoma (p 1148-1157)
Matthew A. Price, Leah E. Colvin Wanshura, Jianbo Yang, Jennifer Carlson, Bo Xiang, Guiyuan Li, Soldano Ferrone, Arkadiusz Z. Dudek, Eva A. Turley and James B. McCarthy

Experimental Therapeutics/Preclinical

Review Articles

Modelling melanoma in mice (p 1158-1176)
Graeme J. Walker, H. P. Soyer, Tamara Terzian and Neil F. Box

List of Referees for Volume 24 (p 1177)

- // -

PCMR Journal Recent PubCast

One new pubcast has been recently released for Pigment Cell & Melanoma Research (PCMR), the scientific journal associated to IFPCS and SMR:

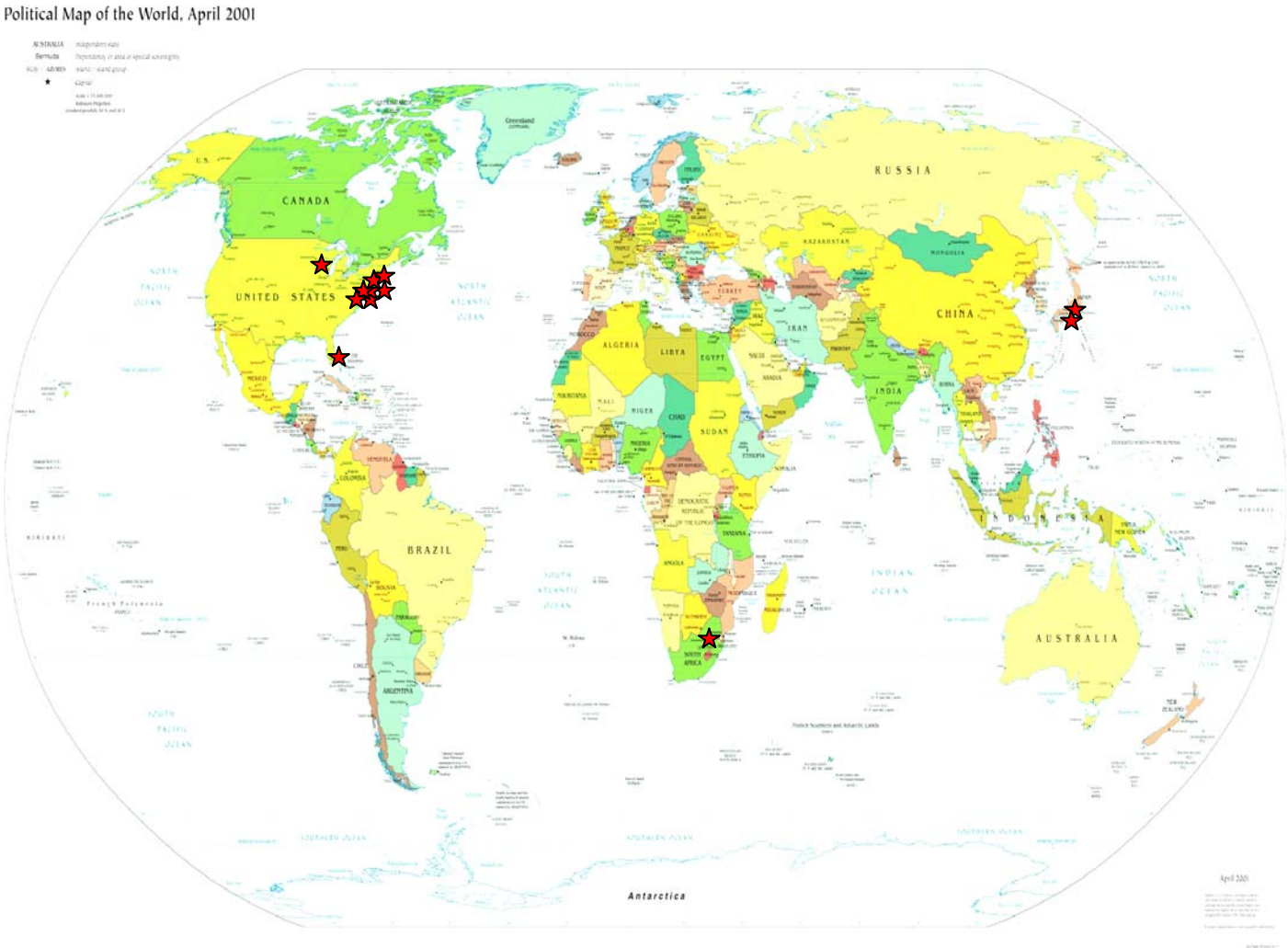
This video refers to the work of Dr. Zigang Don's laboratory (The Hormel Institute, University of Minnesota, Austin, MN, USA) on "Embryonic stem-cell-preconditioned microenvironment induces loss of cancer cell properties in human melanoma cells" by Myoung Ok Kim, Sung-Hyun Kim, Naomi Oi, Mee Hyun Lee, Dong Hoon Yu, Dong Joon Kim, Eun Jin Cho, Ann M. Bode, Yong-Yeon Cho, Tim G. Bowden, Zigang Dong, Pigment Cell Melanoma Res. 24(5), 922-931 (2011).

This Pubcast (video) is available at: http://www.scivee.tv/node/36173.

KEEPING THE PIGMENTATION COMMUNITY CONNECTED

In this issue, we continue the "***Laboratory Updates***" with a column by Dr. Shosuke Ito. We hope that you will take the opportunity to fill us in on what is happening in your lab or company. Volunteers would be greatly appreciated, just email us at paspcr.newsletters@gmail.com. As our Society has numerous friends around the world, we have recently transitioned the section "***Let me introduce…***" under the Pigmentation Community Connections. We continue this section in the current number with a column written by Dr. Jakob Vinther.

This initiative is part of our effort to keep the pigmentation community connected and to emphasize the importance of collaboration and communication between groups. We will keep adding stars on our world map below each time you contribute a column about your newest research projects. So, let's go on a global research adventure!



Courtesy: *http://www.mygeo.info/karten/802784.jpg*

LABORATORY UPDATES

In this number, we invited Dr. Shosuke Ito to share with us his path as a scientist and member of the Pigmentation Community. Dr. Ito's vast research significantly contributed to our knowledge and better understanding of pigments and melanin-related metabolites. His example is inspiring to new scientists who are just now becoming exposed to the fascinating field of pigmentation.

Gertrude-Emilia Costin

By Dr. Shosuke Ito

Chemistry of melanin and melanogenesis has fascinated me for nearly 40 years, ever since I started my career as a post-doc under a fish biologist, Prof. J. A. Colin Nicol, at Marine Science Institute, University of Texas in 1972. This fascination led me to continue my research career after my formal retirement from Fujita Health University School of Health Sciences in March, 2010. I am happy that I can now spend more time as Professor Emeritus than ever in the lab that Prof. Kazumasa Wakamatsu has succeeded from me. Kazu and I have been continuing a fruitful collaboration for a quarter century since he joined my chemistry lab in 1987.

My first encounter with a melanin-related metabolite was the discovery of oligomers of 5,6-dihydroxyindole-2-carboxylic acid (DHICA) in the eye of catfish (Ito and Nicol, 1974). The melanoid compound acts as a reflecting material in the tapetum lucidum (reflecting layer) in the eye. My post-doc research went on to the isolation of 2,5-*S,S*-dicysteinyldopa from the eye of the gar, a premitive fish inhabiting in the North America (Ito and Nicol, 1977). What a coincidence that I started my career as a melanin chemist with isolation of compounds closely related to eumelanin and pheomelanin! After a 3-years stay in a rural seaside town of Port Aransas, I had a good opportunity to work with Prof. Giuseppe Prota, an organic chemist well known for his brilliant work on chemistry of pheomelanin. I spent one year at Stazione Zoologica in Naples, Italy. There, I again encountered a metabolite structurally related to dicysteinyldopa in octopus (Ito et al., 1979). The metabolite is an iron-binding amino acid consisting of dopa and 2 molecules of 5-thiol-histidine.

When I obtained a position in Fujita Health University in 1977, I thought why not to continue research based on my expertise in melanin chemistry. In the early 1980s, I started a collaborative study with Dr. Kowichi Jimbow (now Professor Emeritus) of Sapporo Medical University and realized the need to quantitatively analyze eumelanin and pheomelanin in melanogenic tissues such as hair and melanomas. This led me to develop such a method based on chemical degradation of eu- and pheomelanin followed by HPLC determination of specific degradation products. Pyrrole-2,3,5-tricarboxylic acid (PTCA) was analyzed as a product of permanganate oxidation of eumelanin, and amino-hydroxyphenylalanines (AHP) as a product of hydroiodic acid hydrolysis of pheomelanin (Ito and Fujita, 1985).

Our chemical degradation method has found a broad range of applications through various collaborative studies. To cite a few, the first, yet elegant application by Dr. Anthony J. Thody of University of Newcastle Upon Tyne was to show the effects of α-MSH on the swtich of eu- and pheomelanogenesis in hair of viable yellow mice (Burchill et al., 1986). The collaboration with Tony culminated in the identification of pheomelanin in human epidermis (Thody et al., 1991). Collaborative studies with Dr. Tomohisa Hirobe of National Institute of Radiological Sciences examined pigmentary effects of mouse coat color genes, *Agouti*, *brown*, *dilute*, recessive yellow, *pink-eyed dilution*, *slaty*, and *ruby-eye 2*nd (for a review, see Hirobe, 2011). Other collaborators include (but are not limited to) Prof. John D. Simon of Duke University, Dr. Vincent J. Hearing of National Institutes of Health, and Prof. Zalfa Abdel-Malek of University of Cincinnati. With John, we proposed that mixed

melanogenesis is not a straightforward process but rather proceeds with a formation of pheomelanic core encapsulated by eumelanic surface (Bush et al., 2006; Ito, 2006; Simon et al., 2009). This casing model of mixed melanogenesis found a support from the findings that cultured human epidermal and uveal melanocytes contain rather constant levels of pheomelanin while levels of eumelanin vary with color intensity of the melanocytes (Wakamatsu et al., 2006; Wakamatsu et al., 2008).

We have applied our methodology to solve some issues in chemistry of melanogenesis. For example, we successfully showed significance of DHICA as a building block of natural eumelanin (Ito, 1986) and conversion of benzothiazine to benzothiazole units in pheomelanogenesis (Wakamatsu et al., 2009). The structure of neuromelanin, a dark-brown pigment found in *Substantia nigra* of mid-brain, was shown to be derived from dopamine with a partial incorporation of cysteinyldopamine. This was a collaborative study with Dr. Luigi Zecca of Institute of Biomedical Technologies-CNR, Italy (Wakamatsu et al., 2003). In continuing this line of study, we have recently shown that neuromelanin is a product of biodegradation that takes months in aging neurons. This study was reported by Kazu Wakamatsu at the recent XXIst IPCC 2011 held in Bordeaux, France.

Our chemical degradation – HPLC assays of eumelanin and pheomelanin had not been used as widely as we wished. This seemed to be because some chemical steps in the methods are not generally performed in biology labs. Therefore, to solve this gap, we recently introduced a simple and reproducible method to simultaneously analyze eumelanin and pheomelanin using alkaline hydrogen peroxide oxidation (Ito et al., 2011).

The collaborative studies with Professor Jimbow in 1980s resulted in the discovery of 4-*S*-cysteaminylphenol (4-*S*-CAP) and related phenolic amines as antimelanoma agents (Alena et al., 1990). Those phenols act through oxidative activation by tyrosinase to toxic quinone forms that selectively kill melanocytes and melanoma cells. This was a starting point of our multi-centered collaborative study led by Prof. Jimbow that aims to develop chemo-thermo-immunotherapy of melanona through the use of magnetite-particle connected to 4-*S*-CAP (Sato et al., 2009). We hope this endeavor will lead to establishing a new therapy for advanced melanoma that is hardly curable with conventional therapies.

Kazu and I are now trying to standardize preparation procedures for melanin precursors and related metabolites as well as synthetic melanins, in addition to establishing a standard procedure for melanin determination (see above). These efforts have been carried out as a part of EuMelaNet project, organized by Prof. Marco d'Ischia of University of Naples, and were presented at IPCC 2011, in the session "Chemistry of melanins: standardization workshop roundtable". We are also interested in how eumelanin and pheomelanin are degraded by UVR or heat under physiologically attainable conditions. We hope to find markers for biodegradation of eu- and pheomelanin in the near future.

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LET ME INTRODUCE…

I was a little perplexed when I saw an article about dinosaurs in my weekly email updates from PubMed. Reading the paper on fossil melanosomes was like reliving my childhood fascination with the awe inspiring creatures, so I was thrilled that one of the authors, Dr. Jakob Vinther, agreed to write a column for us detailing the history of the work and filling us in on the wonderful world of dinosaur pigmentation. I hope reading his column will give you the same enjoyment it did me.

Prashiela Manga

By Dr. Jakob Vinther

Like so many scientists my research interests have been - to a great extent - led by contingency and almost a random walk tied by a few key strings of interest. I might as well make it clear that I never thought that my research ever would lead to ways to assess the colors of dinosaurs.

I started my Ph.D. at Yale in 2006 with an interest in evolution and wanted to study the Cambrian explosion by the integration of the fossil record and molecular biology. However, to be a good

paleontologist you need to understand the modes of fossilization, called taphonomy and what actually can get fossilized.

Since I always have had a fascination with preservation of soft tissues and how we can use exceptionally preserved fossils to further understand prehistoric life, I decided to take on a project for a class on the preservation of fossil squids in the fall of 2006. These fossils almost always preserve the ink sac as a three dimensional solid organic blob, which almost certainly was the ink itself that had been preserved. The main goal was to figure out what sort of properties of squid ink made it turn into a solid blob, which must happen quickly after death. Often you see that the mineralized shell is crushed against the fossil ink sac during geologic compression of the sediment, which demonstrates the early solidification of the ink. I did some decay experiments with freshly caught squids in an incubator which made me lose my taste for calamari for over 2 years. The results were disparaging as the squids completely decayed into a slur and the ink sacs also disappeared within days. My conclusion was that it is truly exceptional that squids get fossilized from this study with only limited evidence for the reason why ink sacs and their ink turns into a solid blob.

I also looked at some fossil ink sacs. The Yale Peabody Museum has several specimens from the Jurassic (~160 Ma) of Germany and England. Looking at samples under the scanning electron microscope showed that the ink sacs consisted of tiny granules about 200 nm in diameter and nothing else. These had been described before from fossils (Doguzhaeva et al., 2004) and clearly showed that the ink sacs preserved the melanin granules at a nanometer scale (Figure 1). In fact, it was almost impossible to distinguish the fossil ink sacs from the modern ink.

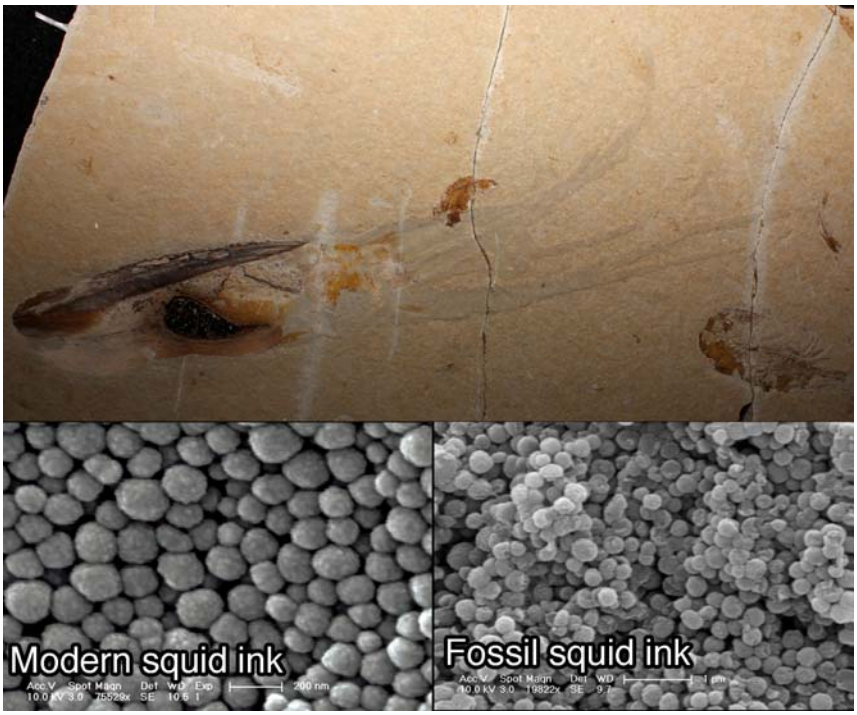

Figure 1. Fossilized squid from Lebanon (Late Cretaceous ~ 80 Ma) (photo: Roy Nohra) (**top**), and examples of recent and fossil melanin granules from ink sacs (**bottom**).

As I was pondering on this, I started thinking about melanin and realized that melanin is the pigment that not only gives squids their ink, but that almost the entire kingdom of animals and beyond synthesize melanin. If melanin fossilizes so well in squids and can be identified by its simple morphology of the large macromolecules, then there was no reason why it should not be present in

other organisms. After a quick brainstorm of the sorts of fossils with organic preservation other than plants, I realized that almost all of the soft tissues preserved as an organic residue have melanin in them. These include hair and feathers, skin, insect cuticles, eyes and even livers and the peritoneoum. I thought back then that this was potentially a breakthrough and, as the conclusion of my class paper, I stated that fossil melanin is most likely ubiquitous and if melanin can be fossilized and be identified by its morphology, we might be able to study the colors of a feathered dinosaur as a wild example. While I didn't impress much of the audience with this far reaching conclusion, I started looking into what sorts of fossils I could initially study and what melanin looks like in birds. Since I was pretty sure that I would not be able to find anyone who would let me chip off a small sample of a fossil feather, which is a rare fossil, I was looking into potential samples that were small enough to be studied under an Environmental SEM so that would be no need to coat the fossil with gold or carbon either.

On a trip back home to Denmark I found the fossil that was needed. A fossil locality there preserved fossils of the Early Eocene age (~54.5 Ma) and several birds with feathers have also been recovered there. I found a small skull with a halo of feather surrounding it and took it under the ESEM. I knew that melanin in modern birds is contained inside the melanosomes and are usually aligned sausage shaped structures about 1 µm long. I zoomed in on the feathers and to my surprise and hope the fossil consisted of nothing but thick swaths of aligned sausage shaped structures (Figure 2). Excited, I sent some pictures to my supervisor Dr. Derek Briggs, a world expert on fossilization of soft tissues and he replied by reminding me that these structures resemble what people have described as lithified bacteria on fossil hair and feathers ever since 1983. I totally neglected that literature (Davis & Briggs, 1995) since I only had studied the fossil squids and then went straight to modern bird feather literature.

Figure 2. The first two fossils we ever studied and found melanosomes preserved in. **Top right**) A fossil bird skull with a halo of feathers, and an SEM image (**top left**) of the preserved melanosomes. **Bottom left**) the fossil Cretaceous feather preserving color bands, and an SEM image of the preserved melanosomes (**bottom right**). From Vinther et al., 2008.

After I returned and had more pictures to show Derek, he conceded that this might be worth looking into further. In the literature, a few examples had been published of fossil feathers with color patterns, which clearly would be the next place to go. If these structures were melanosomes and not bacteria, then they should be reflected as such in a fossil feather with color patterns. We finally found the right candidate to study, a small feather from Brazil, about 100 million years old from the Late Cretacous period. The feather showed beautiful and clear transverse stripes that were black and white. The dark parts neatly preserved the finest details, such as the barbules, whereas the white parts showed almost nothing but the background rock matrix. Likewise, the fossil preserved little sausage shaped structures aligned along the length of the barbules as they do in modern feathers, but they were only present in the dark areas (Figure 2). Derek Briggs was finally being convinced that we actually were studying melanosomes in these fossils. When we showed the SEM images to the famous ornithologist Dr. Richard Prun, he also conceded that these structures almost definitely were melanosomes. We decided to publish the results from these two fossils (Vinther et al., 2008). We presented some obvious potentials already: melanosomes can be organized and make structural colors, like iridescence; furthermore, with the preserved alignment in the fossils we had, it was not impossible to speculate that fossil iridescence could be identified, which we were able to demonstrate the year after (Vinther et al., 2010). We also hypothesized that we could distinguish between black and reddish-brown by the shape of the melanosomes because the black eumelanosomes are sausage shaped and the phaeomelanosomes are smaller spheroids. This was documented the year after, in 2010, by a competing team on a Chinese dinosaur fossil (Zhang et al., 2010). At the same time we had also gone to China to study feathered dinosaurs, which are found there in the hundreds in localities from northeast China. We mapped the colors of a complete dinosaur using melanosomes morphologies and were able to publish this study (Li et al., 2010) a week after the other team's announcement of dinosaur melanosomes. We relied on a statistical method developed by a colleague of ours, Dr. Matthew Shawkey from Akron University, Ohio. By simply measuring the size and distribution of melanosomes of modern bird feathers he could predict the color of either brown, black and grey color using canonical discriminant analysis and this worked really well. The dinosaur we studied, called *Anchiornis huxleyi*, was mostly grey with long feathers on its arms and legs which were white with black tips. On its head it had a rufous crown of feathers (Figure 3). Finally I could say that we have figured out a way to put colors on dinosaurs with scientific confidence after a wild speculation more than 3 years earlier as a first year graduate student.

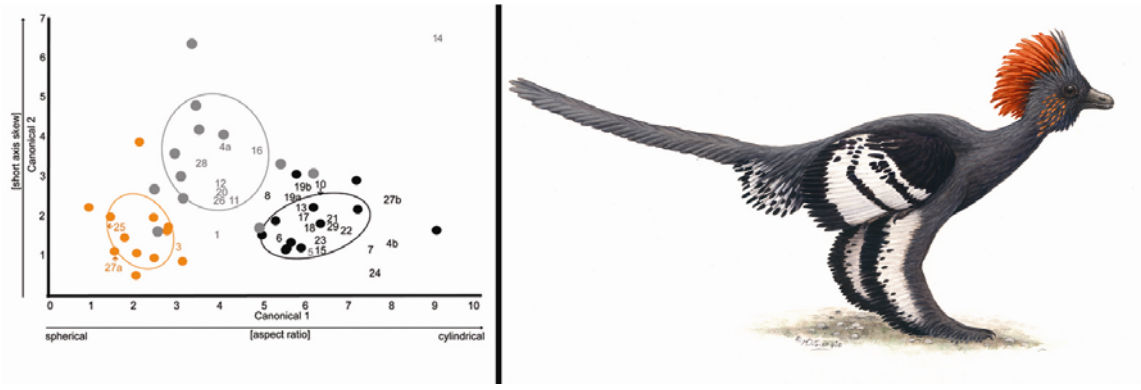

Figure 3. Using parameters such as melanosome distribution, size and mode we could predict colors of a fossil feathered dinosaur, *Anchiornis huxleyi*, and make a reconstruction with a color scheme based on actual observations. The scheme (**left**) shows the canonical discriminant analysis and how training points clearly forms discrete areas characterizing black, grey and brown. To the **right** there is the artist's reconstruction guided by our melanosome analysis.

The implications for paleontologists are clear cut with these studies as we now have ways to identify the color patterns of fossil organisms. For the biochemists I see that the community ha ways to study melanin and its behaviour on a million year time scale. The fact that melanin does get fossilized also clearly reflects why biochemists have had such a hard time describing the molecular structure beyond its monomers of DHI/DHICA since the molecule is cross linked and polymerized in a complex way.

Something I would really like to understand better is why the synthesis of phaeomelanin and eumelanin actually is reflected in the melanosome morphology and how they intergrade when the chemical composition also is mixed. I hope the dermatologists and pigment researchers reading this column could give me some answers to this question in due course or let me know if they already have them. Our next venue is to look at mammal hair and we know that we can distinguish between colors based on morphology there too, so human studies should provide many of these answers.

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MEMBERS IN THE NEWS

The New IFPCS Council (2011 – 2014)

New officers at the IFPCS Council (2011-2014)
From left to right: Drs. Takahiro Kunisada, Andrzej Slominski, Mauro Picardo and Kyoung Chan Park

The New IFPCS Council has been constituted in Bordeaux (France), at the XXIst IPCC organized by Prof. Alain Taïeb. The New Council will govern the International Federation of Pigment Cell Societies (IFPCS) during the following 3 years (2011-2014), until the next IPCC that will be organized by Prof. Boon-Kee Goh in 2014 in Singapore.

The current members of the IFPCS Council are:

Mauro Picardo, ESPCR (President)
Kyoung Chan Park, ASPCR (Vice-President)
Andrzej Slominski, PASPCR (Secretary)
Takahiro Kunisada, JSPCR (Treasurer)
Alain Taïeb, ESPCR
Lionel Larue, ESPCR
Frank Meyskens, PASPCR
Greg Barsh, PASPCR
Chikako Nishigori, JSPCR
Emi Nishimura, JSPCR
Prasad Kumarasinghe, ASPCR
Davinder Parsad, ASPCR
Boon-Kee Goh, ASPCR (*ex officio*, Organizer of the 22nd IPCC - 2014)
Ze'ev Ronai, PASPCR (*ex officio*, Editor of Pigment Cell & Melanoma Research)
Shigeki Shibahara, JSPCR (*ex officio*, Past IFPCS President)
Lluis Montoliu, ESPCR (IFPCS webmaster)

Positions Wanted / Available

Postings for **Positions Wanted** will be open only to members of the PanAmerican Society for Pigment Cell Research (PASPCR) or its sister Societies (ASPCR, JSPCR and ESPCR). Postings for **Positions Available** will be open to all individuals and institutions so long as the position is related to pigment cell research. Please send postings to Dr. William Oetting at oetti001@umn.edu.

The postings will remain on the **Positions Wanted and Available** section of the PASPCR Newsletter and on the web page for 1 year, unless other arrangements are made. Please provide an expiration date for any submitted posting if less than 1 year. Final decisions will be made by the Publications Committee of the PASPCR.

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