PASPCR

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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.

The 17th PASPCR Meeting, organized by Dr. Sancy Leachman, will be held in Park City, Utah, on September 19th-22nd, 2012. Further information on the meeting can be found on pages 6 - 12 of this newsletter.

In this issue, we continue the "***Laboratory Updates***" section with a column by Dr. David Norris, and the "***Industry Perspectives***" section with a column by Dr. Stéphane Commo. We also continue our newly introduced section called "***Clinical Insights***" with a column by Dr. Seth Orlow. Dr. Davinder Parsad writes about the Asian Society for Pigment Cell Research (ASPCR) and the upcoming IPCC meeting in our "***Let Me Introduce…***" section.

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

Also, if you know of training courses that would be of interest to the PASPCR members, please let us know and we will add them to a new section in our Calendar of Events.

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.

PASPCR Newsletter Editorial Team

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The PanAmerican Society for Pigment Cell Research

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Memphis, TN 38163, U.S.A.

CALENDAR OF EVENTS

2012
17th ESPCR
Date and place: September 11-13, Geneva, SWITZERLAND
Web-site: www.espcr.org/ESPCR2012

2012
17th PASPCR Meeting
Date and place: September 19-22, Park City, UT, USA
Web-site: http://www.huntsmancancer.org/paspcr2012

2012
49th Annual Meeting of American Society of Dermatopathology
Date and place: October 11-14, Chicago, IL, USA
Web-site: http://www.asdp.org/Home1.htm

2012
1st European Days of Albinism
Date and place: October 27-27, Paris, FRANCE
Web-site: http://www.genespoir.org/fr

2012
5th ASPCR Meeting
Date and place: November 3-4, New Delhi, INDIA
Web-site: http://www.aspcr2012.com/home

2012
24th JSPCR Meeting
Date and place: November 24-25, Nagahama, JAPAN
Web-site: http://jspcr.jp/english/meeting.html

2012
The 51st Annual Meeting of American Society for Cell Biology
Date and place: December 19-20, San Francisco, CA, USA
Web-site: http://www.ascb.org

2013
International Investigative Dermatology (IID) 2013
Date and place: May 8-11, Edinburgh, Scotland, UK
Web-site: http://www.iid2013.org/welcome/

The *PASPCR Newsletter* is published three times a year (April, August and December) by the PanAmerican Society for Pigment Cell Research. **All views are those of the authors**. For further information or to submit articles, please use the e-mail address paspcr.newsletters@gmail.com.

Publication Committee

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

Stanca A. Birlea
University of Colorado
Aurora, CO, USA

Raymond E. Boissy
University of Cincinnati
Cincinnati, OH, USA

Andrew R. Cullinane
NHGRI/NIH
Bethesda, MD, USA

Lidia Kos
Florida International University
Miami, FL, USA

New Members

Robert Andtbacka
University of Utah
Salt Lake City, UT, USA

Chris Anker
University of Utah
Salt Lake City, UT, USA

Shweta Aras
University of Toledo
Toledo, OH, USA

Kristin Artinger
University of Colorado
Aurora, CO, USA

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Maywood, IL, USA

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Salt Lake City, UT, USA

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Osaka, JAPAN

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University of Toledo
Toledo, OH, USA

Suiquan Wang
Third People's Hospital of Hangzhou
Hangzhou, CHINA

Yuhang Zhang
University of Cincinnati
Cincinnati, OH, USA

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PASPCR PRESIDENT'S CORNER

Where has the time gone? Seems like just last week that Emilia was reminding me about the last newsletter deadline; once again, it seems as though this column may barely squeak by, or under, the current deadline, due in large part to the patience and persistence of Drs. Costin and Manga.

The big news is, of course, our upcoming Society meeting this Fall in Deer Valley, which will no doubt be covered in detail by others. I was able to help a little bit in getting things off the ground for the meeting earlier this year, but the bulk of the planning (and all of the credit) should go to Sancy and her team of local organizers. Based on what has passed through my digital inbox the last 3 months, preparations for the PASPCR meeting seem, well, almost Olympian in attention to detail and planning, even if some people, i.e. the British prime minister, seem to think that Deer Valley lies not so far away from the "middle of nowhere".

In other news relevant to the Society, most of us know that our journal, Pigment Cell and Melanoma Research, has been remarkably successful, and is about to undergo a leadership transition. Ze'ev Ronai has been so prolific in building the journal over the last few years that his job could only be filled by two people, Marcus Bosenberg and Heinz Arnheiter. Ze'ev's success is easily (and some would say cursorily) captured by a recently released ISI impact factor of 5.059, so we pigment cell and melanoma biologists are now nipping at the IF heels of the investigative dermatologists! Although I'm impressed by PCMR's new impact factor, what I find really impressive is a steady rise in the number of articles published per year - about a 20% rate over the last three years - coincident with a continued increase in the quality of articles (based on my entirely anecdotal experience) published by PCMR. So, as Ze'ev says, "Please continue publishing and citing articles in PCMR"; it's one of the best ways we can support our Society, and each other.

Speaking of journals, I've been fortunate enough to be involved with a community-based genetics journal, PLoS Genetics, and, as many of you know, have often turned to my PASPCR colleagues for advice and help in terms of review and editorial activities. I find PLoS Genetics tremendously rewarding, and, in many ways, complementary to PCMR; it's a chance for me to learn about and support areas of science that share a common approach and experimental toolbox, but that span diverse areas of biology and groups of organisms. Helping to lead a journal is also an opportunity to publicly solicit, organize, and then voice consensus opinions about the real impact of potential scientific contributions. For example, we recently published an editorial about genome wide association studies, and how we should evaluate both their rigor and potential importance. Of course, the former question is easier to answer than the latter, but the process (of arriving at a consensus about potential importance) is arguably more valuable than the endpoint.

Finally, on a more personal note, I was fortunate enough earlier this year to spend almost two weeks traveling in South Africa, where we found an amazing display of landscapes, culture,

and, of course, pigmentary diversity in humans and other animals. One of the best parts of the trip was mixing business with pleasure, and the opportunity to meet (and enjoy a beverage or two) with collaborators who come from very different backgrounds, yet share a common interest in biology, and a passion for wildlife conservation. We are, of course, the PASPCR (and the "P" is sadly more of an "N" much of the time), but the Society at large (and the community built around PCMR) should be an opportunity for all of us to enjoy one of the most wonderful benefits of a career in science - enjoying and experiencing how small the world really can be.

Greg Barsh, M.D., Ph.D.
PASPCR President

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LETTER FROM THE PASPCR SECRETARY/TREASURER

Dear PASPCR members,

As we are preparing to register for XVIIth PASPCR Conference in Park City, Utah, September 19-22, 2012, we are pleased to announce the names of the recipients of the travel awards. There were 15 applications of which 4 were selected. This selection was based on the eligibility, as described in the previous PASPCR Newsletter and as posted on the web-site of the Conference. The recipients of this year travel awards are: Dr. Andrew Cullinane, postdoctoral fellow at NIH; Dr. Tae-Kang Kim, postdoctoral fellow at UTHSC; Dr. Zorica Janjetovic, postdoctoral fellow at UTHSC; and Dr. Ivana de la Serna, faculty at the University of Toledo College of Medicine. After careful analysis we also decided to waive the registration fees for the presenters of the abstracts that were selected for the oral presentations. The presenters with waived registration are: Joanne Soong from the Rochester University; Hee-Kap Kang from the Loyola Medical Center; and Shweta Aras from the University of Toledo. Congratulations to all!

For those who will apply next year for travel grants, please renew or join the Society in a timely fashion, at least three months prior the application. This requirement is necessary to be fair for the applicants who are devoted members of the organization. Also note that the student/postdoc membership fee of $40 is below our costs of electronic subscription, e.g., as a Society we subsidize members who are in training.

Dr. Leachman and local organizers are working hard to raise funds for this important meeting to make it both scientifically productive and enjoyable for the participants. Fund raising has been more difficult, particularly because the cosmetic and pharmaceutical industry currently finds it challenging to sponsor scientific meetings due to their own budget constraints. For example, our long-standing and much appreciated support from Johnson and Johnson in the form of $5,000 towards meeting's costs and another $5,000 to sponsor the Aaron B. Lerner Lectureship will now be limited to support for the A. B. Lerner Award. The program of the conference includes an extended list of keynote speakers (20) with expertise in different areas of science. Also available are reduced rates for hotel rooms and transportation from and to the airport. Please make your reservation as soon as possible to take advantage of the early registration.

Our Society has a comparatively good membership with a total of 132 members (an increase from 113 as of last year) including 26 students/fellows, 96 regular members, 2 joint SMR members, 3 IFPCS members and 5 honorary members.

I thank you again for your support of our Society. The stronger the Society the stronger is our ability to educate the public and reviewers on the importance of the melanin pigmentation in medicine and biology.

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

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17th PASPCR MEETING – DEER VALLEY (PARK CITY), UT, USA

Dear Pigment Cell Colleagues and Friends,

The University of Utah and the Huntsman Cancer Institute are very excited to host this year's PASPCR meeting on Wednesday, Sept. 19 through Saturday, Sept. 22, 2012 in the world-renown St. Regis Hotel in Deer Valley (Park City), Utah.

Thanks to local sponsorship by the St. Regis Hotel, ranked by US News as one of the finest luxury resorts in the U.S.A., we will be able to focus our attention on the most interesting and difficult problems in pigment cell biology, while being pampered at a lavish retreat get-away.

The underlying theme of the conference, "Genetics, pigmentation, and disease", permits an emphasis on recent advances in genetics and genomics and how they can be applied to biomedical questions centered around pigmentary variation, and will include sessions on developmental and cell biology, natural selection, pathogenesis of melanoma, and new approaches to diagnosis and treatment.

This year's meeting presents a prestigious group of speakers and conference leaders with an exciting scientific and translational program – confirmed speakers include: Roger Hanlon (Woods Hole), Leif Andersson (University of Uppsala), Mike Shapiro (University of Utah), Mark Shriver (Penn State), Robert Reed (UC Irvine), Rodney Stewart (HCI), Sheri Holmen (HCI), Brian Brooks (NEI), Gisela Erf (University of Arkansas), Hopi Hoekstra (Harvard), Glenn Merlino (NCI), Yardena Samuels (NHGRI), Lisa Cannon-Albright (University of Utah), Boris Bastian (UCSF), Tony Ribas (UCLA), John Kirkwood (University of Pittsburgh), Ken Grossmann (HCI), and Keiran Smalley (Moffitt Cancer Center) among others!

This international meeting brings together patients, physicians, and scientists and promises to be a scientifically and medically valuable event. Several unique opportunities have been incorporated into this year's program. On Wednesday we will have concurrent patient support meetings for vitiligo and melanoma patients, followed by a Keynote Address: "Optical Magic" by Roger Hanlon describing the remarkable plasticity of the octopus with respect to camouflage. On Thursday night attendees will be free to explore Historic Downtown Park City or Salt Lake City on their own. On Friday night the Huntsman Cancer Institute will host the annual PASPCR Gala with a Western Theme and music to reflect the Western Culture of Utah. There will be opportunities to explore and enjoy the mountains and resorts of Park City, tour the Salt Lake City Mormon Temple, or visit the newly opened $2 billion City Creek Mall in downtown Salt Lake City.

The meeting venue also offers vacationing opportunities for spouses and family members. Whether you desire retreating in luxury at the St. Regis Hotel, finding serenity at the 14,000 square-foot Remède Spa, dining poolside or enjoying sumptuous artisanal cuisine with magnificent slope views, or enjoying 18-holes of golf in the breathtaking mountain vistas of Park City's renowned golf destination, hiking in 60 miles of endless outdoor trails in Park City, or strolling along shops, galleries and enticing restaurants in Historic downtown Park City (Walking/Riding map), this year's meeting holds endless opportunities. Try a hot air balloon ride, horseback riding, diving in a geothermal spring hidden within a 55-foot tall Crater, riding on the ziplines and alpine slides at the Park City Mountain Resort or Olympus Park, or visit Timpanogos Cave or the Great Salt Lake.

Please see our website for details of the program and venue: www.huntsmancancer.org/paspcr2012. This is ***not*** a CME event.

We look forward to sharing this inspirational event with you!

Sancy Leachman

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Final Program
XVIIth PASPCR 2012 (Deer Valley, Utah) September 19-22
The Power of Genetics and Pigmentation

Wednesday, Sept 19, 2012

1:00 – 5:00 pm **Melanoma patient support meeting**
Sancy Leachman (Huntsman Cancer Institute, Salt Lake City, UT) and
SolSurvivors melanoma patient advocacy group

1:00 – 5:00 pm **Vitiligo patient support meeting**
Sancy Leachman (Huntsman Cancer Institute, Salt Lake City, UT) and
Paul Tanner, Anaplastologist (Huntsman Cancer Institute, Salt Lake City, UT)

5:00 – 6:00 pm **Optical Magic: adaptive coloration, patterning, and 3D texture in octopus skin**
Roger Hanlon (Marine Biological Laboratory, Woods Hole, MA)

6:00 – 9:00 pm **Welcome reception**

Thursday, Sept 20, 2012: Genetics and Development

8:00 – 9:00 **Breakfast**

9:00 – 9:15 am **Welcome and opening remarks**
Sancy Leachman (Huntsman Cancer Institute, Salt Lake City, UT) and
Greg Barsh (HudsonAlpha Institute, Huntsville, AL)

9:15 – 11:15 am **Plenary session I: Natural selection for pigmentary traits**
Chairs: Leif Andersson (Uppsala University, Uppsala, Sweden)
Prashiela Manga (New York University, NY, NY)

9:15 – 9:40 am **Pelage and predators**
Hopi Hoekstra (Harvard University, Boston, MA)

9:40 – 10:05 am **Variation of human eye, hair, and skin color**
Mark Shriver (Pennsylvania State University, State College, PA)

10:05 – 10:30 am **Color patterns in Heliconius butterflies: genetics and selection**
Robert Reed (University of California, Irvine, CA)

10:30 – 10:55 am **Adaptive variation in pigeons**
Mike Shapiro (University of Utah, Salt Lake City, UT)

10:55 – 11:15 am **Panel Discussion** (Leif Andersson, Prashiela Manga)

11:15 – 11:30 am **Break**

11:30 – 12:30 pm **Aaron B. Lerner Award and Lecture**
Glenn Merlino (National Cancer Institute, Bethesda, MD)
Presented by Andrzej Slominski and Caroline Le Poole (PASPCR)

12:30 – 1:45 pm **Lunch and poster viewing**

1:45 – 3:25 pm **Oral session I: Developmental biology and genetics**
Chairs: Rob Cornell (University of Iowa, Iowa City, IA)
Rodney Stewart (University of Utah, Salt Lake City, UT)
(6 talks selected from abstracts, 10 min each plus 5 min discussion)

1:45 pm **"Paf1 complex regulates transcription pausing required to maintain pluripotent neural crest progenitors"**
Michael Jurynec (University of Utah, Salt Lake City, UT)

2:00 pm **"Melanocyte stem cell niche and pigment patterning in regenerating feathers"**
Sung-Jan Lin (National Taiwan University, Taipei, Taiwan)

2:15 pm **"Differential regulation of SOX10 during the maintenance of the melanocyte lineage and establishment of the melanocyte stem cell"**
Melissa Harris (National Human Genome Research Institute, Bethesda, MD)

2:30 pm **"Direct regulation of melanocyte differentiation by the AP2 transcription factor family"**
Robert Cornell (University of Iowa, Iowa City, IA)

2:45 pm **"Shp2, a non-receptor tyrosine phosphatase mutated in LEOPARD syndrome, is regulated by the neural guidance receptor plexin B1 in human melanocytes"**
Joanne Soong (University of Rochester, Rochester, NY)

3:00 pm **"Genetic studies of vitiligo provide new insights into an ancient disease"**
Richard Spritz (University of Colorado School of Medicine, Aurora, CO)

3:25 – 5:00 pm **Poster session I: Basic science**
Greg Barsh (HudsonAlpha, Huntsville, AL) and
Andrzej Slominski (University of Tennessee, Memphis, TN)

Optional evening activities

Friday, Sept 21, 2012: Model systems for studying pigmentary biology and disease

8:00 – 9:00 am **Breakfast**

9:00 – 11:00 am **Plenary session II: Animal models of pigmentary biology and disease**
Chairs: Glenn Merlino (National Cancer Institute, Bethesda, MD)
Deborah Lang (University of Chicago, Chicago, IL)
Julio Valencia (National Cancer Institute, Bethesda, MD)

9:00 – 9:25 am **Modeling melanoma in mice**
Sheri Holmen (University of Utah, Salt Lake City, UT)

9:25 – 9:50 am **Pharmacologic modulation of melanogenesis**
Brian Brooks (National Eye Institute, Bethesda, MD)

9:50 – 10:15 am **Animal models of vitiligo**
Gisela Erf (University of Arkansas, Fayetteville, AR)

10:15 – 10:40 am **Pigmentary variation and disease in domestic animals**
Leif Andersson (University of Uppsala, Uppsala, Sweden)

10:40 – 11:00 am **Break**

11:00 – 11:25 am **Melanocyte development in zebrafish**
David Parichy (University of Washington, Seattle, WA)

11:25 – 11:50 am **Zebrafish models of melanocytic disorders**
Rodney Stewart (University of Utah, Salt Lake City, UT)

11:50 – 12:15 pm **Systems genetics of molecular networks: the glaucoma-pigmentation link**
Rob Williams (University of Tennessee, Memphis, TN)

12:15 – 12:30 pm **Panel Discussion** (Glenn Merlino, Deborah Lang, Julio Valencia**)**

12:30 – 1:45 pm **Lunch and poster viewing/PASPCR Council Meeting**

1:45 – 3:25 pm **Oral session II: Environmental modulation of pigmentary phenotypes**
Chairs: Zalfa Abdel-Malek (University of Cincinnati, Cincinnati, OH)
Pamela Cassidy (University of Utah, Salt Lake City, UT)
Glynis Scott (University of Rochester, Rochester, MN)
(6 talks selected from abstracts, 10 min each plus 5 min discussion)

1:45 pm **"p53 and paracrine regulation of pigmentation and melanoma"**
Neil Box (University of Colorado School of Medicine, Aurora, CO)

2:00 pm **"ET-1 is a transcriptional target of p53 in epidermal keratinocytes and controls UV radiation-induced melanocyte homeostasis *in vivo*"**
Arup Indra (Oregon State University, Corvallis, OR)

2:15 pm **"Transfer of catalase from melanocytes to keratinocytes: a new mechanism that protects the skin from oxidative stress"**
Ana Luisa Kadekaro (University of Cincinnati, Cincinnati, OH)

2:30 pm **"1, 25 $(OH)_2$ vitamin D3 is a paracrine factor that participates in the DNA damage response of human melanocytes to UV"**
Zalfa Abdel-Malek (University of Cincinnati, Cincinnati, OH)

2:45 pm **"Role of SWI/SNF enzymes in the repair of UV-induced DNA damage"**
Shweta Aras (University of Toledo College of Medicine, Toledo, OH)

3:00 pm **"A multifaceted role for melanosomes in the stress susceptibility of ARPE-19 cells"**
Tadeusz Sarna (Jagiellonian University, Krakow, Poland)

3:25 – 5:00 pm **Poster session II: Translational/clinical science**
Chairs: Frank Meyskens (University of California, Irvine, CA) and
Doug Grossman (University of Utah, Salt lake City, UT)

6:30 pm **Gala dinner**

Saturday, Sept 22, 2012: Advances in melanoma genetics and therapy

7:30 – 8:30 am **Breakfast**

8:00 – 8:30 am **PASPCR Business meeting of all members**
Chaired by Greg Barsh, PhD, President

8:35 – 10:40 am **Plenary session III: Genetics and genomics of melanoma**
Chairs: Claus Garbe (University of Tuebingen, Tuebingen, Germany)
Sancy Leachman (University of Utah, Salt Lake City, UT)
Boris Bastian (University of California San Francisco, San Francisco, CA)

8:35 – 9:00 am **The genetics of melanoma: searching for new therapeutic targets**
Yardena Samuels (National Human Genome Research Institute, Bethesda, MD)

9:00 – 9:25 am **Molecular prognostics in melanoma**
Mohammed Kashani-Sabet (California Pacific Medical Center, San Francisco, CA)

9:25 – 9:50 am **Germline mutations and genetics of melanoma**
Lisa Cannon-Albright (University of Utah, Salt Lake City, UT)

9:50 – 10:15 am **Somatic mutations in melanoma**
Boris Bastian (University of California San Francisco, San Francisco, CA)

10:15 – 10:40 am **Panel Discussion** (Claus Garbe, Boris Bastian, Sancy Leachman)

10:40 – 11:05 am **Break**

11:05 – 12:45 pm **Oral session III: Translational and clinical studies**
Chairs: Tom Hornyak (University of Maryland, Baltimore, MD)
Toni Ribas (University of California, Los Angeles, CA)
Hung Khong (Huntsman Cancer Institute, Salt Lake City, UT)
(6 talks selected from abstracts, 10 min each plus 5 min discussion)

11:05 am **"APE/Ref-1, a druggable target for therapy of human melanoma"**
Sun Yang (University of California, Irvine, CA)

11:20 am **"RhoJ and Pak kinases regulate melanoma chemoresistance by suppressing pathways that sense DNA damage"**
Anand Ganesan (University of California, Irvine, CA)

11:35 am **"The effect of Ccl22 on regulatory T cells and depigmentation in mice"**
Hee-Kap Kang (Loyola University, Chicago, IL)

11:50 am **"Targeting C-MYC with small molecules as a novel anti-melanoma therapy"**
Mikhail Nikiforov (Roswell Park Cancer Institute, Buffalo, NY)

12:05 pm **"Sulforaphane protects melanocytes and epidermal tissue from individuals at increased risk for melanoma from the effects of UV radiation: role of thioredoxin reductase 1"**
Pamela Cassidy (University of Utah, Salt Lake City, UT)

12:20 pm **"The landscape of mutations in melanomas revealed by exome sequencing"**
Ruth Halaban (Yale University, New Haven, CT)

12:45 – 1:45 pm **Lunch**

1:45 pm – 4:00 pm	**Plenary session IV: New approaches to melanoma treatment** Chairs: Kenneth Grossmann (Huntsman Cancer Institute, Salt Lake City, UT) Claus Garbe (University of Tuebingen, Tuebingen, Germany) John Kirkwood (University of Pittsburgh Cancer Institute, Pittsburgh, PA)
1:45 – 2:05 pm	**Adaptive T cell therapy** Toni Ribas (University of California, Los Angeles, CA)
2:05 – 2:25 pm	**Immunotherapy for melanoma** John Kirkwood (University of Pittsburgh Cancer Institute, Pittsburgh, PA)
2:25 – 2:45 pm	**Targeted therapies for melanoma** Kenneth Grossmann (Huntsman Cancer Institute, Salt Lake City, UT)
2:45 – 3:05 pm	**Resistance to chemotherapy in melanoma: genetic solutions?** Keiran Smalley (Moffitt Cancer Center, Tampa, FL)
3:05 – 3:25 pm	**New clinical trials in melanoma** Omid Hamid (Angeles Clinic, Los Angeles, CA)
3:25 – 3:45	**What's new in melanoma surgery?** Robert Andtbacka (Huntsman Cancer Institute, Salt Lake City, UT)
3:45 – 4:00 pm	**Panel Discussion** (John Kirkwood, Kenneth Grossmann, Claus Garbe)
4:00 pm	**Adjourn**

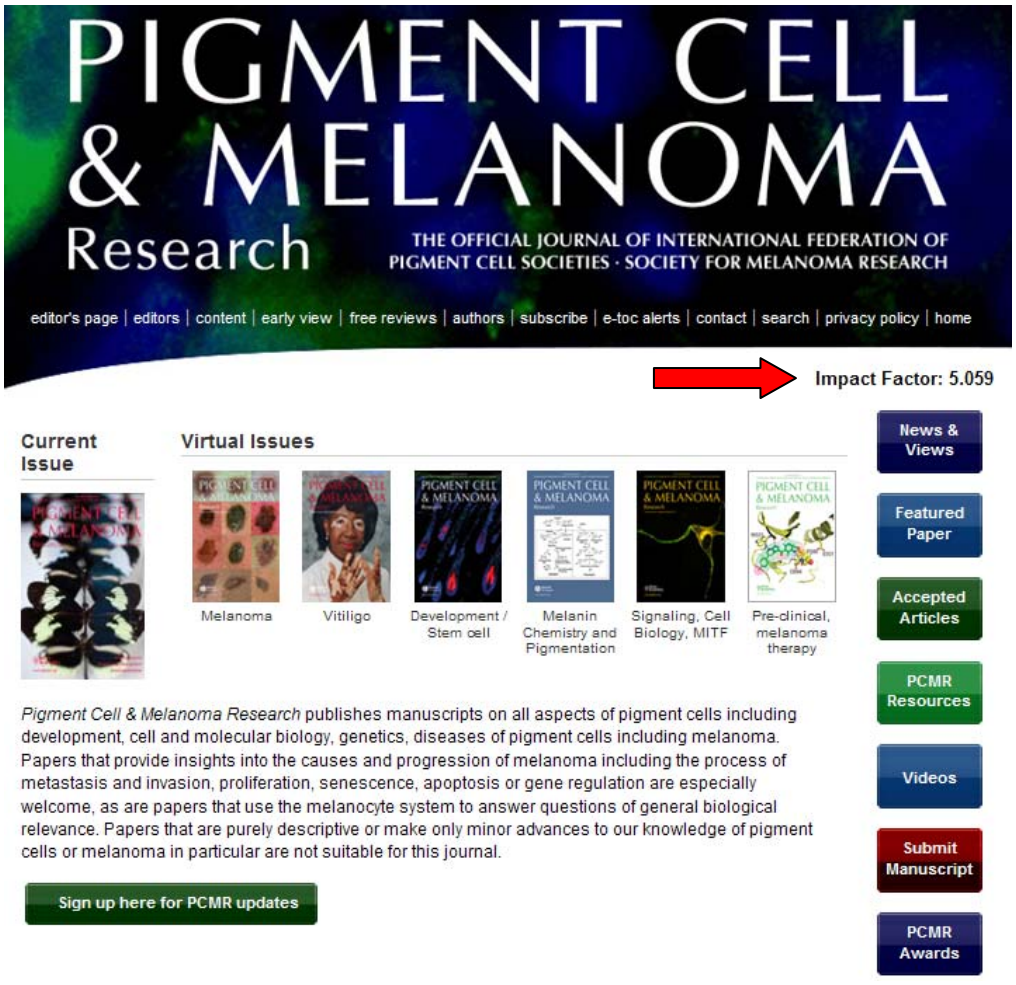
PCMR JOURNAL CORNER

New Impact Factor

We are proud to announce the new Impact Factor of Pigment Cell & Melanoma Research which has increased to 5.059! In addition, the journal has also been included in the ISI: Oncology Category, which means it is now listed in Dermatology, Cell Biology and Oncology. The new Impact Factor is based on citations in the 2011 literature to papers published in 2009 and 2010.

We wish to thank the current Editor-in-Chief Ze'ev Ronai as well as the former Editor-in-Chief Colin Goding for their outstanding contributions to the improvement of PCMR. Based on their rigorous review and revision of submitted papers, the journal is constantly improving and is now reaching out to a larger audience than ever before. We also wish to thank the Editorial Board, all authors who have submitted their good manuscripts, and the reviewers, who volunteered their time and knowledge to substantially improve the quality of the papers.

Pernille Hammelsø
Publisher
Wiley-Blackwell



PCMR Journal Recent PubCast

A 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. Caroline Le Poole's Laboratory (Department of Pathology, Microbiology & Immunology, Oncology Institute, Loyola University, Maywood, IL, USA) on "HSP70i is a critical component of the immune response leading to vitiligo" by Jeffrey A. Mosenson, Andrew Zloza, Jared Klarquist, Allison J. Barfuss, Jose A. Guevara-Patino, I. Caroline Le Poole, Pigment cell & Melanoma Research 25(1), 88-98 (2012).

This Pubcast (video) is available at: http://www.scivee.tv/node/39524.

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2012 SYMPOSIUM "An Integral View of the Science of Pigmentation, Skin Biology, and Melanoma Symposium" – Impressions

The Pigment Cell and Melanoma Research (PCMR) Interest Group in partnership with Johnson & Johnson organized a one day symposium on June 22nd, 2012. Drs. Manpreet Randhawa (J&J) and Julio Valencia (NIH) present a brief report of the meeting.

Reflections on Forging Scientific Collaborations and the Lessons from Organizing a Scientific Symposium on Pigmentation, Skin Biology and Melanoma

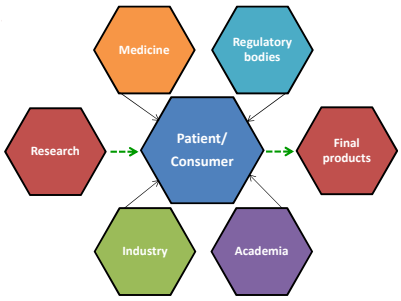
While brilliant researchers are brought together every year at several meetings and symposia, we would like to reflect on the reasons to strengthen these activities and their role in building scientific collaborations these days. Science is an art that cannot be done in isolation. Science helps meet the needs of societies in an efficient way through a teamwork approach leading to effective communication and collaborations. Then the question arises: how can we integrate the scientific pieces from different research groups together to benefit human health? We think the best way is through building strong alliances that can result in relationships that benefit science and society in a fairly and balanced manner. We all agree to a certain extent that establishing innovative alliances between research teams from academia, government and the private industry can be very useful. Even though, among these institutions, scientific progress is measured differently. Thus, progress is measured by the number of publications in academic research, whereas research in a company is mainly driven by the long and short term value it creates for the company where publications are often not the main objective. However, many companies realize that often it is hard to evaluate their work without subjecting it to the reviews and eyes of other researchers. This creates an environment that decreases visibility on both sides. Therefore, it is critical for research institutions to maintain a very proactive approach towards external alliances and to being transparent to the scientific community. One way to accomplish that is to put a lot of effort into learning about the needs of all participants involved regardless of their affiliations and interests. Nevertheless, there are several external factors that challenge collaboration in science when resources are limited.

Because innovative breakthroughs are often more likely to come from collaboration across disciplines rather than by adherence to unique and isolated methods, the Pigment Cell Research Interest Group at NIH underwent a series of strategic rounds of discussion looking to define its plan for the future and address its role in forging collaborations among its members. During those meetings, we understood that forging strong interactions and solid collaborations can be particularly useful in opening the dialogue between researchers from distinctly different disciplines where previous research efforts were in divergent and perhaps unrelated directions. With these ideas in mind, the group changed its name to include melanoma in its title. Today, we are the Pigment Cell and Melanoma Research (PCMR) special interest group (SIG) at NIH. This change was in line with those taken by the Pigment Cell Research Journal. As with any organized group, we designed statements that were consistent with our new name and would help active members to identify themselves with our group. Thus, our mission was defined as "to provide the scientific community, especially at NIH, with an open, fair and attractive forum to encourage high quality scientific research and foster collaborations in the field of pigment cell and melanoma research in agreement with the guidelines of NIH and the United States Government". To fulfill such a mission, we updated our vision to: "Be the preferred and most trusted forum, within the NIH scientific community, to disseminate and discuss science related to the fields of pigment cell and/or melanoma research". We then asked how we could all begin to materialize our renewed aspirations and objectives. To organize a symposium entitled "An Integral View of the Science of Pigmentation, Skin Biology, and Melanoma" was the answer. With the help of our most distinguished members, we worked to create an agenda that included all possible actors capable of igniting interest and inspiring collaboration among fellow researchers. Thus, the symposium featured presentations by well-known scientists in our-related fields from NIH, academia and the consumer skin care industry. We brought together well-known and renowned colleagues such as Melissa Harris, Nicolas Restifo, Steven Rosenberg and Yardena Samuels from NIH; Murray Brilliant, Richard Spritz, Edward DeFabo, Sewon Kang, Paul Chapman and Meenhard Herlyn from academia; and Connie Lin and Nikiforos Kollias from Johnson and Johnson Consumer Companies, Inc. During the symposium these scientists covered the topics of developmental biology in pigmentation, pigmentary disorders, UV damage and skin color, melanoma genetics and biology, and exciting news from several clinical trials in melanoma. The symposium, besides providing a platform for sharing and propelling new ideas in our field, also addressed the challenges around our diversity, complexity and the rapidly changing nature of the sciences involved in our fields.

We believe that this scientific meeting provided the opportunity to review, in one day, new and exciting scientific developments, as well as addressed the question of how to establish solid scientific networks and the potential for interdisciplinary partnerships. We think this symposium was an excellent step forward for building collaborations among people from different backgrounds and fields of expertise. It definitely helped facilitate the environment for an increased pace of research and encouraged the development of innovative and groundbreaking strategies in investigating increasingly novel, complex and convoluted areas. After all, forging collaborations is a human attribute that relies on bringing good people together for the same cause.

Manpreet Randhawa, Ph.D. and Julio C. Valencia, M.D.

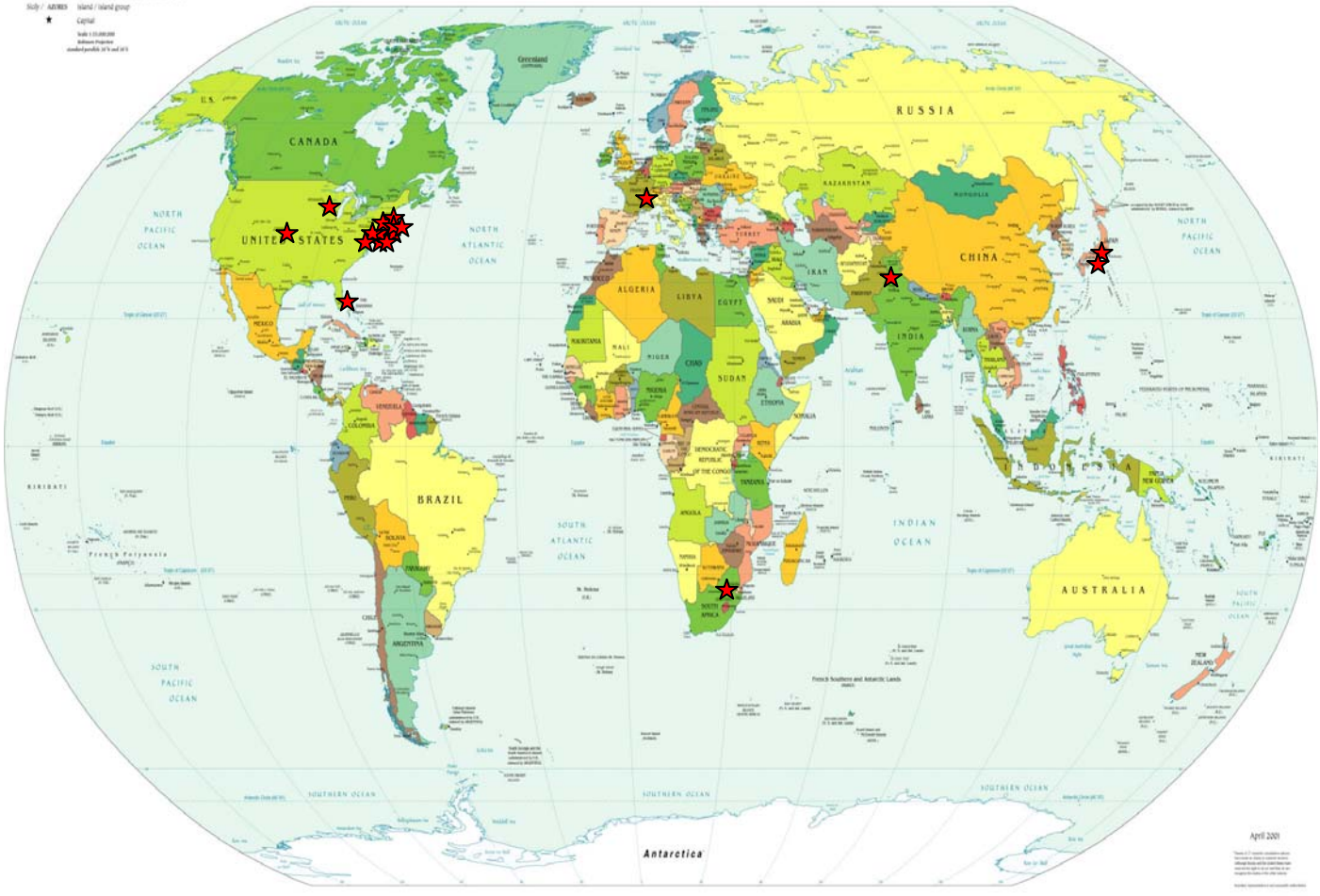
PIGMENTATION COMMUNITY CONNECTIONS



In this issue, we continue the "***Laboratory Updates***" with a column by Dr. David Norris, the "***Industry Perspectives***" with a column by Dr. Stéphane Commo, the "***Clinical Insights***" with a column by Dr. Seth Orlow, and the "***Let Me Introduce…***" with a column by Dr. Davinder Parsad. We hope that you will be inspired to 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.

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!

Political Map of the World, April 2001



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

LABORATORY UPDATES

by Dr. David Norris

Pigment Cell Research and Melanoma Research at the University of Colorado Denver

Department of Dermatology at the University of Colorado Denver

Over the past decade, The Department of Dermatology at the University of Colorado Denver (UCD) has transformed into a powerful academic program that has achieved excellence in education, patient care, and research. The CU Health Sciences Center on the new Anschutz Medical Campus (AMC) is located in Aurora, just east of Denver. There, state-of the art facilities for clinical care, education and research provide an integrated and collaborative environment for the professional Schools of Medicine, Public Health, Pharmacy, Dentistry, and Nursing. This campus is also home to the brand-new University of Colorado Hospital and Children's Hospital of Colorado (formerly The Children's Hospital). A new Department of Veterans Affairs Hospital is under construction.

The Department of Dermatology at UCD has 35 faculty members including 3 M.D. Ph.D. and 17 Ph.D. scientists. Our goal is to provide world-class clinical care in an environment where discovery informs clinical practice and education. We aim for a research standard equal to that in the best basic science departments. The spectacular facilities on the AMC and the skill of the collaborative faculty have been combined to create a unique and truly impressive environment for clinical care, education and research.

The Department of Dermatology has experienced spectacular growth with important recruitments of research faculty specializing in carcinogenesis, stem cell biology and regenerative medicine, immunology, and developmental biology. **Dennis Roop Ph.D.** has been a pivotal figure in the growth of our Department. Dr. Roop is Director of the Charles C. Gates Center for Regenerative Medicine and Stem Cell Biology, and 16 key members of this center have faculty appointments in the Department of Dermatology. Since coming to Colorado in 2007, Dr. Roop has catalyzed the advancement of skin research at UCD through the development of an extensive multi-departmental collaborative network that has brought key investigators together into unique collaborations that are aimed at tackling some of the most important basic and translational questions in skin and pigment cell biology. Indeed, our NIAMS funded P30 UCD Skin Diseases Research Center provides a critical support mechanism for a large campus-wide group of scientists working in skin disease-related research. This multi-Departmental skin diseases research program has also been greatly enhanced by our NIAMS-funded T32 training grant, now in its 30th year. We have developed a large basic and translational Skin Cancer Program based in multiple departments at UCD, with a long-standing focus on melanoma. Our interdepartmental, interdisciplinary Human Genetics Program, headed by Richard Spritz M.D., has also been a key partner in skin disease-related research at UCD, working along with the UCD-SDRC, Stem Cell Center, T32 training grant, and melanoma research program. The research teams in melanoma, non-melanoma skin cancer and head and neck cancer have also greatly benefited from strong collaborative support of the NCI-funded University of Colorado Cancer Center.

Pigment Cell and Melanoma Research Projects at the University of Colorado Denver

Our Department has an established focus on pigment cell biology, and conducts basic research in pigment cell function, as well as research in melanoma and pigmentary disorders such vitiligo.

Dennis Roop's personal research experience in carcinogenesis, stem cells, and skin biology has fostered the growth of several important research efforts relevant to pigment cells: identification of cancer initiating cells in Melanoma (aka melanoma stem cells), and studies of melanocyte stem cells in hair follicles and in the interfollicular epidermis. He has been the leader in bringing these studies to our Melanoma and Non-Melanoma Skin Cancer (NMSC) research program as well as our head and neck cancer program.

For several years the search for cancer initiating cells in melanoma has been overshadowed by Sean Morrison's work challenging the existence of a small population of melanoma initiating cells. During the

past year, evidence for cancer initiating cells in melanoma has been published by numerous investigators, including members of our research team. **Mayumi Fujita M.D. Ph.D.** has worked with Dr. Roop and other scientists in the Stem Cell Center at UCD to identify and characterize cancer initiating cells in human melanomas, not just in melanoma cell lines. By analyzing human melanoma tumors grown in a direct patient tumor xenograft model, she found that isoforms of aldehyde dehydrogenase (ALDH1A1 and ALDH1A3) are markers of "melanoma stem cells" and are attractive therapeutic targets in human melanoma. Cells isolated for ALDH activity expressed stem cell genes and retinoic-acid-driven target genes and were resistant to chemotherapy. She also identified a "side population" able to exclude Hoechst dye in cell populations from human melanomas. These cells were also chemotherapy resistant, but expressed high levels of ABCB1 and ABCB5 and had a unique chemoresistant gene expression pattern. Dr. Fujita's extensive search for means to isolate and characterize melanoma stem cells has also identified a number of technical issues in the original Morrison approach that may explain why he was not able to identify subpopulations of melanoma cells that demonstrate special cancer initiating potential.

David Norris M.D. and **Yiqun Shellman Ph.D.** have an ongoing research partnership focused on determining anti-apoptotic defenses in melanocytes and keratinocytes in the skin, and how these defenses determine resistance of melanoma and NMSC to effective therapy. They have identified many of the anti-apoptotic defenses in melanoma, and have pinpointed key drug combinations that specifically block or reverse these defenses. Their goal is to identify drug combinations that effectively modulate the proteins that control apoptosis, and directly trigger cell death in melanomas. This approach has already found new drug combinations suitable for Phase I trials. They aim to work with Drs. Roop and Fujita to develop drug combinations that specifically kill melanoma stem cells.

Mayumi Fujita has a number of other important projects in melanoma biology, all designed to develop new tools for following melanoma progression or developing new treatment approaches in melanoma. In collaboration with the cytokine pioneer **Charles Dinarello M.D.** (National Jewish Health), she has identified a crucial involvement of the inflammasome in melanoma progression. The inflammasome is a key organelle that initiates cytokine activation, and may be a mechanism to maintain immune evasion in progressing melanomas. Dr. Fujita has also identified peripheral blood biomarkers that can be used to diagnose melanoma and follow response to therapy.

Development of new animal models to study melanoma progression and to test new therapies is an important part of our research program. **Antonio Jimeno M.D. Ph.D.** in the Division of Medical Oncology at UCD has developed a direct patient tumor xenograft model that can be used to screen drugs against patient tumors, and use the data to inform the best chemotherapy approach. All of these models are being utilized in the Phase I Drug Development program headed by **Gail Eckhardt M.D.** (Director of the Division of Medical Oncology). The clinical and translational programs in Melanoma are supported by the clinical efforts of three medical oncologists (**William Robinson M.D.**, **Rene Gonzales M.D**. and **Karl Lewis** M.D.) and one surgeon (**Martin McCarter M.D.**)

A unique and powerful xenograft is being developed by Dr. Jimeno and **Yosef Refaeli Ph.D**., an immunologist in the Department of Dermatology. Using powerful new techniques to immortalize hematopoietic stem cells, Dr. Refaeli is developing a mouse with a human immune system from a cancer patient which is then engrafted with the melanoma tumor from the same patient, creating a direct patient tumor xenograft transplant model in which the tumor and immune system are from the same patient. This will be a truly significant advance to understand the response of patient's melanomas to various therapies in an animal model containing their own immune system. This model will enable a powerful "personalized medicine" approach to treatment selection in melanoma patients.

Qinghong Zhang Ph.D. and **Xiao-Jing Wang Ph.D**. have established a research program to determine the role of CtBP1 in skin biology. Carboxyl-terminal binding protein-1 (CtBP1) is a transcriptional co-repressor that is involved in many responses to damage

in tissue. Dr. Zhang has found that CtBP1 regulates p16INK4a and BRCA1 transcription in melanoma. She will pursue this result to determine whether this key molecular sensor of cell damage plays a role in melanoma progression in response to UVR or to immune attack.

Recently, **Theresa Pacheco M.D.** and **Richard Spritz M.D** (Human Medical Genetics) identified mutations in a novel pigmentation gene as the cause of an inherited multiple lentigines syndrome. **Theresa Pacheco M.D**. and **Yiqun Shellman Ph.D.** are working with **Kristin Artinger Ph.D.** in the Department of Cell Biology to study the role of this novel and uncharacterized protein in melanocyte pigmentation in a zebrafish model as well as in human melanocytes. This work will provide new insights into the relationship of melanocytes and keratinocytes in controlling pigmentation.

Neil Box Ph.D. has a long history of fundamental research in the control of pigmentation in melanocytes. Stretching from his landmark work with Rick Sturm in characterizing the role of the melanocortin-1 receptor (MC1R) in pigmentation and melanoma susceptibility to his recent work in defining the role of p53 in pigmentation and melanoma progression, Dr. Box has been very effective in bringing molecular biology and molecular genetics to melanoma and pigment cell biology. His current work is focused on characterizing the role of p53 in the earliest stages of melanoma initiation. He is also examining the mechanisms by which p53 induces melanocyte pigmentation, proliferation and migration using both mouse models and human experimental systems. **Tamara Terzian Ph.D.** in collaboration with Drs. Box, Norris and Roop will examine p53-dependent activation of melanocyte stem cells in high p53 mouse models and in human skin xenografted onto immunocompromised mice. These mice will be used as preclinical models to test the potential of several p53 activating drugs in vitiligo repigmentation therapy.

Lori Crane Ph.D. (University of Colorado School of Public Health) and **Joseph Morelli M.D**. (Director of Pediatric Dermatology) have a long partnership in the study of the development of nevi in children and the correlation to sun exposure. They have added **Robert Dellavalle M.D. Ph.D.** (Director of Dermatoepidemiology) and Dr. Box to their team. Together, they are working to characterize the genetic and environmental factors that interact to determine nevus counts in children. Moreover, their team is developing the clinical platforms to correlate quantitative measures of sun exposure with genotyping to quantify and predict melanoma risk.

Stanca Birlea M.D. Ph.D. has developed a strong research background in clinical vitiligo research, and spent five years working with Drs. Spritz and Norris in Colorado to develop special skills in genetic approaches to vitiligo and in the science of vitiligo repigmentation. She is now collaborating with Dr. Norris to initiate a new Vitiligo Research Clinic at UCD. This collaboration will employ a molecular biologic approach to understand the mechanisms of repigmentation in human vitiligo, and will investigate alternatives to UVR as a mechanism of repigmentation. This project will have a strong emphasis on melanocyte stem cell activation in vitiligo repigmentation and will be carried out in close cooperation with Drs. Roop, Box and Terzian.

Richard Spritz M.D. is a premier investigator in the genetics of vitiligo. He has established an effective research team including Charles Dinarello, Mayumi Fujita, and **Philippa Marrack Ph.D.** (National Jewish Health) to study the functional significance of the genetic associations with inflammasome proteins in vitiligo. This multi-department collaboration will make use of the clinical material available in our new Vitiligo Research Clinic, as well as the extensive clinical material available to Dr. Spritz through his world-wide vitiligo genetics network.

Conclusion

The research program in pigment cell biology at UCD is broad and deep, applying the most modern techniques of molecular biology and genetics with advanced approaches in animal modeling and analysis. There is a powerful bridge between fundamental investigation and translational research, with the intention of bringing new treatments to patients with melanoma and pigmentary disorders such as hyperpigmentation and vitiligo. The Center for Regenerative Medicine and Stem Cell Biology is

equipped to use modern approaches in stem cell science such as induced pluripotent stem cells (iPS) to correct genetic skin diseases, including diseases of pigmentation. The collaborative alignment of the Stem Cell Center, the UCD-SDRC, the Dermatology T32, and the Inter-Departmental Human Genetics Program has created an environment in which pigment cell biology will thrive.

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INDUSTRY PERSPECTIVES

Hair and skin pigmentation research in L'Oréal R&I

by Dr. Stéphane Commo

People declare aesthetic concerns related to pigmentation all over the word, with various expectations depending on their area of residence, their lifestyle and their culture. Typical needs include prevention of tanning, improvement of uneven skin tone, and fighting against hair graying. This willingness to improve skin and hair color generally arises from the need to be perceived as younger and/or in good health. Pigmentation is also interrelated with photobiology. Indeed sun exposure triggers tanning but, most importantly, excessive and prolonged sun exposure can cause detrimental damage including photoaging and skin cancer. Therefore, the development of highly efficient sunscreens is of major importance to protect people who decide to go into sun exposed areas from photo-induced damage.

Proper answers to these expectations will contribute to improve the quality of life of people, eventually.

L'Oréal R&I has been engaged for decades in deciphering the biology of pigmentation as a key point for a cosmetic industry is to develop products that fulfill consumer's expectations regarding skin and hair color, with the uncompromising responsibility of providing safe cosmetic products.

I'm delighted to accept this invitation to write a column in the PASPCR Newsletter, and I take this opportunity to give a few illustrations of L'Oréal R&I studies in the field of pigmentation.

I first joined L'Oréal R&I to study hair biology. I studied human hair in Bruno Bernard's group through research programs aimed at understanding the regulation of hair growth to identify clues related to hair loss. Among the different approaches to find answers to baldness was G. Costarelis' first paper on label-retaining stem cells in the bulge of mice hair [1], which opened a new field of research in hair biology. Through our studies, we found that human hair harbored at least two distinct reservoirs for epithelial stem cells, one in the upper permanent part of hair follicle (counterpart of the bulge area in mice) and the other one in the lower part, in the bulb area [2]. This observation helped to make sense of findings from other investigations showing that high colony forming cells were located not only in the upper part of the hair follicle but also in the lower part, close to the bulb. Later on, the research program on epithelial stem cells developed to strength at L'Oréal R&I under the supervision of scientists with stem cell biology background.

Although hair graying is perceived as a concern by a huge number of individuals worldwide, only a few studies have dealt with the subject either in public or industry labs. And obviously there is still a lack of marketed hair care products efficient against hair graying so far. L'Oréal R&I has decided to tackle the challenge, and I have been put in charge of this program regarding biological aspects. It has first emerged from our studies that the renewal of hair pigmentation unit, linked to hair cycle, involves a transient melanocyte proliferation, at the telogen to anagen phase transition, from a melanocyte stem cell (MSC) reservoir located in the outer root sheath (ORS) [3]. Then in the course of research on the cause of natural hair graying with age, we have shown that the MSC reservoir in the ORS of human hair follicle vanishes during hair graying [4]. Indeed, there is no doubt that the depletion of MSC is responsible for hair graying. Similar results have been obtained by other teams afterwards, and it is now fully accepted that MSC depletion is a key point in hair graying. When studying MSC in human hair, we wanted to look for DCT/TRP2 expression. Indeed DCT expression was frequently used to follow MSC in the mice model. Thanks to Vince Hearing's antibody directed toward human DCT we could study DCT expression in human hair. Contrary to our expectation, not only did we not find any DCT(+) MSC in human hair, but we discovered that bulb melanocytes did not express DCT either, whereas the enzyme was expressed in all melanocytes in the epidermis [5]. This finding was really astonishing. We then decided to focus on a new research project aimed at identifying DCT functions other than the well-known DOPAchrome Tautomerase function in melanin biosynthesis. Using si-RNA strategy along with directed mutagenesis techniques we could demonstrate, in collaboration with Kazumasa Wakamatsu and Shosuke Ito in Japan, that DCT expression has a beneficial effect on cells under stress

conditions through its DOPAchrome tautomerase catalytic activity-dependent manner [6, 7]. Further collaborative work has revealed that DHICA content decreases with age in human hair, suggesting that DCT expression actually decreases with age in human hair follicle melanocytes [8]. There is no doubt for me that DCT protein possesses not fully understood functions of importance for melanocyte homeostasis (a cytoprotective property of DCT has also been recently demonstrated in quite another model [9]), with particular effect on pigmentation in human hair, especially on the onset of hair graying. Our work has opened the way to new developments eventually resulting in cosmetic products for fighting hair graying.

Thanks to the commitment and tenacity of in-house scientists and leaders, L'Oréal R&I was a pioneer in developing *in vitro* reconstructed skin models over 30 years of research [10], and what could be thought of as unworkable at the very beginning came to accomplishment eventually. Various models have been developed by L'Oréal R&I, some of which are internationally recognized and validated methods. These models provide predictive and alternative methods both for research programs, assessment of efficacy, and safety concerns. Indeed some of these models turned out to be highly useful for *in vitro* studies dedicated to skin pigmentation and photobiology. In this respect, Dr. Christine Duval succeeded in integrating human melanocytes in the basal layer of a reconstructed epidermis. When such a model is exposed to UVA and UVB radiation, melanocytes increase production and transfer of melanin to neighboring keratinocytes as *in vivo*, hence reproducing *in vitro* the tanning response [11]. Furthermore reconstructed human skin model allowed UVA- and UVB-induced alterations in the dermis and epidermis to be investigated, and proved to be useful to assess the ability of the broad-spectrum sunscreen Mexoryl®-SX to protect from photo-induced damage, both in the dermis and the epidermis [12]. More recently Christine Duval and Françoise Bernerd succeeded in developing a new *in vitro* skin model, including living fibroblasts in the dermal compartment beneath a melanocyte-containing reconstructed epidermis [13]. This pigmented reconstructed skin model reproduces normal skin pigmentation characteristics, including tanning. Using this *in vitro* model they could demonstrate the contribution of fibroblasts in the regulation of pigmentation.

With other respects, Laurent Marrot's team demonstrated that Nrf2, a critical transcription factor for antioxidant and phase II detoxifying enzymes expression, was involved in the (photo)-oxydative stress response in human melanocyte [14]. Furthermore, they could show that Nrf2-dependent response differed in human skin melanocytes and keratinocytes. This finding should contribute to better understand how the skin adapts to environmental stress, especially to UV exposure.

In the last decade, we utilized the strong development of OMICS technologies in life science research. Transcriptomics and proteomics analyses have nearly become routine approaches, and changed our scale of observation, strengthening our capability to describe a biological phenotype or response. L'Oreal R&I is challenged daily to raise and bring forward innovations from basic science to market, and we routinely use these OMICS technologies to advance knowledge of skin and hair biology, as recently illustrated by the study of Peggy Sextius *et al*. [15]. These tools already help us to design and develop innovative approaches to meet the consumer's expectations regarding skin and hair color.

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CLINICAL INSIGHTS

by Dr. Seth Orlow

I really hadn't thought at all about pigmentation prior to matriculating as a Dermatology resident at Yale in 1987. As an M.D. Ph.D. student, I studied the role of calmodulin in macrophage function [1], and my interest in dermatology stemmed from an interest in immunology and pediatrics. However, once arriving at Yale, I met Jean Bolognia who was a young faculty member who worked in the laboratory of John Pawelek, and who became a great friend and mentor. I attended a lecture that John gave to the Pharmacology Department at Yale, and was fascinated by the cell biology of pigmentation and the questions that could be asked. John was always an inquisitive scientist and enthusiastic mentor and welcomed me to work in his lab as I could.

Although the life of a dermatology resident is a busy one and there is so much to learn intellectually and visually, I was not willing to put my scientific life on hold, so I would arrive in the early morning, set up my gels, go to clinic, take down my gels at lunchtime, and come back in the early evening to set up another experiment. My research allowed me to apply the biochemical and pharmacologic techniques that I'd learned as a graduate student to the study of the role of melanotropin in controlling pigmentation in murine melanoma cells [2]. Meanwhile, clinically I was learning a great deal about the congenital and acquired skin disorders and their patterns as well as pigmentary disorders like vitiligo (an area of focus at Yale since Aaron Lerner had founded the Department in the mid 1950's). In my final year at Yale, I was able to spend about 80% of my time in the lab with the rest focused on pediatric dermatology. During that time, I developed my interest in the biogenesis of melanosomes. John was kind enough to let me grow that project and take it with me when I left.

I had the opportunity to return to NY in 1990 to establish an independent laboratory effort in melanocyte biology as well as to direct pediatric dermatology at New York University under the leadership of Irwin Freedberg. No one was a bigger believer in the importance of physician scientists in dermatology than Irwin. At NYU my career flourished both clinically and scientifically. One of my great pleasures was the collaborations that I initiated with other colleagues in the pigment cell community, some of whom I had met for the first time at the first PASPCR meeting in Bethesda, Maryland. With Ray Boissy, we studied the relationship of melanosomes to the lysosomal lineage of organelles [3]. With Vince Hearing, we identified pmel17 as a protein component of the melanosomal matrix [4]. With Murray Brilliant, we began our studies on the still enigmatic Pink-eyed dilution (OCA2) protein [5] that continue to this day.

With Greg Barsh, we investigated the cell biology of the newly cloned OA1 gene [6]. With Lynn Lamoreux, we carried out many combined genetic/cellular studies on the effects of different coat and eye color mutations on tyrosinase, Tyrp1 and Dct [7, 8].

Clinically, I became fascinated with patterns of embryonic migration, and, in particular the Lines of Blaschko [9], to which I had been introduced by Jean Bolognia and the work of Rudi Happle. With Jean I published a massive two part review on the Lines of Blaschko [10] which was a seminal learning experience, and subsequently have been involved in studies on a host of other "linear" disorders ranging from nevoid hyper and hypopigmentation (e.g., hypomelanosis of Ito, linear and whorled nevoid hypermelanosis) to the NEMO gene (incredibly responsible for both incontinentia pigmenti and hypohidrotic ectodermal dysplasia with immune deficiency) [11], and many others. For example, our studies showed that contrary to popular belief, most children born with swirled hypo or hyperpigmentation were generally normal, rather than having a neurocutaneous syndrome as had been widely believed. In the end, such swirling appears to be a function of mosaicism for a genetic alteration that includes a pigment gene, with point mutations in a pigment specific gene presumably leading solely to swirled pigmentary changes whereas large deletions or similar catastrophic events can be associated with multiple developmental anomalies depending upon the adjacent genes that are affected.

In the mid 1990's I embarked on an interesting experience relevant to pigment cell biology. Together with 3 of my colleagues at NYU, Irwin Freedberg, Henry Sun and Miki Blumenberg, in collaboration with an executive at Pfizer, we founded the Anaderm Research Corporation. Backed by Pfizer, OSI Pharmaceuticals and NYU, Anaderm was one of the first companies to use pharmaceutical discovery techniques (e.g., high throughput screening, combinatorial chemistry) to develop prescription agents for the treatment of aesthetic problems – specifically pigmentation, hair loss and wrinkles. What started as a discussion regarding garnering corporate funding turned into a 6 year adventure. The funding we received through the Anaderm agreement allowed us to pursue new avenues of research and in my case, opened my eyes to the business of drug development on a professional level. Alas all good things must come to an end, and eventually Pfizer exercised its right to buy out its partners, internalizing the effort in house. Sadly, my "baby", namely a series of the most potent irreversible tyrosinase inhibitors ever discovered, with Ki's in the 100nm range, ended up in the limbo of subsequent corporate shuffles.

This, however, led to another unexpected professional turn. My appetite whetted for the world of pharmaceuticals and biotechnology, while very much continuing my professional work at NYU, I became involved in the world of healthcare venture capital with a small firm based in NY. Starting as an advisor, I rose over the course of the 9 years of my involvement to the level of Partner, participating in and eventually leading investments by the firm in a variety of small private companies in the pharma and medical device spaces. While some of the investments I was involved in were extremely successful (e.g., Protez in the area of "penem" antibiotics, acquired by Novartis, and Conor Medsystems, a drug eluting stent company bought by J&J), I am especially proud of those companies that now have drugs or devices on the market like Acorda (with Ampyra, the first drug ever approved for symptomatic relief in multiple sclerosis) and Salmedix (acquired by Cephalon, with Treanda, a unique mustard agent for certain types of lymphoma).

My interest in drug development continued in the lab. In collaboration with Young-tae Chang, then in NYU's Chemistry Department, we began to systematically employ a "chemical genetics" approach to dissecting new steps and providing new therapeutic targets and tolls in pigment cell biology [12].

When Irwin Freedberg became terminally ill, NYU initiated a national search for his successor. In 2006 I accepted the position of chairman at NYU, one of the country's largest and most revered Dermatology Departments, with a history dating back to the founding of the NY Skin & Cancer Hospital in 1872. One of the first things I did as Chairman was to recruit Prashiela Manga, a former Postdoc in my lab, back to NYU as a junior faculty member. This began a close and productive collaboration that continues to this day.

My collaboration with Prashiela led us to a current area of focus, namely endoplasmic reticulum stress and the unfolded protein response [13]. Prashiela's interests also led me to begin to study in the laboratory a

disorder that I had been taking care of clinically for over 20 years, namely vitiligo.

The two main types of vitiligo are generalized vitiligo and segmental vitiligo. The former has long been associated with other autoimmune diseases and we now know, through the work of Richard Spritz and others, that there are numerous genes that predispose both to vitiligo and to a group of other autoimmune disorders. This still begs the question of how and why in those with vitiligo it is their melanocytes that are the subject of autoimmune attack. In the case of segmental vitiligo, which is quite common in the pediatric age group and in which melanocyte loss is generally limited to one quasi-dermatomal body segment, association with other autoimmune disorders is quite uncommon, suggesting that segmental vitiligo is a disorder of the inability of an embryonic clone of melanocytes to deal with some type(s) of stress. Interestingly, it has long been known that certain phenolic compounds can, via occupational exposure, induce vitiligo indistinguishable from idiopathic generalized vitiligo. Prashiela and I have therefore been recently studying the early events in melanocytes exposed to these agents and how that might then result in initiation of a self-perpetuating autoimmune disease [14].

Also in 2006, Julie Schaffer joined the NYU faculty upon completion of her Pediatric Dermatology fellowship with us. As Julie had been a medical student and dermatology resident at Yale, and was another mentee of Jean Bolognia, it brought things full circle clinically. Julie has become a renowned expert in genetic and congenital skin disorders in her own right, and we have published many papers together as colleagues on a variety of skin and hair disorders ranging from those following Blaschko's lines to novel clinical phenotypes associated with mutations in genes like PTEN and DSG4 [15, 16].

I have found that my knowledge of science has been a great boon to my ability to take care of my patients and to explain things to them and to their parents, and, conversely, my knowledge and experience in dermatology has helped shape my scientific studies. I look forward to continuing to contribute in both arenas.

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LET ME INTRODUCE…

by Dr. Davinder Parsad

I am honoured to write this column for the newsletter and would like to extend my greetings to the members of PASPCR. I am the current President of Asian Society for Pigment Cell Research (ASPCR) and have been associated with this young Society since its inception.

There are some pigmentary disorders that are either unique to or more prevalent in Asia. These differences are due to the complex interaction of the genetic composition, the environment and the cultural practices. In general, even a disease that causes a subtle change in pigmentation in a fair-skinned Caucasian may have a major psycho-social impact in a darker-skinned individual. Both hyperpigmentation and depigmentation are associated with huge stigma. The need to have an organized forum to discuss pigmentary problems of the Asian population and to promote pigment cell research was a long felt need. A historic meeting, held in Beijing, China on 21 May 2004 during the International Congress of Dermatology, was organized by a group of like-minded Asian dermatologists and researchers to establish ASPCR. Dr. Prasad Kumarasinghe was elected as founder President and I became founder Secretary of ASPCR. IFPCS (represented by the then President, Prof. Dorothy Bennett) and the PASPCR, represented by Dr. John Pawelek (PASPCR President) were very supportive of this fledgling Society and its scientific endeavours from the very beginning. During 19th IPPC held at Reston, Virginia, in 2005, the ASPCR was officially admitted to IFPCS. With the dedication and hard work of past Presidents, Dr. Prasad Kumarasinghe and Dr. Kyoung Chan Park, we are moving significantly towards achieving our objectives.

The first major activity of the ASPCR was to organize the First Conference of Asian Society for Pigment Cell Research on "Pigmentary Disorders in the Asian Skin" in February 2005 in New Delhi, India. The second meeting in Singapore, third in Seoul, South Korea and 4th meeting in Guangzhou, China were successfully organized. Now it gives me immense pleasure to invite you all to the 5th Asian Society for Pigment Cell Research 2012 which will be held from 3rd-4th November, 2012 at Hotel Ashok, Chanakyapuri, New Delhi. This conference will definitely be a wonderful mingling of basic research with therapeutics in pigmentary disorders and promises to be a rich scientific feast of academics featuring several eminent international and national speakers on the topic.

I am very happy to inform you that ASPCR is joining hands with Australia and our 6th meeting will be an exciting joint meeting hosted by ASPCR and the Australasian Society for Dermatology Research (ASDR). This will be organised in the beautiful city of Sydney, Australia between 17th-19th May, 2013 by Dr. Prasad Kumarasinghe.

This is an exciting phase for our Society as 22nd International Pigment Cell Conference will be hosted by ASPCR in the beautiful, multi-racial city of Singapore from 4th to 7th September, 2014 under the chairmanship of Dr. Boon Kee Goh. The theme for IPCC 2014, "*Bringing Colours to Life: Advances in Pigment Cell Research and Translation into Clinical Practice*", hopes to capture the vibrancy and advancements in pigment cell research and their applications in dermatology and clinical medicine.

Davinder Parsad, M.D.
ASPCR President

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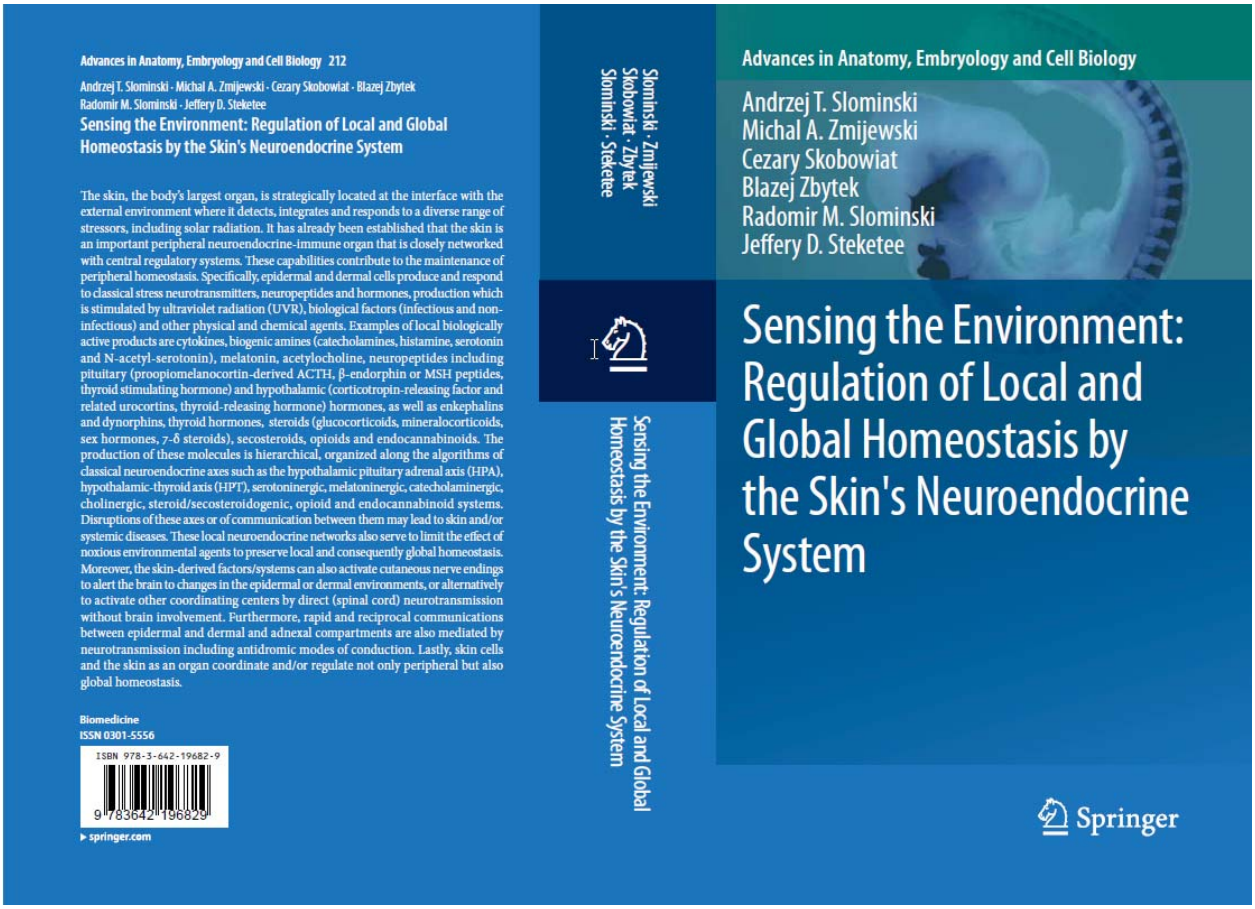
MEMBERS IN THE NEWS

Sensing the Environment: Regulation of Local and Global Homeostasis by the Skin's Neuroendocrine System Book

Several PASPCR members – **Drs. Andrzej T. Slominski, Cezary Skobowiat, Blazej Zbytek, and Radomir M. Slominski** – have recently published the book titled "Sensing the Environment: Regulation of Local and Global Homeostatis by the Skin's Neuroendocrine System", with Dr. Michal A. Zmijewski and Dr. Jeffery D. Steketee. The book is published by Springer-Verlag and it presents the most recent research establishing the skin as an important peripheral neuroendocrine organ, tightly linked to central axes of stress. Furthermore, the book details research results on the response of the epidermal cells to ultraviolet radiation and other biological factors.

The work that was summarized in this book was sponsored by grants from the National Institutes of Health. Information about the print edition can be found on a dedicated homepage.

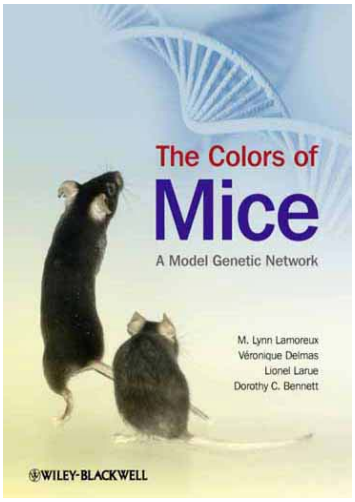


Hello from Lynn Lamoreux!

Hello Friends! This is Lynn. I'm still here, and thanks to y'all still a member of our pigment cell community, but have been doing other things. I've been asked to share what they are.

As you probably noticed, I was always more interested in the whole (holistic) view of the organism than in the parts. How beautiful is the miracle of life, and how beautiful are the interactions of the processes that permit it to exist. That's my deepest interest. Probably because the training that first fired my imagination was about the relationships among biology, ecology and genetics/evolution.

After graduation, and a series of mis-steps and achievements, I settled down to study the mini-ecosystem of pigmentation. That ended a few decades later in our cryopreservation of my whole mouse colony of pigment mutants - and then four of us wrote the book that we all made possible. The "Colors of Mice" characterizes this biological beauty in the precisely lifeless metaphors of science that somehow combine to describe a bit of life.



And then I retired to my little ranch home - just about the time the international Corposystem decided it would be in our (or its) best interests to rape and pillage the Ecosystem (and the people in it), rather than get together and deal with the obvious long-term solutions that have become available to address our overpopulation problem. Everyone knows that mice (or people) cannot exist if we lop off the processes they need to stay alive. So it's hard to imagine the corposystem can't understand this is equally true of the largest living thing, the whole earth ecosystem itself. But apparently they don't. Understand.

So since retirement, my life has been devoted to trying to find ways, basically to save us from destroying our position as part of the ecosystem. Mostly by education, because I have very little influence in the higher towers of power. I began by trying to explain, to the general public, relationships that are obvious to us but are being mostly withheld from both the public media and our educational system, especially in the American South.

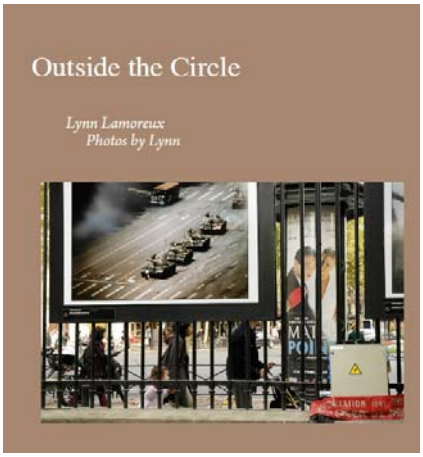
First, I tried to explain that the living ecosystem consists of multiple levels of biological complexity. (I use the simplest set: individual organisms; populations of each species; the whole living unitary earth ecosystem.) These all function together to maintain a viable balance among themselves and between themselves and the nonliving parts of life. Just like a mouse, right? Or a person. And all the processes must maintain a balance to stay "healthy." I define healthy as maintaining a stable state that is beneficial, on balance, to most sentient beings. Especially us.

And so that's what I have been doing for the past 12 years or so. Trying to explain to the general public these realities that we cannot change. And trying to suggest that if we want to change, say, overpopulation, then we have a perfectly good set of technologies that would be far preferable to running around the globe killing other peoples. Or swiping their food and water. But we simply cannot succeed in any goal by trying to change the interconnected processes that are required to maintain a viable, healthy earth. The only available solution to our biological problem is to change our own behaviors, and that's not only individual behaviors. That will not be enough; we must take control over the corposystem and then either get rid of it or use it rationally for compassionate purposes.

I wrote a little handbook called "Bare Bones Ecology Energy Handbook" that can be downloaded free from the lower right side of my blog. It's good that the greatest numbers of blog hits relate to this book. But mostly from students, rather than the general public.

Otherwise than students, changing our own behaviors is not a popular "opinion," so the general public tends to go off surfing for an opinion they like better than mine, and eventually I realized that most Americans (of course I'm generalizing throughout because I'm talking about populations, not individuals) don't know the difference between an opinion and a fact of life.

Apparently most Americans, instead, believe in the corposystem. More than half (I am told) of Americans (I concentrate on us because we have more power than we know how to use compassionately) were raised in the city, where everything we need to stay alive seems to come from the corposystem - and the corposystem is mostly using very sophisticated propaganda to control the people. So the people don't care very much about my ideal of a sustainable ecosystem; what they want is a sustainable corposystem. That's a bigger problem, because of course we cannot *have* a stable corposystem *without* a stable ecosystem to provide the resources necessary for our survival.



Isn't that what I said in the first place? I thought so.

But I tried again, writing a book, in the form of a memoir ("Outside the Circle" will be published in the Spring of 2013). And I began a blog http://factfictionfancy.wordpress.com that is intended to relate biological realities to the various crises and propaganda scams that the corposystem media use to control the people - global warming "controversy" for example. Then I began a radio program (with podcasts at http://BareBonesBiology.com). Posts numbers Bare Bones Biology 092 through Bare Bones Biology100, for example, are about Climate Change, and are available for download as mp3, and are also posted on the blog. All about ecosystem/corposystem functions.

Obviously, the Corposystem is now basically in a war against the ecosystem, and equally obviously this can't last much longer, given that the ecosystem provides the resources for all of life on earth. That's why my work up to now basically involves critique of the corposystem. We created the corposystem, and that gives us a great source of power, because we could (should we choose to take the assignment) control it.

So my next project is to envision a better way for us to behave. Book 25 will be "The Vision Book". Not just a simple vision like "compassion," or "politics." For one thing, neither of these is as simple as their proponents imagine; for another, no simple vision is viable. Life is not simple. It's complicated. Therefore "The Vision Book" will be a community effort. It will try to grow and explain the simplest possible vision for human sustainable survival on earth. Minimally that requires integration of science (not technology, science) with wise compassion (wise usually means with a view to the long term); and rule of law; and education, including the media.

On a more personal note, some of you will remember that during my career I was forced to leave some fine relationships and turned down some really nice offers, because I am chemically sensitive and chose health over "wealth." I ended up in Texas where, as one author put it, "the air sparkled like crystal." More importantly when the air is clean I feel alive, not sick. That was 30 years ago. Right now, I am living in a travel trailer in Santa Fe, forced again to flee for my health. While looking for a place to live, I am also researching other peoples' "visions," of which there are many, to contribute to Book 25. Next stop will be Silver City in September and then Tucson in October. I was planning to go to Oregon, but I think I should instead get back to Texas in time to vote.

Lynn Lamoreux
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LynnLamoreux@Yahoo.com

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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Position Available

A **postdoctoral fellowship** position is ***immediately available*** in the laboratory of

Zalfa Abdel-Malek, Ph.D.
Department of Dermatology
University of Cincinnati College of Medicine, Cincinnati, Ohio

The focus of Dr. Abdel-Malek's research is the photobiological responses of human melanocytes, modulation of these responses by melanocyte stimulating hormone and the melanocortin 1 receptor, and the signaling pathways activated by UV-induced paracrine and autocrine factors.

These projects are funded primarily by NIH R01 grants. Since the position of postdoctoral fellow is supported by NIH T32 training grant, the candidate should be an American citizen or a permanent resident of the U.S.A.

Minimum requirements for the position are a Ph.D. in Biology, with expertise in cell and molecular biology techniques, including tissue culture, imunocytochemistry, Western blotting, and PCR. The candidate should be willing to work collaboratively as a team member.

Interested candidates must immediately contact:

Zalfa Abdel-Malek by email (abdelmza@uc.edu).