

PASPCR

August 2010
Vol. 18 Number 2

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.

Preparations for the 16th Annual Meeting of the PASPCR, spear-headed by Youwen Zhou are progressing well. The meeting will be held in Vancouver, Canada on September 30 - October 2, 2010. Further information on the meeting can be found on the web site (<http://www.paspcr2010.org>) and on pages 9-14 of this newsletter.

In this issue, we continue the “*Let me introduce...*” section, which focuses on the activities of the Hampton University Skin of Color Research Institute. We also continue the “*Lab Updates*” section and our contributor for this issue is Dr. Wendy Westbrook. The “*Industry Perspectives*” section will be provided by Dr. Connie Lin. Dr. Richard Spritz will discuss the most recent papers published by his group in our recently introduced section “*Hot off the Presses*”.

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 that 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.

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 the contributors for columns submitted for inclusion in the letters.

PASPCR Newsletter Editorial Team

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The PASPCR Web Site can be found at:
<http://www.paspcr.org>

**The PanAmerican Society for
Pigment Cell Research**

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Greg Barsh

President-Elect

Andrzej Slominski

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Robert Cornell	(2010-2012)
Gisela Erf	(2009-2011)
Thomas Hornyak	(2009-2011)
Marjan Huizing	(2008-2010)
Ana Luisa Kadekaro	(2008-2010)
Prashiela Manga	(2008-2010)
Michael Marks	(2010-2012)
Miri Seiberg	(2009-2011)
Richard Spritz	(2010-2012)

IFPCS Representative:

Caroline Le Poole (*Treasurer*)

John Pawelek (*Immediate Past-President*)

CALENDAR OF EVENTS

2010

The 16th Annual Meeting of ESPCR

Date and place: September 4-7, Hinxton-Cambridge, UK

Contact: wmeetings@wtconference.org.uk

Web-site:

https://registration.hinxton.wellcome.ac.uk/display_info.asp?id=176

2010

1st Vitiligo World Congress

Date and place: September 23-25, Milano, ITALY

Contact: info@vwc2010.com

2010

16th Annual Meeting of PASPCR

Date and place: September 30-October 2, Vancouver, CANADA

Contact: Youwen Zhou, M.D., Ph.D.

Contact: cpd.info@ubc.ca

Web-site: <http://www.paspcr2010.org>

2010

10th Symposium Scientifique LVMH Recherche

Date and place: October 19, Paris, FRANCE

Contact: rd-infocom@lvmh-pc.com

Web-site: <http://www.lvmhrecherche-symposium.com>

2010

The 23rd Annual Meeting of JSPCR

Date and place: The Jikei University School of Medicine,
November 27-28, JAPAN

2010

The 50th Annual Meeting of American Society for Cell Biology

Date and place: December 11-15, Atlanta, GA, USA

Web-site: <http://www.ascb.org/>

2011

21st IPCC

Date and place: September 21-24, Bordeaux, FRANCE

Contact: Dr. Alain Taïeb, Ph.D.

Contact: contact@ipcc2011.org

Web-site: <http://ipcc2011.org/accueil>

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.

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CORPORATE SPONSORS

by Dr. Andrzej Slominski

The PASPCR would like to acknowledge and thank our Government and Corporate Sponsors; the list below reflects contributions made during the year of 2010. 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 16th PASPCR 2010 Annual Meeting "Pigmentation and Melanoma Conference" as follows:

Canadian Institutes of Health Research (CIHR)

National Institutes of Health (NIH)

Vancouver General Hospital Photomedicine Institute

Johnson & Johnson Consumer Companies

Schering-Plough & Merck

Department of Dermatology and Skin Science, University of British Columbia

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MEMBERSHIP UPDATES

by Dr. Andrzej Slominski

Renewals

Radoslaw Bieniek
University of Tennessee
Memphis, TN, USA

Linda Eastham
Marshall University
Joan C. Edwards School of Medicine
Huntington, WV, USA

Harry H. Matundan
University of California, Irvine
Orange, CA, USA

The PASPCR would like to welcome these new members to the Society:

New Members

Iraz Toprak Aydin
EPFL SV ISREC
Lausanne, SWITZERLAND

Tsing Cheng
New York University School of Medicine
New York, NY, USA

Peter Elias
University of California, San Francisco
San Francisco, CA, USA

Himangi Marathe
University of Toledo
Toledo, OH, USA

Uraivan Panich
Faculty of Medicine Siriraj
Bangkoknoi, Bangkok, THAILAND

Ze'ev Ronai
Sanford-Burnham Medical Research Institute
La Jolla, CA, USA

PASPCR PRESIDENT'S CORNER

The first half of 2010 has been busy and eventful. The 2010 Annual Meeting in Vancouver is approaching fast and arrangements for the conference are falling into place. Following an extension of the submission deadline, a total of sixty-eight abstracts were submitted. Of these, 22 were selected for podium presentations and 46 for poster presentations. The meeting is on track for a strong financial showing. Grants submitted to both the US and Canadian Institutes of Health, prepared by Greg Barsh and Youwen Zhou respectively, were successful. This has allowed us to support 14 travel grants (summarized in Secretary/Treasurer report).

Conference planning is a major undertaking and currently involves much “on the job” training. While previous organizers have always been generous in assisting their successors, it has been proposed that a more formal support mechanism, in the form of a Standing Committee for Conferences, would be advantageous. This proposal was adopted by the PASPCR Council at our recent council meeting. The committee will consist of three former Chairs of the conference and two appointed ad hoc members. If you are interested in serving as an ad hoc member, please contact me at flmeyske@uci.edu by September 1, 2010.

The 2010 Society election will include selection of a President-elect and three council members who will serve for three years each (2011-2013). The Nominating Committee (Chaired by President-Elect Greg Barsh) has received 5 nominations for President-Elect and 14 for the Council positions. The vetting process, which includes confirming that nominees are willing to stand for elections, will be completed soon and 2 candidates proposed for the President-elect ballot and six for Council ballot. The names of the nominees will be circulated to the membership shortly. At that point, additional candidates can be proposed for the election ballot by petition as described in the bylaws.

The Bylaws Task Force (Chair Tom Horynak; Members – Gertrude-Emilia Costin, Ana Luisa Kadekaro, Caroline Le Poole and Richard Spritz) have been hard at work and have completed the initial task assigned to them – review and update the bylaws, particularly in the area of elections. A brief report by Tom Horynak is published in this newsletter. The proposed revisions have passed a Council vote and are shown below. Active PASPCR members will receive a copy of the marked up old bylaws and the new bylaws by email. The changes will then be discussed during the business meeting to be held at the annual meeting in Vancouver and will be voted upon at that time. A proposal for a Standing Committee on Bylaws has also passed a Council vote. The selection process for committee members is described below. If you are interested in serving as an ad hoc member please let me know.

It has been a very busy time for PASPCR.
I look forward to seeing you at the Vancouver meeting.

Frank L. Meyskens, Jr.
President PASPCR

1. Proposed Amendment to Article VI, Section 6.01 of the Bylaws
Article VI: NOMINATION AND ELECTION OF OFFICERS COUNCIL MEMBERS
Section 6.01.

Nominating Committee.

The President shall appoint a Nominating Committee consisting of the President-Elect as Chair, one member of the Council, and three Members-at-large. The Secretary/Treasurer shall verify that the appointees are members in good standing both for the current and for the prior membership year. The nominating Committee shall prepare lists of nominees for election to the Council and the offices of the Organization. In preparing the lists of nominees, the Nominating Committee shall attempt to ensure the widest possible representation from the three Americas as well as from the fields contributing to the Broad area of pigment cell biology. The lists shall be submitted to the President not less than 90 days prior to the date of the Administrative Meeting of the Members, unless otherwise specified by a relevant Rule or Regulation. The President shall promptly notify each nominee of his/her nomination. A nominee may remove his/her name from the lists of nominees by written request (paper or electronic), received by the President not less than 60 days prior to the Administrative Meeting of the Members, unless otherwise specified by a relevant Rule or Regulation.

2. Proposed Amendment to Article VI, Section 6.02 of the Bylaws
Section 6.02.

Petition Candidates. Five or more Members of the Organization may, by petition signed by each and accompanying a written statement of the Nominee asserting his/her willingness to serve, nominate a candidate or candidates for the Council or an office, in addition to those selected by the Nominating Committee. Such petitions must be received by the Secretary/Treasurer not later than 60 days prior to the Administrative Meeting of the Members, or as specified by an adopted Rule and Regulation.

3. Proposed Amendment to Rule and Regulation #3, “Schedule for Elections”

3. Schedule and Requirements for Elections

Admission to the council shall be decided by a ballot held among the general membership. The Nominating Committee, as specified in Article VI, Section 6.01 of the Bylaws, will start the nominating process for officers and council positions in the spring, according to the following timetable:

- a) The lists of nominees shall be submitted by the Nominating Committee to the President on or before July 1st. Prior to July 1st, the chair of the Nominating Committee should solicit input from the general membership regarding nominees for the upcoming Council elections. The Chair of the Nominating Committee shall confirm with the Secretary/Treasurer that the nominees are members in good standing. Nominees whose dues payments are in arrears will be provided the opportunity to correct their status. Only members in good standing both for the current and for the prior membership year will be considered for placement on the ballot for election to the Council. The President shall promptly notify each nominee of his/her nomination.
- b) A nominee may remove his/her name from the lists of nominees by written request (paper or electronic) sent to the President by August 1st.
- c) The lists of nominees from the Nominating Committee shall be made public on September 1st along with the announcement that additional candidates should submit their petitions, as specified in Article VI, Section 6.02 of the Bylaws, to the Secretary/Treasurer by October 1st.

- d) The Secretary/Treasurer shall verify that the petition candidates are members in good standing both for the current and for the prior membership year.
- e) Ballots containing the names of nominees and petition candidates shall be sent to the general members of the Society by October 15th by the Secretary/Treasurer via e-mail and/or regular mail.
- f) The deadline for returning ballots to the Secretary/Treasurer is November 15th.
- g) Ballot counts shall be handled by the Secretary/Treasurer and the results of elections will be announced to the membership by December 1st.
- h) The three candidates with the greatest number of votes shall be named new Council members.

The starting date for new officers and Council members will be January 1 of the next calendar year.

4. Proposed Amendment to Bylaws Article IV: COUNCIL, Section 4.07, Committees Section 4.07-e

Standing Committees. The Council will establish Standing Committees to report to the Council on aspects of Society structure and business. These Committees shall include (but are not limited to):

- a) Bylaws Committee. A Standing Committee of the Bylaws shall be formed. The Bylaws Committee shall meet at least once yearly to review the status of the Bylaws of the Society and recommend changes to the Council. Membership on the Bylaws Committee shall be as specified in the Rules and Regulations of the Society.

5. Proposed Rule and Regulation #12, Standing Committees of the Council 12. Standing Committees

- a) Membership of Standing Committees of the Council, as specified in Article IV, Section 4.07-e, shall consist of three members of the Council, representing at a minimum two different Council terms, initially appointed by the President; and two members of the Society at large, initially appointed by the President. The Secretary/Treasurer shall verify that the appointees are members in good standing both for the current and for the prior membership year. Following constitution of the Committee by the current President, the outgoing President shall appoint two new Council members and one new member-at-large for the Standing Committee(s). The current President shall appoint the other new Council member and the other member-at-large at the midpoint of the President's term. The term of service on each Standing Committee of the Council shall be limited to three years.

LETTER FROM PASPCR SECRETARY/TREASURER

Dear PASPCR members,

I am pleased to inform you that our membership is growing. There was an increase in membership number from 112 to 121. The list of members includes 25 students/fellows, 87 regular members, 4 joint IFPCS members and 5 honorary members. Some overseas investigators have selected our society members as their primary pigment cell research organization. Importantly, Dr. Ze'ev Ronai, Editor in Chief of the PCMR has joined our society as well as Dr. Peter Elias, a recognized expert in skin barrier function. We welcome new members and are looking forward for their contribution to the field of pigmentation.

Concerning our assistance in preparations for the 16th PASPCR meeting progress, having a surplus from the last conference in Memphis we decided to use these funds for travel grants. Fourteen travel grant applications were funded, including 12 from United States and 2 international. The names of recipients are as follows:

Students: Lei Dong
Linda Eastham
Himangi Marathe
Harry Matundan

Postdoctoral fellows: Ryan Dellinger
Tsing Cheng
Jennifer Kubic
Cezary Skobowiat
Zoran Pavicevic
Tae-Kang Kim
Zorica Janjetovic

International applicants: Uraiwan Panich
Iraz Aydin

Faculty: Robert Cornell

Congratulations, and the checks will be distributed at the conference. Also in order to help the Vancouver organizers we will cover costs of travel and accommodations for two distinguished speakers from Europe, Dr. C. Goding, and Dr. K. Schallreuter. The remaining balance will be used to support travel grants for the IFPCS conference in 2011, Bordeaux, France, since there is a strong need for such help for eligible investigators and funds for international travels are not readily available.

Andrzej Slominski, Secretary/Treasurer

BY-LAWS TASK FORCE UPDATES

Synopsis of the Activities of the 2010 Ad Hoc Committee on the PASPCR By-Laws Revision

by Dr. Thomas Hornyak

In January 2010, PASPCR President Frank Meyskens asked me to chair a committee, whose other members were Gertrude-Emilia Costin, Ana Luisa Kadekaro, Caroline Le Poole, and Richard Spritz, to review the existing PASPCR By-Laws and their amendments, especially regarding election procedures, and to propose revisions and recommendations for consideration by the PASPCR Council and the general membership. The committee met by phone conference twice, first on March 17, 2010, and afterwards on April 21, 2010. E-mail exchanges between committee members were also used to share information and recommendations.

A preliminary version of the proposed revisions was sent to President Meyskens prior to a May 26, 2010 PASPCR Council teleconference. Following comments received by members of the PASPCR Council, slight revisions were made in the preliminary version, which were considered by the committee in June. The final version was forwarded to President Meyskens on July 16, 2010, for distribution to the PASPCR Council in advance of the July 21, 2010 PASPCR Council teleconference.

The full revisions will to be distributed to the general membership for consideration pending approval by the PASPCR Council and Officers. The committee drew upon its past experience as PASPCR members as well as upon examples of By-Laws of other organizations to propose revisions. In general, the committee members found opportunities to clarify the current By-Laws regarding the requirements for elections and the timeline of the election process. Additionally, the members recognized the potential value of proposing a standing committee on the By-Laws. This proposed Standing Committee on the By-Laws both can provide for the regular review and necessary revision of the By-Laws, and can ensure that at least a few members of the PASPCR are quite familiar with the current By-Laws for consultation when questions regarding the procedures of the Society arise. The full revisions address both aspects of the committee's deliberations. A specific timeline for the nomination and election process each year is proposed, and membership requirements for nomination for PASPCR Council positions are specified. Provisions for standing committees of the PASPCR are added and creation of the first PASPCR Standing Committee on the By-Laws is proposed.

Thomas Hornyak
Chair By-laws Task Force



16th PASPCR 2010 Annual Meeting
Pigmentation and Melanoma Conference
Sept 30-Oct 2, 2010. Vancouver. Canada

Contact: Dr. Youwen Zhou at: cpd.info@ubc.ca Tel: +1.604.875-5101
Website: www.paspcr2010.org



Sponsored by:

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Department of Dermatology and Skin Science, University of British Columbia

Scientific Committee:

Youwen Zhou, MD, PhD (Co-Chair)
Greg Barsh, PhD (Co-Chair)
Frank Meyskens, MD
Andrzej Slominski, MD, PhD
Richard Spritz, MD, PhD
Xuejun Zhang, MD, PhD

Organizing Committee:

Youwen Zhou, MD, PhD (Chair)
Harvey Lui, MD
David McLean, MD
Haishan Zeng, PhD
Catherine van Raamsdonk, PhD
Kevin McElwee, PhD

Meeting support:

UBC Continuing Professional Development (UBC-CPD)
855 West 10th Avenue, Vancouver, B.C. V5Z 1L7, Canada
Telephone: (604) 875-5101
Fax: (604) 875-5078
Email: cpd.info@ubc.ca

Official Conference Website: www.paspcr2010.org

Accreditation:

This conference has been accredited and designated to be eligible for 21 Section 1 credits or AMA PRA and CMA

Registration

Online Registration: www.paspcr2010.org

	Early Bird By July 19, 2010	After July 19, 2010
Scientists/Researchers	\$399.00	\$499.00
Students/Fellows	\$199.00	\$249.00
Gala Dinner Ticket	\$100.00	

Accommodations

The British Columbia Cancer Research Centre is located at 600 West 10th Avenue. There are a few hotels in the area. We suggest you consider booking so that you can easily walk to the Research Centre. There are many other options in the downtown core (approximately 10-15 min driving distance) but you will need to travel each day to the conference and arrange your own transportation to the meeting. We have also secured low rates at these hotels to help ensure that your trip is affordable.

1. The Holiday Inn Vancouver Centre

(approx 4 minute walk to the BC Cancer Agency)

711 West Broadway, Vancouver BC

Reservations: 1(604) 707-1939

Email: info@hivancouver.com

Group Rate: \$142 CAD per night (not including taxes) till Sept 10, 2010

How to make a reservation at the Holiday Inn: Reservations can be made by contacting the hotel directly at the numbers listed above and mentioning "**Pigmentation and Melanoma Research Congress**" to receive the special rate of \$142.00 for a Deluxe room per night - please note that this nightly rate does not include taxes. All rates are based on availability.

2. Park Inn & Suites Vancouver Broadway

(approx 7 min walking distance)

898 West Broadway, Vancouver, BC

Tel: 1 (604) 872-8661; 1 (604) 872-8661

Fax: 1 (604) 872-2270

Toll Free: 1-800-663-5403; 1-800-663-5403

Website: www.parkinn.com/vancouverca

Email: sales@parkinn-vancouver.ca

Group Rate: \$139/night CAD or \$149 with view/night CAD + taxes (single and double occupancy)

How to make a reservation at the Park Inn and Suites: You can use the university booking code **CANUNI** and enter this code online to receive the rates listed above (based on availability).

3. Plaza 500 Hotel

(approx 4 min walk to the BC Cancer Agency)

500 West 12th Ave, Vancouver, BC, Canada

Toll-free: 1-800-473-1811

Tel: (604) 873-1811

Fax: (604) 873-1980

Email: reservations@plaza500.com

Website: www.plaza500.com

Group Rate: \$119 CAD per night plus taxes for double or single occupancy (based on availability)

How to make a reservation at the Plaza 500 Hotel: Call or email the hotel at reservations@plaza500.com and note that you are with the "**Pigmentation and Melanoma Research Congress**" to receive these rates.

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Updated Meeting Program

September 30, 2010

12:45-13:00 **Opening Ceremony** (Dr. Youwen Zhou, Dr. Greg Barsh)

13:00-13:45 **Presidential Address** (Dr. Frank Meyskens)
“Fifteen Years of Redox and Melanoma - Where are we headed?”

13:50-16:50 **Oral Session 1: Melanoma: Bench to Bedside**
Chair: Dr. Sancy Leachman – Salt Lake City, Utah, USA,
Co-chair: Dr. Andrew E. Aplin – Philadelphia, Pa, USA

13:50-14:20 **Colin Goding** (Oxford, UK): Signaling a Phenotype Switch in Melanoma (*Plenary Lecture*)

14:20-14:50 **Patrik Ernfors** (Stockholm, Sweden): Alternative Pathways for Melanocyte Development (*Plenary Lecture*)

14:50-15:20 **Vernon Sondak** (Florida, USA): Lessons Learned from Nearly Four Decades of Clinical Trials in Early Stage and Metastatic Melanoma (*Plenary Lecture*)

15:20-15:30 Coffee Break

15:30-15:50 **Helen Jiang** (Vancouver, Canada): Alpha 1 Antichymotrypsin is Aberrantly Expressed During Melanoma Progression and Predicts Poor Survival for Patients with Metastatic Melanoma (*Abstract #3*)

15:50-16:10 **Ryan Dellinger** (UC Irvine Medical Center): UDP-Glucuronosyltransferases (UGTs) as Metastasis Suppressors in Melanoma (*Abstract #4*)

16:10-16:30 **Andrew Aplin** (Thomas Jefferson University): Role and Regulation of FOXD3 in Melanoma (*Abstract #5*)

16:30-16:50 **Caroline Le Poole** (Loyola University, Chicago): Occult Expression of Melanocyte Differentiation Markers in Diseased Lung Tissue Provides New Treatment Opportunities for Lymphangioliomyomatosis. (*Abstract #6*)

16:50-18:20 **Poster Session 1: Basic Science**

Moderator: Dr. Greg Barsh (Stanford, California, USA)

(*Abstracts #7, 8, 9, 10, 11, 12, 22, 23, 24, 25, 26, 34, 35, 36, 43, 44, 45, 46, 47, 56, 63, 64, 65*)

18:20-21:00 **Welcome Reception**

October 1, 2010

08:30-10:50 **Oral Session 2: Melanin Synthesis and Pigmentation Therapies**

Chair: Dr. Marjan Huizing – Bethesda, Maryland, USA

Co-Chair: Dr. Haishan Zeng – Vancouver, BC, Canada

08:30-09:00 **Esteban Dell’Angelica** (Los Angeles, California, USA): Animal Models of Hermansky-Pudlak Syndrome (*Plenary Lecture*)

09:00-09:30 **Rox Anderson** (Cambridge, Massachusetts, USA): Laser Treatment for Pigmented Conditions: What Works and What Does Not? (*Plenary Lecture*)

09:30-09:50 **Prashiela Manga** (New York University Medical Center): Delineation of the Unfolded Protein Response in Melanocytes: Potential Implications for Vitiligo and UV Response (*Abstract #18*)

09:50-10:10 **Connie Lin** (Johnson & Johnson): Elemental Bi-mineral Complex Inhibits Tyrosinase Expression and Melanogenesis in vitro (*Abstract #19*)

10:10-10:30 **Viki Swope** (University of Cincinnati): Evidence for Stimulation of Pigmentation of Engineered Skin Substitute by the Potent Melanocortin Analog 4-Phenylbutyryl-His-D-Phe-Arg-Trp-NH₂ (*Abstract #20*)

10:30-10:50 **Pamela Cassidy** (Huntsman Cancer Institute, University of Utah): Protection of UV-irradiated Epidermal Tissue from Donors with Loss-of-Function MC1R Genotypes by the Natural Product Sulforaphane (*Abstract #21*)

10:50-11:00 Coffee Break

11:00-12:00 **Lerner Lecture**

Heinz Arnheiter (NINDS, USA) “2B or not 2B: the role of alternative splicing of MITF” (*Abstract #2*)

12:00-13:00 Lunch

13:00-15:00 **Oral Session 3: Physiology, Oxidative Stress and Neoplasia**

Chair: Dr. Andrzej Slominski – Memphis, Tennessee, USA

Co-Chair: Dr. Caroline Le Poole – Chicago, Illinois, USA

13:00-13:30 **Karin Schallreuter** (Bradford, UK): Oxidative Stress and Skin Pigmentation – What is new? (*Plenary Lecture*)

13:30-14:00 **Doug Grossman** (Salt Lake City, Utah, USA): Targeting Oxidative Stress for Melanoma Chemoprevention (*Plenary Lecture*)

- 14:00-14:20** **Sun Yang** (University of California Irvine): NO Stress Mediated by Neural NO Synthase (nNOS), a Potential Accelerator of Melanoma Progression? (*Abstract #31*)
- 14:20-14:40** **Lidia Kos** (Florida International University): Endothelin 3 Accelerates Tumor Growth and Promotes Metastasis in a Mouse Model of melanoma (*Abstract #32*)
- 14:40-15:00** **Ana Luisa Kadekaro** (University of Cincinnati College of Medicine, Department of Dermatology): p53 Activation is Essential for the Protective Effect of alpha-MSH Against Oxidative Stress in Human Melanocytes (*Abstract #33*)
- 15:00-15:15** Coffee Break
- 15:15-17:15** **Oral Session 4: Greying, Photoaging, Photobiology and Phototherapy**
Chair: Dr. Zalfa Abdel-Malek – Cincinnati, OH, USA
Co-Chair: Dr. Nikiforos Kollias – USA
- 15:15-15:45** **Zalfa Abdel-Malek** (Cincinnati, OH, USA): Regulation of MC1R in Human Melanocytes (*Plenary Lecture - Abstract #39*)
- 15:45-16:15** **Ilt Hamzavi** (Detroit, Michigan, USA): Pigmentation and Photobiology (*Plenary Lecture*)
- 16:15-16:35** **Hegun Wang** (BC Cancer Research Center): In Vivo Confocal Imaging and Micro-Raman Spectroscopy for Skin Cancer Detection (*Abstract #40*)
- 16:35-16:55** **Mei Yu** (Dermatology Department, University of British Columbia): Deficiency in Nucleotide Excision Repair Family Gene Activity, Especially Lack of ERCC3 Activity, is Associated with Non-pigmented Hair Fiber Graying (*Abstract #41*)
- 16:55-17:15** **Jiali Han** (Harvard Medical School): Genome-wide Association Studies: Opportunities in Cohorts (*Abstract #42*)
- 17:15-18:30** **Poster Session 2: Clinical-translational**
Moderator: Dr. Frank Meyskens (Irvine, California, USA)
(*Abstracts #13, 14, 15, 16, 17, 27, 28, 29, 30, 37, 38, 48, 49, 50, 51, 57, 58, 66, 67*)
- 18:30** Conference Day Ends

October 2, 2010

- 08:30-11:30** **Oral Session 5: Vitiligo, Pathogenesis and Therapy**
Chair: Dr. Harvey Lui – Vancouver, British Columbia, Canada
Co-Chair: Dr. Gisela Erf – Fayetteville, Arkansas, USA
- 08:30-09:00** **Richard Spritz** (Denver, Colorado, USA): Vitiligo Susceptibility Genes (*Plenary Lecture*)
- 09:00-09:30** **Youwen Zhou** (University of British Columbia, Canada): Vitiligo Pathogenesis: Clues from Transcriptome Analyses (*Plenary Lecture*)
- 09:30-10:00** **Ahmed Alissa** (Riyadh, Saudi Arabia): Recent Advances in Surgical Treatment of Vitiligo (*Plenary Lecture*)
- 10:00-10:10** Coffee Break

- 10:10-10:30** **Gisela Erf** (University of Arkansas, Division of Agriculture): Environmental Triggers of Vitiligo Expression in Vitiligo-susceptible Smyth Line Chickens (*Abstract #52*)
- 10:30-10:50** **Sherif Awad** (Minia University): Chinese Cupping: A Simple Method to Obtain Epithelial Grafts for the Management of Resistant Localized Vitiligo (*Abstract #53*)
- 10:50-11:10** **Davinder Parsad** (PGIMER): Defining Stability in Vitiligo Based on Adhesion of Melanocytes: A Comparative Study of Stable vs Unstable Disease (*Abstract #54*)
- 11:10-11:30** **Yuanshen Haung** (University of British Columbia): Vitiligo Lesional Gene Expression Profile: Correlation with Clinical Subtypes and Therapeutic Response (*Abstract #55*)

11:30-12:40 **Translational Research Discussion on Vitiligo Pathogenesis and Therapy**
Moderator: Dr. Youwen Zhou

Panelists: Drs. Richard Spritz, Harvey Lui, Ilt Hemzavi, Gisela Erf, Ahmed Alissa, Caroline Le Poole, and all who are interested

Selected Topics:

- GWAS and other studies have proven that Vitiligo is an autoimmune disease. How do other factors influence vitiligo pathogenesis?
- Is vitiligo a neurological disease?
- How to achieve repigmentation in vitiligo patients?
- How to keep repigmentation gained in vitiligo patients after NB UVB phototherapy?
- Are there molecular and other predictors of vitiligo therapeutic response?
- What are the roles of immune-regulating biological therapies in vitiligo?

12:40-13:40 Lunch

13:40-16:00 **Oral Session 6: Melanocyte Development, Genetics and Animal Models**
Chair: Dr. William Pavan – Bethesda, Maryland, USA
Co-Chair: Dr. Catherine van Raamsdonk – Vancouver, British Columbia, Canada

- 13:40-14:20** **David Parichy** (Seattle, Washington, USA): TBA (*Plenary Lecture*)
- 14:20-14:40** **Victor Tron** (Kingston, Ontario, Canada): MicroRNA and Melanoma Progression (*Plenary Lecture*)
- 14:40-15:00** **Marjan Huizing** (National Human Genome Research Institute (NIH)): The Genetics of Hermansky-Pudlak Syndrome (*Abstract #59*)
- 15:00-15:20** **Robert Cornell** (University of Iowa): Transcription Factor Activator Protein 2 Family Members Promote Zebrafish Melanophore Differentiation (*Abstract #60*)
- 15:20-15:40** **Ling Hou** (Wenzhou Medical College): Allele-specific Interactions between Mitf and Kit in Melanocyte Generation: 2b or not 2b? (*Abstract #61*)
- 15:40-16:00** **Dong Lin** (BC Cancer Research Center): A Panel of New Patient-Derived Melanoma Xenograft Models (*Abstract #62*)

16:00-16:15 **Closing Remarks** (Dr. Youwen Zhou, Dr. Greg Barsh)

16:15-17:15 **Business Meeting**

17:15 **Gala Dinner**

PCMR JOURNAL CORNER

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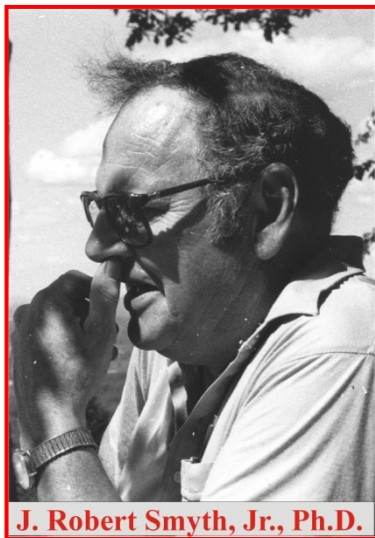
PCMR Journal First PubCast

The scientific journal Pigment Cell & Melanoma Research (PCMR) has published the first pubcast, produced for a Desmond Tobin's paper, recently published in the June 2010 issue of PCMR: "Prostaglandin-E2 is produced by adult human epidermal melanocytes in response to UVB in a melanogenesis-independent manner" by Gledhill K., Rhodes L.E., Brownrigg M., Haylett A.K., Masoodi M., Thody A.J., Nicolaou A., Tobin D.J. Pigment Cell Melanoma Res. 2010 Jun;23(3):394-403. Epub 2010 Mar 17. <http://www.ncbi.nlm.nih.gov/pubmed/20236442>
This PUBCAST (video) is available at: <http://www.scivee.tv/node/18147>

**REMEMBERING J. ROBERT SMYTH,
Ph.D.**

by Dr. Raymond Boissy

OBITUARY: It is with a bittersweet heart that I inform you of the passing of J. Robert Smyth, PhD. Dr. Smyth was the quintessential educator who mentored many students (my career was sparked by him and his insights) and who was a passionate advocate for the PASPCR and the pigment cell community.



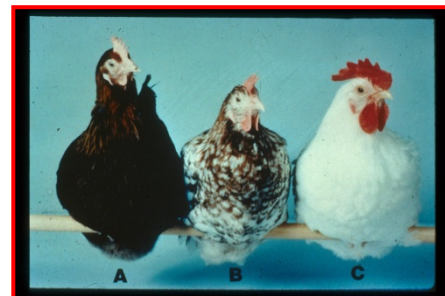
J. Robert Smyth, Jr., Ph.D.

AMHERST - Dr. J. Robert (Bob) Smyth Jr., formerly of 851 South East St., Amherst, passed away on March 22, 2010, at the age of 86 following a brief illness.

Bob was born on Feb. 9, 1924, in Lexington, Ky. He was the son of the late John R. Smyth and Selma Eubanks Smyth. He graduated from the University of Maine in 1945 with a degree in poultry science, and he received MS and PhD degrees in animal genetics from Purdue University in 1947 and 1949, respectively. He met his wife, Ethel Ann “Evvie” Tarr during his freshman year at Maine, and the couple married on Sept. 23, 1945, in Baltimore, MD, following their graduation from UMO. Bob and Evvie and daughter Kathy moved to Amherst, Massachusetts in 1949 when Bob accepted an

associate professor position at the University of Massachusetts. He was hired into a research position but enjoyed teaching and always managed to teach some classes throughout his career, both at the Stockbridge School of Agriculture, and in the University’s Animal Science program.

Bob was recognized professionally a number of times during his career including the prestigious Merck Poultry Award, the Poultry Science Award, and the Breeders of America Research Award. He served on several commercial committees, and was a member of the University Athletic Council for three years. Bob had many significant accomplishments during his career including the development of the Anderson turkey, a large, cost-effective bird that helped popularize turkey as a mainstream America food source. He also developed the “Smyth chicken”, which was strictly a research bird used in the study of vitiligo.



Smyth Vitiligo Chickens

The Smyth chicken is the only known practical animal model for studying vitiligo, a disease of the skin and eyes found occasionally in human beings. During his 46-year career at UMass, Dr. Smyth mentored over 31 graduate students who have gone on to impressive careers of their own in teaching, research, and other fields. Several of his students have made significant contributions in the area of genetics and medicine.

LET ME INTRODUCE...
Hampton University Skin of Color Research Institute

by Dr. Cecile Andraos-Selim

Hampton University Skin of Color Symposium gathered luminary speakers from around the world

Over a year ago Hampton University Skin of Color Research Institute (HUSCRI), Co-Directed by Drs. Valerie Harvey and David McDaniel, was created. Its mission is to conduct research, build and disseminate knowledge, and create educational forums in order to improve the understanding, treatment and prevention of skin disorders that uniquely affect or present differently in people with skin of color. Located in Hampton, Virginia, HUSCRI is the first institute of its kind in the state. HUSCRI is housed in the new Hampton University biomedical building and has over two thousand square feet of well equipped laboratory space. *“Our goal for the Institute is to play a leadership role in increasing understanding of the science of both the distinct features and disorders associated with skin of color, which in turn will help us develop new treatment options to benefit skin of all colors”* stated Valerie Harvey, MD, HUSCRI, Co-Director and Assist. Professor of Dermatology at Eastern Virginia Medical School (EVMS), Norfolk, VA.

One of the first undertakings of HUSCRI was to gather renowned researchers from around the world to speak in its inaugural symposium *“Hampton University Skin of Color Symposium: From Benchtop to Bedside”* which took place on May 1-2 in Williamsburg, VA. The highlight of this conference was a global perspective on the latest basic research, study findings and tools enhancing disease diagnosis, as well as the treatments and management of cutaneous diseases that affect skin of color. Luminary speakers from North and South America, Africa, Asia, and Europe participated in the symposium. Among the distinguished speakers were scientists and clinicians from the National Institutes of Health; Harvard Medical School; University of California, Irvine; Howard University; and Wake Forest University just to name a few.

Symposium talks were well balanced between basic science studies and clinical research and were organized under different sessions such as Skin of Color – Global Perspective; Skin of Color - Health Disparity; Hot Topics in Pigment Cell Research – Benchtop to Bedside; and Clinical Disorders and Aging. David McDaniel, MD, HUSCRI, Co-Director and Assist. Professor of Clinical Dermatology and Plastic Surgery at EVMS explained that *“From Benchtop to Bedside was designed to generate and promote meaningful dialogue and knowledge about how skin cells function and communicate with each other at the genomic level and cutting-edge basic research to clinical investigations and effective therapies to enhance patient care worldwide”*. A special session in this symposium was on ‘Perspective from Industry’, which included talks from L’Oreal Recherche, L’Oreal Institute for Ethnic Hair and Skin Research, Mediquest Therapeutics, and Johnson and Johnson.

Many speakers and attendees expressed their positive feelings toward the symposium. Dr. Vincent Hearing, Chief, Pigment Cell Biology Section, Center for Cancer Research, National Cancer Institute, wrote: *“Thanks for organizing the recent HUSCRI Symposium on Skin of Color in Williamsburg, Virginia. It was really an exceptionally interesting meeting and covered all facets of current knowledge about basic and clinical research on skin of various colors. All in all, it was a great Symposium and hopefully is just the first of a series to be held in the future”*. *“The national and international faculty that presented at HUSCRI’s inaugural symposium provided the audience with an overview of the biology of and disorders associated with skin of color,”* said Antoinette Hood, MD, Professor and Chairman of Department of Dermatology at EVMS. *“Most importantly, showing us the important need for more research – basic science, clinical, and epidemiological – in which HUSCRI will lead the way”*.

HUSCRI's symposium was accredited by Eastern Virginia Medical School Continued Medical Education (CME) and was made possible in part by an unrestricted educational grant at the platinum level from L'Oreal Institute for Ethnic Hair and Skin Research. Other corporate supporters included Medicis and Olympus.

Cecile Andraos-Selim, MBBCh, PhD, HUSCRI's Administrative Core Director and Associate Professor of Biology at Hampton University observed that "A high momentum of interest in collaboration between individuals, of maybe different backgrounds but similar goals, was generated at the symposium. A momentum which we hope will result in long-term collaborative relationships between different skin researchers".

Cecile Andraos-Selim, MBBCh, PhD



Standing up from left to right: Bruno A. Bernard, Dr. ES Sci., L'Oréal Recherche; Kyoung-Chan Park, MD, PhD, Prof. & Chairman, Dept. of Dermatol., Seoul National Univ. College of Medicine, Seoul, Korea; Enzo Berardesca, MD, Dir., Clinical Dermatology, San Gallicano Dermatological Institute, Rome, Italy; David McDaniel, MD, Hampton Univ. Skin of Color Research Institute, Co-Dir. & Assist. Prof. of Clinical Dermatol. & Plastic Surgery at Eastern Virginia Medical School; Nikiforos Kollias, PhD, Distinguished Research Fellow, Johnson & Johnson; Andrew Alexis, MD, MPH, FAAD, Dir. of the Skin of Color Center, St. Luke's-Roosevelt Hosp.; Harold Bryant, PhD, Dir., L'Oréal Institute for Ethnic Hair & Skin Research; Lovell A. Jones, PhD, Dir., Center for Research on Minority Health, MD Anderson Cancer Center, Univ. of Texas; Vincent Hearing, PhD, Chief, Pigment Cell Biology Section, Center for Cancer Research, NCI, NIH; Godson Nwokogu, PhD, Prof. of Chemistry, Hampton Univ.; Anand Ganesan MD, PhD, Assist. Prof., Univ. of California Irvine, College of Dermatology; Tom Dooley, PhD, Chief Scientific Officer, MediQuest Therapeutics, Inc.

Sitting down from left to right: Fatimata Ly, MD, Head, Dept. of Dermatology, Institute for Social Hygiene, Dakar, Sénégal; Cecile Andraos-Selim, MBBCh, PhD, HUSCRI Administrative Core Dir., Assoc. Prof. of Biology, Hampton Univ.; Valerie Harvey, MD, HUSCRI Co-Dir. & Assist. Prof., Dept. of Dermatology, Eastern Virginia Medical School; Pamela Hammond, PhD, RN, FAAN, ANEF, Provost, Hampton Univ.; Valeria Aoki, MD, Assoc. Prof. of Dermatology, Univ. of Sao Paulo Medical School; Joyce A. Hunter, PhD, Deputy Dir. of the National Center on Minority Health & Health Disparities; Victoria Barbosa, MD, MPH, MBA, Assoc. Prof., Dept. of Dermatology, Rush Univ. Medical Center; Antoinette Hood, MD, Chair, Dept. of Dermatology Eastern Virginia Medical School.

Speakers missing from the picture: R. Rox Anderson, MD, Prof. of Dermatology, Harvard Medical School; Tom Dooley, PhD, Chief Scientific Officer, MediQuest Therapeutics, Inc.; Zoe Draelos, MD, Clinical & Research Dermatologist; Rebat M. Halder, MD, Prof. & Chairman, Dept. of Dermatology, Howard Univ., College of Medicine; Robert S. Kirsner, MD, PhD, Chief of Dermatology, Univ. of Miami Hospital; Lynn McKinley-Grant, MA, MD, FAAD, Assoc. Prof. Georgetown Univ. Hospital / Washington Hospital Center; Kimberly S. Salkey, MD, Assist. Prof. of Dermatology, Eastern Virginia Medical School; Gil Yosipovitch, MD, Prof., Dept. of Dermatology, Neurobiology & Anatomy, & Regenerative Medicine, Wake Forest Univ.

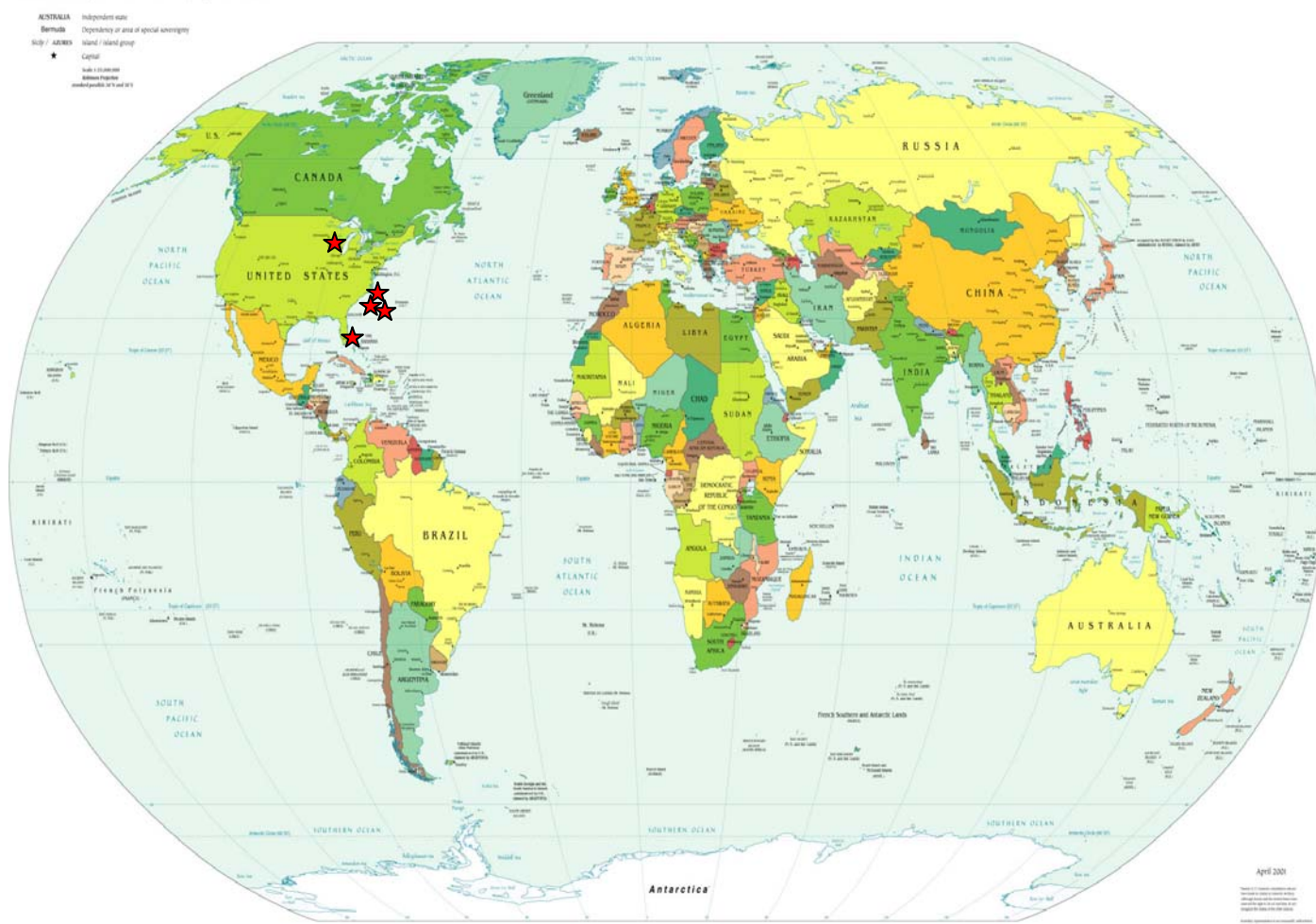
LAB UPDATES & INDUSTRY PERSPECTIVES.

KEEPING THE PIGMENTATION COMMUNITY CONNECTED

In this issue, we continue the “*Lab Updates*” section with a contribution from Dr. Wendy Westbrook. This column provides a forum for PIs and their post-doctoral fellows to let us know what they are working on and tell us about new avenues of research the lab is focusing on. To find out what is new with our colleagues in industry, we will have in this number the “*Industry Perspectives*” section held by Dr. Connie Lin. 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.

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>

LAB UPDATES

From pigmentation to breast cancer: a journey about G'Rab'bing new opportunities and "trafficking" into new research fields.

*by Dr. Wendy Westbroek, postdoctoral fellow,
The lab of Dr. William A. Gahl*

Research on the genetics and cell biology of Hermansky Pudlak, Chediak Higashi, and Griscelli syndrome is on the daily menu in the lab of Dr. Gahl. These syndromes all have one clinical feature in common namely partial albinism of the skin, hair and/or eyes. My particular interest in these syndromes started in 2000 during my PhD training in the laboratory of Dr. Jean Marie Naeyaert at Ghent University Hospital in Belgium, where I mainly worked on the cell biology of Griscelli syndrome type II. This is a rare autosomal recessive disorder caused by mutations in the small GTPase Rab27A. Rabs are the key regulators in specific membrane trafficking within cells. In epidermal melanocytes, the active GTP-bound form of Rab27A interacts with the membranes of mature fully-pigmented melanosomes through its geranylgeranyl group. Once attached, Rab27A recruits its effector Melanophilin (Mlph) and the actin-dependent motor protein Myosin Va (MyoVa). It is through this molecular Rab27A/Mlph/MyoVA tripartite complex that melanosomes are linked to the peripheral actin network, which is required for eventual melanosome transfer to surrounding keratinocytes in the epidermis (Westbroek et al., 2003).

In 2004, while collaborating with members of the Gahl lab, we reported that a Griscelli syndrome type II patient had very subtle hypomelanosis of the skin. Through quantitative real time PCR and western blotting, we observed significant up-regulation of endogenous mRNA and protein level of Rab27B, a homologue of Rab27A, in the melanocytes derived from this patient. Our immunofluorescence and yeast two-hybrid

screening data also revealed that Rab27B was able to form a tripartite complex on the melanosome membrane with Melanophilin and Myosin Va. This finding suggested that up-regulated Rab27B could partially take over the function of Rab27A, which could explain the very subtle skin hypomelanosis observed in that particular patient (Westbroek et al., 2004). This is how my interest in the cellular function of Rab27B was born and little did I know at that time that my curiosity would "traffic" me into a new field of research very soon.

To study the localization and function of Rab27A and Rab27B in different cell types, I initiated a collaborative effort with Dr. Olivier De Wever from the Laboratory of Experimental Cancer Research at Ghent University Hospital in Belgium. Transfection of Rab27A and Rab27B in various cancer cell lines yielded very surprising results only a few weeks into the project. We found that transient over-expression of Rab27B in several non-invasive estrogen-positive breast cancer cell lines, such as MCF-7 and T47D, promoted proliferation, morphological changes and invasion into matrigel. Transient over-expression of Rab27A had no morphological or functional effect on these cell lines.

In July 2004, I accepted a visiting postdoctoral fellowship at the National Human Genome Research Institute (NHGRI) in the lab of Dr. Gahl where my main projects were the cell biology of Griscelli and Chediak Higashi syndrome. Dr. Gahl welcomed and supported my proposal to study the molecular mechanism of Rab27B in breast cancer progression; the close collaboration with Dr. De Wever remained. We soon realized that the project had much potential and more hands and brains were desperately needed. In June 2006, we recruited a Belgian PhD student, An Hendrix, to work on the project in a full-time capacity. Over the years, we also established a multi-disciplinary team of researchers from the National Institutes of Health in the USA, Ghent University Hospital in Belgium, Imperial College London in the United Kingdom, and Institut National de la Santé et de la Recherche Médicale

(INSERM) in France. Our joint effort resulted in the discovery of a novel Rab27B-dependent molecular pathway that regulates invasive growth and metastasis in estrogen receptor-positive breast cancer.

Cancers achieve invasive growth by delivering pro-invasive molecules into the tumor micro-environment, but the molecular mechanisms for the secretion of these proinvasive growth regulators remain largely unknown. One likely process involves release of vesicle content (exocytosis). Key players in exocytosis include the secretory small Rab GTPases; they control the secretory process of vesicles. Our team demonstrated that stable over-expression of Rab27B in non-invasive breast cancer cell lines promoted cell cycle progression, proliferation and invasion of breast cancer cells *in vitro*. Mass spectrometry identified HSP90-alpha, a chaperon molecule, as a key pro-invasive growth regulator that was secreted in a Rab27B-dependent fashion into the micro-environment, which is required for the activation of matrix metallo proteinase-2, a key player in breakdown of the extracellular matrix. In an *in vivo* xenograft mouse model, we showed that invasive tumor growth and hemorrhagic ascites were induced by over-expression of Rab27B. To validate our findings, we studied the endogenous expression levels of Rab27B in clinical breast cancer samples. Statistical analysis revealed that up-regulation of Rab27B was associated with lymph node metastasis and tumor differentiation grade in estrogen receptor-positive human breast tumors. In conclusion, derailed Rab27B-mediated exocytosis regulates invasive growth and metastasis in ER-positive breast cancer cell lines, and increased expression is associated with poor prognosis in humans (Hendrix et al., 2010).

The manuscript describing our scientific findings was published in the June 16th issue of the *Journal of the National Cancer Institute* (Hendrix et al., 2010). Rab27B was patented as a novel biomarker and therapeutic target for diagnosis and treatment of ER-positive breast cancer.

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3. Hendrix A, Maynard D, Pauwels P, Braems G, Denys H, Van den Broecke R, Lambert J, Van Belle S, Cocquyt V, Gespach C, Bracke M, Seabra MC, Gahl WA, De Wever O, Westbroek W. Effect of the secretory small GTPase Rab27B on breast cancer growth, invasion, and metastasis. *J Natl Cancer Inst*, 102:866-880, 2010.

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INDUSTRY PERSPECTIVES

A Rewarding Applied Research in Industry

by Dr. Connie Lin

I felt honored and hesitant at the same time when I received the invitation to write this perspective for PASPCR Newsletters. I thought of many others who have made more significant contributions to pigment cell research. After a second thought, I felt it could be interesting to share with you the story of my scientific journey as an immigrant, and especially of my rewarding applied research experience at Johnson & Johnson.

My scientific journey started when I was at college in China. I received my BS in

Pharmacy from Shanghai Medical University, and my MS in Pharmaceutical Science from Shanghai Institute Pharmaceutical Industry, China. Upon my graduation, I was empowered by scientific knowledge and experience in pharmaceutical science, especially in the field of targeted drug delivery using liposomal technology.

I have always considered myself as a lucky person who has been fortunate to come across great supervisors and mentors in my three important career milestones. Shortly after I graduated, I received an invitation from Dr. Helmut Hauser, a professor from the Biochemistry Department at Swiss Federal Institute of Technology (also called ETH) in Zurich, Switzerland, to work as a research scientist in his lab. It took me a year to get an approval from my Chinese institute to go abroad and receive education and training in a Western country. I still remember the scene on the first day when I arrived in Zurich in 1990. I was picked up at the Zurich airport by a Chinese fellow who was a very kind and gifted student in the same lab. Carrying my two big suitcases, we took public transportations from the airport directly to the lab. After a brief greeting, Professor Hauser started to talk about his research projects and his expectations for me. I still don't remember what exact projects he was referring to, simply because I was so exhausted from the long flight and jetlag. Most importantly, my English was limited to reading and writing, and not to listening, comprehension and verbal communication. Fortunately, Professor Hauser was a real European gentleman who understood my language barrier and the typical Asian "quietness culture". He always took extra time to discuss my study design and results. He was the first and one of the most important mentors in my life, who also opened a door to the Western Society for me. His encouragement and mentorship played a critical role in my later career advancement. With his guidance, I was able to co-author two papers and one chapter book within the first 19 months of my departure from my country.

My passion for Biological sciences was growing during my stay in Switzerland. By then, I had limited knowledge in molecular biology. I was fascinated by watching someone in another lab running a DNA agarose gel, which inspired me to pursue a Ph.D. degree in molecular biology later in the United States.

In 1992, I left Prof. Hauser's lab to join my husband, a graduate student at North Dakota State University. I started my graduate study in 1993 at the Biochemistry Department of Boston University, where I had the good fortune to meet Dr. Paul Pilch. Dr. Pilch dedicated his career to studying the insulin signaling pathway and Glut-4 containing vesicles. I worked on projects related to insulin action and energy expenditure during my graduate study. With Dr. Pilch's guidance and support, I cloned a novel component of the Glut44 containing vesicle named sortilin. Sortilin is expressed mainly in the nervous system but it was later identified as a novel MITF target. Even today, I am still very proud of my productivities (4 papers, 2 boys, and the Russek Student Achievement Award) during my graduate study. At the same time, I can't imagine I could've achieved these (except the boys, of course) without Dr. Pilch's teaching, inspiration and encouragement.

The last significant milestone in my scientific life and career development was my postdoctoral training under the guidance of Dr. Miri Seiberg. I joined the Skin Research Center at J&J in 1998, when I gained interest and knowledge in melanocyte biology and pigment cell research. My postdoctoral project combined basic and applied research. In collaboration with Dr. David Fisher, we identified agents that modulate MITF, a transcription factor involved in melanocyte survival and development, and skin pigmentation. Using a luciferase reporter construct driven by the MITF promoter, we identified several agents that affect MITF promoter activity and confirmed their pigmentary modulating activities. Our findings suggest that modulation of MITF expression can alter skin pigmentation and further confirm the central role of MITF in melanogenesis (1).

During my one-year postdoctoral training at J&J, I was surprised to learn that the skin research center at J&J is a highly competitive, yet very rewarding research institute. Many high quality publications in peer-reviewed journals were produced by outstanding research scientists at this research center, including my supervisor, Dr. Seiberg. One of the significant achievements from Dr. Seiberg was her contribution to pigment research by discovering the important roles of keratinocytes and their interaction with melanocytes in the regulation of skin pigmentation. I also found that the applied research at J&J was very rewarding and stimulating by watching Dr. Seiberg's successful footsteps and roadmaps of "from basic research to products".

I became a permanent employee of the J&J Skin Research Center in 1999. Since then, I have been working together with Miri on several applied research projects, including the evaluation and development of agents for affecting skin pigmentation. Together, we published many papers and patent applications in different areas. We studied PAR-2, a keratinocyte receptor implicated in the regulation of skin color. We showed that unlike the known PAR-2 activating peptide, SLIGRL, the tetra peptide LIGR induces keratinocyte phagocytosis and increases skin pigmentation without inducing inflammatory processes. Our findings suggest that enhancing skin pigmentation by topical applications of LIGR may result in a desired tanned skin color, without enhancing inflammatory processes or the need of UV exposure (2). As the pattern of melanosome transfer is skin color-dependent and is regulated by the ethnic origin of the keratinocytes, we hypothesized that PAR-2 may play a role in the modulation of pigmentation in a skin type-dependent manner. Indeed, we demonstrated that PAR-2 expression and activity correlate with skin color, suggesting the involvement of PAR-2 in ethnic skin color phenotypes (3).

Following that study, we performed a gene chip analysis of keratinocytes derived from dark and light skins and identified many ethnic

differences within keratinocytes. Some of these differences are not directly related to pigmentation. However, they could be translated into improved skin care products for different ethnic skins. Among them, *Cathepsin L2* gene (*CTSL2*) expression was found to be significantly lower in darkly pigmented skins. *CTSL2* is a human stratum corneum desquamation processing-related enzyme. We hypothesize that reduced *CTSL2* proteolytic activity within the stratum corneum of darker skins might be associated with the "ashy skin phenotype". This work highlights the importance of understanding ethnic skin at a deeper level than skin color (4).

Human skin is endowed with the capacity to synthesize and metabolize steroid hormones. The role of hormone-regulatory enzymes in skin physiology is heavily studied but remains largely unknown. We have concluded that the aldo-keto reductase 1C subfamily (AKR1Cs), the hormone-regulatory enzymes, are expressed in keratinocytes and fibroblasts and are UVB and H₂O₂-inducible. Interestingly, we found that the induction of AKR1C1 expression by UVB was concomitant with the presence of an apoptotic marker. Furthermore, down-regulation of AKR1Cs by siRNA led to significantly reduced cell viability. Our data demonstrated that AKR1C subfamily genes are stress-inducible and might function as survival factors in keratinocytes (5).

Many of you may be aware of Dr. Seiberg's story on "from the keratinocyte PAR-2 to soybean extracts for skin lightening products". Non-denatured soybean extracts are patented proprietary technology broadly used in J&J skin care products for even skin tones and anti-aging benefits. You may not know about the benefits of soy in skin cancer prevention. We showed that pretreatment with non-denatured soybean extracts could reduce the risk of non-melanoma skin cancer development by reducing UVB-induced DNA and cellular damage and by inhibiting UVB-induced microenvironmental changes like inflammatory processes. Our studies suggest that topical application of non-denatured soy extracts could

potentially reduce the incidence of skin cancer (6, 7).

In 2008, we initiated a research program to better understand the molecular mechanisms involved in the induction and development of solar lentigines (SLs). Using various *in vitro* and *in vivo* tools, we elucidated the functional role of Keratinocyte Growth Factor (KGF) in skin pigmentation and in the induction of SLs. We showed for the first time the *in vivo* generation of hyperpigmentary lesions with histological resemblance to human SLs (8). In collaboration with Drs. Andrzej Slominski and David Cassarino, we further investigated the role of KGF/KGF receptor (KGFR) and other pigmentary genes during the progression of SLs development. We demonstrated the association of KGF with the pathology of SLs and suggested a possible inactive status (dormancy or quiescence) of the advanced lesions (9).

One of my newer assignments is to gain fundamental understanding of the molecular and cellular processes involved in skin aging. As we all know, skin aging is associated with wrinkles, sagging, and uneven pigmentation. In collaborating with many colleagues, we discovered a novel anti-aging mechanism for retinol and demonstrated that retinol exerts its anti-aging benefits not only via enhanced epidermal proliferation and increased collagen production, but also through an increase in elastin production and assembly (10). We are searching for botanical extracts that could enhance skin elasticity. One of our botanical extract candidates not only induces elastin fiber formation, but also exerts depigmenting effects. This extract might be able to erase both wrinkles and age spots.

Looking back at my scientific journey, I am immensely grateful to all my supervisors for their coaching, inspiration, and support. I am also grateful to J&J for offering and nourishing a rewarding scientifically excellent research environment. Of course, the aforementioned publications would not have been possible without Dr. Seiberg, my supervisor and mentor, and my many colleagues and collaborators within J&J and the academic community. I

have a very rewarding career and I am extremely lucky to be an employee of J&J, where we are encouraged to conduct research for product development and claim support and to publish our findings. The excitement of scientific-oriented applied research with focused problem solving within J&J is enormous and very gratifying to me.

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HOT OFF THE PRESSES

We have recently introduced this new column with the goal of giving our readers the opportunity to highlight their recent publications or comment on a just published article. PASPCR members are welcome to submit their accepted or recently published article/s to an expert in the field for comment. Alternatively, if you would like to comment on an article, please contact us via the newsletter email at paspcr.newsletters@gmail.com.

**Insights from Genomewide Studies of
Generalized Vitiligo: Autoimmune Etiology
and Inverse Relationship with Malignant
Melanoma**

by Dr. Richard Spritz

Generalized vitiligo (GV) is the most common pigmentation disorder, in which acquired patches of white skin and overlying hair result from loss of melanocytes from the involved areas [1,2]. GV occurs with a frequency ~0.5% in northern European-derived whites and ~0.1% in Chinese [3]. The average age of onset is ~24 years, and prevalence is approximately equal in males and females [4]. The concordance of generalized vitiligo in monozygotic twin-pairs is ~23% [4], and epidemiological evidence indicates that GV is a complex trait involving multiple genes and unknown environmental factors [3].

Many hypotheses have been proposed to account for melanocyte death in GV, most based on relatively little compelling underlying data [1,5]. Most current evidence supports an autoimmune basis of disease [6], though the triggers of the autoimmune response remain unknown. About 15-25% of GV patients have at least one additional concomitant autoimmune disease, particularly autoimmune thyroid disease, (Hashimoto's thyroiditis and Graves' disease), pernicious anemia, rheumatoid arthritis, psoriasis, type 1 diabetes, Addison's disease, and systemic lupus erythematosus, and these same autoimmune diseases occur with increased frequency in GV patients' first-degree relatives, whether or not those relatives have GV themselves [4]. Together, these findings indicate that GV patients and their close relatives have inherited susceptibility to this specific diathesis of autoimmune diseases, mediated by shared susceptibility genes.

Candidate gene association studies and gene expression analyses have produced a long list of GV candidate genes, of which only *HLA* and *PTPN22* have had consistent support from multiple studies. Most of rest were "identified" on the basis of smaller case-control genetic association studies, and almost certainly constitute false-positives due to inadequate sample size, insufficient power to minimize statistical fluctuation, and population stratification artifacts [3]. Two additional genes, *NALP1* (now *NLRP1*) and *XBPI*, were first mapped by unbiased genome-wide linkage analysis and subsequently were identified by positionally targeted genetic association studies [7,8]; both of these genes have been replicated by multiple studies [3,8]. These four confirmed GV susceptibility loci, *HLA*, *PTPN22*, *NLRP1*, and *XBPI*, all encode important immunoregulatory proteins, lending support to the autoimmune hypothesis of GV pathogenesis.

Recently, the findings of three different unbiased genomewide association studies (GWAS) of GV have been reported, two from European-derived white populations [9-11] and one from China [12]. Together, these studies

identified a total 15 confirmed GV susceptibility loci, resulting in major insights into pathways of disease pathogenesis and overall strongly supporting an autoimmune basis for typical GV. The first GWAS, of a founder population in an isolated Romanian village with a high prevalence of GV and other autoimmune diseases [9], detected association at chromosome 6qter near *IDDM8*, a type 1 diabetes-rheumatoid arthritis locus near *SMOC2*. The second GV GWAS [10,11], also carried out in European-derived whites, identified a total 13 susceptibility loci for GV, including *HLA* class I (specifically, *HLA-A*0201*), *HLA* class II, *PTPN22*, *RELER*, *FOXP1*, *LPP*, *CCR6*, *IL2RA*, *TYR*, *GZMB*, *NLRP1*, *UBASH3A*, and *CIQTNF6*. The third GV GWAS, carried out in Chinese [12], similarly identified GV association in the *HLA* class I and class III regions, and likewise detected association with *CCR6*. The GV-associated SNP in the *CCR6* region is the same in European-derived whites and Chinese, suggesting that these two populations may share a single causal allele, and is located only 1.44 Mb from the previous GV-associated SNP in the *SMOC2* region [9] suggesting the possibility that these two signals might be related. Virtually all of these confirmed GV susceptibility loci encode known immunoregulatory proteins, and many have been associated with genetic susceptibility to other autoimmune diseases that are epidemiologically associated with GV, apparently contributing to shared susceptibility to these diseases. The one exception, *TYR*, encodes tyrosinase, the key enzyme of melanin biosynthesis in the melanocyte. However, in GV even *TYR* appears to act primarily to mediate recognition of the melanocyte target cell by the immune system.

Beyond its role in pigmentation, in GV tyrosinase is the major autoantigen. In this regard GV is thus analogous to type 1 diabetes and autoimmune thyroid disease, in that genetic susceptibility to disease involves genes that encode key specialized intracellular components of the autoimmune target cell types

and that constitute major autoantigens for the corresponding disease (GV: *TYR*, tyrosinase; type 1 diabetes: *INS*, insulin; autoimmune thyroid disease: *TG*, thyroglobulin). For GV, the causal *TYR* susceptibility variant appears to be the major (Arg) allele of rs1126809, a common non-synonymous (Arg402Gln) polymorphism that has a minor allele frequency 0.22-0.40 in European-derived whites. This polymorphism is rare in other populations, which is why it was not detected in the Chinese GV GWAS, even though *TYR* may well play a role in GV pathogenesis in all populations (genetic studies can only detect *differences*). In contrast, the minor (Gln) allele is associated with susceptibility to malignant melanoma in European-derived whites [13,14]. Thus, from the standpoint of genetic susceptibility, the *TYR* Arg402Gln variant represents an inverse relationship between GV and malignant melanoma.

Much of the biology that likely underlies this inverse relationship is already known, largely from extensive studies on melanoma patients. Tyrosinase is a major antigen presented to the immune system on the surface of melanocytes by *HLA* class I molecules, principally *HLA-A*0201*. Indeed, as noted previously, *HLA-A*0201* itself is a major GV risk allele that exhibits significant genetic interaction with *TYR* in modulating GV susceptibility [10], reflecting the corresponding biological interaction. *HLA-A*0201* skin-homing melanocyte-specific cytotoxic T cells are enriched in the circulation of GV patients [15], and *HLA-A*0201* is protective against malignant melanoma [16], playing an important role in tumor cell recognition by cytotoxic T cells [17]. On the surface of melanocytes and melanomas, *HLA-A*0201* presents a specific tyrosinase nonapeptide, YMDGTMSQV (also known as Tyr₃₆₉(D)), corresponding to tyrosinase residues 369-377 derived from proteolytic cleavage of tyrosinase [18]. However, in the genome *TYR* codon 371 encodes asparagine, not aspartate; the aspartate is produced largely during enzymatic deglycosylation of the *N*-linked oligosaccharide

at residue 371Asn by cytosolic peptide *N*-glycanase [19]. *N*-glycosylation at tyrosinase 371Asn is required for post-translational deamidation to 371Asp, and this modification is required for presentation of the corresponding epitope by *HLA-A*0201* class I molecules [20]. However, tyrosinase-402Gln is thermosensitive [21], and is misfolded during synthesis, retained in the endoplasmic reticulum, incorrectly glycosylated, and largely degraded by the proteasome [22,23]. Accordingly, tyrosinase-402Arg is expressed at a higher level than tyrosinase-402Gln, is probably more completely *N*-glycosylated at residue 371Asn, is thus more efficiently deamidated to produce the 371Asp-containing *HLA-A*0201*-restricted epitope, and thus is more efficiently presented by *HLA-A*0201* to the immune system on the surface of melanocytes. Thus, tyrosinase-402Arg likely makes a greater contribution than does tyrosinase-402Gln to immune surveillance (and genetic protection) against malignant melanoma and susceptibility to GV. In contrast, in persons heterozygous or homozygous for the *TYR*-402Gln variant allele, presentation of tyrosinase is reduced, and immune surveillance may thus fail to detect neoplastic melanocytes, while the 402Gln allele is associated with relative protection from GV. It is perhaps noteworthy that two of the other GV susceptibility loci, *IL2RA* and *GZMB*, encode proteins involved in differentiation and effector functions of cytotoxic T cells that mediate melanocyte killing in GV and perhaps also melanoma cells by immune surveillance.

It is thus clear that recent large-scale GWAS have yielded considerable progress in identifying genes that are truly involved in risk of GV, with 15 total loci now confirmed: 13 in European-derived whites, 4 in Chinese, and in a few cases, in both (*HLA* class I, *HLA* class II, *HLA* class III, *PTPN22*, *RERE*, *FOXP1*, *LPP*, *CCR6*, *IL2RA*, *TYR*, *GZMB*, *NLRP1*, *UBASH3A*, *XBPI1*, and *CIQTNF6*). Most of the previously-reported GV candidate genes likely constitute false-positives. The 13 loci confirmed in European-derived whites account for approximately 9% of total genetic risk of

GV in that group, indicating that numerous additional loci probably remain to be discovered, with a few common and perhaps numerous rare variants accounting for disease risk at each locus. Essentially all of the confirmed GV susceptibility genes regulate function of the immune system, strongly supporting the autoimmune hypothesis of vitiligo pathogenesis. Many of these genes have also been associated with other autoimmune diseases, and thus are beginning to highlight shared pathways of autoimmune susceptibility among these diseases. Furthermore, findings both for *HLA-A* and *TYR* suggest an inverse relationship between susceptibility to GV and susceptibility to malignant melanoma, with genetic interaction that reflects underlying biochemical and functional interaction between the corresponding proteins. The overall picture indicates that genetic variation at *HLA-A* and *TYR* interacts to modulate immune surveillance against malignant melanoma, with heightened surveillance predisposing to GV and protecting against melanoma, and reduced surveillance protecting against GV but predisposing to melanoma. This biological relationship may also explain the frequent occurrence of GV in patients treated for melanoma, in whom development of this autoimmune phenotype constitutes a relatively favorable prognostic sign.

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MEMBERS IN THE NEWS

Dr. John Pawelek

Inaugural John M. Pawelek Lectureship presented at the 4th Meeting of the ASPCR, Guangzhou, China, June 12-14, 2010.

Dr. John Pawelek, a long-time member and past president of the PASPCR had the honor of attending the ASPCR inaugural “John M. Pawelek Lectureship” at the 4th Meeting of the ASPCR in Guangzhou, China, June 12-14. The lecture was presented by Prof. K. C. Park, Seoul, South Korea. John is a long-time member of the research faculty in the Department of Dermatology, Yale University School of Medicine. He has authored more than 200 peer-reviewed papers in the areas of skin pigmentation and melanoma for which he has received a number of awards and honors. The ASPCR is represented by physicians and scientists in Asia and throughout the world who

share interests in various aspects of skin pigmentation. It is a sister society to the European, Japanese, and Pan-American Societies and a member of the IFPCS. At the Guangzhou meeting, John also presented a lecture entitled “Pigmentation Research: Yesterday, Today, and Tomorrow”.

Dr. Gertrude-Emilia Costin

M.B.A. Degree Conferral

Dr. Gertrude-Emilia Costin has recently graduated from Aspen University (Denver, CO) with a Master of Business Administration (M.B.A.) degree. She has also been presented with the Florence Sabin Award during the graduation ceremony that took place in Denver, CO on June 26th, 2010.

More info:

http://info.aspen.edu/index.php?option=com_content&view=article&id=73

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POSITIONS WANTED/AVAILABLE

Postings for **Positions Wanted** will be open only to members of the PanAmerican Society for Pigment Cell Research 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 Bill 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.

Positions Available

**Senior Scientist, Skin Biology (4059100606)
at Johnson & Johnson Consumer Inc.**

Job Description

Johnson & Johnson Consumer & Personal Products Worldwide, a member of the Johnson & Johnson Family of Companies, is recruiting for a Senior Scientist, located in Skillman, NJ.

Johnson & Johnson Consumer Products Company Division of Johnson & Johnson Consumer Companies, Inc. develops and markets baby care, wound care and skin care products that address the needs of consumers and health care professionals and incorporate the latest innovations. The portfolio includes heritage brands JOHNSON'S® Baby and BAND-AID® Brand, as well as leading skin care brands such as AVEENO® and CLEAN & CLEAR®.

The Senior Scientist will be responsible for applied research studies and for supporting the Johnson & Johnson skin care business. The main job responsibility for this position is to

design and perform *in vitro* studies and to analyze results using cellular and molecular biology tools and computerized image analysis. Studies could be of enzymatic activity analysis, tissue culture, DNA/RNA/protein extraction and analysis, Immunohistochemistry staining and the like. Documenting studies in research notebooks and in monthly reports, presenting research data as needed, reading scientific literature and participating in research discussions and seminars are also required.

Qualifications

A minimum of a Bachelors degree with at least two years hands-on experience is required. A focused degree in biology or related sciences is required. An advanced degree is preferred. Hands on experience with *in vitro* work is required. Basic molecular biology and/or biochemistry knowledge and experience in various biological research techniques (Tissue culture, RT-PCR, QPCR, Western blot, IHC, enzymatic activity analysis, DNA/RNA/protein extraction) are required. Microscopy and computerized image analysis experience is a plus. Proficiency with Microsoft Office is required. The ability to engage in individual studies and in teamwork is a must. The ability to design studies, execute and analyze data, make conclusions and suggestions for next steps is required. This position requires that the candidate be based in Skillman, NJ

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