The CDR has now been in existence since March 2011. We have grown rapidly as a Center in these last two and a half years. We have established the CDR Seminar Series as well as the CDR Annual Skin Workshop. This year thanks to our Rutgers University/CDR donor, Dr. William “Bill” Ju (President, Advancing Innovation in Dermatology, Inc.), we held our “Innovations in Dermatological Sciences “ event at the East Brunswick Hilton hotel. This was the first in a series of annual meetings and we look forward to the next one on October 8th 2014 at the Heldrich Hotel - see website www.derm.rutgers.edu for registration and updates. As 2013 draws to a close and the new year approaches, it is good to look back at the past twelve months to see what we have accomplished at the CDR. During 2013, we have offered a total of 16 CDR seminars including three jointly presented with TRI Princeton (speakers for these events were: Drs. Karen Burke - held at TRI Princeton, Milind Rajadhaksha at Rutgers, and Richard Mendelsohn at Rutgers).

Throughout the year Dr. Nava Dayan presented a series of 12 webinars that covered such diverse subjects as “Testing for Cytotoxicity-Basics and Approaches for the Prediction of Acute Toxicity” and “Eye Irritation” to “Testing for Skin Adverse Side Effects through Biomarker Analysis”. October was a very busy month for the CDR. We held the one-day Educational Class Claims for Skin Care Products- From Biomarkers to Human Studie. Again in October, we offered the One Day Skin Course presented by Drs. Otto Mills, Joel Zatz and David Steinberg.

In addition, on October 24th the CDR offered members a CDR Training Day with speakers from Permegear Inc. www.permgear.com, Hellertown, PA. The training provided information on ways of measuring and quantifying permeation rates in skin membranes. Exhibitors included Permegear Inc. with sets of Franz diffusion cells and Pion Inc. (Billerica, MA) www.pion-inc.com who demonstrated the Skin PAMPA Test System that can be used as a complimentary screen prior to Franz Cell testing due to the lower cost, enhanced usability, higher throughput and reduced sample requirements. Pre-coated with a proprietary formulation, the 96 well plates are disposable, which completely eliminates cross contamination and the additional time and labor required for washing glass cells.

We are now looking at a very exciting program for 2014 with brand new speakers and event topics. I hope to see you at these CDR events!

This year we also expanded our CDR Advisory Council to include the following members:

- Angela Christiano - Dermatology, Columbia University
- Gary Cleary - Cyterion, Inc. CA
- Adam Friedman - Montefiore-Einstein College of Medicine
- Vince Gruber - Lonza
- Julie Hirsch - Johnson & Johnson
- William Ju- Advancing Innovation in Dermatology, Inc.
- John Lyga - Avon
- Gopi Menon - Ashland
- Amy Pappert - RWJ Medical School, Rutgers
- Miri Seiberg - Seiberg Consulting
The Center for Dermal Research offers pharmaceutical, personal care, cosmetic and other companies an opportunity to participate in its programs and meetings. Membership affords companies and their key employees opportunities to learn about the latest developments at the Center for Dermal Research at Rutgers and to meet scientists and researchers who are making progress in developing new concepts and products in the science. Through their participation members also have the opportunity to contribute to the research that is being conducted by the Center.

Sponsor a student or graduate student who will present a talk at the company once a semester (two presentations per membership year)

Opportunity for an employee to shadow a Lab Tech or Researcher for a week

Attendance for two new employees at a lab training session

Two seats on the CDR Advisory Board

Six attendees at CDR events held through the membership year

1/2 day per month face time with Dr. Bozena Michniak-Kohn and/or key lab members

Two seats on CDR Program Committees

Full access to Archived Lectures

Your firm will be able to present an exhibit at all events, your company representative will have the opportunity to present a 15-minute talk to the attendees, and your company logo will also be featured prominently in all meeting and event marketing materials.

Double-Diamond Level ($50,000). The membership affords companies with more say in how their membership funds are spend and grants them further access to resources at the CDR.

For a limited time we are offering members who wish to renew their membership at a higher level a 5% discount.

Special seating at the VIP table during the reception with CDR leadership and speakers of the evening.
CDR Membership Program

**Diamond Level ($20,000).** This new member level opens a whole new realm of opportunities and level of involvement for members of the CDR.

- One seat CDR Advisory Board
- Six attendees at CDR events held through the membership year
- 1/4 day per month face time with Dr. Bozena Michniak-Kohn and/or key lab members
- One seat on CDR Program Committees
- Full access to Archived Lectures
- Your firm will be able to present an exhibit at all events, your company representative will have the opportunity to present a 5-minute talk to the attendees, and your company logo will also be featured prominently in all meeting and event marketing materials. Attendance of up to four company representatives at no additional charge for all CDR events held through the membership year. *In addition, special seating at the VIP table during the reception with CDR leadership and speakers of the evening.

**Gold Level ($2500).** Your firm will be able to present a tabletop exhibit at all events and your company logo will also be featured in all meeting and event marketing materials. Attendance by up to two company representatives at no additional charge for any CDR event held through the membership year.

**Silver Level ($1000).** Your firm’s logo will be featured in all meeting and event marketing materials. Attendance by one company representatives at any CDR event held through the membership year at reduced or no cost.

**Individual Memberships ($250).** Attendance at any CDR event held through the membership year at reduced or no cost.

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Platinum Level ($5000). Your firm will be able to present an exhibit at all events, your company representative will have the opportunity to present a 5-minute talk to the attendees, and your company logo will also be featured prominently in all meeting and event marketing materials. Attendance of up to four company representatives at no additional charge for all CDR events held through the membership year. *In addition, special seating at the VIP table during the reception with CDR leadership and speakers of the evening.

Gold Level ($2500). Your firm will be able to present a tabletop exhibit at all events and your company logo will also be featured in all meeting and event marketing materials. Attendance by up to two company representatives at no additional charge for any CDR event held through the membership year.

Silver Level ($1000). Your firm’s logo will be featured in all meeting and event marketing materials. Attendance by one company representatives at any CDR event held through the membership year at reduced or no cost.

Individual Memberships ($250). Attendance at any CDR event held through the membership year at reduced or no cost.
2013 Research Highlights of the CDR

The work with the tyrosine-based self-assembling nanospheres continues with a novel focus on delivery of drugs such as adapalene (to hair follicles for the treatment of acne) and riluzole for the treatment of melanoma (Tannaz Ramezanli - Graduate Student)

Sergio Silva received his Ph.D. (with Honors and Distinction) at the University of Coimbra, Coimbra Portugal. The work was performed jointly at Rutgers University and University of Coimbra and the title of Sergio’s thesis was “Strategies to Improve Transdermal Drug Delivery: Hydrogel Vehicles, Permeation Enhancers and Iontophoresis”.

The CDR hosted a Visiting Scientist Francisco Javier Palma Gavalian, B.S. from Departamento de Ingeniería Química y Bioprocesos, Pontificia Universidad Catolica de Chile, Santiago, Chile, January - July 2013. Francisco worked on novel polymer films.

New work began this year in the area of siRNA delivery to human skin (Mania Dorrani - Graduate Student)

Work is continuing on human skin equivalents and in particular using decellularized tissues as skin models (Pei-Chin Tsai - Graduate Student)

Biorelevant dissolution studies continue as well as the design & characterization of novel edible oral polymer films (Krizia Karry & Golshid Keyvan - Graduate Students)
Two recent part-time Ph.D. students Sonali Bose from Novartis and Indrajit Ghosh from Celgene who graduated in 2012 had their last set of papers published this year. Dr. Bose’s work involved the “Development and Characterization of Lipid Based Nanosystems of Quercetin for Topical Delivery”. Dr. Ghosh’s work involved the “Design and Evaluation of Supersaturated and Submicron Topical Formulations of a Poorly Water Soluble Drug for Enhancing Skin Permeability-A Case Study with Ibuprofen”.

Dina Ameen, a new Ph.D. student joined the Michniak-Kohn group in Spring. She will be working on novel transdermal delivery approaches.

A new Master’s student Siddhartha Vattikuti (Masters in Pharmaceutical Engineering - Chem. Eng) joined the Michniak-Kohn group. He plans to work on the designing novel transdermal patches for omeprazole and other drugs.


Dr. Michniak-Kohn was a Plenary Speaker at the 21st COLAMIQC (Congreso Latinoamericano e Iberico de Quimicos Cosmeticos) Transamerica Expo Center, Sao Paolo, Brazil, May 14-16th 2013. The title of her talk was “Novel nanospheres that deliver actives to skin layers”. The co-authors on this paper were Zhang, Z., Kilfoyle, B., Sheihet, L., Kohn, J.

Dr. Michniak-Kohn was a Plenary Speaker at the opening of the Center for the Teaching and Research in Nanotechnology (Centrum Dydaktyczno-Badawcze Nanotechnologii), West Pomeranian University of Technology, Szczecin, Poland, June 15-23, 2013. The title of her talk was “Nanoparticles for Skin Delivery”.

Dr. Michniak-Kohn was a Plenary Speaker at
On November 19th, 2013 the CDR co-hosted the first “Innovations in Dermatological Sciences”. This event brought together over 100 attendees at the East Brunswick Hilton hotel. The day was replete with poster sessions and exhibitors. The event featured several notable speakers such as Dr. Rox Anderson (Harvard Medical School), who discussed use of laser treatment in skin and Dr. Nancy Montiero-Riviere (Kansas State University) who addressed the risks of skin exposure to nanoparticles. Dr. Miri Seiberg presented on the use of soy products, while Peter Nicholson of Galderma, Switzerland discussed how academia and industry can work together.

This was the first in a series of annual meetings and we look forward to the next one on October 8th, 2014 at the Heldrich Hotel see website www.derm.rutgers.edu for registration and updates.
5th Annual CDR Skin Workshop 
“Stem Cells and the Skin”

The 5th Annual Skin Workshop on “Stem Cells and the Skin” was held at the Life Sciences building at Rutgers University on November 6th. This event featured an outstanding set of speakers that represented the frontiers of research in this hot topic area. The plenary speaker at this event was Dr. Elaine Fuchs from Rockefeller University.

Dr. Fuchs is a cell biologist, famous for her work on the molecular mechanisms of skin and skin diseases, and has led the modernization of dermatology. Fuchs also pioneered reverse genetics approaches, which assess protein function first and then assesses its role in development and disease. In particular, Fuchs researches skin stem cells, and their production of hair and skin layers. As an HHMI investigator, she is currently the Rebecca C. Lancefield Professor of Mammalian Cell Biology and Development at Rockefeller University. The plenary session was followed by talks from Drs. Valerie Horsley (Yale University), Elena Ezhkova and Michael Rendl (Mount Sinai Hospital, NY), Angela Christiano (Columbia University Medical Center) and Sarah Millar (Pennsylvania).
Formulations-Critical Components of Skin Product Formulations. It was a brief overview of such critical areas of formulation science, which included preservatives, antioxidants, chelation, humectants and emollients. As well as how understanding these parts of the formulation can give the know-how to solve common marketing problems.

The Changing Regulatory Landscape, i.e. the regulations of drugs and cosmetics in the US. This included the recent laws passed by California, which affect the cosmetic and drug industries. He also discussed the latest regulations in Canada and Europe.

Conducting and Interpreting Human Testing and Acne to Xerosis-Changing Paradigms. The lecture provided insight into predictive testing by considering the phenomena and protocols for contact irritation, contact allergy, phototoxicity and photo allergy. In addition to clinical evaluations of toxicity and safety, roles for non-invasive sampling and instrumental evaluations were addressed.

Acne to Xerosis, common chronic disorders and diseases that impact large populations with numerous products available from personal care to OTC and prescription sector were discussed.

The Aspects of Product Quality and Horny Layer Basics. Dr. Zatz spoke on how the final skin product should satisfy four basic requirements: stability, efficacy, biocompatibility and patient/consumer acceptance.

Skin Delivery and Delivery Systems. This topic included optimization of skin delivery requirements and an understanding of the nature of the problem to be solved/benefited/achieved as well as what measurements should be focused on or at the least included.
NEW IN THIS YEAR

LOOKING AHEAD TO 2014

- The CDR evening seminar series continues with a slate of brand new speakers not featured in past CDR seminars
- One Spring and one Fall CDR/TRI Princeton Joint Seminar
- NEW!!! E-learning website - over 20 slide presentations with audio (free for CDR members) with new additions each month
- Sixth CDR Annual Workshop on “Natural Products and the Skin” being planned for late Spring 2014 at Rutgers
- Main CDR annual symposium October 8th, 2014 “Innovations in Dermatological Sciences 2014” at Heldrich Hotel, New Brunswick - derm.rutgers.edu
- New!!! CDR Blog
- Reduced rates for CDR members for CDR events and webinars
- Priority access to research laboratory facilities & instrumentation to CDR members
- Exceptional networking at CDR events with pharma, personal care & cosmetic companies

2014 CALENDAR OF EVENTS:

- February 10th / 5.30pm CDR Seminar - Grazia Stagni, Long Island University
- March 26th / 5.30pm CDR Seminar - Dr. Joachim Kohn, New Jersey Center for Biomaterials
- April 23rd / 9am-5pm 6th ANNUAL SKIN WORKSHOP on “NATURAL PRODUCTS AND SKIN”
- April 28th / 5.30pm CDR Seminar - Hilton Kaplan, Rutgers University “Platelet-mediated percutaneous collagen induction through microneedling the skin”
- May 15-16th / Human Hair/Cosmetic Interactions Course
- May 19th / 5.30pm CDR Seminar - Mark Chandler, ACT Solutions Corp.
- June 2nd / 5.30pm CDR Seminar - Sam Shefer, Salvona “Nanotechnology delivery system to treat Acne - Practical approach”
- Sept 15th / 9am-4pm ONE DAY EDUCATIONAL CLASS - Nava Dayan, Dr. Nava Dayan LLC “Claims Substantiation for Topical Products - Comprehensive & Updated”
- October 8th / 9am-5pm INNOVATION IN DERMATOLOGICAL SCIENCES 2014 at the Heldrich Hotel, New Brunswick
- October 21st / 9am-5pm United States Pharmacopeia (USP) Course - Topics TBD
- November 18th / 9am-4pm PROTEOMICS IN SKIN CARE: BEYOND GENE EXPRESSION-one day event with invited speakers

MORE TO COME

PLEASE CHECK OUR WEBSITE / WWW.NJBIOMATERIALS.ORG
2013 CDR EVENTS

January 31st - First in series of 12 Webinars presented by Dr. Nava Dayan, “Introduction to Skin Toxicology”

February 4th - CDR Seminar Series - Jeffrey Stock, “Novel Non-Steroidal Lipid Therapeutics for Chronic Skin Conditions Associated with Oxidative Stress and Inflammation”

February 14th - TRI/CDR Seminar, Princeton Dr. Karen Burke M.D.

February 18th - CDR Seminar Series - Robert Falcone, “Techniques/Technologies to address skin hyper-pigmentation.”

February 19th - Basic and Applied Dermatology Forum, Marc Chandler

February 26th - Second in series of 12 Webinars presented by Dr. Nava Dayan, “Currents in alternative methods for skin safety assessment”

March 6th - Third in series of 12 Webinars presented by Dr. Nava Dayan, “Cytotoxicity”

March 11th - CDR Seminar Series - Dr. Sonali Bose - Novartis, NJ

March 18th - CDR Seminar Series - Ilya Raskin, “Phytochemicals for human health & beauty”

April 1st - CDR Seminar Series - Diksha Kaushik, “Percutaneous Penetration Modifiers & Formulation Effects”

April 8th - CDR Seminar Series - Susie Chen

April 17th - A One Day Skin Permeability Training, CDR and PermeGear, Inc.

April 24th - Fourth in series of 12 Webinars presented by Dr. Nava Dayan, “Skin Irritation”

May 6th - CDR Seminar Series - Dr. Neelam Muizzuddin - Estee Lauder Companies, “Topical 5a reductase inhibitors effectively reduce skin surface sebum production”

May 21st - Fifth in series of 12 Webinars presented by Dr. Nava Dayan, “Basics of Skin Sensitization and Newest Testing Methods”

June 4th - Basic & Applied Dermatology Forum - Dr. Raj Mehta, “Addressing Microbial Resistance”

June 12th - CDR Seminar Series - Kemal Levi - Bio-X Consulting “UV Damage and Sun Care: Deciphering Mechanics of Skin to Develop Next Generation Therapies”

June 25th - Sixth in series of 12 Webinars presented by Nava Dayan, “Basics of Skin Sensitization and Newest Testing Methods”

July 22nd - CDR Seminar Series - Robert Falcone, Peter Thomas Roth, Clinical Sciences

July 30th - Seventh in series of 12 Webinars presented by Nava Dayan, “Genotoxicity”

August 6th - Eighth in series of 12 Webinars presented by Nava Dayan, “Skin Absorption”


September 9th - CDR Seminar Series - Frank Romanski, Ph.D. and Norman Richardson, Ph.D., BASF - The Chemical Company, “The delivery of drugs, skin sensory benefits and increased mildness through topical pharmaceutical excipient selection”

September 18th - Ninth in series of 12 Webinars presented by Nava Dayan, Ph.D., “Skin Toxicokinetics”

September 24th - TRI/CDR Fall Seminar - Milind Rajadhyaksha, Ph.D., “Confocal microscopy of skin cancers: current topics in technology and translational research”, Memorial Sloan Kettering Cancer Center

October 1st - One Day Educational Class - Nava Dayan Ph.D., NEW and EXPANDED - Claims for Skin Care Products - From Biomarkers to Human Studies

October 7th - CDR Seminar Series - Laurie Joseph Ph.D.


October 23rd - Tenth in series of 12 Webinars presented by Nava Dayan Ph.D., “Eye Irritation”

October 29th - One Day Educational Class - “Insights into Skin Product Development” - Otto Mills, Ph.D., Joel Zatz, Ph.D. and David Steinberg, FRAPS

November 5th - Eleventh in series of 12 Webinars presented by Nava Dayan Ph.D., “Endocrine Disruption”

November 6th - CDR Fifth Annual Skin Workshop, 9 a.m. - 5:00 p.m., “Stem Cells and Skin”

November 19th - One Day Fall Event, “Innovations in Dermatological Sciences”, hosted by Rutgers University and Center for Dermal Research CDR, East Brunswick Hilton, New Brunswick, NJ

November 25th - TRI/CDR Winter Seminar, 5:30 p.m. - Richard Mendelsohn, Ph.D.

December 9th - Twelfth in Series of Webinars presented by Nava Dayan Ph.D., “Chronic Cumulative Exposure Prediction through Gene Expression”

December 16th - CDR Seminar Series - Dr. Miri Seiberg, Seiberg Consulting - “Hair Graying”
2013 PUBLICATIONS:


2013 POSTER PRESENTATIONS AT CONFERENCES:

1) Michniak-Kohn, B., Zheng, Z., Kilfoyle, B., Sheihet, L., Kohn, J. Novel nanospheres that deliver actives to skin layers. Invited as International Keynote Speaker at 21st COLAMIQC (Congreso Latinoamericano e Iberico de Quimicos Cosmeticos) and FCE Cosmetic Exhibition, Transamerica Expo Center, Sao Paolo, Brazil, May 14-16, 2013. INVITED PLENARY SPEAKER.


6) Ghosh, I., Michniak-Kohn, B. Formulation design & stabilization of nanosuspension formulation for enhancing the permeability of poorly water soluble drug through the skin. AAPS Annual Meeting and Exposition, San Antonio, TX, Nov. 10-14, 2013.


8) Ramezanli, T., Zheng, Z., Michniak-Kohn, B. Tyrosine-derived nanospheres increase effectiveness of paclitaxel in melanoma cell lines. AAPS Annual Meeting and Exposition, San Antonio, TX, Nov. 10-14, 2013.


