



This activity is being provided in two learning formats. The first is a live activity offered in a virtual platform. These live sessions will be recorded and also made available as an enduring material, along with additional pre-recorded sessions. Both the recorded live sessions and the pre-recorded sessions are available for credit through May 31, 2020.

Release Date: May 14, 2020

Expiration Date: May 31, 2020

Society for Investigative Dermatology Meeting Virtual Conference Live Sessions

Live Session Thursday, May 14

CME CREDITS: 1.25

Plenary Session I: President: Richard Gallo, MD/PhD

3:30 PM-4:45 PM EDT

3:30 PM- 3:45 PM

506 Predicting the long-term outcomes of biologics in psoriasis patients using machine learning

S. Emam¹, A. Du², P. Surmanowicz², S. Thomsen¹, R. Griener¹, R. Gniadecki²

¹University of Alberta, Edmonton, Alberta, Canada, ²Medicine, University of Alberta, Edmonton, Alberta, Canada

3:45 PM -4:00 PM

476 Utilization and impact of immunotherapy in stage IV melanoma using the National Cancer Database

R. Conic^{1,2}, R. Knackstedt², G. Damiani², B. Gastman²

¹University of Maryland, Baltimore, Maryland, United States, ²Cleveland Clinic, Cleveland, Ohio, United States

4:00 PM -4:15 PM

130 Small non-coding RNAs interact with ERK2 and effect MAPK/ERK pathway

Z. Siproshvili¹, R. M. Shenoy¹, L. Elcavage¹, P. Khavari^{1,2}

¹Dermatology, Stanford University, Stanford, California, United States, ²VA Palo Alto Healthcare System, Palo Alto, California, United States

4:15 PM-4:30 PM

861 Intravenous gentamicin therapy for junctional epidermolysis bullosa patients harboring nonsense mutations

M. Hao¹, R. Antaya², J. Cogan¹, C. Hamilton², Y. Hou¹, A. Kwong¹, D. Woodley¹, M. Chen¹

¹University of Southern California, Los Angeles, California, United States, ²Yale School of Medicine, New Haven, Connecticut, United States

4:30 PM-4:45 PM

361 Skin-induced IL-36 triggers plasma cell IgE class switching and allergic disease

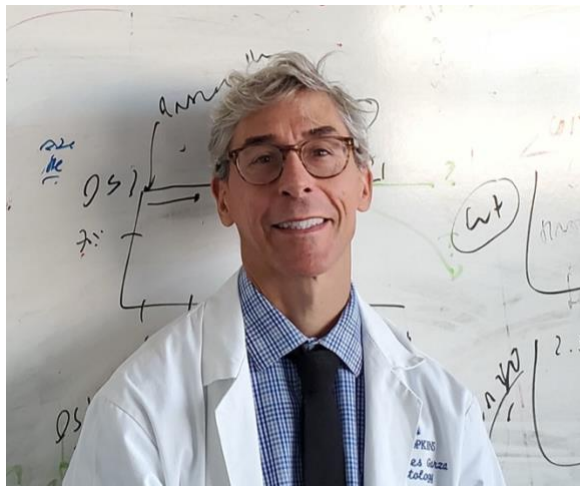
G. J. Patrick¹, H. Liu¹, M. Alphonse¹, D. Dikeman¹, C. Youn¹, J. Otterson¹, Y. Wang¹, A. Ravipati¹, Q. Liu¹, E. Raymond², M. Ramanujam², N. Archer¹, L. S. Miller¹

¹Dermatology, Johns Hopkins School of Medicine, Baltimore, Maryland, United States, ²Boehringer Ingelheim Pharmaceuticals Inc., Ridgefield, Connecticut, United States

Thursday May 14 Live Session

CME CREDITS: .5

4:45 – 5:15 pm, EDT SID State-of-the-Art Lecture II, 'Walking with Billingham's Ghost'



Luis Garza, MD, PhD. Dr. Garza is an Associate Professor of Dermatology with secondary appointments in Cell Biology and Oncology at the Johns Hopkins University School of Medicine. He did his undergraduate work at Cornell University, followed by an MD-PhD at the University of Pennsylvania. He completed his dermatology residency at the University of Michigan, followed by a postdoctoral fellowship in the lab of George Cotsarelis at the University of Pennsylvania. Dr. Garza's current research focuses on wound healing and regenerative medicine.

His lab is funded by the NIH/NIAMS, the DoD, and Maryland State Stem Cell Fund. Dr. Garza is a Board Member of the SID.

Live Session Friday, May 15

CME CREDITS: 1.25

Plenary Session II: Presider: Kurt Lu, MD and Peggy Myung, MD, PhD

3:30 PM-4:45 PM EDT

3:30 PM-3:45 PM

561 Development and first-in-human characterization of a potent oral CCR4 antagonist for the treatment of atopic dermatitis

L. E. Cheng, A. Jorapur, S. Jacobson, O. Talay, S. Miakicheva, D. Trujillo, N. Lee, J. Jankicevic, D. Wustrow, P. Kassner, W. Ho, D. Brockstedt

RAPT Therapeutics, Inc., South San Francisco, California, United States

3:45 PM -4:00 PM

327 *Staphylococcus epidermidis* protease EcpA is a deleterious component of the skin microbiome in atopic dermatitis

L. Cau^{1,2}, M. Williams¹, A. Butcher¹, T. Nakatsuji¹, J. Cheng¹, T. Hata¹, J. Kavanaugh³, C. Mainzer², B. Closs², A. Horswill³, R. L. Gallo¹

¹Dermatology Department, University of California, San Diego, California, United States, ²R&D Department, SILAB, Brive, France, ³Immunology and Microbiology Department, University of Colorado Anschutz Medical Campus, Aurora, Colorado, United States

4:00 PM-4:15 PM

717 Enhanced molecular signatures in cutaneous lupus erythematosus patients support distinct pathogenic pathways in African American patients

J. L. Zhu¹, L. Tran², F. Zheng², J. James², J. Guthridge², B. F. Chong¹

¹Dermatology, University of Texas Southwestern Medical Center, Dallas, Texas, United States, ²Arthritis & Clinical Immunology, Oklahoma Medical Research Foundation, Oklahoma City, Oklahoma, United States

4:15 PM-4:30 PM

775 Hyperactivation of sympathetic nerves drives melanocyte stem cell depletion

B. Zhang¹, S. Ma^{1,2,3}, I. Rachman⁴, M. He^{1,5}, P. Baral⁶, S. Choi¹, W. A. Gonçalves¹⁰, Y. Shwartz¹, E. M. Fast^{1,7}, Y. Su⁴, L. I. Zon^{1,7,8}, A. Regev^{2,8,3}, J. D. Buenrostro¹, T. M. Cunha^{6,9}, I. M. Chiu⁶, D. Fisher⁴, Y. Hsu¹

¹Stem Cell and Regenerative Biology, Harvard University, Cambridge, Massachusetts, United States, ²Klarman Cell Observatory, Broad Institute of MIT and Harvard, Cambridge, Massachusetts, United States, ³Department of Biology and Koch Institute, Massachusetts Institute of Technology, Cambridge, Massachusetts, United States, ⁴Cutaneous Biology Research Center, Department of Dermatology, Massachusetts General Hospital, Charlestown, Massachusetts, United States, ⁵Molecular and Cellular Biology, Harvard University, Cambridge, Massachusetts, United States, ⁶Department of Immunology, Harvard Medical School, Boston, Massachusetts, United States, ⁷Division of Hematology/Oncology, Boston Children's Hospital/Dana-Farber Cancer Institute, Boston, Massachusetts, United States, ⁸Howard Hughes Medical Institute, Chevy Chase, Maryland, United States, ⁹Department of Pharmacology, Ribeirão Preto Medical School, University of São Paulo, Ribeirão Preto, Brazil, ¹⁰Graduate Program in Cellular Biology, Institute of Biological Science, Federal University of Minas Gerais, Belo Horizonte, Brazil

4:30 PM-4:45 PM

030 VGLL3, an orchestrator of female-biased autoimmunity, interfaces with the Hippo pathway to modulate genes involved in immunity and fibrosis

A. C. Billi¹, C. Zeng¹, M. Gharaee-Kermani², S. W. Stoll¹, M. J. Wilson¹, O. Plazyo¹, X. Xing¹, J. M. McCarthy¹, L. C. Tsoi^{4,5}, J. Kahlenberg², A. A. Dlugosz^{1,3}, J. E. Gudjonsson¹

¹Dermatology, University of Michigan, Ann Arbor, Michigan, United States, ²Internal Medicine, Division of Rheumatology, University of Michigan, Ann Arbor, Michigan, United States, ³Cell and Developmental Biology, University of Michigan, Ann Arbor, Michigan, United States, ⁴Biostatistics, University of Michigan, Ann Arbor, Michigan, United States, ⁵Computational Medicine & Bioinformatics, University of Michigan, Ann Arbor, Michigan, United States

Friday May 15 Live Session

CME CREDITS: .5

4:45 – 5:15 pm, EDT SID State-of-the-Art Lecture III, *NIH's Scientific Approach to Inclusive Excellence*



Hannah Valantine, MD, MRCP, FACC. Dr. Valantine is the first NIH Chief Officer for Scientific Workforce Diversity, and a Senior Investigator in the Intramural Research Program at the National Heart, Lung, and Blood Institute. Prior to starting this position in April 2014, Dr. Valantine was Professor of Cardiovascular Medicine and the Senior Associate Dean for Diversity and Leadership at Stanford, a leadership position she held since November 2004. She is nationally recognized for her transformative approaches to diversity and is a recipient of the NIH Director's Pathfinder Award for Diversity in the Scientific Workforce. She is currently leading NIH efforts to promote diversity through innovation across the NIH-funded biomedical workforce through a range of evidence-based approaches. Dr. Valantine maintains an active clinical research program that continues to have high impact on patient care. Current research extends her previous finding that an organ transplant is essentially a genome transplant, and that monitoring the level of donor DNA in a recipient's blood as a marker of organ damage will detect early stages of rejection. She is currently overseeing a multi-site consortium of

mid-Atlantic transplant centers to validate these findings clinically toward the development of a non-invasive tool for detecting early signs of organ rejection.

CME CREDITS: .5

5:15 – 5:45 pm, EDT SID State-of-the-Art Lecture IV, *'Epigenetic Regulation of Skin Homeostasis and Skin Stem Cells'*



Elena Ezhkova, PhD. Dr. Ezhkova is a Professor of Cell, Developmental, and Regenerative Biology Department at the Icahn School of Medicine at Mount Sinai (NY). Her laboratory implements an array of powerful cellular and high-throughput molecular biology tools to dissect how epigenetic gene regulators play a role in cell fate determination, homeostasis, and regeneration of the skin. Identification of these molecular mechanisms aids in expanding our understanding of skin development, homeostasis, and the progression of various tissue disorders, including cancer.

Live Session Saturday, May 16

CME CREDITS: 1.25

Plenary Session III: Presiders: Vladimir Botchkarev, MD, PhD, Marjana Tomic-Canic, PhD

4:00 PM-5:15 PM EDT

4:00 PM-4:15 PM

225 Desmoglein 1 deficiency in knockout mice impairs epidermal barrier formation and results in a psoriasis-like gene signature in E18.5 embryos

Q. R. Roth-Carter¹, L. Godsel¹, J. L. Koetsier¹, J. A. Broussard^{1,6}, H. E. Burks¹, G. Fitz⁴, A. L. Huffine¹, S. Amagai¹, S. Lloyd³, J. Kweon³, L. C. Tsoi², W. R. Swindell², G. Urciuoli⁵, C. Missero⁵, X. Bao³, J. E. Gudjonsson², K. J. Green^{1,6}

¹Department of Pathology, Northwestern University, Chicago, Illinois, United States, ²Dermatology, University of Michigan, Ann Arbor, Michigan, United States, ³Molecular Biosciences, Northwestern University, Evanston, Illinois, United States, ⁴Vanderbilt, Nashville, Tennessee, United States, ⁵CEINGE, Naples, Italy, ⁶Dermatology, Northwestern, Chicago, Illinois, United States

4:15 PM-4:30 PM

169 MrgprD-expressing neurons maintain cutaneous mast cell homeostasis

S. Zhang¹, T. Edwards¹, J. Cohen¹, T. Hirai¹, N. Rittenhouse², E. Schmitz², B. McNeil³, Y. Yang¹, H. R. Koerber⁴, T. Sumpter¹, A. Poholek², K. Albers⁴, D. Kaplan¹

¹Dermatology and Immunology, University of Pittsburgh, Pittsburgh, Pennsylvania, United States, ²Pediatrics, University of Pittsburgh, Pittsburgh, Pennsylvania, United States, ³Allergy & Immunology, Northwestern University, Chicago, Illinois, United States, ⁴Neurobiology, University of Pittsburgh, Pittsburgh, Pennsylvania, United States

4:30 pm-4:45 PM

434 Association of skin response in erythema and sclerosis with survival in chronic graft-versus-host disease

L. X. Baker¹, M. Byrne², P. Martin³, S. Lee³, H. Chen², M. Jagasia², E. Tkaczyk¹

¹Department of Veterans Affairs and Vanderbilt Dermatology Translational Research Clinic, Nashville, Tennessee, United States, ²Vanderbilt-Ingram Cancer Center, Nashville, Tennessee, United States, ³Fred Hutchinson Cancer Research Center, Seattle, Washington, United States

4:45 PM-5:00 PM

829 Single-cell approaches to uncover adipocyte precursor heterogeneity and differentiation mechanisms in the skin

G. Rivera¹, K. Kamimoto¹, E. Butka^{1,2}, W. Kong^{2,1}, S. Morris^{1,2}

¹Developmental Biology, Washington University in St. Louis, St. Louis, Missouri, United States, ²Genetics, Washington University in St. Louis, St. Louis, Missouri, United States

5:00 PM-5:15 PM

659 Regulation of 3D genome organization by the STAG2 tumor suppressor in melanoma

Z. Chu, B. Zheng

Dermatology, MGH, Harvard Med School, Boston, Massachusetts, United States

Enduring Material

Concurrent Mini-symposium 1: Genetic Disease, Gene Regulation, and Gene Therapy

CME CREDIT: 1.5

276 Autocrine IFN- κ restricts CRISPR-Cas9 keratinocyte transfection through STING-APOBEC3G activation

M. Sarkar¹, R. Uppala¹, A. Tsoi¹, S. Shao¹, A. C. Billi¹, B. E. Perez White², A. Kidder¹, X. Xing¹, J. Kahlenberg³, J. E. Gudjonsson¹

¹Dermatology, University of Michigan, Ann Arbor, Michigan, United States, ²Dermatology, Northwestern University, Chicago, Illinois, United States, ³Rheumatology, Internal Medicine, University of Michigan, Ann Arbor, Michigan, United States

287 Secreted frizzled-related protein 5 (SFRP5) inhibits the melanin synthesis of melanocytes via Wnt/ β -catenin signaling pathway in vitiligo

D. Zou, Y. Chen, L. Zhang, Y. Zhang, J. Chen

The First Affiliated Hospital of Chongqing Medical University, Chongqing, China

288 ATAC-Seq analysis reveals a widespread increase of chromatin accessibility in psoriasis

F. Zhou, L. Tang

Institution of Dermatology, Anhui Medical University, Hefei, Anhui, China

272 Targeted reactivation of a dormant tumor suppressor gene CDKN2A inhibits proliferation of skin cancer cells

J. W. Lee¹, D. Rokunohe¹, D. D. Walker¹, K. Tuttle¹, K. Bradwisch¹, O. Denisenko², K. Bomsztyk², M. Kawasumi¹

¹Dermatology, University of Washington, Seattle, Washington, United States, ²Allergy and Infectious Diseases, University of Washington, Seattle, Washington, United States

263 First in human use of a novel in vivo gene therapy for the treatment of autosomal recessive congenital ichthyosis: Results of a phase I/II placebo controlled trial

P. Agarwal¹, B. Agostini¹, A. Collin L'Hortet¹, P. Zhang¹, S. Krishnan¹, A. Paller²

¹Krystal Biotech Inc, Pittsburgh, Pennsylvania, United States, ²Northwestern University, Chicago, Illinois, United States

305 In vivo correction of recessive dystrophic epidermolysis bullosa (RDEB) by direct cutaneous COL7A1 gene replacement: Results of a phase 1-2 trial

M. P. Marinkovich¹, S. Vinzant², V. Karkala¹, K. Sridhar¹, I. Gurevitch¹, J. Dolorito¹, P. Agarwal², S. Krishnan²

¹Dermatology, Stanford University, Redwood City, California, United States, ²Krystal Biotech Inc, Pittsburgh, Pennsylvania, United States

Concurrent Mini-symposium 2: Innate Immunity, Microbiology, and Microbiome

CME CREDIT: 1.5

351 Innate lymphoid cells in the blood of untreated and dupilumab-treated patients with atopic dermatitis

W. Bauer, N. Alkon, C. Bangert, P. M. Brunner, G. Stingl

Department of Dermatology, Medical University of Vienna, Vienna, Austria

336 Diet-induced obesity impairs the antimicrobial defense function of dermal adipocyte progenitors

L. Zhang^{1,2}, C. Guerrero-Juarez³, S. Chen², X. Zhang¹, M. Yin¹, F. Li², S. Wu¹, J. Cheng², Y. Liu³, T. Hata², M. V. Plikus³, R. L. Gallo²

¹School of Pharmaceutical Sciences, Xiamen University, Xiamen, Fujian, China, ²Department of Dermatology, University of California, San Diego, San Diego, California, United States, ³NSF-Simons Center for Multiscale Cell Fate Research, University of California, Irvine, Irvine, California, United States

318 Short-term exposure to Western diet (WD) predisposes mice to psoriasis-like skin and joint inflammation
Z. Shi¹, Y. Wan², S. Hwang¹

¹Dermatology, UC Davis, Sacramento, California, United States, ²Medical Pathology and Laboratory Medicine, UC Davis, Sacramento, California, United States

339 Dynamic neutrophil and T cell TNF production protects against *S. aureus* skin infections

C. Youn, M. Alphonse, J. H. Rubens, D. Joyce, D. Dikeman, Y. Wang, R. Ortines, Q. Liu, M. Mazhar, N. Archer, L. S. Miller

Dermatology, Johns Hopkins University School of Medicine, Baltimore, Maryland, United States

309 Dissemination of cutaneous staphylococcus aureus infection is limited by early neutrophil recruitment regulated by ECRG4

R. A. Dorschner¹, A. Baird², B. Eliceiri²

¹Dermatology, University of California, San Diego, San Diego, California, United States, ²Surgery, University of California, San Diego, La Jolla, California, United States

337 Innate immune tolerance of the epidermis is mediated by epigenetic regulation of MAP2K3

Y. Sawada, T. Nakatsuji, T. Dokoshi, N. Kulkarni, J. Jones, G. Sen, M. Liggins, R. L. Gallo

Department of Dermatology, University of California, San Diego, La Jolla, California, United States

Concurrent Mini-symposium 3: Pharmacology and Drug Development

CME CREDIT: 1.5

569 Rilzabrutinib (PRN1008) shows BTK-mediated mechanisms of action supporting clinical development for immune-mediated diseases

C. Langrish, M. Francesco, Y. Xing, J. Bradshaw, T. Owens, P. Nunn

Principia Biopharma, South San Francisco, California, United States

608 Targeting CtBP-mediated proinflammatory gene transcription to treat skin inflammation

H. Li¹, C. Zhang¹, B. Li², M. Fujita¹, D. Norris¹, X. Wang², M. Huang¹

¹Dermatology, University of Colorado Anschutz Medical Campus, Aurora, Colorado, United States, ²Pathology, University of Colorado Anschutz Medical Campus, Aurora, Colorado, United States

578 Improved local drug delivery with bioadhesive nanoparticles in the treatment of skin cancer

J. K. Hu¹, H. Suh², M. Qureshi¹, J. M. Lewis¹, W. M. Saltzman², M. Girardi¹

¹Dermatology, Yale School of Medicine, New Haven, Connecticut, United States, ²Department of Biomedical Engineering, Yale School of Engineering and Applied Science, New Haven, Connecticut, United States

577 Plasma exosomal miR-375-3p regulates ferroptosis in keratinocytes by targeting lipid transporter GPX4 in SJS/TEN

C. Zhang, G. Wang, M. Fu

Xijing Hospital, Fourth Military Medical University, Xi'an, China

591 Pan-caspase inhibition is a novel immunotherapeutic against MRSA skin infections in mice

M. Alphonse, J. H. Rubens, R. Ortines, N. Orlando, A. Patel, D. Dikeman, Y. Wang, I. Vuong, D. Joyce, J. Zhang, M. M. Mumtaz, Q. Liu, C. Youn, G. J. Patrick, A. Ravipati, R. J. Miller, N. Archer, L. S. Miller
Dermatology, Johns Hopkins University School of Medicine, Baltimore, Maryland, United States

588 Identification of highly potent and selective Interleukin-1 receptor associated kinase 4 (IRAK4) degraders for the treatment of hidradenitis suppurativa

A. Slavin, V. Campbell, M. Mayo, H. Rong, X. Zheng, N. Ji, M. Weiss, S. Rusin, K. Sharma, J. Gollob, N. Mainolfi
Immunology, Kymera Therapeutics, Cambridge, Massachusetts, United States

Concurrent Mini-symposium 4: Skin, Appendages, and Stem Cell Biology

CME CREDIT: 1.5

778 Identification and analysis of G-protein-coupled receptors (GPCRs) involved in the regulation of keratinocyte proliferation

P. Pedro¹, N. Salinas Parra¹, R. Iglesias-Bartolome²

¹NIH, Bethesda, Maryland, United States, ²National Cancer Institute, Bethesda, Maryland, United States

767 Discovering the signaling pathways underlying mouse Merkel cell development using FACS-based single cell RNA-seq

L. Miao¹, M. Kelly², S. Barkdull¹, L. Collado¹, M. Kelley², I. Brownell¹

¹Dermatology Branch, NIAMS, NIH, Bethesda, Maryland, United States, ²Laboratory of Cochlear Development, NIDCD, NIH, Bethesda, Maryland, United States

769 Single cell transcriptomics reveals dermal fibroblast heterogeneity and a progenitor population that shapes fibroblast heterogeneity

X. Zhang¹, W. Liu¹, L. Sun¹, M. Yin¹, S. Wu¹, L. Zhang^{1,2}

¹School of Pharmaceutical Sciences, Xiamen University, Xiamen, Fujian, China, ²Department of Dermatology, University of California, San Diego, La Jolla, California, United States

766 Keratinocyte differentiation is coupled to mechanical cues through the LINC complex

A. G. Ziemann¹, R. Stewart³, A. E. Zubek^{1,2}, E. Carley³, I. Jalilian³, M. King³, V. Horsley^{1,2}

¹Molecular, Cellular and Developmental Biology, Yale University, New Haven, Connecticut, United States, ²Dermatology, Yale University, New Haven, Connecticut, United States, ³Cell Biology, Yale University, New Haven, Connecticut, United States

789 Evolution of an Engrailed 1 enhancer underlies expanded sweat gland density of humans

D. Aldea¹, Y. Atsuta², B. Kokalari¹, S. Schaffner³, Y. Kamberov¹

¹Genetics, Perelman School of Medicine/University of Pennsylvania, Philadelphia, Pennsylvania, United States, ²Harvard Medical School, Boston, Massachusetts, United States, ³Broad Institute of MIT and Harvard, Cambridge, Massachusetts, United States

774 Extreme organization of supra-basal cells allows the building of modular feather architectures for adaptable flight

C. Chuong¹, W. Chang², H. Wu², M. Lei², W. Juan²

¹Pathology, University of Southern California, Los Angeles, California, United States, ²Integrative Stem Cell Center, China Medical University, Taichung, Taiwan

Concurrent Mini-symposium 5: Translational Studies

CME CREDIT: 1.0

889 Interleukin-9 promotes malignant T cell survival by inhibiting oxidative stress and lactic acidosis in cutaneous T cell lymphoma

S. Kumar¹, B. Dhamija¹, S. Marathe¹, A. Karulkar¹, N. Sharma², H. Jain², R. Purwar¹

¹Biosciences and Bioengineering, Indian Institute of Technology Bombay, Mumbai, India, ²Tata Memorial Hospital, Mumbai, India

892 Differentially expressed plasma proteins in pityriasis rubra pilaris patients treated with ixekizumab

J. L. Strunck^{1, 2}, D. Haynes¹, C. Topham², A. Ortega-Loayza¹, T. M. Greiling¹

¹Oregon Health and Science University, Portland, Oregon, United States, ²University of Utah School of Medicine, Salt Lake City, Utah, United States

868 Pathogenesis based therapy improves cutaneous abnormalities in porokeratosis- A pilot study

L. Azmony^{1, 2}, Q. Sun³, C. Hamilton³, Y. H. Lim³, J. S. Leventhal³, A. S. Paller⁴, K. Choate³

¹Dermatology, Rabin Medical Center, Petach Tikva, Israel, ²Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel, ³Dermatology, Yale School of Medicine, New Haven, Connecticut, United States, ⁴Dermatology and Pediatrics, Northwestern Univ. Med School, Chicago, Illinois, United States

855 Dietary grape intake protects against UV damage in humans by augmenting DNA repair

A. S. Oak, R. Shafi, M. Elsayed, B. Mishra, L. Saag, A. T. Slominski, S. Bae, M. Athar, C. Elmets

Dermatology, University of Alabama at Birmingham, Birmingham, Alabama, United States

Concurrent Mini-symposium 6: Carcinogenesis and Cancer Genetics

CME CREDIT: .75

115 Dysregulated estrogen signaling through CYP1B1 contributes to Notch deficiency in squamous cell carcinoma

L. Yang^{1, 2}, X. Li^{5, 3}, Y. S. Brooks^{3, 4}

¹Division of Nephrology and Hypertension, Vanderbilt University Medical Center, Nashville, Tennessee, United States, ²Radiation and Medical Oncology, Zhongnan Hospital of Wuhan University, Wuhan, China, ³Cutaneous Biology Research Center, Massachusetts General Hospital, Boston, Massachusetts, United States, ⁴Department of Dermatology, Harvard Medical School, Boston, Massachusetts, United States, ⁵King's Lab, School of Pharmacy, Shanghai Jiaotong University, Shanghai, China

138 Copy number gain at chromosome 7q21 potentiates the large cell transformation in cutaneous T cell lymphoma

F. Liu¹, X. Ren², Y. Wang¹

¹Department of Dermatology and Venereology, Peking University First Hospital, Beijing, China, ²Biomedical Pioneering Innovation Center (BIOPIC), Peking University, Beijing, China

142 Epidermal integrin $\alpha 3\beta 1$ is essential to maintain tumor growth and promotes a tumor-supportive keratinocyte secretome

W. M. Longmate¹, S. Varney¹, D. Power¹, R. Pandulal Miskin², K. E. Anderson¹, L. DeFreest¹, L. Van De Water^{1,2}, C. DiPersio^{1,2}

¹Surgery, Albany Medical College, Albany, New York, United States, ²Regenerative & Cancer Cell Biology, Albany Medical College, Albany, New York, United States

135 Clonal dynamics and the earliest steps of carcinogenesis in chronically UV-exposed skin

L. Tordesillas, S. Avdieiev, M. Abdalah, O. Chavez Chiang, Z. Chen, L. S. Simoes, Y. A. Chen, R. A. Gatenby, E. R. Flores, J. S. Brown, K. Y. Tsai

H. Lee Moffitt Cancer Center, Tampa, Florida, United States

Concurrent Mini-symposium 7: Interdisciplinary Spotlight (on the Microbiome)

CME CREDIT: 1.5

860 Microbiome therapy of atopic dermatitis by application of rationally selected human commensal skin bacteria

T. Nakatsuji¹, T. Hata¹, L. Tong¹, J. Cheng¹, F. Shafiq¹, A. Butcher¹, A. Spergel⁴, K. Johnson³, B. Jepson³, A. Calatroni³, P. Taylor², D. Leung², R. L. Gallo¹

¹Dermatology, UCSD, La Jolla, California, United States, ²National Jewish Health, Denver, Colorado, United States, ³RhoFed Inc, Chapel Hill, North Carolina, United States, ⁴NIAID, NIH, Bethesda, Maryland, United States

598 Identification of a human skin commensal bacterium that selectively kills cutibacterium acnes

A. O'Neill¹, T. Nakatsuji¹, M. Williams¹, R. Mills², A. Hayashi³, D. Gonzalez², R. L. Gallo¹

¹Dermatology, University of California San Diego, San Diego, California, United States, ²Pharmacology, University of California San Diego, San Diego, California, United States, ³Medicine, Tohoku University, Sendai, Japan

362 Psoriatic fungal and bacterial microbiomes identify patient endotypes

I. Salem², K. P. Schrom¹, S. Chu², M. Retuerto², B. Richardson², S. Margvicius², M. Cameron², M. Ghannoum², T. McCormick², K. Cooper^{2,1}

¹University Hospitals Cleveland Medical Center, Cleveland, Ohio, United States, ²Case Western Reserve University, Cleveland, Ohio, United States

241 C. Acnes IA1 Phylotype induces features of acneic skin when applied on 3D in vitro model

C. Mainzer, S. Bordes, M. Laclaverie, R. Jugé, C. Grimaldi, E. Aymard, B. Closs
R&D Department, SILAB, Brive la Gaillarde, France

343 Quorum Quenching: A promising and physiological microbial control strategy

M. Gault¹, L. Danoux¹, S. Leoty-okombi¹, V. Andre-frei¹, P. Ludwig²

¹BASF BCS, Lyon, France, ²BASF Corp, Tarrytown, New York, United States

322 The association of Malassezia, barrier disruption, immune dysregulation, and change of lipid metabolism with the pathogenesis of red face syndrome of atopic dermatitis

S. Kim, H. Chu, S. Choi, J. Kim, S. Kim, K. Lee, C. Park

Department of Dermatology, Severance Hospital, Cutaneous Biology Research Institute, Yonsei University College of Medicine, Seoul, Korea (the Republic of)

Concurrent Mini-symposium 8: Patient Population Research

CME CREDIT: 2.25

427 Leukocytoclastic vasculitis with and without IgA deposition is associated with renal damage: A case-control study

E. M. Leland¹, Y. Semenov², B. Kaffenberger³, K. Williams¹, J. Alhariri¹, S. Kwatra¹

¹Dermatology, Johns Hopkins University School of Medicine, Baltimore, Maryland, United States, ²Dermatology, Washington University School of Medicine, St. Louis, Missouri, United States, ³Dermatology, Ohio State University Wexner Medical Center, Columbus, Ohio, United States

413 Wildfire-associated air pollution impacts clinic visits for itch and atopic dermatitis

R. Fadau^{1, 2, 3}, B. Grimes¹, J. Balmes^{1, 2}, M. Wei^{1, 3}

¹University of California, San Francisco, San Francisco, California, United States, ²University of California, Berkeley, Berkeley, California, United States, ³Veterans Affairs Medical Center, San Francisco, California, United States

390 Atopic dermatitis and risk of major neuropsychiatric disorders: A population-based cohort study

J. Wan¹, D. Shin¹, M. Syed¹, K. Abuabara², J. Gelfand¹

¹University of Pennsylvania, Philadelphia, Pennsylvania, United States, ²UCSF, San Francisco, California, United States

466 The relationship between atopic dermatitis and childhood symptoms of attention deficit/hyperactivity disorder: A longitudinal cohort study

Y. Lee³, N. Tomaszewski¹, S. Langan², K. Abuabara¹

¹Department of Dermatology, UCSF, San Francisco, California, United States, ²Faculty of Epidemiology and Population Health, LSHTM, London, United Kingdom, ³Tulane University School of Medicine, New Orleans, Louisiana, United States

430 Crohn's disease prevalence prior to and following hidradenitis suppurativa diagnosis

M. Rosales Santillan¹, K. Savage², M. Porter¹, R. Parker³, M. Simon³, A. B. Kimball¹

¹Beth Israel Deaconess Medical Center, Boston, Massachusetts, United States, ²Drexel University College of Medicine, Philadelphia, Pennsylvania, United States, ³Arcadia.io, Burlington, Massachusetts, United States

429 Risk of keratinocyte carcinoma among patients with hidradenitis suppurativa

S. Ashrafzadeh¹, Y. Kim¹, G. Peters¹, H. Lee², M. Asgari¹

¹Department of Dermatology, Massachusetts General Hospital, Boston, Massachusetts, United States, ²Department of Statistics, Massachusetts General Hospital, Boston, Massachusetts, United States

423 Sebaceous carcinoma incidence among solid organ transplant recipients in the United States, 1987-2017

M. R. Sargen, M. Tucker, A. M. Goldstein, E. K. Cahoon, E. A. Engels

Division of Cancer Epidemiology and Genetics, National Cancer Institute, Rockville, Maryland, United States

437 Risk of second primary malignancies in Kaposi Sarcoma: A U.S. population-based study

B. Nardone¹, M. Nasca², W. Liszewski¹, D. P. West¹, G. Micali²

¹Dermatology, Northwestern University, Chicago, Illinois, United States, ²Dermatology, University of Catania, Catania, Italy

424 Quality of life in patients with facial cutaneous lupus erythematosus

J. S. Concha^{1,2}, D. Yan^{1,2}, A. Ravishankar^{1,2}, C. Bax^{1,2}, R. Borucki^{1,2}, V. Werth^{1,2}

¹Dermatology, University of Pennsylvania, Philadelphia, Pennsylvania, United States, ²CMCVAMC, Philadelphia, Pennsylvania, United States

450 Risk of inflammatory bowel disease in patients with atopic dermatitis- A population based cohort study

M. Syed, D. Shin, J. Wan, J. Gelfand

Dermatology, University of Pennsylvania, Philadelphia, Pennsylvania, United States

Concurrent Mini-symposium 9: Single-Cell Transcriptomics and Cell-Cell Interactions in the Skin

CME CREDIT: 1.5

163 Single cell analysis of human vitiligo lesions reveals a role for CCR5 in T regulatory cell function

K. Gellatly¹, J. Strassner², K. Essien², M. Ahmed², R. Murphy¹, A. Coffin-Schmitt¹, X. Fan², X. Ding², M. Frisoli², E. Kim², Z. Abbas², A. Derr¹, P. McDonel¹, M. Garber¹, J. Harris²

¹Bioinformatics and Integrative Biology, UMASS Medical School, Worcester, Massachusetts, United States, ²Dermatology, UMASS Medical School, Worcester, Massachusetts, United States

186 Immune cell-derived growth factors drive fibrosis in scleroderma and graft-vs-host disease

I. Odell¹, R. Flavell^{2,3}

¹Dermatology, Yale University, New Haven, Connecticut, United States, ²Immunobiology, Yale University, New Haven, Connecticut, United States, ³Howard Hughes Medical Institute, Chevy Chase, Maryland, United States

183 Inference and analysis of cell-to-cell communication from single-cell transcriptomics data on skin

S. Jin¹, C. Guerrero-Juarez², L. Zhang¹, M. V. Plikus², Q. Nie^{2,1}

¹Mathematics, University of California, Irvine, Irvine, California, United States, ²Developmental and Cell Biology, University of California, Irvine, Irvine, California, United States

171 Single cell RNA sequencing to improve synthetic skin equivalents

S. Atwood¹, A. Stabell¹, S. Wang¹, N. Ling², B. Sun², G. Sen²

¹UC Irvine, Irvine, California, United States, ²UC San Diego, La Jolla, California, United States

161 Single-cell RNA sequencing combined with interstitial fluid proteomics defines cell-type-specific immune gene regulation in atopic dermatitis

T. B. Rojahn¹, V. Vorstandlechner¹, T. Krausgruber², W. Bauer¹, N. Alkon¹, C. Bangert¹, N. Fortelny², K. Rindler¹, A. Elbe-Burger¹, C. Bock², M. Mildner¹, P. M. Brunner¹

¹Medical University of Vienna, Vienna, Austria, ²CeMM Research Center for Molecular Medicine, Vienna, Austria

188 scRNA-seq and RNA-seq for Stiff Skin Syndrome identify pericytes as a key pathogenic cell population and avenue for therapeutic targeting

J. E. Gudjonsson¹, L. C. Tsoi², A. C. Billi², O. Plazyo¹, R. Wasikowski², Y. Jiang¹, C. Zeng², J. Kirma², M. J. Wilson¹, M. Patrick¹, K. Raja², R. Lafyatis³, J. Kahlenberg¹, D. Khanna¹

¹University of Michigan, Ann Arbor, Michigan, United States, ²Dermatology, University of Michigan, Ann Arbor, Michigan, United States, ³University of Pittsburgh, Pittsburgh, Pennsylvania, United States

Concurrent Mini-symposium 10: Skin of Color

CME CREDIT: .75

713 Do race and ethnicity impact healthcare utilization and costs? A population study among U.S. non-melanoma skin cancer patients

T. Sierra¹, L. Blumenthal¹, J. Hekmatjah³, V. S. Chat², C. Read¹, A. Kassardjian¹, A. W. Armstrong¹

¹USC Keck School of Medicine, Los Angeles, California, United States, ²Medical College of Georgia at Augusta University, Los Angeles, California, United States, ³Western Michigan University, Homer Stryker M.D. School of Medicine, Sherman Oaks, California, United States

733 SFRP2-expressing, COL11A1-expressing fibroblasts are the major fibroblast population within keloids

I. Dougherty, V. Cantu, D. Glass

UT Southwestern Medical Center, Dallas, Texas, United States

736 Racial disparities in biologics utilization for psoriasis

W. Hodges¹, T. Bhat¹, C. Herbosa¹, S. Kwatra², A. Musiek¹, C. M. Mann¹, Y. Semenov³

¹Division of Dermatology, Washington University, St. Louis, Missouri, United States, ²Department of Dermatology, Johns Hopkins University, Baltimore, Maryland, United States, ³Department of Dermatology, Massachusetts General Hospital, Boston, Massachusetts, United States

Concurrent Mini-symposium 11: Tissue Regeneration and Wound Healing

CME CREDIT: 1.25

806 Bioprinted skin integrates and forms epidermal rete ridges in full-thickness wounds

A. M. Jorgensen, A. Gorkun, M. Varkey, C. Clouse, S. Lee, J. J. Yoo, S. Soker, A. Atala

Wake Forest Institute for Regenerative Medicine, Wake Forest School of Medicine, Winston-Salem, North Carolina, United States

817 Proliferative transit amplifying cells phagocytose dead neighbors to promote regeneration after chemo- and radio-therapeutic injury

J. Hong¹, Y. Hsu², W. Wee¹, Y. Wu², S. Lin^{1,2}

¹Department of Dermatology, National Taiwan University and National Taiwan University Hospital, Taipei, Taiwan, ²Department of Biomedical Engineering, National Taiwan University, Taipei, Taiwan

816 Dual LSD1/HDAC inhibition accelerates skin wound healing

M. Kida¹, M. Wu¹, P. Cole², V. Falanga¹, A. Sharov¹, R. Alani¹

¹Dermatology, Boston University School of Medicine, Boston, Massachusetts, United States, ²Division of Genetics, Departments of Medicine and Biological Chemistry and Molecular Pharmacology, Harvard Medical School, Brigham and Women's Hospital, Boston, Massachusetts, United States

815 Targeting GM3 synthesis improves wound healing in human diabetic skin equivalents

T. R. Holmes, K. Lewandowski, K. R. Kwan, M. S. Bonkowski, A. S. Paller

Dermatology, Northwestern University Feinberg School of Medicine, Chicago, Illinois, United States

814 Circadian factors BMAL1 and CLOCK control transcriptional innate antiviral immunity programs in response to skin wounding

S. Kirchner^{1,4}, V. Lei¹, M. Coates¹, C. Handfield¹, D. Corcoran³, X. Ling^{1,5}, J. Shannon^{1,2}, P. Rosa Coutinho Goulart Borges Mariottoni¹, D. Hughes⁶, D. Waters⁶, K. Dzirasa^{6,7,8}, A. S. MacLeod^{1,2,4}

¹Dermatology, Duke University, Durham, North Carolina, United States, ²Immunology, Duke University, Durham, North Carolina, United States, ³Center for Genomic and Computational Biology, Duke University, Durham, North Carolina, United States, ⁴Molecular Genetics and Microbiology, Duke University, Durham, North Carolina, United States, ⁵Suzhou Ninth Peoples Hospital, Suzhou, China, ⁶Neurobiology, Duke University, Durham, North Carolina, United States, ⁷Psychiatry and Behavioral Sciences, Duke University, Durham, North Carolina, United States, ⁸Neurosurgery, Duke University, Durham, North Carolina, United States

Concurrent Mini-symposium 12: Adaptive and Auto-Immunity

CME CREDIT: 1.0

066 In vivo tracking of antigen-specific skin-resident memory CD4⁺ T cells

Z. Sun², K. Zhang², H. Chu², T. S. Kupper¹, C. Park²

¹Department of Dermatology & Harvard Skin Disease Research Center, Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts, United States, ²Department of Dermatology & Cutaneous Biology Research Institute, Yonsei University, Seoul, Korea (the Republic of)

099 Competition for active TGFβ eliminates bystander CD8⁺ T_{RM} from the epidermal niche

T. Hirai¹, Y. Yang¹, Y. Zenke¹, H. Li¹, P. Y. Zhou¹, B. A. Nguyen¹, D. Masopust², D. Kaplan¹

¹Dermatology, University of Pittsburgh, Pittsburgh, Pennsylvania, United States, ²Departments of Microbiology and Immunology, University of Minnesota, Minneapolis, Minnesota, United States

089 Modulation of the IL-23/Th17 immune axis by enhancement of adenosine A_{2A} receptor (A_{2A}R) signaling alleviates psoriasis (PsO)

A. Welihinda, P. Ravikumar, S. Yadav, G. Kang, E. Amento

Molecular Medicine Research Institute, Sunnyvale, California, United States

014 IL-27 induces IL-15 production to facilitate T cell survival in allergic contact dermatitis

J. Suwanpradid¹, M. Lee¹, P. Hoang¹, J. Kwock¹, L. Floyd¹, J. Smith¹, Z. Yin², A. Atwater¹, S. Rajagopal¹, R. Kedl³, D. Corcoran¹, A. S. MacLeod¹

¹Duke University, Durham, North Carolina, United States, ²Jinan University, Guangzhou, China, ³University of Colorado, Aurora, Colorado, United States

Concurrent Mini-symposium 13: Epidermal Structure and Barrier Function

CME CREDIT: 1.75

226 Skin controls gut immune function through innate immune ECM cross talk

T. Dokoshi¹, F. Li¹, M. Liggins¹, M. R. Williams¹, J. Seidman², R. Knight¹, B. C. Taylor¹, J. T. Chang¹, J. Olvera¹, R. L. Gallo¹

¹University of California San Diego, San Diego, California, United States, ²University of California, San Diego, San Diego, California, United States

243 H3K9me3 methyltransferase Setdb1 and chromatin remodelling ATPase Lsh maintain constitutive heterochromatin and prevent activation of silent transposable elements in epidermal keratinocytes

G. Chen¹, A. Aziz¹, T. Sharova¹, E. Frenkel¹, A. Fairchild¹, L. Yang², V. A. Botchkarev¹, K. Muegge³, A. Sharov¹

¹Dermatology, Boston University School of Medicine, Boston, Massachusetts, United States, ²Department of Orthopedics and Sports Medicine, University of Washington, Seattle, Washington, United States, ³Center for Cancer Research, National Cancer Institute, Frederick, Maryland, United States

206 Involucrin knockout mice exhibit decreased Vitamin D receptor expression and reduced Vitamin D agonist-induced skin inflammation

A. D. Schmidt, M. E. Mathyer, E. Brettmann, C. de Guzman Strong
Washington University School of Medicine, St. Louis, Missouri, United States

205 CD100 maintains the skin barrier function and is involved in atopic dermatitis

Y. Zou^{1,3}, C. Zhang², Z. Zhu², X. Yao⁴, W. Li³

¹Dermatology, The First Affiliated Hospital of Fujian Medical University, Fuzhou, Fujian, China, ²Dermatology, Xijing Hospital, Fourth Military Medical University, Xi'an, China, China, ³Dermatology, Huashan Hospital, Fudan University, Shanghai, China, ⁴Institute of Dermatology, Chinese Academy of Medical Sciences and Peking Union Medical College, Nanjing, China

223 Skin barrier, inflammation, and metabolism– connections through Ovol1/Ovol2

M. Dragan, P. Sun, D. Haensel, R. Vu, A. Verlande, A. Pham, Q. Nguyen, G. Gutierrez, S. Masri, X. Dai
Biological Chemistry, UC Irvine, Irvine, California, United States

251 Skin epidermal keratinocyte differentiation-associated processes regulate homeostatic antiviral protein expression

M. Lee^{1,2}, J. Shannon^{1,3}, V. Jain⁴, S. Joost⁵, M. Kasper⁵, D. L. Corcoran⁶, S. G. Gregory⁴, A. S. MacLeod^{1,2,3}

¹Dermatology, Duke University, Durham, North Carolina, United States, ²Molecular Genetics and Microbiology, Duke University, Durham, North Carolina, United States, ³Immunology, Duke University, Durham, North Carolina, United States, ⁴Molecular Physiology Institute, Duke University, Durham, North Carolina, United States, ⁵Biosciences and Nutrition and Center for Innovative Medicine, Karolinska Institute, Huddinge, Sweden, ⁶Center for Genomics and Computational Biology, Duke University, Durham, North Carolina, United States

229 IRAK2 promotes abnormal epidermal differentiation during inflammatory states to facilitate and amplify immune responses in skin

S. Shao^{1,2}, J. E. Gudjonsson², L. C. Tsoi², B. E. Perez White³, B. Andersen⁴, R. L. Modlin⁵, S. Weidinger⁶, J. Kahlenberg⁷

¹Dermatology, Xijing Hospital, Fourth Military Medical University, Xi'an, China, ²Dermatology, University of Michigan, Ann Arbor, Michigan, United States, ³Northwestern University, Chicago, Illinois, United States, ⁴Department of Biological Chemistry, University of California, Irvine, California, United States, ⁵Division of Dermatology, Department of Medicine, David Geffen School of Medicine, University of California, Los Angeles, California, United States, ⁶Department of Dermatology and Allergy, University Hospital Schleswig-Holstein, Campus Kiel, Kiel, Germany, ⁷Division of Rheumatology, Department of Internal Medicine, University of Michigan, Ann Arbor, Michigan, United States

Concurrent Mini-symposium 14: Patient-Targeted Research

CME CREDIT: 2.25

509 PIQ-C, a new PROMIS[®] tool, measures intensity and impact of itch on children with atopic dermatitis

A. S. Paller¹, J. Shei², S. Rangel¹, D. Ramachandran¹, N. Puar¹, V. Patel¹, K. Jackson², J. Silverberg¹, D. Cella²

¹Dermatology, Northwestern Univ., Chicago, Illinois, United States, ²Medical Social Sciences, Northwestern Univ., Chicago, Illinois, United States

517 Leveraging CRISPR-Cas12a for the detection of human T-cell leukemia virus type 1

C. Baker¹, Y. Chen¹, M. S. Hayden^{1,2}

¹Geisel School of Medicine at Dartmouth, West Lebanon, New Hampshire, United States, ²Dermatology, Dartmouth-Hitchcock Medical Center, Lebanon, New Hampshire, United States

537 Efgartigimod in pemphigus: Interim phase 2 results

M. Goebeler¹, Z. Bata-Csörgő², S. Baum³, C. De Simone⁴, B. Didona⁵, R. Gyulai⁶, E. Remenyik⁷, N. Reznichenko⁸, E. Schmidt⁹, R. Stepanenko¹⁰, T. Zeeli¹¹, M. Ziv¹², P. Dupuy¹³, P. Verheesen¹³, P. Ulrichs¹³, H. de Haard¹³, W. Parys¹³

¹University Clinic of Würzburg, Würzburg, Germany, ²University of Szeged, Szeged, Hungary, ³Chaim Sheba Medical Center, Ramat Gan, Israel, ⁴Catholic University Policlinic A. Gemelli, Rome, Italy, ⁵Dermatopathic Institute of the Immaculate, Rome, Italy, ⁶University of Pécs, Pécs, Hungary, ⁷University of Debrecen, Debrecen, Hungary, ⁸Zaporizhzhya State Medical University, Zaporizhzhya, Ukraine, ⁹University of Lübeck, Lübeck, Germany, ¹⁰Bogomolets National Medical University, Kiev, Ukraine, ¹¹Tel Aviv Sourasky Medical Center, Tel Aviv, Israel, ¹²Ha'Emek Medical Center, Afula, Israel, ¹³argenx BVBA, Ghent, Belgium

489 Words matter: A randomized controlled study evaluating the impact of decision framing on treatment preferences in adults with psoriasis and psoriatic arthritis

A. Kassardjian¹, V. S. Chat², L. Archuleta¹, J. Hekmatjah³, T. Sierro¹, C. Read¹, A. Y. Chen¹, I. Singh¹, A. W. Armstrong¹

¹Keck School of Medicine, Los Angeles, California, United States, ²Medical College of Georgia at Augusta University, Augusta, Georgia, United States, ³Western Michigan University, Homer Stryker M.D. School of Medicine, Kalamazoo, Michigan, United States

488 Intravenous ertapenem therapy for advanced hidradenitis suppurativa

K. Babbush, M. Ghias, A. Nosrati, K. Pacific, H. Hosgood, S. Cohen
Albert Einstein College of Medicine, Bronx, New York, United States

555 Practice changing landmark study- multi-institutional analysis of image guided superficial radiotherapy (IGSRT) for the treatment of non-melanoma skin cancer (NMSC)

L. Yu¹, D. Ladd²

¹Radiation Oncology, Laserderm, Smithtown, New York, United States, ²Tru-Skin Dermatology, Austin, Texas, United States

542 The importance of IL-36 in palmoplantar pustulosis (PPP): An immunohistochemical analysis

R. E. Schopf, N. Assy

Dermatol, Johannes Gutenberg Univ., Mainz, Germany

529 Profiling of phenotypes and plasma proteins identifies biomarkers for psoriasis severity and psoriatic arthritis

J. Walsh, M. Milliken, C. Carroll, S. Belman, K. Callis Duffin, G. Krueger, B. Feng

University of Utah, Salt Lake City, Utah, United States

497 Efficacy of immunotherapy in Merkel cell carcinoma patients with chronic immunosuppression

L. Zawacki, K. Lachance, T. Akaike, P. Nghiem

Dermatology, University of Washington, Seattle, Washington, United States

Concurrent Mini-symposium 15: Photobiology

CME CREDIT: 1.75

627 UVB-generated microvesicle particles mediate systemic immunosuppression

L. Liu¹, C. M. Rapp¹, S. Zheng³, J. B. Travers^{1,2}

¹Pharmacology & Toxicology, Wright State University, Dayton, Ohio, United States, ²Dayton Veterans Administration Medical Center, Dayton, Ohio, United States, ³The Ohio State University, Columbus, Ohio, United States

640 CrispR/Cas9 deletion of TLR4 impacts the UV-induced stress response in human keratinocytes

V. Kirschnerova¹, M. Khawam¹, B. Seligmann², C. Curiel^{1,3}, G. T. Wondrak^{1,4}, S. E. Dickinson^{1,5}

¹University of Arizona Cancer Center, Tucson, Arizona, United States, ²BioSpyder Technologies, Carlsbad, California, United States, ³College of Medicine, University of Arizona, Tucson, Arizona, United States, ⁴Pharmacology and Toxicology, University of Arizona, Tucson, Arizona, United States, ⁵Pharmacology, University of Arizona, Tucson, Arizona, United States

643 XPC dissociation from damaged DNA and efficient global nucleotide excision repair depend on vitamin D receptor

C. Wong¹, D. H. Oh^{1,2}

¹Dermatology Research Unit, San Francisco VA Health Care System, San Francisco, California, United States, ²Department of Dermatology, University of California, San Francisco, San Francisco, California, United States

628 Evidence that wounding of geriatric skin which upregulates IGF-1 levels protects against both abnormal carcinogenic UVB responses as well as from the development of non-melanoma skin cancer

J. B. Travers¹, M. G. Kemp¹, D. Spandau²

¹Pharmacology, Wright State University, Dayton, Ohio, United States, ²Indiana University, Indianapolis, Indiana, United States

626 Solar simulated light induces cutaneous SCC in inbred mouse strains: Development of a clinically relevant mouse model

A. C. Adams⁴, A. M. Macy⁴, H. Cui³, J. Merida², S. E. Dickinson^{3,4}, D. J. Glembocki², D. J. Roe^{1,3}, K. T. Hastings^{4,3}

¹Mel and Enid Zuckerman College of Public Health, University of Arizona, Tucson, Arizona, United States, ²US Dermatology Partners Pathology Lab, Scottsdale, Arizona, United States, ³University of Arizona Cancer Center, Tucson, Arizona, United States, ⁴University of Arizona College of Medicine, Phoenix and Tucson, Arizona, United States

637 Age and insulin-like growth factor-1 (IGF-1) status impact translesion synthesis (TLS) pathway activation in human keratinocytes and skin epidermis

M. G. Kemp, R. J. Hutcherson, A. Alkawar, A. J. Castellanos, R. D. Gabbard

Pharmacology and Toxicology, Wright State University, Dayton, Ohio, United States

645 5-(3', 4'-Dihydroxyphenyl-valerolactone) regulates DNA methylation in UVB-irradiated keratinocytes

A. Kim¹, B. Mock¹, H. Lee², Y. Kang¹, D. Kim^{1,2}, J. Shin^{1,2}

¹Skin Biology Research Center, Department of Biochemistry, CHA University School of Medicine, Seongnam-si, Gyunggi, Korea (the Republic of), ²Dermatology, Bundang Medical Center, Seongnam-si, Gyunggi, Korea (the Republic of)

Concurrent Mini-symposium 16: Pigmentation and Melanoma

CME CREDIT: 1.0

697 A nuclear cAMP microdomain suppresses tumor growth by Hippo pathway inactivation

M. M. Drozdz², A. Doane², G. Desman¹, J. Wang², M. Reilly², K. Aguirre², E. Kane², J. Wolchok³, T. Merghoub³, O. Elemento², E. Piskounova², J. Zippin²

¹Icahn School of Medicine at Mount Sinai, New York, New York, United States, ²Weill Cornell Medical College, New York, New York, United States, ³Memorial Sloan Kettering Cancer Center, New York, New York, United States

664 Oncogenic melanocyte stem cells, driven by regenerative niche signals, give rise to heterogeneous melanoma resembling human melanoma

Q. Sun¹, I. Katehis¹, W. Lee¹, Y. Mohri², M. Takeo¹, C. Lim¹, X. Xu³, P. S. Myung⁴, R. Atit⁵, M. Taketo⁶, R. Moubarak⁷, M. Schober¹, I. Osman¹, D. Gay⁸, D. Saur⁹, E. K. Nishimura², M. Ito¹

¹Dermatology and Cell Biology, New York University School of Medicine, New York, New York, United States, ²Tokyo Medical and Dental University, Tokyo, Japan, ³University of Pennsylvania, Philadelphia, Pennsylvania, United States, ⁴Yale University, New Haven, Connecticut, United States, ⁵Case Western Reserve University, Cleveland, Ohio, United States, ⁶Kyoto University, Kyoto, Japan, ⁷Pathology, New York University School of Medicine, New York, New York, United States, ⁸CEA/DRF/IBFJ/iRCM/LRTS, Fontenay-aux-Roses cedex, France, ⁹Technische Universität München, München, Germany

675 The phosphorylation of CD147 by Fyn plays a critical role in melanoma cell growth and metastasis

X. Zhang, Y. Guo, X. Chen, C. Peng

Dermatology, Xiangya Hospital, Central South University, Changsha, Hunan, China

689 Anti-tumor effects and mechanism of 4'-bromo-resveratrol in a BRAF^{V600E}/PTEN^{NULL} melanoma mouse model

G. Chhabra, C. K. Singh, M. A. Ndiaye, N. Ahmad

Dermatology, University of Wisconsin-Madison, Madison, Wisconsin, United States

CME CREDIT: .5

Eugene M. Farber Lecture



Title: Genetic Discoveries in Psoriasis: Towards a Brighter Future

Dr. Liao is Professor of Dermatology and Director of the Psoriasis and Skin Treatment Center at the University of California San Francisco (UCSF). As a physician-scientist, Dr. Liao currently serves as Chair of the Scientific Advisory Committee for the National Psoriasis Foundation and also serves as a member of the National Psoriasis Foundation Medical Board. He received his undergraduate degree in biochemistry from Harvard University, M.D. from Harvard Medical School, completed a genomics research fellowship at the National Institutes of Health and his dermatology residency at UCSF. Dr. Liao's clinical expertise includes the use of biologics, phototherapy, and the Goeckerman regimen. He directs multiple clinical trials studying the effects of biologic agents on psoriasis and atopic dermatitis. The Liao laboratory studies the genetic, environmental, and lifestyle triggers of psoriasis and other inflammatory skin diseases. His research program includes high resolution genetic mapping and functional genomics, elucidation of disease pathways through single-cell transcriptional and immunoprofiling technologies, and determination of the role of the microbiome in inflammation.

CME CREDIT: .5

Julius Stone Lecture



Title: Pathogen-Host Interactions in the Skin

Gabriel Nuñez, M.D., is the Paul de Kruif Endowed Professor in Academic Pathology at the University of Michigan. He received his M.D. degree from the University of Seville, Spain and postdoctoral training in Immunology at the University of Texas Southwestern Medical Center, Dallas. Dr. Nuñez completed his residency training in Anatomical Pathology at Washington University in St Louis. In 1987, he joined the laboratory of Stanley Korsmeyer at Washington University in Saint Louis, where he studied the function of the anti-apoptotic protein BCL-2. In 1991, he joined the Department of Pathology at the University of Michigan in Ann Arbor as an Assistant Professor, and was promoted to full Professor in 2001.

Dr. Nuñez is recognized worldwide as one of the foremost experts in gastrointestinal and systemic inflammation, host-microbial interactions, and mucosal immunology. His

laboratory identified NOD1 and NOD2, the first members of the Nod-like receptor (NLR) family, a class of pattern-recognition receptors that mediate cytosolic sensing of microbial organisms. Nuñez and colleagues showed that genetic variation in a NLR family member, NOD2, is strongly associated with susceptibility to Crohn's disease. Dr. Nuñez is the author of more than 350 scientific publications which have resulted in more than 100,000 citations. A prolific speaker, Dr. Nuñez has given more than 450 scientific lectures worldwide. He has mentored more than 100 scientists including 64 postdoctoral fellows. The great majority of his trainees are independent investigators and members of the Faculty of academic institutions in the United States, Europe and Asia.

Dr. Nuñez has received numerous awards during his career including the Dean's Achievement Award in Basic Science and Distinguished Faculty Lectureship Award from the University of Michigan Medical School, Merit Award from the National Institutes of Health, and the Rous-Whipple Award from the American Society of Investigative Pathology. He is an elected member of the National Academy of Medicine. His research program is supported by several RO1 grants from the National Institutes of Health.

CME CREDIT: .5

Naomi M. Kanof Lecture



Title: Mechanism-Based Breakthroughs in Autoimmune Skin Disease

Dr. Victoria Werth is a Professor of Dermatology and Medicine at the Perelman School of Medicine at the University of Pennsylvania and Chief of the Division of Dermatology at the Philadelphia Veterans Administration Hospital. Dr. Werth earned her medical degree from Johns Hopkins University School of Medicine in Baltimore, Maryland. She completed a residency in internal medicine at Northwestern Memorial Hospital in Chicago, Illinois, and dermatology residency and immunodermatology fellowship at New York University School of Medicine in New York, funded by the NIH and Dermatology Foundation. She joined the faculty at Penn in 1989 and has developed an internationally recognized program in autoimmune skin diseases.

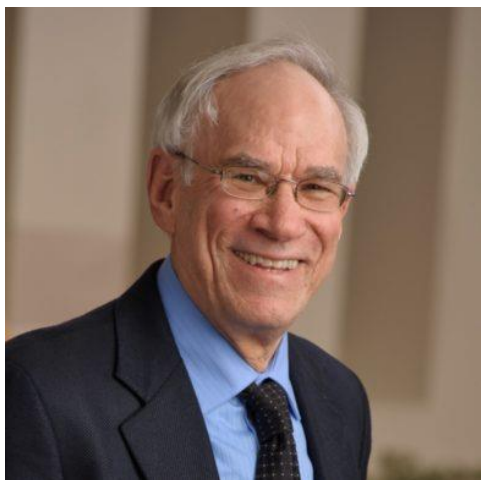
She is a co-founder of the Rheumatologic Dermatology Society and previous president of the group. She is co-founder of the Medical Dermatology Society, and a recipient of their lifetime achievement award. She initiated

the combined internal medicine/dermatology residency program in the U.S., which has successfully trained prominent leaders in complex medical dermatology. She has a longstanding interest in clinical and translational research pertaining to autoimmune skin diseases, including cutaneous lupus erythematosus, dermatomyositis, and autoimmune blistering diseases, with a focus on improving the outcomes of autoimmune dermatologic diseases. She has developed and validated disease severity tools now used in many international trials for these diseases, with a goal to advancing evidence for current and new therapeutics. Her laboratory studies include studies in cutaneous lupus and dermatomyositis that relate to pathogenesis and heterogeneity of response to treatment, and ultraviolet light effects on skin. Recent clinical studies have examined mechanistic effects of therapeutics in CLE, as well as subset-specific expression of cytokine signatures. Her work has been funded by the Dermatology Foundation, NIH, the Veterans Administration, the Lupus Research Alliance, the Lupus Foundation of America, the Myositis Association, the International Pemphigus and Pemphigoid Foundation, CARRA, and industry.

CME CREDIT: .5

Medical Ethics Lecture

Title: Biomedical ethics 2.0: redefining the meaning of disease, patient and treatment



Frederick Grinnell is the Robert McLemore Professor of Medical Science in the department of cell biology at UT Southwestern Medical Center (UTSW). He received his Ph.D. in biochemistry from Tufts New England Medical Center in 1970. After graduating, he moved to Dallas for postdoctoral work and joined the UTSW cell biology faculty in 1972. Research in his laboratory contributed to the discovery of fibronectin and its importance in wound repair. His studies helped popularize using wound fluid to analyze the human wound environment and led to the observations that chronic wounds contain degraded fibronectin and elevated proteinases. His work also emphasized the importance of studying tissue biomechanics using fibroblasts interacting with 3D collagen matrices. He is a past recipient of a 10 year NIH MERIT award from the NIGMS trauma

program. Grinnell also engages in interdisciplinary work in bioethics and at the boundary between science and philosophy aiming to advance science education and public understanding of science. In 1998, he founded and was first director of the UTSW Ethics in Science and Medicine Program and later organized and continues to lead the North Texas Bioethics Network. He has written two books about the nature of science — *The Scientific Attitude* (2nd Edition, Guilford Press, 1992) and *Everyday Practice of Science: Where Intuition and Passion Meet Objectivity and Logic* (Oxford University Press, 2009). *Everyday Practice* was shortlisted for the 2010 UK Royal Society Science Book Prize. In 2012, Fred was elected as a Fellow of the American Association for the Advancement of Science in the Section on History and Philosophy of Science. His commitment to medical education was recognized in 2012 by a UT Regents' Outstanding Teaching Award, and in 2017, by the State of Texas Minnie Stevens Piper Professor Award.

CME CREDIT: .5

William Montagna Lecture



Title: Principles of Organ Regeneration Discovered by Live Imaging

Valentina Greco was born in Palermo, Italy and earned her undergraduate degree in Molecular Biology at the University of Palermo, Italy. She earned her PhD with Suzanne Eaton at the EMBL/MPI-CBG, Germany (1998-2002) and her post-doc with Elaine Fuchs at the Rockefeller University (2003-2009). Dr. Greco is currently the Carolyn Walch Slayman Professor of Genetics, Cell Biology and Dermatology Departments, and a member of the Yale Stem Cell Center and Yale Cancer Center at Yale University (2009-present).

The Greco Lab aims to understand how stem cells and their niche cells contribute to organ regeneration by establishing novel approaches to visualize and manipulate stem cells in a live animal.

This work has provided unprecedented insights into tissue regeneration by answering long-standing but elusive questions that continually advance the fields of stem cell biology and regenerative medicine. New concepts established by her group include that the niche regulates stem cell fate and number, stem cells are flexible to environmental demands, differentiation drives self-renewal of stem cells, and homeostatic correction battles the emergence of disease.

Dr. Greco is the recipient of the 2012 American Skin Association Award, 2013 Dermatology Foundation Award, 2014 Women in Cell Biology Junior Award for Excellence in Research from the American Society of Cell Biology, the 2014 International Society for Stem Cell Research Outstanding Young Investigator Award, the 2015 Robertson Stem Cell Investigator Award from the New York Stem Cell Foundation, the 2015 Mallinckrodt Scholar Award, the 2016 Early Career Award from the American Society of Cell Biology, the 2016 HHMI Faculty Scholar Award, the 2017 Glenn Foundation Award, the 2017 Class of '61 Award by the Yale Cancer Center, the 2018 Yale Mentoring Award in the Natural Sciences, the 2019 Yale Genetics Department Mentoring Award, 2019 NIH DP1 Innovator Award and 2019 Yale Post-doctoral Mentoring Award.

Learning Objectives

After attending the SID Meeting, attendees will be able to:

1. Identify which disease states require new or additional research
2. Evaluate state-of-the-art information relating to basic skin biology research
3. Describe how newly discovered, evidence-based scientific information may or may not be applied to the current practice of clinical dermatology
4. Apply strategies to structure and design successful research proposals, abstracts and manuscripts
5. Facilitate interdisciplinary and/or collaborative investigation in clinical dermatology and skin biology to improve research hypotheses, processes and/or techniques
6. Incorporate knowledge gained from interactions between basic scientists and clinicians into daily decision-making

Accreditation Statement



This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of Case Western Reserve University School of Medicine and the Society for Investigative Dermatology. Case Western Reserve University School of Medicine is accredited by the ACCME to provide continuing medical education for physicians.

Live Sessions

Case Western Reserve University School of Medicine designates this live activity for a maximum of 5.25 *AMA PRA Category 1 Credit™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Enduring Material

Case Western Reserve University School of Medicine designates this enduring material for a maximum of 25.25 *AMA PRA Category 1 Credit™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Activity Director

Kevin Cooper, MD

Professor and Chair

Department of Dermatology

Case Western Reserve University School of Medicine

Dr. Cooper reports no financial relationship with a commercial interest relevant to this activity.

Disclosure Statement

The policy of Case Western Reserve University School of Medicine CME Program (CWRU CME) requires that the Activity Director, planning committee members and all activity faculty (that is, anyone in a position to control the content of the educational activity) disclose to the activity participants all relevant financial relationships with commercial interests. Where disclosures have been made, conflicts of interest, real or apparent, must be resolved. Disclosure will be made to activity participants prior to the commencement of the activity. CWRU CME also requires that faculty make clinical recommendations based on the best available scientific evidence and that faculty identify any discussion of “off-label” or investigational use of pharmaceutical products or medical devices.

All of the planning committee members* and speakers listed below for the Live Sessions have disclosed that they have no relevant financial interests/arrangements or affiliations with organization(s) that could be perceived as a real or apparent conflict of interest in the context of the subject of their presentation(s).

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Laura Baker, BS

Allison Billi, MD/PhD

Laura Cau, PhD

Zhaowei Chu, BS

Rosalynn Conic, MD, PhD

*Elena Ezkhova, PhD

Richard Gallo, MD, PhD

Luis Garza, MD, PhD

**Michelle Hao, MD Candidate

*Tissa Hata, MD

Ya-Chieh Hsu, PhD

*Daniela Kroshinsky, MD, MPH

*Kurt Lu, MD
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Guillermo Rivera Gonzalez, PhD
*Peggy Myung, MD/PhD
Quinn Roth-Carter, PhD
Zurab Sibrashvili, Ph.D

Philip Surmanowicz, BHSc
*Marjana Tomic-Canic, PhD
Hannah Valantine, MD
*Kevin Wang, MD/PhD, Co-Chair
Shiqun Zhang, PhD
Jane Zhu, BA

The following planning committee members and speakers for the Live Sessions have disclosed financial interest/arrangements or affiliations with an organization that could be perceived as a real or apparent conflict of interest in the context of the subject of their presentation(s). Only current arrangements/ interests are included:

- *Niroshana Anandasabapathy, MD/PhD, Honorarium, Bristol Myer Squibb
- *Vladimir Botchkarev, MD/PhD, Consultant: Phillips; Employee: Monasterium Laboratory, Germany
- Laurence Cheng, MD, PhD, Major Stock Shareholder & Employee: RAPT Therapeutics, Inc.
- *Benjamin Chong, MD, Consultant: ICON Medical Imaging & Viela Bio
- *Johann Gudjonsson, MD/PhD, Grant/Research Support: Almirall, Eli Lilly, SunPharma, Novartis, Pfizer, AnaptysBio; Consultant: Almirall, Eli Lilly, Novartis, AnaptysBio
- *Lloyd Miller, MD/PhD, Co-Chair, Employee: Janssen Pharmaceuticals; Grant Support: AstraZeneca, Pfizer, Regeneron, Integrated Biotherapeutics; Stock: Noveome Biotherapeutics; Consultant: Almirall
- *Kenneth Tsai, MD/PhD, Stock: NFlection Therapeutics & DXB Biosciences/Clearista; Honoraria: Merck, EMD Serono

All of the planning committee members* and speakers for Enduring Materials listed below have disclosed that they have no relevant financial interests/arrangements or affiliations with organization(s) that could be perceived as a real or apparent conflict of interest in the context of the subject of their presentation(s).

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Anngela Adams, MS
Martin Alphonse, PhD
Sepideh Ashrafzadeh, BS
Scott Atwood, PhD
**Lihi Atzmony, MD
**Kayla Babbush, BS
Catherine Baker, BA
Laura Baker, BS
Wolfgang Bauer, MD
Allison Billi, MD/PhD
Laura Cau, PhD
Jin Chen, Ph.D.
Gagan Chhabra, Ph.D.
Zhaowei Chu, BS
Cheng Ming Chuong, MD, PHD
Josef Concha, MD
Rosalynn Conic, MD, PhD
Sally Dickinson, PhD
Michael DiPersio, PhD
Tatsuya Dokoshi, M.D. Ph.D
Robert Dorschner, MD

Morgan Dragan, B.S.
Marek Drozd, PhD
*Elena Ezhkova, PhD
Raj Fadadu, B.A.
Richard Gallo, MD, PhD
Luis Garza, MD, PhD
Kyle Gellatly, M.S.
Donald Glass, MD, PhD
Matthias Goebeler, MD
Valentina Greco, PhD
Frederick Grinnell, Ph.D.
*Tissa Hata, MD
**Michelle Hao, MD Candidate
Toshiro Hirai, PhD
Wesley Hodges, MD, MPS
Thomas Holmes, PhD
Ya-Chieh Hsu, PhD
Jamie Hu, BA
Mingxia Huang, PhD
Suoqin Jin, PhD
Adam Jorgensen, BS

Yana Kamberov, Ph.D.
Ari Kassardjian, B.S.
Masaoki Kawasumi, MD, PhD
Michael Kemp, PhD
Maki Kida, MD, PhD
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Aram Kim
Stephen Kirchner, B.S.
*Daniela Kroshinsky, MD, MPH
**Sushant Kumar
Yong Lee, BS
Min Jin Lee, BA
Evelyn Leland, BS
Fengjie Liu, PhD
Langni Liu, PhD candidate
*Kurt Lu, MD
Carine Mainzer, PhD
Lingling Miao, Ph.D
*Peggy Myung, MD/PhD
Teruaki Nakatsuji, PhD
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Allen Oak, MD
Alan O'Neill, PhD
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Quinn Roth-Carter, PhD
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Michael Sargen, MD
**Mrinal Sarkar, PhD
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Alina Schmidt, B.S.
**Shuai Shao, MD, PhD
Andrey Sharov, MD, PhD
Zhenrui Shi, MD, PhD

Tiffany Sierro, B.S.
Zurab Sibrashvili, Ph.D
Jennifer Strunck, BS
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Zhengwang Sun, PhD
Philip Surmanowicz, BHSc
Jutamas Suwanpradid, PhD
Maha N. Syed, MBBS
*Marjana Tomic-Canic, PhD
Leticia Tordesillas, PhD
Jeffrey Travers, MD, PhD
Hannah Valentine, MD
*Kevin Wang, MD/PhD, Co-
Chair
Ajith Welihinda, Ph.D.

Kyle Williams, BS
Christian Wong, BS
Lei Yang, MD, PhD
**Lauren Zawacki, BS
Lingjuan Zhang, Ph.D.
**Chen Zhang, Doctor
Shiqun Zhang, PhD
Xiao-wei Zhang, Bachelor of
Science
Fusheng Zhou, Ph.D
Jane Zhu, BA
Abigail Zieman, Ph.D.
Ying Zou, PhD

The following planning committee members* and speakers for Enduring Materials have disclosed financial interest/ arrangements or affiliations with an organization that could be perceived as a real or apparent conflict of interest in the context of the subject of their presentation(s). Only current arrangements/ interests are included.

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*Niroshana Anandasabapathy, MD/PhD, Honorarium, Bristol Myer Squibb

*Vladimir Botchkarev, MD/PhD, Consultant: Phillips; Employee: Monasterium Laboratory, Germany
Patrick Brunner, MD, MSc, Grant/Research Support: The LEO Foundation, Novartis; Consultant: LEO Pharma, Pfizer, Sanofi Genzyme, Eli Lilly, Novartis, Amgen, Celgene, UCB Pharma, Biotest, Arena Pharma, Boehringer Ingelheim, AbbVie: Speakers' Bureau: LEO Pharma, Pfizer, Sanofi Genzyme, Eli Lilly, Novartis, Amgen, Celgene, UCB Pharma, Biotest, Arena Pharma, Boehringer Ingelheim, AbbVie: Advisory Committee: LEO Pharma, Pfizer, Sanofi Genzyme, Eli Lilly, Novartis, Amgen, Celgene, UCB Pharma, Biotest, Arena Pharma, Boehringer Ingelheim, AbbVie

Laurence Cheng, MD, PhD, Major Stock Shareholder & Employee: RAPT Therapeutics, Inc.

*Benjamin Chong, MD, Consultant: ICON Medical Imaging & Viela Bio

Bingjian Feng, PhD, Grant Support: Astra Zeneca & Pfizer

*Johann Gudjonsson, MD/PhD, Grant/Research Support: Almirall, Eli Lilly, SunPharma, Novartis, Pfizer, AnaptysBio; Consultant: Almirall, Eli Lilly, Novartis, AnaptysBio

Claire Langrish, PhD BSc, Major Stock Shareholder: Principia Biopharma

Sabrina Leoty-Okombi, PhD, Employee: BASF

**Wilson Liao, MD, Grant/Research Support: Abbvie, Amgen, Janssen, Novartis, Pfizer, Regeneron, Sanofi, TRex Bio

M. Peter Marinkovich, MD, Grant/Research Support: Krystal Biotech

*Lloyd Miller, MD/PhD, Co-Chair, Employee: Janssen Pharmaceuticals; Grant Support: AstraZeneca, Pfizer, Regeneron, Integrated Biotherapeutics; Stock: Noveome Biotherapeutics; Consultant: Almirall

Gabriel Nunez, MD, Grant/Research Support: Amway; Consultant: Boehringer Ingelheim

Ian Odell, MD, PhD, Grant Support: AbbVie

**Monica Rosales Santillan, MD, Research Fellowship: AbbVie & Janssen

Rudolph Schopf, MD, Grant/Research Support: Institution; Consultant: Abbvie; Speakers' Bureau: Leo

Zhenrui Shi, MD, PhD, Grant Support: National Psoriasis Foundation

Anthony Slavin, PhD, Employee: Kymera Therapeutics

*Kenneth Tsai, MD/PhD, Stock: NFlection Therapeutics & DXB Biosciences/Clearista; Honoraria: Merck, EMD Serono

Joy Wan, MD, MSCE, Grant Support: Pfizer

**Victoria Werth, MD, Grant/Research Support: Celgene, Janssen, Pfizer, Biogen, Gilead, Corbus Pharmaceuticals, Genentech, AstraZeneca, Viela, CSL Behring, Syntimmune; Consultant: Celgene, Medimmune, Resolve, Genentech, Idera, Janssen, Lilly, Pfizer, Biogen, BMS, Gilead, Amgen, Medscape, Nektar, Incyte, EMD Sorona, CSL Behring, Principia, Crialis, Viela Bio, Argenx, Kirin, Regeneron, Principia, AstraZeneca, Abbvie, Octapharma, GSK, Astra-Zeneca

**Christine Youn, MS, Grant Support: Pfizer

Lio Yu, MD, Grant/Research Support: SkinCure Oncology; Consultant: SkinCure Oncology

Target Audience

This continuing medical education activity is intended for all sectors of the dermatology community, consisting of research investigators, clinicians, research and clinical trainees, members of industry, and community advocates for skin health/disease.

Media

Recorded slides and audio presentation. Resource materials may include downloads of videos, print materials, slides or web pages.

Instructions

To receive a statement of credit for either the live activity and/or the enduring material you must:

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Estimated Time to Complete this Educational Activity

Including review of any resource material, the live activity is expected to take 5.25 hours to complete; the enduring material 25.25 hours.

Fee

There is no fee for this program.

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Resources

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