

CURRICULUM VITAE

David L. Miller

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President

CuDerm Corporation / bioNET Incorporated

Box 797686 Dallas, TX. 75379-7686

EDUCATION: B.A. in Chemistry, Lehigh University, 1963.

Ph.D. in Physical Chemistry, Rutgers University, 1969.

PRIOR POSITIONS:

1981-1991

Principal Scientist, Biophysical Testing/ Claims Substantiation

Mary Kay Cosmetics, Inc.

1330 Regal Row

Dallas, TX 75247

1969-1981

Senior Group Leader, Skin Biophysics

Research & Development

Johnson & Johnson Products, Inc.

New Brunswick, NJ 08902

PROFESSIONAL/TECHNICAL INTERESTS AND INVOLVEMENTS:

Application of image analysis techniques for assessment of skin properties. Development of techniques to evaluate the physical and chemical state of the skin and other biomaterials, ultrasonic diagnostic techniques for the skin, state-of-the-art diagnosis of skin function via mechanical and electrical property measurement. Physical chemistry of biomaterials and adhesives, permeability and diffusion in polymeric films and the skin, sorption of small molecules by solids, interaction of the skin with solid and liquid substrates

Member of American Chemical Society, Society for Investigative Dermatology, American Academy of Dermatology, International Society for Bioengineering and the Skin, and the Dermal Clinical Evaluation Society. Serves on Editorial Review Board for Journal of the Society of Cosmetic Chemists and Journal of Skin Research and Technology.

RECENT PUBLICATIONS AND PRESENTATIONS:

"Image Analysis of Skin Surface Replicas and Photographic Methods for Characterizing Large Facial Pores", Poster at American Academy of Dermatology annual meeting, 2002.

"Non-Invasive Bioengineering Techniques Used in the Assessment of Wound Healing", Poster at American Academy of Dermatology annual meeting, 2002.

"Clinical Evaluation of a Topically Applied Product to Improve the Appearance and Physical Condition of Aging Skin", Poster at American Academy of Dermatology annual meeting, 2002.

"Capturing Benefits of Lip Formulations Via Biophysical and Photographic Documentation", Poster at American Academy of Dermatology annual meeting, 2001.

"Evaluating the performance benefits of conditioning formulations on human skin," chapter in *Conditioning Agents for Hair and Skin*, R. Schueller and P. Romanowski, Eds. Marcel Dekker 1999.

"Objective assessment of cellulite using silicone replicas and image analysis," Poster at 12th ISBS, Boston 1998.

The use of the Dermavision Imaging system for quantifying the effects of AHA treatments on skin hyperpigmentation," Poster at American Academy of Dermatology annual meeting, 1996.

"Image analysis of skin" workshop presented at 12th ISBS, Boston 1998.

"Measurement of macroscopic texture of skin surface replicas using computerized image analysis," presented at 5th congress of the International Society for Skin Imaging, Vienna 1997.

"**D-SQUAME**[®] Adhesive Disks," Chapter in *Bioengineering of the Skin: Skin Surface Imaging and Analysis*, Wilhelm, K-P, et al, Editors CRC Press, Boca Raton, 1996.

"Application of Squametry in the Assessment of DRY SKIN," invited lecture at the First International Symposium on Cosmetic Efficacy New York 1996.

"Objective substantiation and biophysical methods" invited lecture at the IBC Conference on Novel in vitro and Clinical Testing Methods for Skin, Boston 1996.

"Sticky Slides and Tape Techniques to Harvest Stratum Corneum," Chapter in *Handbook of Non-invasive Methods and the Skin*, Serup, J., and Jemec, G.B.E., Eds., CRC Press, Boca Raton, 1995.

"First experiences with high-frequency ultrasound examination of the skin," invited lecture at 3rd congress of the International Society for Ultrasound and the Skin, Elsinore 1993.

"Application of a special electrical property measurement protocol to lips," Poster presented at 10th International Symposium of Bioengineering and the Skin, October 1992.

"Optical profilometry of replicas—revisited," Lecture at 10th ISBS October 1992.

"Skin Stripping: Electrical properties of Stratum Corneum," poster presented at Dermal Clinical Evaluation Society Poster Meeting June 1991.

"Two approaches to evaluating skin surface sebum," poster presented at Dermal Clinical Evaluation Society Poster Meeting June 1991.

"Objective and subjective instruments to assess tanning" presented at the 8th International Symposium of Bioengineering and the Skin, June 1990

"Independent Clinical Laboratories: Qualification Study Placement Study Monitoring and Future service trends" in *Clinical Safety and Efficacy Testine of Cosmetics*, W/C/ Waggoner, Ed. Marcel Dekker 1989.

"Objective Measures of Lip Condition" Poster presented at 7th International Symposium of Bioengineering and the Skin, June 1988.

"Characterization of Lip Condition: Clinical Observations and Objective Measurements," Dermal Clinical Evaluation Society POSTER SESSION, Fairfield, NJ, June 1988.

"In Vivo Mechanical Testing of Lip Skin: Methodology", *Bioengineering and the Skin*, 3, 309 1987.

"A Simple, Low Cost Image Analysis System for Evaluation of the Skin Surface," *Bioengineering and the Skin*, 3, p243 1987.

"In Vivo Measurements of Water Permeability and Mechanical Properties of Finger Nails," Workshop on Biophysical Measurement of Skin, Hair and Nails, Philadelphia PA, September 1987.

"Approaches to Skin Typing", Workshop at the 6th International Symposium of Bioengineering and the Skin, Liege Belgium, 1986.

"A Simple, Low Cost Image Analysis System for Evaluation of the Skin Surface," presented at the 6th International Symposium of Bioengineering and the Skin, Liege Belgium, 1986.

"Sebutape: A device for visualizing and measuring sebaceous secretion," *J. Soc. Cosmet. Chem.*, 37, p369 1986.

"In Vivo Instrumentation in Clinical Dermal Testing," *Cosmetics and Toiletries*, 101, p57 (May 1986).

"Evaluation of Lip Condition: Comparison of a Biophysical and Clinical Method," poster at the 5th International Symposium of Bioengineering and the Skin, San Francisco, CA, August 1985.

"In Vivo Mechanical Testing of Lip Skin", presented at the 5th International Symposium of Bioengineering and the Skin, San Francisco, CA, August 1985.

"Moisturizer Claim Substantiation - An Evaluation," Society of Cosmetic Chemists COSA session, May, 1984.

"Instrumental Approaches to Skin Property Measurement," Dermal Clinical Evaluation Society 1st Annual Seminar, September, 1984.

"Claim Substantiation for Moisturizers," New York Section, Society of Cosmetic Chemists, October, 1984.

PUBLICATIONS AND PRESENTATIONS PRIOR TO 1984:

"The Thermomechanical Analysis of Natural and Chemically Modified Human Hair," J. Soc. Cosmet. Chem., 23, p359, 1972.

"A Physicochemical Approach to the Characterization of Stratum Corneum," Dermatology Digest, 12, pl3, 1973.

"Clustering of Sorbed Water in Stratum Corneum," presented at the spring meeting of the American Physical Society, 1974.

"Diffusion of Water Vapor in Stratum Corneum Membranes," presented at the spring meeting of the American Physical Society, 1975.

"A Physicochemical Approach to the Characterization of Stratum Corneum" in "Applied Chemistry at Protein Interfaces", Advances in Chemistry Series, number 145, 1975.

"Diffusion Controlled Thermal Desorption, H Thermochemica Acta, 14, pl51, 1976.

"Thermoanalytical Probes for the Analysis of Physical Properties of Stratum Corneum," presented at the First International Symposium on Bioengineering and the Skin, 1976. Published in J. Invest. Derm., 69, p287, 1977.

"Determining Skin Thickness with Pulsed Ultrasound," J. Invest. Derm., 72, pl7, 1978.

"Biophysical Properties of Skin," presented at the Academy of Pharmaceutical Society, Symposium on Dermatologicals, Rational Basis for Development and Clinical Use, April, 1979.

"New Approaches to Transepidermal Water Loss Measurements," presented at Department of Dermatology, University of Pennsylvania Medical School, May, 1979.

"Skin Thickness Measurement with Pulsed Ultrasound," presented at the Second International Symposium on Bioengineering and The Skin, July, 1979.

"Indirect Measures of Transepidermal Water Loss," presented at the Second International Symposium on Bioengineering and The Skin, edited by R. Marks and P. Payne, MTP Press, 1981.

"Total Characterization of the Skin Physical State," presented at the Second International Symposium on Bioengineering and The Skin, July, 1979.

"Methods of Evaluating Skin Moisture - A Critical Review," Society of Cosmetic Chemists Annual Technical Seminar, May, 1980.

"Ultrasonic Assessment of Cutaneous Atrophy by Intradermal Corticosteroids," Society of Investigative Dermatology, 1981.

"Dermatological Applications of Ultrasound Biometry," Bioengineering and Skin Symposium, 1981.

"Characterizing the Polymeric Nature of the Skin," North Jersey ACS Meeting, 1981.

"Cross-Sectional Ultrasonic Scanning of Skin Using Plastic Film Transducers," Bioengineering and The Skin, 3, p241, 1982.

"Measurement of Skin Properties," N. Texas Chapter of the Instrument Society of America, November, 1983.