Contributions to Hair Research from the Americas

Years	Type	Last Name	Full Name	Institution(s)	Contribution(s)	Select Notable Publications
1930s-1960s						
1930s	Basic	Dawson	Helen L. Dawson, PhD	Washington University School of Medicine, St. Louis, Missouri, USA	Demonstrated the rate and type of cyclic growth as found in the coat of a guinea pig based on a series of measurements covering a sufficient period of time. Recognized that ovarian hormones inhibit mammalian hair growth.	Dawson HL. On hair growth: a study of the effect of pregnancy on the activity of the follicle in the guinea-pig (Cavia cobaya). *Am J Anat.* 1933; 53(1):89-115. Dawson HL. A study of hair growth in the guinea-pig (Cavia cobaya). *Am J Anat.* 1930; 45:461-484.
1940s-1950s	Clinical	Hamilton	James B. Hamilton, MD, PhD	State University of New York College of Medicine; Long Island College of Medicine; University of Missouri; Yale University; Albany College of Medicine	Established types/categories of scalp "hairiness" as standards to classify and grade common baldness (this was eventually expanded on by O'Tar T. Norwood). Started as the Hamilton Classification Scale. Studied the correlation between endocrine and genetic factors involved in baldness. Noted common baldness is induced by androgens.	Hamilton JB. Age, sex and genetic factors in the relation of hair growth in man: A comparison of Caucasian and Japanese populations. In: W Montagna and RA Ellis, eds. *The Biology of Hair Growth*. Academic Press, New York, 1958; pp 400-433. Hamilton JB. Patterned loss of hair in man: Types and incidence. *Ann NY Acad Sci.* 1951; 53:708-728. Hamilton JB. Male hormone stimulation is prerequisite and incitant in common baldness. *Amer J Anat.* 1942; 71:451-480.
1950s	Basic	Chase	Herman B. Chase, PhD	Brown University, Providence, Rhode Island, USA	Studied the interaction among components of the skin and hair cycle. Noted that systemic factors, such as hormones, and physical factors influence the hair cycle.	Chase HB. Physical factors which influence the growth of hair. In: Montagna W and Ellis RA, eds. *The Biology of Hair Growth.* Academic Press Inc., New York, 1958, pp 435-440. Chase HB. The physiology and histochemistry of hair growth. *J Soc Cosmetic Chemists.* 1955; 6:9-14. Chase HB. Growth of hair. *Physiol Revs.* 1954; 34(1):113-126.

1950s-1960s	Clinical	Kligman	Albert M. Kligman, MD, PhD	University of Pennsylvania, Philadelphia, Pennsylvania, USA	Provided first description of human hair cycle/telogen effluvium (TE) and central centrifugal cicatricial alopecia (CCCA). Laid the foundation for understanding different types of telogen effluvia and was one of the first to recognize racial differences in hair loss phenotypes and impact of hair care practices on cicatricial alopecia.	Kligman A. Pathologic dynamics of human hair loss. I. telogen effluvium. *Arch Dermatol.* 1961; 83(2):175-198. Kligman A. The human hair cycle. *J Invest Dermatol.* 1959 Dec; 33:307-16.
1950s-1960s	Basic	Montagna	William Montagna, PhD	Oregon Regional Primate Research Center, Beaverton, Oregon, USA	Examined the basic science of hair and hair growth. Initiated the Montagna Symposium on the Biology of Skin in 1950 with the first meeting focused on hair held in 1967.	Montagna W, Dodson RL, eds. *Hair Growth, Proceedings of the University of Oregon Medical School Symposium on the Biology of Skin*. 1967, Advance in Biology of Skin Vol. IX. Publication No. 277 from the Oregon Regional Primate Research Center. Pergamon Press. Oxford. First edition 1969. Library of Congress Catalog Card No. 60-10839. Montagna W, Ellis RA, eds. *The Biology of Hair Growth.* Academic Press: New York, 1958.
1950s-1960s	Clinical/ Surgical	Orentreich	Norman Orentreich, MD	Private Practice, New York, New York, USA	Discovered donor dominance theory and thereby established the field of hair restoration surgery in North America.	Orentreich N. Autografts in alopecias and other selected dermatologic conditions. *Am NY Acad Sci.* 1959; 83:463-479.
1950s	Basic, Translational, Clinical	Pinkus	Hermann Pinkus, MD	Pinkus Dermatopathology Laboratory, Monroe, Michigan, USA	Studied the hair cycle, pathology of hair follicles, and stroma. Known for describing the structure of the hair follicle, lichen nitidus and alopecia mucinosa.	Pinkus H. Embryology of hair. In: W Montagna and RA Ellis, eds. *The Biology of Hair Growth.* Academic Press, New York, 1958, pp 1-32. Pinkus H. Examination of the epidermis by the strip methods. II. Biochemic Data on regeneration of the human epidermis. *J Invest Dermatol.* 1952; 19:431-447.

1950s–1960s	Basic	Van Scott	Eugene J. Van Scott, MD	National Institutes of Health (NIH), National Cancer Institute (NCI), Dermatology branch, Bethesda, MD Temple University, Philadelphia, Pennsylvania, USA	Co-founded Dermatology Foundation, a nonprofit organization created in 1964 to provide a national organization for advancing patient care through funded research. Helped form the Society for Investigative Dermatology (SID). Published on the geometric relationship between the matrix of the hair bulb and its dermal papilla in normal and alopecic scalp. Established the skin turnover time and applications of alpha- and beta- hydroxy acids for use in cosmetic dermatology.	Van Scott EJ, Ekel TM, Auerback R. Determinants of rate and kinetics of cell division in scalp hair. *J Invest Dermatol.* 1963; 41(5):269-273. Van Scott EJ. The modulating influence of stromal environment on epithelial cells studied in human autotransplants. *J Invest Dermatol.* 1961; 36:109-131. Van Scott EJ, Ekel TM. Geometric relationships between the matrix of the hair bulb and its dermal papilla in normal and alopecic scalp. *J Invest Dermatol.* 1958; 31:281-287.
1950s-1990s	Basic	Hardy	Margaret Hardy	Columbia University, New York, New York, USA; University of Guelph, Guelph, Ontario, Canada	Examined the differentiation of hair follicles and hairs in organ culture. Inspired stem cell scientists to use hair follicles as model system.	Hardy MH. The secret life of the hair follicle. *Trends in Genetics*, 1992; 8(2):55-61. Hardy MH. The development of pelage hairs and vibrissae from skin in tissue culture. *Ann NY Acad Sci.* 1951; 53(3):546-561. Hardy MH. The development of mouse hair *in vitro* with some observations in pigmentations. *J Anat.* 1949; 83:364-384.
1960s	Clinical	Barman	Julio M. Barman, MD	Facultad de Ciencias Médicas, Universidad Nacional del Litoral, Rosario de Santa Fe, Republica Argentina	Contributed to our understanding of hair density and the hair cycle.	Barman JM, Astore I, Pecoraro V. The normal trichogram of adult. *J Invest Dermatol.* 1965; 44:233-236.
1960s-1980s	Clinical/ Surgical	Stough	D. Bluford Stough, MD, III	Private practice, Hot Springs, Arkansas, USA	Founding member of American Society for Dermatologic Surgery. Early pioneer of modern-day hair transplantation surgery. Advanced scalp flap technology for hair restoration.	Stough DB 3rd, Cates JA. Transposition flaps for the correction of baldness: a practical office procedure. *J Dermatol Oncal Surg.* 1980; 6(4):286-289.

1960s-1980s	Translational	Uno	Hideo Uno, MD, PhD	Oregon Regional Primate Research Center, Beaverton, Oregon	Developed the Macaque monkey animal model for studies of androgenetic alopecia with a focus on the safety and efficacy of topical minoxidil for the treatment of androgenetic alopecia.	Uno H, Cappas A, Schlagel C. Cyclic dynamics of hair follicles and the effect of minoxidil on the bald scalps of stumptailed macaques. *Amer J Dermatopathology.* 1985 Jun; 7(3):283-297. Uno H, Adachi K, Montagna W. Morphological and biochemical studies of hair follicle in common baldness of stump-tailed macaque (Macaca speciosa). In: W Montagna and RL Dobson, eds. *Advance in Biology of Skin.* Vol 9, Hair Growth. Pergamon Press: Oxford, 1968; pp 221-224. Uno H, Allegra F, Adachi K, Montagna W. Studies of common baldness of the stump-tailed macaque: I. Distribution of hair follicles. *J Invest Dermatol.* 1967; 31:281-287.
1960s-1990s	Clinical/ Surgical	Norwood	O'Tar T. Norwood, MD	University of Oklahoma, Norman, Oklahoma, USA	Added to Hamilton's scale to create the commonly used Norwood Classification Scale for male pattern baldness/ androgenetic alopecia (AGA). Co-founded the International Society of Hair Restoration Surgery (ISHRS), the leading society for hair transplant physicians. Founding member of American Society for Dermatologic Surgery.	Norwood OT. Male pattern baldness: classification and incidence. *South Med J.* 1975; 68(11):1359-1365. Norwood OT. Hair Transplant Surgery. Springfield, Ill. Thomas [1973].
1960s-1990s	Clinical	Muller	Sigfrid A. Muller, MD	Mayo Clinic, Rochester, Minnesota, USA		Muller SA. Trichotillomania: A histopathologic study in sixty-six patients. *J Am Acad of Dermatol.* 1990; 23(1):56-62. Muller SA, Winkelmann RK. Alopecia areata: an evaluation of 736 patients. *Arch Dermatol.* 1963; 88(3):290-297.
1970s-1980s						

1970s	Clinical	Brown	Algie C. Brown, MD	Medicine (Dermatology) and Pathology (Dermatopathology) at Emory University School of Medicine, Atlanta, Georgia, USA	Found that different types of congenital or inherited defects may eventuate in a final common pathway of deficiency of high-sulfur hair protein. Founded the first American Academy of Dermatology (AAD) accredited training program and the first Dermatopathology Lab, and conducted extensive research in forensic medicine/pathology with a special interest in vitiligo and alopecia areata (AA).	Brown AC, Belser RB, Crounse RG, Wehr RF. A congenital hair defect: trichoschisis with alternating birefringence and low sulfur content. *J Invest Dermatol.* 1970 Jun; 54(6):496-509.
1970s	Clinical	Hashimoto	Ken Hashimoto, MD	Veterans Hospital, Nashville, Tennessee, USA Wayne State University, Detroit, Michigan, USA	Studied electron microscopic features on hair. Investigated a better system to study and identify diseases of the scalp and other thick surfaces using microscopy.	Hashimoto K. New methods for surface ultrastructure: comparative studies of scanning electron microscopy, transmission electron microscopy and replica method. *Int'l J Dermatol.* 1974 Nov; 13(6):357-381.

1970s-1980s	Clinical	Kahn	Guinter Kahn, MD	University of Colorado, Aurora, Colorado, USA	Discovered topical minoxidil use for hair growth. This was the first Food and Drug Administration (FDA)-approved drug for hair growth and only the second cosmetic FDA-approved drug. After some legal wrangling, Dr. Kahn was credited with helping develop Rogaine®, the first baldness remedy recognized by the U.S. Patent and Trademark Office. It was originally patented in 1971 by pharmaceutical company Upjohn as a hypertension treatment. Dr. Charles Chidsey, one of Upjohn's consultants working at the University of Colorado's medical school to administer the minoxidil experiments, however, noted a strange side effect of minoxidil in a female patient was to increase hair growth. He brought in Dr. Kahn and Dr. Paul Grant, dermatologists, to consult on the patient, and though her blood pressure was lowered, she was growing hair all over her face and temples. Dr. Kahn wondered if minoxidil could grow hair on the top of the head and began experimenting, soon discovering that minoxidil could be effective in restoring lost hair. In 1988, the FDA approved minoxidil for topical use to stimulate hair growth and Upjohn began manufacturing and selling it as Rogaine®.	United States Patent (19) Chidsey, III et al. (54) (75) (73) (21) 22 (63) (51) METHODS AND SOLUTIONS FOR TREATING MALE PATTERN ALOPECA Inventors: Charles A. Chidsey, III, Boulder, Wyo.; Guinter Kahn, Miami Beach, Fa Assignee: The Upjohn Company, Kalamazoo, Mich.

1970s-1980s		Baden	Howard P. Baden, MD	Harvard Medical School, Boston, Massachusetts, USA	Identified structural and protein abnormalities in hereditary hair disorders and compared hair proteins to proteins in the epidermis and nail. His work pointed to specific protein abnormalities that later led to the identification of the molecular pathways and genes associated wtih many of these disorders.	Baden HP, McGilvray N, Lee LD, Baden L, Kubilus J. Comparison of stratum corneum and hair fibrous proteins. *J Invest Dermatol*. 1980; 75:311-315. Baden HP, Jackson CE, Weiss L, Jimbow K, Lee L, Kubilus J, Gold RJ. The physicochemical properties of hair in the BIDS syndrome. *Amer J Hum Gent.* 1976; 28:514-521. Baden HP, Goldsmith LA, Fleming B. A comparison of the physicochemical properties of human keratinized tissues *Biochim Biophys Acta.* 1973; 332:269-278.
1970s–1990s	Basic, Clinical	Bystryn	Jean-Claude Bystryn, MD	New York University School of Medicine, New York, New York, USA	Published on the immunology of hair loss and hair follicle pigmentation.	Tobin DJ, Orentreich N, Fenton DA, Bystryn JC. Antibodies to hair follicles in alopecia areata. *Invest Dermatol.* 1994; 102:721-724. Bystryn JC, Tamesis J. Immunologic aspects of hair loss. *J Invest Dermatol.* 1991 May; 96(5):88S-89S. doi: 10.1111/1523-1747. Bystryn JC, Orentreich N, Stengel F. Direct immunofluorescence studies in alopecia areata and male pattern alopecia. *J Invest Dermatol.* 1979; 73(5):317-320.

1970s-2000s	Clinical	Shupack	Jerome L. Shupack, MD	New York University School of Medicine, New York, New York, USA	Contributed to the fields of dermatopharmacology and drug development, which included new treatments for alopecias. Engaged in the first pivotal clinical trials of the first two milestone pharmacologic agents for androgenetic alopecia: topical minoxidil and oral finasteride.	Drake LA, Dinehart SM, Farmer ER, Goltz RW, Graham GF, Hordinsky MK, Lewis CW, Pariser DM, Webster SB, Whitaker DC, Butler B, Lowery BJ, Price VH, Baden H, DeVillez RL, Olsen E, Shupack JL. Guidelines of care for androgenetic alopecia. American Academy of Dermatology. *J Am Acad Dermatol.* 1996 Sep; 35(3 Pt 1):465-469. Shupack JL, Kanof N, Stolman LP, Vogel L, Whitlow M, Cohen DE, Washenik K, Lee MP, Stiller MJ. New York University therapeutic roundtable: a panel of experts answer questions on the treatment of challenging cases. *Cutis.* 1994 Jul; 54(1):29-33. Shupack JL, Kassimir JJ, Thirumoorthy T, Reed ML, Jondreau L. Dose-response study of topical minoxidil in male pattern alopecia. *J Am Acad Dermatol.* 1987 Mar; 16(3 Pt 2):673-676.
1970s-2010s	Clinical	Drake	Lynn A. Drake, MD	Massachusetts General Hospital/Harvard Medical School, Boston, Massachusetts, USA	Discovered that 1 chloro-2,4-dinitrobenzene (DNCB) could successfully treat extensive alopecia areata (AA). This was an important finding as it was the first time hapten-induced contact hypersensitivity had been used in AA. Authored a pivotal study examining the safety and effects of finasteride on scalp skin and serum androgen levels in men with androgenetic alopecia.	Lin RL, Garibyan L, Kimball AB, Drake LA. Systemic causes of hair loss. *Ann Med*. 2016 Sep; 48(6):393-402. Drake L, Hordinsky M, Fiedler V, Swinehart J, Unger WP, Cotterill PC, Thiboutot DM, Lowe N, Jacobson C, Whiting D, Stieglitz S, Kraus SJ, Griffin EI, Weiss D, Carrington P, Gencheff C, Cole GW, Pariser DM, Epstein ES, Tanaka W, Dallob A, Vandormael K, Geissler L, Waldstreicher J. effects of finasteride on scalp skin and serum androgen levels in men with androgenetic alopecia. *J Am Acad Dermatol*. 1999; 41(4):550-554. Drake LA, Rosenberg E, Dunaway D. Alopecia areata—a response to DNCB. *Arch Dermatol*. 1976; 112:256.

1980s	Basic	Bazzano	Gail S. Bazzano, PhD	Dermatology Research Foundation of California, Los Angeles, California, USA	Noted the use of retinoic acid for hair growth. Studied the synergistic effect of retinoids in combination with a low concentration of minoxidil for hair growth.	Terezakis NK, Bazzano GS. Retinoids: Compounds important to hair growth. *Clin Dermatol.* 1988; 6(4):129-131. Bazzano GS, Terezakis NK, Galen W. Topical tretinoin for hair growth promotion. *J Am Acad Dermatol.* 1986; 15(4):880-893.
1980s	Clinical	Fiedler	Virginia C. Fiedler, MD	University of Illinois at Chicago, Chicago, Illinois, USA	First to report topical minoxidil can elicit hair regrowth in alopecia areata (AA), and topical minoxidil elicits a dose-response effect on hair regrowth in AA. Studied oral minoxidil in the management of AA.	Weiss VC, Buys CM. Direct T-cell effects of minoxidil. *Clin Dermatol.* 1988 Oct-Nov; 6(4):148-151. Fielder-Weiss VC, Rumsfield J, Buys CM, West DP, Wendrow A. Evaluation of oral minoxidil in the treatment of alopecia areata. *Arch Dermatol.* 1987 Nov; 123(11):1488-1490. Fiedler-Weiss VC, West DP, CM Buys, Rumsfield JA. Topical minoxidil dose-response effect in alopecia areata. *Arch Dermatol.* 1986; 122(2):180-182. (Fiedler) Weiss VC, West DP, Mueller CE. Topical minoxidil in alopecia areata. *J Am Acad Dermatol*. 1981 Aug; 5(2):224-226.
1980s		Headington	John T. Headington, MD	University of Michigan, Ann Arbor, Michigan, USA	Noted that transverse sections of cylindrical scalp biopsy specimens provided excellent samples for histologic and quantitative morphometric analyses of follicles and follicular units.	Headington JT. Transverse microscopic anatomy of the human scalp. A basis for a morphometric approach to disorders of the hair follicle. *Arch Dermatol.* 1984 Apr; 120(4):449-456. Headington JT, Mitchell A, Swanson N. New histopathologic findings in alopecia areata studied in transverse sections. *J Invest Dermatol.* 1981; 76:325.

1980s	Clinical	Terezakis	Nia K. Terezakis, MD	Tulane University, New Orleans, Louisianna, USA Louisiana State University, Baton Rouge, Louisianna, USA Dermatology Research Foundation of California, Los Angeles, California, USA	Noted the use of retinoic acid for hair growth. Studied the synergistic effect of retinoids in combination with a low concentration of minoxidil.	Terezakis NK, Bazzano GS. Retinoids: Compounds important to hair growth. *Clin Dermatol.* 1988; 6(4):129-131. Bazzano GS, Terezakis NK, Galen W. Topical tretinoin for hair growth promotion. *J Am Acad Dermatol.* 1986; 15(4):880-893.
1980s-1990s		DeVillez	Richard L. DeVillez, MD	The Upjohn Company, Kalamazoo, Michigan, USA	Was the director of the First Hair Symposium, which was held in the United States and sponsored by the Upjohn Company. This symposium included basic science, clinical, and translational researchers from the United States and the world, and focused on the science and development of minoxidil for the treatment of androgenetic alopecia.	DeVillez RL, Jacobs JP, Szpunar CA, Warner ML. Androgenetic alopecia in the female. Treatment with 2% topical minoxidil solution. *Arch Dermatol.* 1994 Mar; 130(3):303-307. DeVillez RL. The therapeutic use of topical minoxidil. *Dermatol Clinics.* 1990 Apr; 8(2):367-375. DeVillez RL, Buchanan JM. The graying phenomenon: an unusual manifestation of alopecia areata. *Int J Dermatol.* 1982; 21(6):344-346.

1980s-2000s	Clinical/ Surgical	Uebel	Carlos O. Uebel, MD, PhD	Pontifical Catholic University of Rio Grande do Sul, Porto Alegre, Brazil	Credited for creating a technique using a hair-bearing angular flap in one single stage for male pattern baldness (MPB) surgery, from which a parietal flap could be rotated without undermining. Credited for the creation of micro- and minigraft megasessions, a procedure in which 1,000 micro-/minigrafts are implanted in a single session. Introduced for the first time in the world platelet-rich plasma (PRP) and its growth factors for hair loss.	Uebel CO, da Silva JB, Cantarelli D, Martins P. The role of platelet plasma growth factors in male pattern baldness surgery. *Plast Reconstr Surg.* 2006; 118(6):1458-1466. Uebel CO. A new advance in baldness surgery using platelet-derived growth factor. *Hair Transpl Forum Int'l.* 2005; 15(3):77-84. Uebel, CO. Megasessions with micrografts and minigrafts. *Ann Plast Surg.* 1991; 27:476-487. Uebel, CO. Baldness surgery- reduction versus flap. *Handchir Mikrochir Plast Chir.* 1983; 15:250-253.
1980s-2010s	Clinical	Whiting	David A. Whiting, MD	Baylor University, Waco, Texas, USA Private Practice Dermatology, Dallas, Texas, USA	Expert in the histology of alopecic disorders especially male pattern hair loss, female pattern hair loss, alopecia areata (AA), and telogen effluvium (TE). Studied basic aspects of hair growth, hair and scalp disorders, surgery, and hair cosmetics.	Whiting DA. Histology of the Human Hair Follicle. In: Blume-Peytavi U, Whiting DA, Trüeb RM, eds. *Hair Growth and Disorders* Springer-Verlag: Berlin Heidelberg, 2008; Chapter 7, pp 107-123. Whiting DA. Diagnostic and predictive value of horizontal sections of scalp biopsy specimens in male pattern androgenetic alopecia. *J Am Acad Dermatol.* 1993 May; 28(5):755-763.

1980s-2010s	Clinical	Price	Vera Price, MD	University of California – San Francisco, San Francisco, California, USA	Co-founded the patient support organizations National Alopecia Areata Foundation (NAAF) and Cicatricial Alopecia Research Foundation (CARF). NAAF and CARF not only support the community of patients affected by hair loss, but have also been critical in advocating for research and treatment. A pivotal partnership between NAAF and the National Institutes of Health (NIH) lead to the NAAF patient registry and paved the way for the breakthrough research on inflammatory pathways involved in the pathogenesis of alopecia areata (AA). First described the clinical entities trichothiodystrophy (TTD) and loose anagen syndrome (LAS). Subsequent characterization showed this autosomal recessive genetic disorder TTD to be a result of defects in the nucleotide excision repair pathway.	Mirmirani P, Willey A, Headington JT, Stenn K, McCalmont TH, Price VH. Primary cicatricial alopecia: histopathologic findings do not distinguish clinical variants. *J Am Acad Dermatol.* 2005; 52(4):637-43. Price VH, Gummer CL. Loose anagen syndrome. *J Am Acad Dermatol*. 1989; 20(2 Pt 1):249-256. Price VH, Odom RB, Ward WH, Jones FT. Trichothiodystrophy: sulfur-deficient brittle hair as a marker for a neuroectodermal symptom complex. *Arch Dermatol*. 1980; 116(12):1375-1384.
1980s-2010s		Stenn	Kurt Stenn, MD	Yale University, New Haven, Connecticut, USA Aderans Research Institute, Marietta, Georgia, USA; Johnson & Johnson University of Pennsylvania, Philadelphai, Pennsylvania, USA	Developed compound screening tool for hair growth compounds in mice. Discovered role of sebaceous gland dysfunction in cicatricial alopecia.	Wu X, Scott L Jr, Washenk K, Stenn K. Full-thickness skin with mature hair follicles generated from tissue culture expended in human cells. *Tissue Eng Part A*. 2014 Dec; 20(23-24):14-21. Stenn KS, Karnik P. Lipids to the top of hair biology. *J Invest Dermatol.* 2010; 130(5):1205-1207. Stenn KS. Exogen is an active, separately controlled phase of the hair growth cycle. *J Am Acad Dermatol.* 2005; 52:374-375. Stenn KS, Paus R. Controls of hair follicular cycling. *Physiol Revs.* 2001; 81:449-494.

1980s-2020s	Clinical	Bergfeld	Wilma F. Bergfeld, MD	Cleveland Clinic, Cleveland, Ohio, USA	Founded (1989) and served as president (2011-2016) of the North American Hair Research Society (NAHRS). She was also the first female to be elected president of the American Academy of Dermatology (AAD) (1992), co-chaired the 2015 World Congress of Hair Research held in Miami, Florida, and is the current chair of the International Federation of Hair Research Societies (IFHRS). Specializes in clinical dermatology such as hair disorders including androgen excess hair loss and alopecia areata (AA) as a systemic disease. Studies dermatopathology of alopecic disorders, engages in pharmaceutical clinical studies, and acts as an advisor to pharmaceutical companies.	Kyei A, Bergfeld WF et al. Medial and environmental risk factors for the development of central centrifugal cicatricial alopecia: A populations study. *Arch Dermatol.* 2011; 147(8):909-914. Sellheyer K, Bergfeld WF. Histopathology evaluation of alopecias. *Am J Dermatopathol.* 2006; 28(3):236-259. Mikesell JF, Bergfeld WF, Braun WE. HLA-DR antigens in alopecia areata. Preliminary report. *Cleve Clinic Q.* 1986 Summer; 53(2):189-191. Kasick JM, Bergfeld WF et al. Adrenal androgenic female-pattern alopecia: sex hormones and the balding woman. *Cleve Clin Q.* 1983 Summer; 50(2):111-122.
1980s-2020s	Clinical	Duvic	Madeleine Duvic, MD	MD Anderson, Houston, Texas, USA	Was principal investigator of the Alopeica Areata Patient Registry and Biorepository, funded by the National Institutes of Health, and then transferred to the National Alopecia Areata Foundation. Focused on promoting research on the genetic basis of alopecia areata (AA) with participation of four additional sites: University of California – San Francisco, University of Colorado, University of Minnesota, and Columbia University. Demonstrated that history of atopy and autoimmune disease was associated with an increased risk of AA. Found serum IL-15 may be a marker of AA severity.	Barahmani N, Lopez A, Babu D, Hernandez M, Donley SE, Duvic M. Serum T helper 1 cytokine levels are greater in patients with alopecia areata regardless of severity or atopy. *Clin Exp Dermatol.* 2010; 35(4):409-416. Barahmani N, Schabath MB, Duvic M. History of atopy or autoimmunity increases risk of alopecia areata. *J Am Acad Dermatol.* 2009; 61(4):581-591. Duvic M, Norris D, Christiano A, Hordinsky M, Price V. Alopecia areata registry: an overview. *J Invest Dermatol Symp Proc.* 2003 Oct; 8(2):219-221.

1980s-2020s	Translational & Clinical	Jimenez	Joaquin J. Jimenez, MD	University of Miami, Coral Gables, Florida, USA	First description of a model for the study of chemotherapy induced alopecia (CIA). Subsequently, studies on this and other models have led to the further understanding of the pathophysiology of CIA. Led the first multi-center study on the efficacy and safety of a low-level laser device in the treatment of male and female pattern hair loss. Study observed that the increase in terminal hair count was comparable to the short-term trials of 5% minoxidil topical solution and 1 mg/day finasteride. These results have led to further studies to define the optimal duration of treatment.	Jimenez JJ, Tongyu C. Wikramanayake, Wilma Bergfeld, Maria Hordinsky, Janet G. Hickman, Michael R. Hamblin, and Lawrence A. Schachner. Efficacy and safety of a low-level laser device in the treatment of male and female pattern hair loss: a multicenter, randomized, sham device-controlled, double-blind study. *Am J Clin Dermatol.* 2014; 15(2):115-127. Jimenez JJ, Wong, GHW, Yunis AA. Interleukin 1 protects from ARA-C-induced alopecia in the rat model. *FASEB J.* 1991; 5:2456-2458.
1980s–2020s	Clinical & Basic	Hordinsky	Maria K. Hordinsky, MD	University of Minnesota, Minneapolis, Minnesota, USA	Clinical researcher in hair diseases. Past President of the American Hair Research Society and one of the first recipients of a grant from the National Alopecia Areata Foundation. Studies nerves and neuropeptides and their association with the symptomatic scalp and hair diseases such as alopecia areata (AA), frontal fibrosing alopecia (FFA), lichen planopilaris (LPP), and androgenetic alopecia (AGA).	Shaik JA, Estharabadi N, Farah RS, Hordinsky MK. Heterogeneity in amount of growth factors secreted by platelets in platelet-rich plasma samples from alopecia patients. *Exp Dermatol*. 2020 Oct; 29(10):1004-1011. Doche I, Wilcox GL, Ericson M, Valente NS, Romiti R, McAdams BD, Hordinsky MK. Evidence for neurogenic inflammation in lichen planopilaris and frontal fibrosing alopecia pathogenic mechanism. *Exp Dermatol*. 2020 Mar; 29(3):282-285. Farah S, Farah R, Junzueira A, Hongfei G, Ericson M, Hordinsky M. Increased cutaneous stimulation is required for C-fiber sensory perception in alopecia areata: a double-blind study. *J Am Acad Dermatol.* 2016 Dec; 75(6):1265-1267.

1980s-2020s	Clinical/ Pathology	Sperling	Leonard C. Sperling, MD	Uniformed Services University, Bethesda, Maryland, USA	Was an early adopter of the use of horizontal sections in the interpretation of hair pathology, a technique pioneered by Dr. Terry Headington. Over the past three decades and in numerous peer-reviewed publications, Dr. Sperling has established the histologic criteria, and in some cases the clinical findings and criteria, for numerous forms of cicatricial and non-cicatricial alopecia. Helped to establish the numerical/diagnostic standards for *normal* scalp biopsies in multiple races. Accumulated works culminated in the publication of the first and only textbook of hair pathology (now in its 2nd edition), which included clinical criteria as well as histologic findings.	Callender, VD, Wright DR, Ddavis, EC, Sperling L. Hair breakage as a presenting sign of early or occult central centrifugal cicatricial alopecia. *Arch Dermatol*. 2012 Sept; 148(9):1047-1052. Sperling LC, Cowper SE, Knopp EA. *An Atlas of Hair Pathology with Clinical Correlations*, 2nd Edition. London: Informa Healthcare, 2012. Sperling L, Hussey S, Sorrelis T, Darling T. Cytokeratin 75-expression in central, centrifugal, cicatrical alopecia—New observations in normal and diseased hair follicles. *J Cut Pathol.* 2010 31(9); 973-976.

1980s-2010s	Basic	Sawaya	Marty Sawaya, MD, PhD	University of Miami, Coral Gables, Florida, USA SUNY Brooklyn Health Science Center, Brooklyn, New York, USA University of Florida, Gainesville, Florida, USA	Examined steroid biochemistry in human hair follicles and sebaceous glands. Studied inflammasome signaling proteins linking neuroscience to endocrinology and dermatology. Studied steroid effect on the hair cycle in androgenetic alopecia and other hair disorders such as alopecia areata (AA). Found specific caspases are activated by dihydrotestosterone, leading to the production of pro-inflammatory cytokines that alter the human hair cycle and early inflammatory events shortening the hair cycle. Findings from his clinical/basic research revealed a change in the assembly of inflammasomes early in the inflammatory response pathway with drugs such as topical minoxidil and oral finasteride primarily by the caspase family of cysteine proteases.	de Rivero Vaccari JP, Sawaya ME, Brand F 3rd, Nusbaum BP, Bauman AJ, Bramlett HM, Dietrich WD, Keane RW. Caspase-1 level is higher in the scalp in androgenetic alopecia. *Dermatol Surg.* 2012 Jul; 38(7 Pt 1):1033-1039. Sawaya ME, Blume-Peytavi U, Mullins DL, Nusbaum BP, Whiting D, Nicholson DW, Lotocki G, Keane RW. Effects of finasteride on apoptosis and regulation of the human hair cycle. *J Cutaneous Med & Surg.* 2002; 6(1):1-9. Sawaya ME, Shalita AR. Androgen receptor polymorphisms (CAG repeat lengths) in androgenetic alopecia, hirsutism and acne. *J Cutaneous Med & Surg*. 1998 Jul; 3(1):9-15. Sawaya ME, Price VH. Different levels of 5a-reductase type I and II, aromatase and the androgen receptor in human hair follicles of men and women with androgenetic alopecia. *J Invest Dermatol.* 1997; 109(3):296-300.

1980s-2020s	Clinical/ Surgical	Unger	Walter P. Unger, MD	Mt. Sinai School of Medicine, New York, New York, USA	Determined the "Safest Donor Area" for hair transplanting. Between 1994-1995, Unger and a Dermatology resident examined 328 Caucasian men with male pattern baldness, aged 65 to greater than 80 years old, and looked for scalp areas containing at least 8 hairs per 4mm diameter circles. The findings were published in 1995 and included a diagram that was eventually designated, "The Safest Donor Area." Dr. Unger believes the presentation was, and continues to be, the most important advice he has ever published. More importantly, he hopes similar studies including at least as many patients and at least as aged patients, using the most modern technology and for all races, will be done as soon as feasible; this would be more accurate and far more important to the field of hair restoration surgery.	Unger W. The Donor Site. In: *Hair Transplantation*, 3rd ed. New York: Marcel Dekker, 1995; pp 185-187.
1986-2020s	Clinical	Shapiro	Jerry Shapiro, MD	New York University, New York, New York, USA University of British Columbia, Vancouver, British Columbia	Established the first integrated medical, surgical and basic science hair fellowship in the world. Trained over 30 fellows from 4 continents who authored over 100 peer-reviewed articles in both medical and hair transplantation literature. Popularized topical immunotherapy in North America with the largest studies done on this continent. Started with animal work and then human work. Performed bench to bedside translational research. Published clinical trials using platelet-rich plasma in different hair diseases.	Shapiro J, Ho, A, Kumar S, Yin L, Sicco, K. Evaluation of platelet-rich plasma as a treatment for androgenetic alopecia: a randomized controlled trial. *J Amer Acad Dermatol.* 2020; 83(5):1298-1303. Santos LDN, Shapiro J. What's new in hair loss. *Dermatol Clin.* 2019 Apr; 37(2):137-141. Shapiro J. Hair Loss in Women. *N Engl J Med.* 2007; 357:1620-1630.
1990s						

1990s	Basic, Clinical, Translational	Bertolino	Arthur P. Bertolino, MD, PhD	New York University Medical Center, New York, New York, USA	Advanced knowledge about human and mouse hair keratins. Noted that distinct functional requirements are satisfied by the multiplicity of hair keratins. Described a method for the isolation of mouse hair follicle mRNAs.	Bertolino AP. Mouse hair keratins cDNA: Implications and sequences. *Clin Dermatol.* 1998; 6(4):42-45. Yu J, Yu D-W, Checkla DM, Freedberg IM, Bertolino AP. Human hair keratins. *J Invest Dermatol.* 1993 Jul; 101(1)SUPPL:S56-S59. Bertolino AP, et al. Differential expression of type I hair keratins. *J Invest Dermatol.* 1990 Mar; 94(3):297-303.
1990s	Clinical	Kaufman	Keith D. Kaufman, MD	Merck Sharp & Dohme Corp., a subsidiary of Merck & Co., Inc., Kenilworth, New Jersey, USA	Conducted and designed clinical studies with the type 2 5α-reductase inhibitor finasteride in males with androgenetic alopecia (AGA). Phase 2 studies of finasteride vs. placebo established proof of concept and the optimal dose for further study. Three Phase 3 placebo-controlled studies established the efficacy and safety profile of the drug in men with AGA and led to approval of the first oral medication (Propecia®) for the treatment of men with male pattern hair loss.	Kaufman KD, Dawber RP. Finasteride, a Type 2 5alpha-reductase inhibitor, in the treatment of men with androgenetic alopecia. *Expert Opin Investig Drugs.* 1999 Apr; 8(4):403-415.
1990s	Basic	Martin	Gail R. Martin, PhD	University of California – San Francisco, San Francisco, California, USA	Discovered Fgf5 mutation as causing Angora phenotype. Found evidence that FGF5 functions as an inhibitor of hair elongation, thus identifying a molecule whose normal function is apparently to regulate one step in the progression of the follicle through the hair growth cycle.	Hébet JM, Rosenquist T, Gotz J, Martin GR. FGF5 as a regulator of the hair growth cycle: evidence from targeted and spontaneous mutations. *Cell.* 1994 Sep; 78(6):1017-1025.
1990s	Clinical	Savin	Ron Savin, MD	Private Practice, New Haven, Connecticut	Developed a widely used visual method of classifying and tracking hair loss using computer-generated male and female pattern and density scales.	Trancik RJ, Savin R. Classification scale for male and female androgenetic alopecia. Clin *Pharmacol Ther.* 1996; 59:166-166.

1990s	Basic	Steinert	Peter M. Steinert, PhD	Former Chief of the Laboratory of Skin Biology, National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), National Institutes of Health, Bethesda, Maryland, USA	Internationally renowned for his work on intermediate filaments and structural and molecular biology of skin. Studied the novel role for disulfide bond cross-linking in stabilization of intermediate filaments and the tissues containing them. Major achievements included studies on keratin structure and keratin-intermediate filament assembly; identification of novel, cornified-cell-envelope components; characterisation of enzymes involved in their cross-linking (transglutamisases (TG)) including the three-dimensional structure of TG3; and identification of the biochemical steps leading to cornified-cell-envelope assembly.	Wang H, Parry DA, Jones LN, Idler WW, Marekov LN, Steinert PM. *In vitro* assembly and structure of trichocyte keratin intermediate filaments: a novel role for stabilization by disulfide bonding. *J Cell Biol*. 2000; 151(7):1459-1468. Steinert PM, Parry DA. The conserved H1 domain of the type II keratin 1 chain plays an essential role in the alignment of nearest neighbor molecules in mouse and human keratin 1/keratin 10 intermediate filaments at the two- to four-molecule level of structure. *J Biol Chem.* 1993 Feb 5; 268(4):2878-87.
1990s-2000s	Basic	King	Lloyd King, MD, PhD	Vanderbilt University, Nashville, Tennessee, USA	Basic researcher, dermatopathologist and dermatologist. Studied alopecia areata (AA) and its relevance to other organ-specific autoimmune diseases. Collaborated with Dr. John Sundberg on genetic studies in patients and mouse models to show that AA is a complex, polygenic disease. Several genetic susceptibility loci were identified to be associated with signaling pathways that are important to hair follicle cycling and development.	Pratt C, King L, Messenger A, Christiano A, Sundberg J. Alopecia areata. *Nature Reviews Disease Primers.* 2017; 3:17011 King LE Jr, McElwee KJ, Sundberg JP. Alopecia areata. *Curr Dir Autoimmun.* 2008; 10:280-312.
1990s-2000s	Clinical/ Surgical	Limmer	Bobby L. Limmer, MD	Private Practice, San Antonio, Texas, USA	Credited with creating the follicular unit transplant (FUT, a procedure that involves stereomicroscopically dissecting a strip graft into naturally occurring follicular units.	Limmer BL. Transplanted grafts should consist only of naturally occurring follicular units. *Hair Transpl Forum Int'l.* 2005; 15(6):203.

1990s-2000s	Clinical	Roberts	Janet Roberts, MD	Private Practice, Portland, Oregon, USA	Studied the use of finasteride to treat postmenopausal woman with androgenetic alopecia. Found finasteride 1 mg/day is optimal dose for treatment of male pattern hair loss.	Price V, Roberts J, Hordinsky M, Olsen Elise, Savin R, Bergfeld W, Fiedler V, Lucky A, Whiting D, Pappas F, Culbertson J, Kotey P, Meehan A, Waldstreicher J. Lack of efficacy of finasteride in postmenopausal women with androgenetic alopecia. *J Am Acad Dermatol.* 2000; 43:768-76. Roberts J, Fiedler V, Imperato-Mcginley J, Whiting D, Olsen E, Shupack J, Stough D, DeVillez R, Rietschel R, Savin R, Bergfeld W, Swinehart J, Funicella T, Hordinsky M, Lowe N, Katz I, Lucky A, Drake L, Price V, Gencheff C. Clinical dose ranging studies with finasteride, a type 2 5α-reductase inhibitor, in men with male pattern hair loss. *J Am Acad Dermatol.* 1999; 41:555-563.
1990s-2000s	Basic	Sun	Tung-Tien (Henry) Sun, PhD	New York University, New York, New York, USA	Discovered that label-retaining cells exist exclusively in the bulge area of the mouse hair follicle. This finding changed the view that hair follicle stem cells reside in the matrix of the hair bulb. Devised a double-label technique to show upper follicular keratinocytes emigrate into the epidermis in normal newborn mouse skin and in adult mouse skin in response to a penetrating wound. This indicates that the hair follicle represents a major repository of keratinocyte stem cells in mouse skin and that follicular bulge stem cells are potentially bipotent as they can give rise to not only the hair follicle but also the epidermis. Found evidence that specific genes are turned on during catagen, and, therefore, it is not simply a passive “degenerative” phase.	Yu DW, Yang T, Sonoda T, Gong Y, Cao Q, Gaffney K, Jensen PJ, Freedberg IM, Lavker RM, Sun TT. Osteopontin gene is expressed in the dermal papilla of pelage follicles in a hair-cycle-dependent manner. *J Invest Dermatol.* 2001; 117(6):1554-1558. Taylor G, Lehrer MS, Jensen PJ, Sun TT, Lavker RM. Involvement of follicular stem cells in forming not only the follicle but also the epidermis. *Cell.* 2000; 102(4):451-461. Cotsarelis G, Sun T, Lavker RM. Label-retaining cells reside in the bulge area of pilosebaceous unit; implications for follicular stem cells, hair cycle, and skin carcinogenesis. *Cell.* 1990; 61(7):1329-1337.

1990s-2000s		Ericson	Marna Ericson, PhD	University of Minnesota, Minneapolis, Minnesota, USA	The Ericson lab examines images and quantifies biomarkers in skin and other organs using laser scanning microscopy and three-dimensional analysis. Generation of images includes use of single- and multi-photon, correlative, super-resolution confocal, electron microscopy, and microPET imaging, as well as second harmonic generation.	Hordinsky, M, Ericson, M. Hair Follicle Vascularization and Innervation. Hair, Hair Growth and Hair Disorders. 2008: 75-83. Hordinsky, M, Ericson, M, Snow, D, Boeck, C, Lee, W, Peribulbar Innervation and Substance P Expression Following Nonpermanent Injury to the Human Scalp Hair Follicle, *J Invest Dermatol Symp Proceedings*. 1999; 4 (3): 316-319.
1990s-2000s	Clinical/ Surgical/ Translational	Gandelman	Marcelo Gandelman, MD	University of São Paulo, São Paulo, Brazil	Known for eyelash transplantation. Introduced the concept of naturalness and density using single-hair transplantation for reconstruction of eyebrows and eyelashes in the first study on eyebrow and eyelash reconstruction published in Western literature. Wrote the chapter that has served as a model for eyebrow reconstruction surgeries to this day. Studied how to increase the percentage of graft integration in hair transplant surgery. This translational research had a major impact on hair transplantation surgery when it was discovered that dehydration was a decisive factor in a graft's death. Until then, harvested grafts had been placed in dry gauze or left drying on the surgical gloves, which resulted in large follicular losses. This discovery led hair surgeons to keep the grafts moist, which has resulted in significant improvement in graft survival and growth rates.	Gandelman M, Mota AL, Abrahamsohn PA, de Oleveira SF. Light and electron microscopic analysis of controlled injury to follicular unit grafts. *Dermatol Surg.* 2000 Jan; 26(1):25-31. Gandelman M. Eyebrow and Eyelash Transplantation. In: W Unger, ed. *Hair Transplantation,* 3rd Edition. Marcel Dekker, 1995; pp 294-308.

1990s-2000s		Slominski	Andrzej T. Slominski, MD, PhD	University of Tennessee, Memphis, Tennessee, USA University of Alabama, Birmingham, Alabama, USA	Studied hair follicle pigmentation	Slominski, A, Wortsman, J, Plonka, P, Schallreuter, K, Paus, R, Tobin, D. Hair follicle pigmentation. *J Invest Dermatol.* 2005 Jan; 124(1):13-21. Slominski, A, Paus, R, Costantino, R. Differential expression and activity of melanogenesis-related proteins during induced hair growthi n mice. *J Invest Dermatol.* 1991 Feb;96(2):172-9.
1990s-2010s	Clinical	Ahluwalia	Gurpreet Ahluwalia, PhD	Arena Pharmaceuticals, San Diego, California, USA Allergan, Irvine, California, USA P&G/Gillette	Did clinical research in the development of VANIQA and LATISSE, the first and only FDA-approved drugs in their class for the reduction of unwanted facial hair in women and for the treatment of eyelash hypotrichosis, respectively. Demonstrated the efficacy of bimatoprost to improve eyelash growth following chemotherapy-induced hair loss and improve scalp hair growth in those with androgenetic alopecia (AGA). Awarded more than 50 US patents for hair growth modulation. Continuing clinical research in alopecia areata (AA) at Arena Pharm.	Roberts J, Shapiro J, McMichael A, Ahluwalia G. A randomized placebo-controlled trial of bimatoprost for androgenic alopecia in men. Presented at the Skin Disease Education Foundation's 38th Hawaii Dermatology Seminar, February 16-21, 2014, Waikoloa, Hawaii. Ahluwalia GS. Safety and efficacy of bimatoprost solution 0.03% topical application in patients with chemotherapy-induced eyelash loss. Journal of Investigative Dermatology Symposium Proceedings. 2013; 16(SUPPL):S73-S76. Shander D, Ahluwalia GS. Management of unwanted facial hair by topical application of eflornithine. In: Elsner P and Maibach H, eds. *Cosmeceuticals and Active Cosmetics. Drugs Versus Cosmetics.* Taylor & Francis group publisher, 2005; pp 489-510.
1990s-2020s	Translational/Clinical	Anderson	R. Rox Anderson, MD	Harvard, Wellman Laboratories	Expert in lasers and the science behing the use of low level laser light also known as photobiomodulation for hair growth inmale pattern hair loss (MPHL) and female pattern hair loss (FPHL)	Lin TY, Manuskiatti W, Dierickx CC, Farinelli WA, Fisher ME, Flotte T, Baden HP, Anderson RR. Hair growth cycle affects hair follicle destruction by ruby laser pulses. *J Invest Dermatol.* 1998 Jul; 111(1):107-113.

1990s-2020s	Basic	Chuong	Cheng-Ming Chuong, MD, PhD	University of Southern California, Los Angeles, California, USA	Studies development, regeneration and evolution of skin appendages. In the 1990s, when Sonic hedgehog (Shh), Wnt signaling pathways, fibroblast growth factor (FGF) morphogen growth factors and Hox, Msx, and other transcription factors began to be found involved in organ formation, Chuong's team was among the first to apply them to the study of skin appendage formation including feather, scale, beak, and hair. In 1998, he pioneered the work on identifying fibroblast growth factor (FGF) and bone morphogenetic protein (BMP) as Turing activator and inhibitor in periodic skin appendage formation. In the 2000s, the Chuong laboratory used feather morphogenesis as a model to study hair architecture formation. In 2008, his laboratory identified that BMP cycling in intradermal adipose tissue can regulate beta catenin–based hair cycling, leading to the concept that macro-environment (hormone, pregnancy, seasonal environment) can affect hair stem cell activation, in addition to microenvironmental regulation. In 2015, the Chung lab showed they could pluck 200 hairs in a specific topology to activate 1,000 hairs. They further demonstrated this quorum sensing hair regenerative behavior is mediated by integrating micro-injury-induced immune signaling with regeneration.	Chen C-C, Wang L, Plikus MV, Jiang TX, Murray PJ, Ramos R, Guerrero-Juarez CF, Hughes MW, Lee OK, Shi S, Widelitz RB, Lander AD, Chuong CM. Organ-level quorum sensing directs regeneration in hair stem cell populations *Cell.* 2015; 161:277-290. Plikus MV, Mayer JA, de la Cruz D, Baker RE, Maini PK, Maxson R, Chuong CM. Cyclic dermal BMP signaling regulates stem cell activation during hair regeneration. *Nature*. 2008; 451:340-344.
1990s-2020s	Basic	Cotsarelis	George Cotsarelis, MD	University of Pennsylvania, Philadelphia, Pennsylvania, USA	Discovered location of hair follicle stem cells in bulge of mouse and human hair follicles and then showed their role in hair follicle regeneration and in cicatricial and androgenetic alopecia (AGA). Identified inhibitory role of Prostaglandin D2 in AGA.	Cotsarelis G, Sun TT, Lavker RM. Label retaining cells reside in the bulge area of the pilosebaceous unit: implications for follicular stem cess, heair cycle, and skin carcinogenesis. *Cell.* 1990; 61:1329-1337

1990s-2020s	Clinical/ Surgical	Stough	Dowling B. Stough, MD, IV	Private Practice, Hot Springs, Arkansas, USA	Co-founded the International Society of Hair Restoration Surgery (ISHRS). Developed the Feathering Zone Technique® (1989), which he used to optimize single-hair grafting for a natural appearing hairline. Demonstrated rhomboid flap for alopecia correction and scalp reduction with Z-plasty.	Nelson BR, Stough DB, Gillard M, Stough DB, Johnson TM. The paramedian scalp reduction with posterior Z-plasty: a technique to minimize the "slot" defect. *J Dermatol Surg Oncol.* 1992; 18:990-998. Stough DB, Stough DB. Triple rhomboid flap for crown alopecia correction. *J Dermatol Surg Oncol.* 1990; 16:543-548.
1990s-2020s	Basic	Sundberg	John P. Sundberg, DVM, PhD	The Jackson Laboratory, Bar Harbor, Maine, USA	Developed a mouse model for many hair diseases including alopecia areata (AA). Discovered hairless gene mutation. The C3H/HeJ inbred mouse strain was found to develop waxing and waning hair loss that clinically and histologically resembled AA. The Sundberg team went on to develop a full-thickness skin graft and demonstrated that lymphoid cells could reproduce AA in a predictable manner. This spontaneous and graft-induced model was used for comparison to human AA in the first transcriptome study combined with antibody blocking studies in the mice to confirm that this was a cell-mediated autoimmune disease involving the lymphocyte co-stimulatory cascade. Crosses with strains that did not get AA revealed a very complex genetic-based disease.	Sundberg JP, Silva KA, Li R, Cox GA, King LE. Adult-onset alopecia areata is a complex polygenic trait in the C3H/HeJ mouse model. *J Invest Dermatol.* 2004; 123:294-297. Carroll JM, McElwee KJ, King LE Jr, Byrne MC, Sundberg JP. Gene array profiling and immunomodulation studies define a cell-mediated immune response underlying the pathogenesis of alopecia areata in a mouse model and humans. *J Invest Dermatol*. 2002; 119:392-402. McElwee KJ Boggess D, King LE Jr, Sundberg JP. Experimental induction of alopecia areata-like hair loss in C3H/HeJ mice using full-thickness skin grafts. *J Invest Dermatol*. 1998; 111:797-803. Sundberg JP, Cordy WR, King, LE Jr. Alopecia areata in aging C3H/HeJ mice. *J Invest Dermatol.* 1994; 102:847-856.

1990s-2020s	Clinical	Olsen	Elise A. Olsen, MD	Duke University Medical Center, Durham, North Carolina, USA	Expertise with developing standardized assessment measures for hair loss. Introduced the idea of differentiating early and late onset of central hair loss in women and collecting both under the umbrella term of female pattern hair loss (FPHL) instead of the prior term, androgenetic alopecia (AGA), thus allowing for consideration of different etiological factors related to age and hormonal changes. Also introduced a new pattern of FPHL (frontal accentuation/Christmas tree pattern) that allows for clinical differentiation of FPHL from chronic telogen effluvium (TE). Introduced the Severity of Alopecia Tool (SALT) score, the Central Scalp Alopecia in African American Women Photographic Scale, and the Alopecia Density and Extent (ALODEX) score as standardized means of assessing hair loss of alopecia areata (AA), central centrifugal cicatricial alopecia (CCCA), and other hair loss conditions, thus facilitating clinical trials in these conditions.	**FPHL:** Olsen EA. The midline part: An important physical clue to the clinical diagnosis of androgenetic alopecia in women. *J Am Acad Dermatol.* 1999; 40:106-109. **Assessment hair loss:** Olsen EA, Roberts J, Sperling L, Tosti A, Shapiro J, McMichael A, Bergfeld W, Callender V, Mirmirani P, Washenik K, Whiting D, Cotsarelis G, Hordinsky M. Objective outcome measures: collecting meaningful data on alopecia areata. *J Am Acad Dermatol.* 2018 Sep; 79(3):470-478. Olsen EA, Callendar V, Sperling L, McMichael A, Anstrom KJ, Bergfeld WD, Durden F, Roberts J, Shapiro J, Whiting DA. Central scalp alopecia photographic scale in African American women. *Dermatol Ther.* 2008; 21(4): 264-267. Olsen EA, Hordinsky MK, Price VH, Roberts JL, Shapiro J, Canfield D, Duvic M, King LE Jr, McMichael AJ, Randall VA, Turner ML, Sperling L, Whiting DA, Norris D. Alopecia areata investigational assessment guidelines—Part II. *J Am Acad Dermatol.* 2004; 51: 440-447. Olsen EA, Hordinsky M, McDonald-Hull, Price V, Roberts J, Shapiro J, Stenn K. Alopecia areata investigational assessment guidelines. *J Am Acad Dermatol*. 1999; 40:242-246.

1990s-2020s	Clinical/ Surgical	Rassman	William R. Rassman, MD	Private Practice	Credited with creating follicular unit extraction (excision) (FUE) for hair transplantation, around the same time as Ray Woods from Australia. Combined follicular unit extraction and scalp micropigmentation for the cosmetic treatment of alopecias.	Rassman W, Pack J, Kim J. Combining follicular unit extraction and scalp micropigmentation for the cosmetic treatment of alopecias. *Plast Reconst Surg Glob Open.* 2017. Rassman, WR, Bernstein, RM, McClellan, R, Jones, R, Worton, E, Uyttendaele, H. Follicular unit extraction: minimally invasive surgery for hair transplantation. *Dermatol Surg.* 2002; 28:720-728.
1999-2020s	Clinical, Translational	Canfield	Douglas C. Canfield	Adjunct Clinical Professor of Medicine and Cardiology at Georgetown University School of Medicine, Washington DC	Founder and president of Canfield Scientific, Inc. Pioneered the use of specialized devices in medical photography and in imaging for clinical studies. Developed solutions for research and practice that includes multi-spectral and multi-modal 2D and 3D image capture systems; digital asset management; aesthetic simulation; and applications for detection, measurement, and analysis for various skin conditions.	Kohli I, Isedeh P, Al-Jamal M, DaSilva D, Batson A, Canfield D, Kollias N, Lim HW, Hamzavi I. Three-dimensional imaging of vitiligo. *Exper Dermatol.* 2015; 24(11):879-880. Canfield, D, Photographic Documentation of Hair Growth in Androgenetic Alopecia, *Dermatologic Clinics*, 1999; 17, (2): 261-269.
1999-2020s	Clinical	Goldberg	Lynne J. Goldberg, MD	Boston University	Dermatopathologist with expertise in alopecia studies including secondary scarring alopecias. Lectures on the histopathology of alopecia in transverse sections; furthered the work of Headington, Whiting and Sperling, pioneers on this subject. Assessed one of the first patients with permanent chemotherapy induced alopecia following treatment for breast cancer rather than bone marrow transplantation.	Tallon B, Blanchard E, Goldberg LY, . Permanen chemotherapy induced alopecia: case report a review. *J Am Acad Dermatol.* 2010; 63(2):333-6 Goldberg LJ. Cicatricial marginal alopecia: Is it a traction? *Br J Dermatol*. 2009; 160(1):62-68.

1999-2020s	Clinical	McMichael	Amy J. McMichael, MD	Wake Forest School of Medicine, Winston-Salem, North Carolina, USA	Studied hair loss in skin of color patients and central centrifugal cicatricial alopecia (CCCA). Found a genetic polymorphism associated with CCCA. Improved understanding of hair loss in African American women. Demonstrated that mutations in *PADI3*, which encodes a protein that is essential to proper hair-shaft formation, were associated with CCCA.	Felix K, De Souza B, Portilla N, Hogue L, Ahn CS, Sangueza O, McMichael AJ. Dermatoscopic evaluation of central centrifugal cicatricial alopecia beyond the vertex scalp. *JAMA Dermatol.* 2020 Aug 1; 156(8):916-918. Malki L, Sarig O, Romano MT, Méchin MC, Peled A, Pavlovsky M, Warshauer E, Samuelov L, Uwakwe L, Briskin V, Mohamad J, Gat A, Isakov O, Rabinowitz T, Shomron N, Adir N, Simon M, McMichael A, Dlova NC, Betz RC, Sprecher E. Variant *PADI3* in central centrifugal cicatricial alopecia. *N Engl J Med.* 2019 Feb 28; 380(9):833-841.
2000s						

2000s-2010s	Basic, Translational, Clinical	Karnik	Pratima Karnik, PhD	Case Western Reserve University, Cleveland, Ohio, USA	First to describe the role of peroxisome proliferator-activated receptor gamma (PPARg) in the pathogenesis of cicatricial alopecia. Noted the expression and/or activity of PPARg, a transcription factor that regulates lipid metabolism and the inflammatory response, is significantly decreased in lichen planopilaris (LPP). Found that targeted deletion of PPARg in follicular stem cells in mice caused a skin and hair phenotype that emulated scarring alopecia. Changes in lipid metabolism and the accumulation of toxic lipid intermediates are primary events that trigger the inflammatory response in cicatricial alopecia. The Karnik lab was the first to show that altered cholesterol biosynthesis within hair follicle cells causes the accumulation of toxic sterol intermediates. These intermediates inhibit hair growth, activate the expression of toll-like receptor and interferon genes, and induce the recruitment of macrophages that surround the hair follicle and initiate their destruction. With Dr. Mirmirani showed that PPARg agonists such as thiazolidinediones (pioglitazone), which induce the activity of PPARg in cells, may be used as novel treatment strategies for LPP. First case study to show that after initiation of pioglitazone therapy, the patient experienced rapid resolution of symptoms and a decrease in inflammation on biopsy. This suggested that pioglitazone was responsible for patient improvement.	Panicker SP, Ganguly T, Consolo M, Price V, Mirmirani P, Honda K, Karnik P. Sterol intermediates of cholesterol biosynthesis inhibit hair growth and trigger an innate immune response in cicatricial alopecia. *PLoS One.* 2012; 7(6)e38449. Mirmirani P, Karnik P. Lichen planopilaris treated with peroxisome proliferator - activated receptor gamma agonist. *Arch Dermatol.* 2009 Dec; 145(12):1363-1366. Karnik P, Tekeste Z, McCormick TS, Gilliam AC, Price VH, Cooper KD, Mirmirani P. Hair follicle stem cell-specific PPARgamma deletion causes scarring alopecia. *J Invest Dermatol.* 2009 May; 129(5):1243-1257.

2000s-2020s	Translational	Dawson	Thomas L. Dawson, Jr., PhD	Skin Research Institute, Singapore	Added to understanding of female chronogenetic alopecia as a clinical entity, and discovered shaft diameter as a useful treatment target. Dr. Dawson's team discovered, in collaboration with Dr. Andrew Messenger and Clarence Robbins, that female chronogenetic alopecia (FCA) was a distinct clinical disorder with a different etiology from androgenetic alopecia (AGA). In FCA, hair follicles lose bioenergetics potential, particularly but not exclusively, in the fronto-temporal region. This results in a loss of hair diameter giving the appearance of hair thinning without a substantial loss of hair density. They also discovered that boosting energy production via NAD supplementation clinically and statistically increases hair diameter and provides a noticeable benefit to sufferers.	Robbins C, Mirmirani P, Messenger AG, Birch MP, Youngquist RS, Tamura M, Dawson TL Jr. What women want—quantifying the perception of hair amount: an analysis of hair diameter and density changes with age in Caucasian women. *BJD.* 2012; 167(2):324-332; Lemasters JJ, Ramshesh VK, Lovelace GL, Lim J, Wright GD, Harland D, Dawson TL Jr. Compartmentation of mitochondrial and oxidative metabolism in growing hair follicles: a ring of fire. *J Invest Dermatol*. 2017 Jul; 137(7):1434-1444.
2000s–2020s	Clinical & Basic	Christiano	Angela M. Christiano, PhD	Columbia University, New York, New York, USA	Discovered hairless gene mutation as causing the rare genetic disorder Atrichia with Papules. Dr. Christiano's team has used genetic approaches to understand the genetic basis of alopecia areata (AA). They conducted the first Genome-Wide Association Study (GWAS) in 2010, which utilized many samples from the National Alopecia Areata Registry. The GWAS study revealed several genes that contribute to AA, and subsequent meta-analysis studies have both confirmed the initial GWAS genes and uncovered additional ones. The GWAS study made several important contributions to the field that yielded new information and helped to reframe our understanding of AA. First, it showed that AA shares few, if any, genes in common with the other complex skin inflammatory disorders, such as psoriasis and atopic dermatitis, and it helped explain why drugs targeted against	Anzai A, Wang EHC, Lee EY, Aoki V, Christiano AM. Pathomechanisms of immune-mediated alopecia. *Int Immunol.* 2019 Jul; 31(7):439-447. Wang EHC, Sallee BN, Tejeda CI, Christiano AM. JAK inhibitors for treatment of alopecia areata. *J Invest Dermatol.* 2018 Sep; 138(9):1911-1916. Wang ECE, Christiano AM. The changing landscape of alopecia areata: the translational landscape. *Adv Ther.* 2017 Jul; 34(7):1586-1593. Petukhova L, Duvic M, Hordinsky M, et al. Genome-wide association study in alopecia areata implicates both innate and adaptive immunity. *Nature*. 2010;466(7302):113-117. Aita VM, Ahmad W, Panteleyev AA, Kozlowska U, Kozlowska A, Gilliam TC,

					these disorders were largely ineffective in AA. Secondly, the GWAS study revealed that AA shared several genetic pathways with unexpected complex diseases including rheumatoid arthritis, celiac disease, and type 1 diabetes. As a result of this new information, the focus of the lab's research turned toward the major signaling pathway uncovered by the GWAS study, known as the NKG2D pathway, which is shared among these disorders. This focus led to the identification of small molecule janus kinase (JAK) inhibitors as potential new treatment targets in AA. Building on previous work by John Sundberg that established the CeH/HeJ mouse model of AA, the Christiano lab showed that JAK inhibitors could both prevent and reverse AA in the mouse model. These pre-clinical studies provided a foundation for clinical trials using JAK inhibitors for the treatment of AA. The work of the Christiano Lab illustrates how genetic approaches can be used to find new and unanticipated pathways underlying inflammatory skin diseases, and with the availability of a well-characterized mouse model of disease, can be leveraged to rapidly advance new laboratory findings into clinical trials.	Jablonska S, Christiano AM. A novel missense mutation (C622G) in the zinc-finger domain of the human hairless gene associated with congenital atrichia with papular lesions. *Exp. Dermatol*. 2000; 9:157-162.

2000s-2020s	Basic	Ito	Mayumi Ito, PhD	New York University	Identified wound induced hair follicle neogenesis. Discovered role of Wnt in hair pigmentation. Demonstrated the definitive evidence to show new hair follicles can regenerate in adult skin after wounding and the roles for Wnt and Sonic hedgehog (Shh) signaling pathways in this process.	Lim CH, Sun Q, Ratti K, Lee SH, Zheng Y, Takeo M, Lee W, Rabbani P, Plikus MV, Cain JE, Wang DH, Watkins DN, Millar S, Taketo MM, Myung P, Cotsarelis G, Ito M. Hedgehog stimulates hair follicle neogenesis by creating inductive dermis during murine skin wound healing. *Nat Commun*. 2018 Nov 21; 9(1):4903. Ito M, Yang Z, Andl T, Cui C, Kim N, Millar SE, Cotsarelis G. Wnt-dependent de novo hair follicle regeneration in adult mouse skin following wounding. *Nature.* 2007; 447(7142):316-20.
2000s-2020s	Translational/Clinical	Washenik	Ken Washenik, MD, PhD	Department of Dermatology, New York University School of Medicine, Aderans Research Institute, Bosley Medical Group	Dr. Washenik's areas of research endeavors in the alopecias have been in the areas of pharmacology, autologous cell therapy development (including epidermal, dermal and adipose cells) and folliculoneogenesis. Prior to his cell therapy work, he was the Director of the Dermatopharmacology Unit, the oldest in the country, in the Department of Dermatology at New York University's School of Medicine. In 2014, he was awarded the Platinum Follicle Award from the International Society of Hair Restoration Surgery for his research contributions to the field of hair restoration.	Marshall BT, Ingraham CA, Wu X, Washenik K. Future horizons in hair restoration. *Facial Plast Surg Clin North Am.* 2013 Aug; 21(3):521-528. Stenn K, Parimoo S, Zheng Y, Barrows T, Boucher M, Washenik K. Bioengineering the hair follicle. *Organogenesis.* 2007 Jan; 3(1):6-13. Stough D, Stenn K, Haber R, Parsley WM, Vogel JE, Whiting DA, Washenik K. Psychological effect, pathophysiology, and management of androgenetic alopecia in men. *Mayo Clin Proc.* 2005 Oct; 80(10):1316-22.
2000s–2020s	Clinical	Tosti	Antonella Tosti, MD	University of Miami	Clinical researcher. Studies innovative therapies, leader in trichoscopy. Reviewed the role of vitamins and minerals in hair loss.	Almohanna HM, Ahmed AA, Tsatalis JP, Tosti A. The role of vitamins and minerals in hair loss: a review. *Dermatol Ther (Heidelb).* 2019 Mar; 9(1):51-70. Lacarrubba F, Micali G, Tosti A. Scalp dermoscopy or trichoscopy. *Curr Probl Dermatol.* 2015; 47:21-32.

2000s-2020s	Clinical/ Surgical	Cole	John P. Cole, MD	Private Practice	Developed sharp dissection follicular unit excision (FUE) and set standards for most parameters around the FUE technique and motorized FUE.	Cole JP. An analysis of follicular punches, mechanics, and dynamics in follicular unit extraction. *Facial Plast Surg Clin North Am.* 2013 Aug; 21(3):437-47. Cole JP. A strong proponent of FUE. *Hair Transpl Forum Int'l.* 2011; 21(6):193-194.
2000s-2020s	Basic and Translational	Mirmirani	Paradi Mirmirani, MD	Kaiser Permanente, Orinda, California, USA University of California – San Francisco, San Francisco, California, USA Case Western Reserve University, Cleveland, Ohio, USA	Studied the role of peroxisome proliferator-activated receptor (PPAR) gamma dysfunction in scarring alopecias and treatment of scarring alopecias with PPAR gamma agonists. First to identify that peroxisome proliferator-activated receptor (PPAR) gamma, a transcription factor that is required for lipid metabolism and peroxisome biogenesis, is crucial for healthy pilosebaceous units. The loss of function of PPAR gamma was seen in scalp biopsies of patients with lichen planopilaris (LPP). A scarring alopecia phenotype was also seen in mice with a targeted deletion of PPAR gamma in follicular stem cells. Subsequent treatment of a patient with LPP using a PPAR-gamma agonist showed improvement of symptoms and cessation of further hair loss.	Karnik P, Tekeste Z, McCormick TS, Gilliam AC, Price VH, Cooper KD, Mirmirani P. Hair follicle stem cell-specific PPARgamma deletion causes scarring alopecia. *J Invest Dermatol*. 2009; 129(5):1243-1257. Mirmirani P, Karnik P. Lichen planopilaris treated with a peroxisome proliferator–activated receptor γ agonist. *Arch Dermatol.* 2009; 145(12):1363-1366.
2000s-2020s	Basic	Fuchs	Elaine Fuchs, PhD	The Rockefeller University, New York, New York, USA	Focused research on how stem cells of mammalian skin give rise to the epidermis, hair follicles and sweat glands. Characterized and confirmed location of hair follicle stem cells. Reviewed major events of the hair cycle. Noted that bulge cells maintain hair regeneration started by hair germ cells.	Greco V, Chen T, Rendl M, Schober M, Pasolli HA, Stokes N, Dela Cruz-Racelis J, Fuchs E. A two-step mechanism for stem cell activation during hair regeneration. *Cell Stem Cell.* 2009 Feb 6; 4(2):155-69. Alonso L, Fuchs E. The hair cycle. *J Cell Sci.* 2006; 119:391-393.

2000s-2020s	Clinical	Taylor	Susan C. Taylor, MD	University of Pennsylvania, Philadelphia, Pennsylvania, USA	Established a Central Centrifugal Cicatricial Alopecia (CCCA) program at the Perelman School of Medicine, University of Pennsylvania, which focuses on the epidemiology and pathogenesis of this scarring alopecia. Together with a multidisciplinary group including dermatopathologists, geneticists, and a mathematician, and utilizing a repository of several thousand of CCCA scalp biopsy specimens derived primarily from her patient base, several aspects of CCCA have been examined. In addition to a CD-4 predominant lymphocytic inflammatory infiltrate, increased numbers of CD1+a Langerhans cells; a decrease in the hair density by 25% in young women at the time of presentation; the presence of fibrotic trochantors suggesting stem cell depletion; JAK-STAT pathway activation in both CCCA-affected and CCCA-unaffected hair follicles informing new therapies; and a decreased lymphocytic inflammation with advancing age have been found. Epidemiology studies in CCCA included a comorbid risk for anxiety and depression, a significant impairment in quality of life among Black American women, an association of breast cancer but not colorectal cancer, and an association of type 2 diabetes. Established Skin of Color Society in 2004.	Brown-Korsah JB, Roche FC, Taylor SC. Association of breast and colorectal cancer in patients with central centrifugal cicatricial alopecia: A retrospective, cross-sectional pilot study. *J Am Acad Dermatol.* 2021; 84(3):859-860. Roche FC, Fischer AS, Gaddis KJ, Dentchev T, Taylor SC, Cotsarelis G, Seykora JT. Fibrotic trochanters: a potential mechanism for stem cell depletion in scarring alopecias. *J Cutan Pathol.* 2021 Mar; 48(3):458-460. McKenzie SA, Roche FC, Onyekaba G, Williams DM, Ogunleye TA, Taylor SC. Comorbid anxiety and depression among Black women with central centrifugal cicatricial alopecia: a retrospective study. *J Dermatol.* 2021 Jan; 48(1)e19. Flamm A., Moshiri A, Roche F, Onyekaba G, Nguyen J, James AJ, Taylor SC, Seykora JT. Characterization of the inflammatory infiltrate associated with central centrifugal cicatricial alopecia. *J Cutan Pathol*. 2020; 47:530-534.

2000s-2020s	Basic	Lyle	Stephen Lyle, MD, PhD	University of Massachusetts Medical School, Worcester, Massachusetts, USA	Studied TR3 and the inhibitory effect of androgens on keratinocytes and the role of lipase H in hair growth and development.	Xie L, Yang R, Liu S, Lyle S, Cotsarelis G, Xiang L, Zhang L, Li B, Wan M, Xu X. TR3 is preferentially expressed by bulge epithelial stem cells in human hair follicles. *Lab Invest.* 2016 Jan; 96(1):81-8. Kazantseva A, Goltsov A, Zinchenko R, Grigorenko AP, Abrukova AV, Moliaka YK, Kirillov AG, Guo Z, Lyle S, Ginter EK, Rogaev EI. Human hair growth deficiency is linked to a genetic defect in the phospholipase gene LIPH. *Science.* 2006 Nov 10; 314(5801):982-985.
2010s						
2010s	Translational/Clinical	Marinkovich	M. Peter Marinkovich, MD	Stanford	Currently studying extracellular matrix in hair development. Laminin-10 is a widely expressed molecule found in a number of epithelial tissues and appears to act as a potent morphogen, stimulating hair follicle development in the skin of mice. The Marinkovich lab is currently examining this system to further understand the mechanisms whereby laminin-10 facilitates hair follicle development and basal cell carcinoma invasion, a developmentally similar process.	Anderson RR. Lasers for dermatology and skin biology. *J Invest Dermatol*. 2013 Jul 1; 133(7):E21-3. DeRouen MC, Zhen H, Tan SH, Williams S, Marinkovich MP, Oro AE. Laminin-511 and integrin beta-1 in hair follicle development and basal cell carcinoma formation. *BMC Dev Biol.* 2010; 10:112.
2010s	Basic	Morgan	Bruce A. Morgan, PhD	Harvard University, Boston, Massachusetts, USA	Examined the role of the dermal papilla (DP) and found the formation of the DP during follicle neogenesis provides a context to contemplate the mechanisms that maintain DP size and the potential to exploit these processes for hair preservation or restoration. Examined birthdate and characteristics of the hair follicles that switch between the production of different hair types.	Chi W, Wu E, Morgan BA. Earlier-born secondary hair follicles exhibit phenotypic plasticity. *Exp Dermatol.* 2015 Apr; 24(4):265-268. Morgan BA. The dermal papilla: an instructive niche for epithelial stem and progenitor cells in development and regeneration of the hair follicle. *Cold Spring Harb Perspect Med.* 2014 Jul 1; 4(7):a015180. Chi W, Wu E, Morgan BA. Dermal papilla cell number specifies hair size, shape and cycling and its reduction causes follicular decline. *Development.* 2013 Apr; 140(8):1676-1683.

2010s	Basic	Oro	Anthony Oro, MD, PhD	Stanford University, Stanford, California, USA	Defined molecular profiles of different types of alopecia areata (AA). Described procedure to generate targeted overexpression or shRNA-mediated knockdown of factors using lentivirus in a tissue-specific manner to facilitate study of epithelial-mesenchymal signaling pathways that lead to hair follicle morphogenesis. Demonstrated that hair cycle timing depends on regulated stability of signaling substrates by the ubiquitin-proteasome system.	Yucel G, Van Arnam J, Means PC, Huntzicker E, Altindag B, Lara MF, Oro AE. Partial proteasome inhibitors induce hair follicle growth by stabilizing ß-catenin. *Stem Cells.* 2014; 32(1):85-92. Woo W-M, Atwood SX, Zhen HH, Oro AE. Rapid genetic analysis of epithelial-mesenchymal signaling during hair regeneration. *J Vis Exp.* 2013; (72).
2010s	Basic	Yi	Rui Yi, PhD	University of Colorado – Boulder, Boulder, Colorado, USA	Noted unique ability of stem cells to maintain cell identity using cell-intrinsic mechanism to reinforce quiescence upon self-renewal.	Yi R. Concise review: mechanisms of quiescent hair follicle stem cell regulation. *Stem Cells*. 2017; 35(12):2323-2330. Wang L, Siegenthaler JA, Dowell RD, Yi R. Foxc1 reinforces quiescence in self-renewing hair follicle stem cells. *Science.* 2016 Feb 5; 351(6273):613-617.

2010s-2020s	Translational	Aguh	Crystal Aguh, MD	Johns Hopkins University, Baltimore, Maryland, USA	Associated central centrifugal cicatricial alopecia (CCCA) with fibroproliferative disorders. Discovered the progression of CCCA closely mirrors a group of disorders termed "fibroproliferative disorders" (FPDs). Found an association between CCCA and one FPD, uterine fibroids, which occurs at nearly five times the rate in women with CCCA compared to race and age-matched controls. These results formed the basis of the hypothesis for the lab's microarray study to identify whether expression patterns in CCCA overlapped with known FPDs. Results noted preferential expression of fibroproliferative genes in affected scalp that had been previously implicated in the pathogenesis of FPDs. Additionally, an overlap in canonical pathways between CCCA and atherosclerosis and hepatic stellate fibrosis, two FPDs, was noted.	Aguh C, Dina Y, Talbot Jr CC, Garza L. Fibroproliferative genes are preferentially expressed in central centrifugal cicatricial alopecia. *J Am Acad Dermatol.* 2018 Nov 1; 79(5):904-12. Dina Y, Okoye GA, Aguh C. Association of uterine leiomyomas with central centrifugal cicatricial alopecia. *JAMA Dermatol.* 2018 Feb 1; 154(2):213-224.
2010s-2020s	Clinical	Barbosa	Victoria Barbosa, MD, MPH, MBA	The University of Chicago Medicine, Chicago, Illinois, USA L'Oreal Institute for Ethnic Hair and Skin Research, Chicago, Illinois, USA	Studied scalp and hair disorders affecting those of skin of color. Built and directed the L'Oreal Institute for Ethnic Hair and Skin Research.	Taylor SC, Barbosa V, Burgess C, Heath C, McMichael AJ, Ogunleye T, Callender V. Hair and scalp disorders in adult and pediatric patients with skin of color. *Cutis.* 2017 Jul; 100(1):31-35.
2010s-2020s	Basic, Translational, Clinical	Brownell	Isaac Brownell, MD, PhD	National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) , Bethesda, Maryland, USA Developmental Biology Program, Sloan-Kettering Institute, New York, New York, USA	Showed how Sonic hedgehog (Shh) creates a moleculari and phenotypically distinct population of hair follicle stem cells after nerves cultivate a microenvironment.	Brownell I, Guevara E, Bai CB, Loomis CA, Joyner AL. Nerve-derived sonic hedgehog defines a niche for hair follicle stem cells capable of becoming epidermal stem cells. *Cell Stem Cell.* 2011 May 6; 8(5):552-65.

2010s-2020s	Clinical	Callender	Valerie Callender, MD	Howard University, Washington, DC, USA Private Practice, Glenn Dale, Maryland, USA	Noted that early central centrifugal cicatricial alopecia (CCCA) must be considered in the differential diagnosis of scalp hair loss, particularly in women of African ancestry. Found that subjects with CCCA who applied topical clobetasol propionate 0.05% emollient foam to their scalp daily demonstrated continuous clinical improvement throughout a 14-week study.	Callender VD, Kazemi A, Young CM, Chappelle J. Safety and efficacy of clobetasol propionate 0.05% emollient foam for the treatment of central centrifugal cicatricial alopecia. *J Drugs Dermatol.* 2020; 19(7):719-724. Callender VD, Rucker Wright D, Davis EC, Sperling LC. Hair breakage as a 2020s ing sign of early or occult central centrifugal cicatricial alopecia (CCCA): clinicopathological findings in 9 cases. *Arch Dermatol*. 2012; 148(8):1-6.
2010s-2020s	Clinical	Donovan	Jeff Donovan, MD, PhD	University of Toronto, Toronto, Ontario, Canada University of British Columbia, Vancouver, BC, Canada	Research showed that immunotherapy with diphencyprone can be helpful for some children with alopecia areata (AA). Research in scarring alopecia raised the possibility of lichen planopilaris (LPP) developing as a consequence of hair transplantation.	Salsberg J, Donovan JC. The safety and efficacy of diphencyprone for the treatment of alopecia areata in children. *Arch Dermatol.* 2012; 148:1084-1085. Donovan JC. Lichen planopilaris following hair transplantation: report of 17 cases. *Dermatol Surg.* 2012; 38:1998-2004.
2010s–2020s	Basic	Everts	Helen B. Everts, PhD, RDN	Texas Woman's University, Denton, Texas, USA	Studied Vitamin A in the diet and its affect on alopecia areata (AA) and central centrifugal cicatricial alopecia (CCCA). Everts established the localization pattern of key proteins in retinoic acid (an active form of vitamin A) synthesis and signaling in the epidermis, hair follicle, dermis, dermal dendritic cells, NKG2D cells, and subcutaneous fat during the hair cycle. Discovered that these proteins were altered in patients with AA and CCCA as well as their respective mouse models. In addition, found that the progression and severity of these diseases was worsened when mice were fed either no vitamin A or 3-7 times the recommended level of dietary vitamin A. This work suggests that precise levels of vitamin A are required for optimal hair growth.	Duncan FJ, Silva KA, Johnson C, King B, Szatkiewicz JP, Kamdar S, Ong DE, Napoli JL, Wang J, King LE Jr, Whiting DA, McElwee KJ, Sundberg JP, Everts HB. Endogenous retinoids in the pathogenesis of alopecia areata. *J Invest Dermatol.* 2013; 133:334-343. Everts HB, Silva KA, Montgomery S, Suo L, Menser M, Valet A, King LE Jr, Ong DE, Sundberg JP. Retinoid metabolism is altered in human and mouse cicatricial alopecia. *J Invest Dermatol.* 2013; 133:325-333.

2010s-2020s	Clinical	Farah	Ronda S. Farah, MD	University of Minnesota, Minneapolis, Minnesota, USA	Studies alopecia areata (AA) and neurodermatology. Identified functional differences in C-fiber sensory perception in affected and unaffected AA scalp. Control subjects did not demonstrate significantly different scalp sensation by location, suggesting the differences detected were disease related and not location specific. Created a clinician's guide to photobiomodulation and alopecia. Advanced new technologies for the treatment of alopecia.	Dodd EM, Winter MA, Hordinsky MK, Sadick NS, Farah RS. Photobiomodulation therapy for androgenetic alopecia: a clinician's guide to home-use devices cleared by the Federal Drug Administration. *J Cosmet Laser Ther*. 2018; 20(3):159-167. Farah RS, Farah RS, Junqueira Bertin AC, Guo H, Ericson ME, Hordinsky MK. Increased cutaneous stimulation is required for C-fiber sensory perception in alopecia areata: A double-blind study. *J Am Acad Dermatol*. 2016; 75(6):1265-1267.
2010s-2020s	Translational	Garza	Luis Garza, MD, PhD	Johns Hopkins University, Baltimore, Maryland, USA	Studies androgenetic alopecia (AA) and dsRNA involvement in hair regeneration. Lead author on a publication showing how prostaglandin D2 likely contributes to androgenetic alopecia. His laboratory also was instrumental in defining the role of double-stranded (ds)RNA and innate immune activation in hair follicle neogenesis.	Nelson AM, Reddy SK, Ratliff TS, Hossain MZ, Katseff AS, Zhu AS, Chang E, Resnik SR, Page C, Kim D, Whittam AJ, Miller LS, Garza LA. dsRNA released by tissue damage activates TLR3 to drive skin regeneration. *Cell Stem Cell.* 2015 Aug 6; 17(2):139-151. Garza LA, Liu Y, Yang Z, et al. Prostaglandin D2 inhibits hair growth and is elevated in bald scalp of men with androgenetic alopecia. *Sci Transl Med.* 2012 Mar; 4(126):126ra34.

2010s-2020s	Basic	Greco	Valentina Greco, PhD	Yale University, New Haven, Connecticut, USA	Defined secondary germ lineage. Results from the Greco laboratory demonstrated that the aberrant behaviors of mutant cells can deform tissues, but tissues can cope via highly dynamic processes of correction, by mechanisms such as mutant cell elimination. The suggestion is that such a dynamic response could be advantageous to tissues with high turnover and/or constant insults, raising the possibility that this plasticity could be in place in other tissues beyond the skin. The lab's finding that tissue deformation by established oncogenes can be resolved suggests the exciting prospect that our epithelial tissues activate innate mechanisms to eradicate tumors before they even start. The Greco lab has also developed live imaging methodologies to follow the same stem cells within their niche over time and interrogate their fate decisions. The results have revealed a robust mechanism of compensation, in which distinct epithelial stem cells can adopt new stem cell functions and fuel tissue regeneration in the face of physiological demands.	Brown S, Pineda CP, Xin T, Boucher J, Suozzi KC, Park S, Matte-Martone C, Gonzalez DG, Julie Rytlewski J, Beronja S, Greco V. Correction of aberrant growth preserves tissue homeostasis. *Nature*. 2017 Aug 17; 548:334-337. Rompolas P, Mesa KR, Greco V. Spatial organization within a niche as a determinant of stem cell fate. *Nature.* 2013 Oct 24; 502(7472):513-518.
2010s-2020s	Clinical/ Surgical	Harris	James A. Harris, MD	University of Colorado	Introduced blunt punch follicular unit exactraction (excision) (FUE) and established some basic tenets for FUE harvesting and donor area management. Directed development of robotic FUE device. Blunt punch FUE addressed the technological shortcomings identified by Bernstein and Rassman in their seminal work on sharp punch FUE. A motorized technique allowed for a more efficient, less traumatic method of FUE graft production. This was followed by a robotic FUE device that utilized the blunt punch dissection technique.	Harris, James A. Robotic-assisted follicular unit extraction for hair restoration: case reports. *J Cosmet Dermatol.* 2012; 25:284-287. Harris JA. Conventional FUE. In: W Unger, ed. *Hair Transplantation*, 5th Edition. Informa Healthcare, 2011. Harris JA. New methodology and instrumentation for Follicular Unit Extraction (FUE): lower follicle transection rates and expanded patient candidacy. *Dermatol Surg.* 2006 Jan; 32:56-62.

2010s-2020s	Basic	Horsley	Valerie Horsley, PhD	Yale University, New Haven, Connecticut, USA	Discovered the relationship between fat cells and hair cycling. Noted skin adipocytes and their progenitors promote epithelial stem cell quiescence and activation by signaling to hair follicles, and hair follicles signal back to adipocyte progenitors, causing them to expand and regenerate (as in skin scars).	Zwick R, Guerrero-Juarez C, Horsley V, Plikus M. Anatomical, physiological, and functional diversity of adipose tissue. *Cell Metab.* 2018; 27:68-83. Festa E, Fretz J, Schmidt B, Rodeheffer M, Horowitz M, Horsley V. Adipocyte lineage cells contribute to the skin stem cell niche to drive hair cycling. *Cell.* 2011 Sep; 146(5):761-771.
2010s-2020s	Basic & Translational	Hsu	Ya-Chieh Hsu, PhD	Harvard Stem Cell Institute, Harvard University, Boston Massachusetts, USA	The Hsu Lab looks at how systemic changes of the body alter the cell-cell interactions governing development, regeneration, and injury repair. Delineated the lineage hierarchy of hair follicle cells and investigated how signals from stem cell progeny regulate hair follicle stem cells. Demonstrated APMs and sympathetic nerves form a dual-component niche to modulate hair follicle stem cell activity.	Shwartz Y, Gonzalez-Celeiro M, Chen CL, Pasolli HA, Sheu SH, Fan SM, Shamsi F, Assaad S, Lin ET, Zhang B, Tsai PC, He M, Tseng YH, Lin SJ, Hsu YC. Cell types promoting goosebumps form a niche to regulate hair follicle stem cells. *Cell.* 2020 Aug 6; 182(3):578-593.e19. Huang WY, Lin ET, Hsu YC, Lin SJ. Anagen hair follicle repair: Timely regenerative attempts from plastic extra-bulge epithelial cells. *Exp Dermatol.* 2019 Apr; 28(4):406-412. Hsu YC, Pasolli HA, Fuchs E. Dynamics between stem cells, niche, and progeny in the hair follicle. *Cell.* 2011 Jan 7; 144(1):92-105.
2010s-2020s	Basic, Translational	Jababari	Ali Jabbari, MD, PhD	University of Iowa Roy J. and Lucille A. Carver School of Medicine, Iowa City, Iowa, USA	Focused on T cells in alopecia areata (AA). Transcriptional profiling of AA skin and immune cell participants in AA using microarrays and single-cell RNA-sequencing technologies; early basic science rationale and clinical trials on use of JAK inhibitors for AA.	Borcherding N, Crotts SB, Ortolan LS, Henderson N, Bormann NL, Jabbari A. A transcriptomic map of murine and human alopecia areata. *JCI Insight.* 2020 Jul 9; 5(13):e137424. Jabbari A, Sansaricq F, Cerise J, Chen JC, Bitterman A, Ulerio G, Borbon J, Clynes R, Christiano AM, Mackay-Wiggan J. An open-label pilot study to evaluate the efficacy of tofacitinib in moderate to severe patch-type alopecia areata, totalis, and universalis. *J Invest Dermatol.* 2018 Jul; 138(7):1539-1545.

2010s-2020s	Translational	King	Brett A. King, MD, PhD	Yale University School of Medicine, New Haven, Connecticut, USA	Studied treatment of alopecia areata (AA) with janus kinase (JAK) inhibitors. Together with Dr. Britt Craiglow, Dr. King published the first patient with severe AA to be successfully treated with a JAK inhibitor (tofacitinib). The publication, was met with worldwide excitement.	Crispin M, Ko J, Craiglow BG, Li S, Shankar G, Urban JR, Chen JC, Cerise JE, Jabbari A, Winge MCG, Marinkovich MP, Christiano AM, Oro AE, King BA. Safety and efficacy of the JAK inhibitor tofacitinib citrate in patients with alopecia areata. *JCI Insight.* 2016; 1:e89776. Craiglow BG, King BA. Killing two birds with one stone: oral tofacitinib reverses alopecia universalis in a patient with plaque psoriasis. *J Invest Dermatol.* 2014; 134:2988-2990.
2010s-2020s	Clinical	Lenzy	Yolanda Lenzy, MD	Private Practice, Chicopee, Massachusetts, USA	Completed largest prospective study of the association between type 2 diabetes and severe central-scalp hair loss in African American women using the Black Women's Health Study cohort. Studying the impact of the partnership between dermatologists and hair stylists in facilitating the earlier diagnosis and treatment of scarring hair loss.	Coogan PF, Bethea TN, Cozier YC, Bertrand KA, Palmer JR, Rosenberg L, Lenzy Y. Association of type 2 diabetes with central-scalp hair loss in a large cohort study of African American women. *Int J Womens Dermatol*. 2019; 5(4):261-266.
2010s-2020s	Basic	McElwee	Kevin McElwee, PhD	University of British Columbia, Vancouver, BC, Canada University of Bradford, Bradford, UK	Looked at treatment with allergens to improve success of alopecia areata (AA) treatment. Found that to investigate human-specific mechanistic and therapeutic questions, the human immune system can be recapitulated using mouse models that carry a variety of genetic-based immunodeficiencies and allow for human full-thickness skin grafts onto mice.	Zhang X, McElwee KJ. Allergy promotes alopecia areata in a subset of patients. *Exp Dermatol.* 2020 Mar; 29(3):239-242. Broadley D, McElwee KJ. A "hair-raising" history of alopecia areata. *Exp Dermatol.* 2020 Mar; 29(3):208-222. Sundberg JP, McElwee K, Brehm MA, Su L, King LE Jr. Animal models for alopecia areata: what and where? *J Investig Dermatol Symp Proc.* 2015 Nov; 17(2):23-26.

2010s-2020s	Clinical	Mesinkovska	Natasha Atanaskova Mesinkovska, MD, PhD	University of California – Irvine, Irvine, California, USA	Performed clinical trials on alopecia areata (AA), its treatments and comorbidities Made important contribution in defining comorbidities in AA and championed for AA recognition as a medical condition. Designed and developed AA clinical protocols and clinician and patient related outcomes to foster emerging AA therapy assessment.	Korta DZ, Christiano AM, Bergfeld W, Duvic M, Ellison A, Fu J, Harris JE, Hordinsky MK, King B, Kranz D, Mackay-Wiggan J, McMichael A, Norris DA, Price V, Shapiro J, Atanaskova Mesinkovska N. Alopecia areata is a medical disease. *J Am Acad Dermatol.* 2018 Apr; 78(4):832-834. Conic RZ, Miller R, Piliang M, Bergfeld W, Atanaskova Mesinkovska N. Comorbidities in patients with alopecia areata. *J Am Acad Dermatol.* 2017 Apr; 76(4):755-757.
2010s-2020s	Basic	Myung	Peggy Myung, MD, PhD	Yale University, New Haven, Connecticut, USA	Performs genetic studies of hair follicle morphogenesis and regeneration. Dr. Myung's lab studies how the embryonic precursor for dermal papilla (DP)—the dermal condensate (DC)—forms. Her team combined genetic approaches and novel single-cell RNA-seq analysis to unveil a roadmap of DC differentiation that initiates prior to hair follicle morphogenesis. Importantly, this study demonstrated that 1) quiescent DC cells come from a highly proliferative dermal population that resides in the peri-DC region, and 2) DC cells require Wnt/b-catenin signaling to acquire DC cell fate. The lab is currently studying how DC precursor cells give rise to DP cells and dermal sheath cells and the role of cell cycle status in cell fate decisions. The ultimate goal of her lab is to develop effective methods to program dermal cells into hair follicle inductive cells that can regenerate hair follicles in adult skin *de novo*.	Gupta K, Levinsohn J, Linderman G, Chen D, Sun TY, Dong D, Taketo MM, Bosenberg M, Kluger Y, Choate K, Myung P. Single-cell analysis reveals a hair follicle dermal niche molecular differentiation trajectory that begins prior to morphogenesis. *Dev Cell.* 2019; 48(1):17-31.e6.

2010s-2020s	Basic, Translational, Clinical	Nagao	Keisuke (Chris) Nagao, MD, PhD	National Institutes of Health, Bethesda, Maryland, USA	Studied immune regulation mediated by the hair follicles His laboratory has identified hair follicles as control towers of the skin immunity that support the tissue-residency and localization of dendritic cells, T cells, and innate lymphoid cells.	Adachi, T, Kobayashi, T, Sugihara, E, Yamada, T, Ikuta, K, Pittaluga, S, Saya, H, Amagai, M, Nagao, K. Hair follicle-derived IL-7 and IL-15 mediate skin-resident memory T cell homeostasis and lymphoma. *Nat Med.* 2015 Nov; 21(11):1272-9. Nagao, K, Kobayashi, T, Moro, K, et al. Stress-induced production of chemokines by hair follicles regulates the trafficking of dendritic cells in skin. *Nat Immunol.* 2021 Jun 24; 13 (8): 744-52.
2010s-2020s	Basic	Petukova	Lynn M. Petukova, PhD	Columbia University, New York, New York, USA	Studies genetic architecture of hair disorders. Dr. Petukhova is a statistical geneticist and data scientist whose analyses have identified monogenic and polygenic etiologies that contribute to rare and common hair disorders. Her current work is focused on using machine learning methods to build out networks of genes that govern hair follicle biology.	Severin RK, Li X, Qian K, Mueller AC, Petukhova L. Computational derivation of a molecular framework for hair follicle biology from disease genes. *Sci Rep.* 2017; 7(1):16303.
2010s-2020s	Clinical	Piliang	Melissa Piliang, MD	Cleveland Clinic Foundation, Cleveland, Ohio, USA	Reported one of the early series of alopecia areata (AA) patients treated with tofacitinib. Did a lot of work on AA co-morbidities, such as thyroid disease, nutritional deficiencies, and eosinophilic esophagitis, and on therapeutics such JAK-I and DPCP among others. Worked on identifying co-morbidities of lichen planopilaris (LPP) and frontal fibrosing alopecia (FFA), such as thyroid disease, vitamin D deficiency, and dyslipidemia, and on therapeutics and clinical and pathologic diagnosis.	Conic RRZ, Piliang M, Bergfeld W, Atanaskova-Mesinkovska N. Vitamin D status in scarring and non-scarring alopecia [published online ahead of print, 2018 Apr 21]. *J Am Acad Dermatol.* 2018; S0190-9622(18)30631-5. Ibrahim O, Bayart CB, Hogan S, Piliang M, Bergfeld WF. Treatment of alopecia areata with tofacitinib. *JAMA Dermatol.* 2017; 153(6):600-602.

2010s-2020s	Basic	Plikus	Maksim V. Plikus, PhD	University of California, Irvine, California, USA	Noted the collective growth of hair follicles. The Plikus lab studies macroscopic mechanisms of hair regeneration in skin. It has shown that regeneration of hairs is not random; instead, it is coordinated by a large-scale signaling mechanism. At the core of this mechanism are long-range activating hair-to-hair signals and inhibitory adipocyte-to-hair signals. Recognizing the functional importance of such long-range signals, Plikus defined them as "macro-environmental." They also introduced several new terms such as "regenerative hair waves," "signaling macro-environment," and the "refractory and competent phases" of the hair cycle, which are now an integral part of the scientific jargon in the field of skin research.	Wang Q, Oh JW, Lee HL, Dhar A, Peng T, Ramos R, Guerrero-Juarez CF, Wang X, Zhao R, Cao X, Le J, Fuentes MA, Jocoy SC, Rossi AR, Vu B, Pham K, Wang X, Mali NM, Park JM, Choi JH, Lee H, Legrand JMD, Kandyba E, Kim JC, Kim M, Foley J, Yu Z, Kobielak K, Andersen B, Khosrotehrani K, Nie Q, Plikus MV. A multi-scale model for hair follicles reveals heterogeneous domains driving rapid spatiotemporal hair growth patterning. *Elife.* 2017 Jul 11; 6:e22772. Plikus MV, Baker RE, Chen CC, Fare C, de la Cruz D, Andl T, Maini PK, Millar SE, Widelitz R, Chuong CM. Self-organizing and stochastic behaviors during the regeneration of hair stem cells. *Science*. 2011; 332:586-589. Plikus MV, Mayer JA, de la Cruz D, Baker RE, Maini PK, Maxson R, Chuong CM. Cyclic dermal BMP signalling regulates stem cell activation during hair regeneration. *Nature*. 2008; 451:340-344.
2010s-2020s	Basic	Rendl	Michael Rendl, PhD	Icahn School of Medicine at Mount Sinai, New York, New York, USA	Focused his work on how to uncover how specialized dermal papilla cells act as an instructive niche for hair follicle stem cells during embryonic hair follicle formation and adult hair growth and regeneration. Provided a classification guide of hair follicle morphogenetic stages and description of latest insights into the early cellular and molecular events and signaling requirements for hair follicle morphogenesis in relation to one another in a holistic manner.	Saxena N, Mok KW, Rendl M. An updated classification of hair follicle morphogenesis. *Exp Dermatol.* 2019 Apr; 28(4):332-344. Driskell RR, Clavel C, Rendl M, Watt FM. Hair follicle dermal papilla cells at a glance. *J Cell Sci.* 2011 Apr 15; 124(Pt 8):1179-82.

2010s-2020s	Clinical	Rogers	Nicole Rogers, MD	Tulane University School of Medicine, New Orleans, Louisianna, USA	Expertise is in hair transplantation. Advanced the knowledge of nutraceuticals in the treatment of hair loss. Promotes the Dermascope for the diagnosis of scalp and hair conditions.	Farris PK, Rogers N, McMichael A, Kogan S. A novel multi-targeting approach to treating hair loss, using standardized nutraceuticals. *J Drugs Dermatol.* 2017 Nov 1; 16(11):s141-s148. Rogers NE. Scoping scalp disorders: practical use of a novel dermatoscope to diagnose hair and scalp conditions. *J Drugs Dermatol.* 2013 Mar; 12(3):283-90.
2010s-2020s	Basic	Rompolas	Panteleimon Rompolas, PhD	University of Pennsylvania, Philadelphia, Pennsylvania, USA	Used live imaging to show hair follicle stem cell activity and regulation. Pioneered state-of-the-art imaging approaches to directly visualize hair follicle regeneration, at the single cell level, by 2-photon microscopy. His work captured in real-time the activity of hair follicle stem cells in the intact mouse skin and resolved the hierarchical organization and regulation of distinct stem cell and progenitor populations that contribute to hair growth.	Rompolas P, Mesa KR, Greco V. Spatial organization within a niche as a determinant of stem-cell fate. *Nature.* 2013; 502(7472), 513-518. Rompolas P, Deschene ER, Zito G, Gonzalez DG, Saotome I, Haberman AM, Greco V. Live imaging of stem cell and progeny behaviour in physiological hair-follicle regeneration. *Nature.* 2012; 487(7408), 496-499.
2010s-2020s	Translational/Clinical	Rosenblum	Michael Rosenblum, MD, PhD	University of California, San Francisco	Studies immunology of the hair follicle. Specializes in inflammatory and autoimmune skin diseases. Studying a defect in Tregs could be responsible for alopecia areata (AA) and could play a role in other forms of baldness, such as male pattern baldness. Believes Tregs may play a key role in wound repair as well. Found that Treg-cell regulation of localized inflammation enables HFSC differentiation and, thereby, skin-barrier regeneration. This has implications for the maintenance and repair of other barrier tissues.	Mathur AN, Zirak B, Boothby IC, Tan M, Cohen JN, Mauro TM, Mehta P, Lowe MM, Abbas AK, Ali N, Rosenblum MD. Treg-cell control of a CXCL5-IL-17 inflammatory axis promotes hair-follicle-stem-cell differentiation during skin-barrier repair. *Immunity.* 2019 Mar 19; 50(3):655-667.e4.

2010s-2020s	Clinical	Sadick	Neil S. Sadick, MD	Weil Cornell College of Medicine, New York, New York, USA Private Practice, New York, New York, USA	Studied the role of inflammation in causing alopecia. Established treatment protocols for platelet-rich plasma (PRP) and low energy light/radiofrequency sources. Dr. Sadick's group showed in 2011 that even in traditional "non-inflammatory alopecias" like androgenetic alopecia (AGA) there is a prominent micro-inflammatory and fibrotic component documented by IgG deposition and cytokine upregulation that leads to the miniaturization of follicles and hair loss. By identifying the patients with AGA and female pattern hair loss (FPHL) presenting an inflammatory component, customized treatment protocols were developed that included the addition of topical steroids to traditional FDA-approved drug regimens (minoxidil/finasteride). Dr. Sadick's interest in the role of inflammation in several types of hair loss led to the evaluation and adoption of other anti-inflammatory treatment modalities such as PRP, low level laser energy, fractional lasers, nutraceuticals, and microneedling radiofrequency for hair loss. These treatments were evaluated as monotherapy or in combination with traditional treatment strategies. Ultimately, optimal clinical protocols were developed, the most prominent of which was the PRP protocol for hair loss consisting of three monthly treatments, followed by tapering to every three and ultimately every six months.	Sadick NS, Callender VD, Kircik LH, Kogan S. New insight into the pathophysiology of hair loss trigger a paradigm shift in the treatment approach. *J Drugs Dermatol.* 2017; 16:s135-s140. Wipf A, Boysen N, Hordinsky MK*, Dando EE, Sadick N, Farah RS.* The rise of transcutaneous drug delivery for the management of alopecia: a review of existing literature and an eye towards the future. *J Cosmet Laser Ther.* 2019; 21:247-254. Dodd EM, Winter MA, Hordinsky MK, Sadick NS, Farah RS. Photobiomodulation therapy for androgenetic alopecia: A clinician's guide to home-use devices cleared by the Federal Drug Administration. *J Cosmet Laser Ther.* 2018; 20:159-167. Magro CM, Rossi A, Poe J, Manhas-Bhutani S, Sadick N. The role of inflammation and immunity in the pathogenesis of androgenetic alopecia. *J Drugs Dermatol.* 2011; 10:1404-1411.

2010s-2020s	Clinical	Senna	Maryanne Makredes Senna, MD	Harvard Medical School; Massachusetts General Hospital, Boston, Massachusetts, USA	Conducted a prospective study to examine long-standing alopecia in patients with chronic cutaneous graft versus host disease (cGVHD) and its prognostic implications for affected patients. Identified four patterns of hair loss including patchy non-scarring (41.2%), diffuse non-scarring (11.8%), diffuse sclerotic (11.8%), and patchy sclerotic (5.9%). The location of the inflammatory infiltrate correlated with the hair loss pattern patients had clinically, with cell populations around the bulb and bulge in non-scarring and sclerotic cases, respectively. Fluorescence in situ hybridization (FISH) studies in female cGVHD patients with male donors demonstrated Y chromosomes limited to the area of the hair follicle affected by inflammatory cells, suggesting that this alopecia may be a direct manifestation of cGVHD of the hair follicle. An additional retrospective study conducted by Dr. Senna's team in this patient population found that long-standing adnexal changes in cGVHD patients are associated with more severe overall GVHD, and higher rates of ocular and oral GVHD, suggesting important prognostic implications for long-standing alopecia and nail changes for these patients.	Marks DH, Naftulin JS, Penzi LR, Manatis-Lornell A, Yasuda MR, Chapman CM, Rao SR, Saavedra A, Senna MM. Histologic and clinical cross-sectional study of chronic hair loss in patients with cutaneous chronic graft-versus-host disease. *J Am Acad Dermatol.* 2019 Nov; 81(5):1134-1141. Naftulin JS, Penzi LR, Manatis-Lornell A, Yasuda MR, Porter ML, Saavedra A, Senna MM. Longstanding alopecia and nail dystrophy are associated with more severe overall chronic graft-versus-host disease in adults. *Bone Marrow Transplant.* 2019; 54(3):469-472.

2010s-2020s	Translational	Seykora	John T. Seykora, MD, PhD	University of Pennsylvania	Characterized inflammation driving frontal fibrosing alopecia (FFA) and central centrifugal cicatricial alopecia (CCCA). Characterized inflammatory cells in FFA and showed that it is a CD8+ T Cell predominant infiltrate. Evaluated CCCA specimens and showed that this disorder is associated with a CD4+ predominant infiltrate and increased Langerhans cells in hair follicles. Developed the HoVert technique to maximize histologic information from a scalp biopsy.	Flamm A, Moshiri AS, Roche F, Onyekaba G, Nguyen J, James AJ, Taylor S, Seykora JT. Characterization of the inflammatory features of central centrifugal cicatricial alopecia. *J Cutan Pathol.* 2020; 47(6):530-534. Ma SA, Imadojemu S, Beer K, Seykora JT. Inflammatory features of frontal fibrosing alopecia. *J Cutan Pathol.* 2017; 44(8):672-676. Nguyen JV, Hudacek K, Whitten JA, Rubin AI, Seykora JT. The HoVert technique: a novel method for the sectioning of alopecia biopsies. *J Cutan Pathol.* 2011; 38(5):401-406.
2010s-2020s	Basic & Translational	Tumbar	Tudorita Tumbar, PhD	Cornell University, Ithaca, New York, USA	Studies molecular mechanisms controlling cell fate of hair follicle stem cells. Dr. Tumbar's laboratory focuses on adult stem cells and their interaction with their tissue of residence, and uses the mouse skin as a primary model system identified. Devised a novel technique to isolate label-retaining cells (LRCs) from tissues based on their green fluorescent protein (GFP) retention. Using a genomic approach, a large number of factors preferentially expressed in bulge cells have been identified with a significant fraction of these factors most likely involved in the cross-talk between bulge cells and the surrounding environment, suggesting a possible role for LRCs in organizing the stem cell niche.	Li KN, Jain P, He CH, Eun FC, Kang S, Tumbar T. Skin vasculature and hair follicle cross-talking associated with stem cell activation and tissue homeostasis. *Elife.* 2019 Jul 25; 8:e45977. Waghmare SK, Tumbar T. Adult hair follicle stem cells do not retain the older DNA strands *in vivo* during normal tissue homeostasis. *Chromosome Res.* 2013 May; 21(3):203-12 Lee J, Tumbar T. Hairy tale of signaling in hair follicle development and cycling. *Semin Cell Dev Biol.* 2012 Oct; 23(8):906-16.

2010s-2020s	Basic	Wong	Sunny Y. Wong, PhD	University of Michigan, Ann Arbor, Michigan, USA	Noted stem cells in the skin and hair follicles coordinate their behaviors to maintain barrier function, regenerate hair, and heal wounds.	Vagnozzi AN, Reiter JF, Wong SY. Hair follicle and interfollicular epidermal stem cells make varying contributions to wound regeneration. *Cell Cycle.* 2015; 14(21):3408-3417. Wong SY, Reiter JF. Wounding mobilizes hair follicle stem cells to form tumors. *Proc Natl Acad Sci USA.* 2011 Mar 8; 108(10):4093-4098.
2016-2020s	Clinical	Ko	Justin M. Ko, MD, MBA	Stanford University School of Medicine, Stanford, California, USA	Has expertise with clinical trials in alopecia areata (AA). Found tofacitinib to be a safe and effective treatment for severe AA. Developed ClinRO and PRO measures for eyebrow, eyelash, and nail appearance to provide meaningful assessment of outcomes important to patients with AA in regards to eyebrow, eyelash, and scalp hair loss.	Wyrwich KW, Kitchen H, Knight S, Aldhouse NVJ, Macey J, Nunes FP, Dutronc Y, Mesinkovska N, Ko JM, King BA. Development of clinician-reported outcome (ClinRO) and patient-reported outcome (PRO) measures for eyebrow, eyelash and nail assessment in alopecia areata. *Am J Clin Dermatol.* 2020 Oct; 21(5):725-732. Kennedy Crispin M, Ko JM, Craiglow BG, Li S, Shankar G, Urban JR, Chen JC, Cerise JE, Jabbari A, Winge MC, Marinkovich MP, Christiano AM, Oro AE, King BA. Safety and efficacy of the JAK inhibitor tofacitinib citrate in patients with alopecia areata. *JCI Insight.* 2016 Sep 22; 1(15):e89776.

Additional Central & South American Contributions

Years	Type	Last Name	Full Name	Institution(s)	Contribution(s)	Select Notable Publications
1880s-1949s-	Clinical	Baliña	Pedro Baliña, MD, PhD	University of Buenos Aires Saint Louis Hospital. Paris Clinicas Hospital. Buenos Aires	Was one of the first to publish the causal relationship of traction and the development of alopecia in the medical literature. Founder and President of the Argentine Association of Dermatology.	Baliña, P. Alopecia pseudo tiñosa de causa traumática e insólita. *Rev argent Derm Sif.* 1932; 16:699. Baliña P. Alopécie liminaire de Sabouraud, Bull. Soc. franç. de dermat. et syph. 1933(Jul); 40:1277.

1960s	Clinical	Pecoraro	Vicente Pecoraro, MD, PhD	Nacional del Litoral University, Rosario -Santa Fe Italiano Garibaldi Hospital. Rosario-Santa Fe Centenario Hospital. Rosario-Santa fe	Developed the trichogram technique. The term "trichogram" was coined by Pecoraro in 1964, who described further trichometric parameters such as hair density, hair shaft diameter and its variation, daily hair growth rates and frequency of the different stages of the hair cycle in different scalp areas.	Pecoraro V, Astore J, Barman J. The normal trichogram in the child before the age of puberty. *J Invest Dermatol.* 1964; 42:427-30. Astore IP, Pecoraro V, Pecoraro EG. Method, technic and computations in the study of the trophic state of the human scalp hair. *J Invest Dermatol.* 1964; 42:421-425. Barman JM, AStore I, Pecoraro V. The normal trichogram of the adult. *J Invest Dermatol.* 1965; 44:233-236.
	Clinical	Pereira	José Marcos Pereira, MD	Hospital Padre Bento de Guarulhos, Brasil	First Brazilian dermatologist to embrace in-depth hair research and teaching. Published numerous books on hair disorders.	Pereira JM. Alopecia Androgenetica Calvicie na mulher, Tricologia tratado das doencas dos cabelos e do couro cabeludo and Propedêutica das doenças dos cabelos e do couro cabeludo
	Clinical	Pirmez	Rodrigo Pirmez, MD	Santa casa de Misericórdia do Rio de Janeiro, Brazil	Original work on the use of isotretinoin on the management of FFA. Noted that the fringe-sign does not always indicate traction alopecia and that the presence of a pseudo-fringe sign can be present in FFA female patients, especially in dark-skinned patients.	Pirmez R, Duque-Estrada B, Barreto T, Quintella DC, Cuzzi T. Successful treatment of facial papules in frontal fibrosing alopecia with oral isotretinoin. *Skin Appendage Disord.* 2017(May); 3(2):111-113 Pirmez R, Duque-Estrada B, Abraham LS, Pinto GM, de Farias DC, Kelly Y, Doche I. It's not all traction: the pseudo 'fringe sign' in frontal fibrosing alopecia. *Br J Dermatol.* 2015(Nov); 173(5):1336-8.
2000s	Basic, Clinical	Salas-Alanis	Julio Cesar Salas-Alanis, MD	Monterrey University, Monterrey Nuevo León	Described genetic abnormalities in hypohidrotic ectodermal dysplasia. X-linked congenital generalized hypertrichosis, trichothiodystrophy and other genetic conditions.	Salas-Alanis JC, Wozniak E, Mein CA, Duran Mckinster CC, Ocampo-Candiani J, Kelsell DP, Hua R, Garza-Rodriguez ML, Choate KA, Barrera Saldaña HA. Mutations in EDA and EDAR genes in a large Mexican Hispanic cohort with hypohidrotic ectodermal dysplasia. *Annals of Dermatology.* 2015; 27(4):474-477. DeStefano GM, Kurban M, Anyane-Yeboa K, Dall'Armi C, Di Paolo G, Feenstra H, Silverberg

						N, Rohena L, López-Cepeda LD, Jobanputra V, Fantauzzo KA, Kiuru M, Tadin-Strapps M, Sobrino A, Vitebsky A, Warburton D, Levy B, Salas-Alanis JC, Christiano AM. Mutations in the cholesterol transporter gene ABCA5 are associated with excessive hair overgrowth. *PLoS Genet.* 2014; 15:10(5). DeStefano GM, Fantauzzo KA, Petukhova L, Kurban M, Tadin-Strapps M, Levy B, Warburton D, Cirulli ET, Han Y, Sun X, Shen Y, Shirazi M, Jobanputra V, Cepeda-Valdes R, Cesar Salas-Alanis J, Christiano AM. Position effect on FGF13 associated with X-linked congenital generalized hypertrichosis. *Proc Natl Acad Sci U S A.* 2013(May); 110(19):7790-5. Salas-Alanís JC, Palou J, Del Río R, Ferrando J Alopecia Cicatrizal Asociado a Estructuras Siringomas-Like. *Actas Dermo-Sif.* 1993; 84:(11)517-520.
2005-2020	Clinical	Guzman-Sanchez	Daniela Guzman-Sanchez, MD	National University of Guadalajara	Contributed to genetic studies of alopecia areata, epidemiological international studies of alopecias. Has published international epidemiological studies about alopecias, including the Mexican Latin populations and has studied Fas ligands in scarring alopecias and genetic studies in alopecia areata.	Vañó-Galván S, Saceda-Corralo D, Blume-Peytavi U, Cucchía J, Dlova NC, Gavazzoni Dias MFR, Grimalt R, Guzmán-Sánchez D, Harries M, Ho A, Holmes S, Larrondo J, Mosam A, Oliveira-Soares R, Pinto GM, Piraccini BM, Pirmez R, De la Rosa Carrillo D, Rudnicka L, Shapiro J, Sinclair R, Tosti A, Trüeb RM, Vogt A, Miteva M. Frequency of the types of alopecia at twenty-two specialist hair clinics: a multicenter study. *Skin Appendage Disord.* 2019; 5(5):309-315. McMichael AJ, Guzmán-Sánchez DA, Pichardo R, Iordanov M, Farley S, Inabinet R. Fas Ligand expresión is not up-regulated in scarring alopecias. *Exper Dermatol.* 2010; 19:608-609.
2010-2020s	Clinical	Asz-Sigall	Daniel Asz-Sigall, MD	National University of Mexico ABC Hospital	Described and classified peripilar cast severity in frontal fibrosing alopecia (FFA) and the ethnic hair characteristics in the mestizo population,	Martínez-Velasco MA, Vázquez-Herrera NE, Misciali C, Vincenzi C, Maddy AJ, Asz-Sigall D, Tosti A. Frontal Fibrosing Alopecia Severity Index: A trichoscopic visual scale that

					described the hair shedding scale in Latin-American patients. Founded the Mexican Trichology Society, creating the first trichological Society of Latin America	correlates thickness of peripilar casts with severity of inflammatory changes at pathology. *Skin Appendage Disord.* 2018(Oct); 4(4):277-280.
2010-2020	Clinical	Herz-Ruelas	Maira Herz-Ruelas, MD	Hospital Universitario, Monterrey Nuevo León	Contributed to the understanding on the use of phototherapy and immunotherapy in Mexican Latin patients with alopecia areata. Lichen planus pigmentosus in frontal fibrosing alopecia (FFA) Intralesional and oral dutasteride in androgenetic alopecia (AGA)	Herz-Ruelas ME, Welsh O, Gomez-Flores M, Welsh E, Miranda-Maldonado I, Ocampo-Candiani J. Ultraviolet A-1 phototherapy as an alternative for resistant alopecia areata. *Int J Dermatol.* 2015; 54(10):e445-e447. Herz-Ruelas ME, Gomez-Flores M, Miranda-Maldonado I, Welsh E, Ocampo-Candiani J, Welsh O. Escalating dosimetry of UVA-1 in the treatment of alopecia areata. *Int J Dermatol.* 2017; 56(6):653-659.
1940's - 1950's	Clinical	Pierini	Luis Pierini, MD, PhD	University of Buenos Aires	Argued that Brocq's Pseudopelade has a lichenian nature and that in most cases it was the final stage of lichen planopilaris (LPP). Founded Archivos Argentinos de Dermatología Journal.	Pierini, L. E., and Borda, J. M. : Pseudopelada y liquen plano:Es la pseudopelada una forma de liquen plano? *Rev argent dermat.* 1949(Jun); 33:45-67. Pierini LE, Borda JM. Pseudopelada y liquen plano: La pseudopelada de Brocq manifestación escleroatrófica post liqueniana, *Arch Arg Dermat.* 1951(Oct); 1:1-17.
2010-2020	Clinical	Sanchez-Dueñas	Luis Enrique Sanchez-Dueñas, MD	Dermika Dermatologic Center	Described generalized hypertrichosis as a reaction to treatment with interleukin 17 blockers as well as genetic implications on scarring alopecias.	Sánchez-Dueñas LE, Rojano-Fritz LK, García-Rodríguez JC. Generalized hypertrichosis associated with the use of interleukin 17 blockers in 2 patients with psoriasis. *JAAD Case Rep*. 2020; 6(7):683-685. Díaz-Pérez LM, Escobar-Ramírez K, Sánchez-Dueñas LE. A new familial presentation of dissecting cellulitis: the genetic implications on scarring alopecias. *JAAD Case Rep*. 2020;6(8):705-707.
2010-2020	Clinical	Vazquez-Herrera	Norma Vazquez-Herrera, MD	Insituto Tecnologico of Monterrey	Contributed to studies about scalp itch, the use of optical coherence tomography in FFA, and the hair parameters on OCT in Latin-americans.	Vázquez-Herrera NE, Tosti A. Scalp Itch: A Systematic Review. *Skin Appendage Disord.* 2018(Aug); 4(3):187-199.

					Description and classification of peripilar cast severity in FFA and their ethnic hair characteristics, and the hair shedding scale in TE of Latin patients. She also has worked on AA treatment and short anagen syndrome.	Vazquez-Herrera NE, Eber AE, Martinez-Velasco MA, Perper M, Cervantes J, Verne SH, Magno RJ, Nouri K, Tosti A. Optical coherence tomography for the investigation of frontal fibrosing alopecia. *J Eur Acad Dermatol Venereol.* 2018(Feb); 32(2):318-322.
2015-2020	Clinical	Larrodondo	Jorge Larrodondo, MD	Clinica Alemana Santiago de Chile	Described the use of ultrasound and OTC optical coherence tomography for scalp diseases; contributed trichoscopic and clinical descriptions of lipedematous and scalp amyloidosis.	Doche I, Miotto I, Rivitti-Machado MC, et al. Trichoscopic and imaging study of lipedematous alopecia: report of five cases [published online ahead of print, 2020 Apr 16]. *J Eur Acad Dermatol Venereol*. 2020; 10.1111/jdv.16480. doi:10.1111/jdv.16480 Larrondo J, Gosch M, Peña C, et al. Do not forget to check the scalp in systemic light-chain amyloidosis [published online ahead of print, 2020 Jun 22]. *J Am Acad Dermatol*. 2020; S0190-9622(20)31151-8. doi:10.1016/j.jaad.2020.06.053
2015-2020	Clinical	Martínez-Velasco	Maria Abril Martínez-Velasco, MD	National University of Mexico	Description of Mexican Mestizo hair parameters and the vascular plexjs in frontal fibrosing alopecia with optical coherence tomography (OCT) Described novel and interesting topics in Latin-American patients: hair parameters and the vascular plexus in FFA patients using optical coherence tomography. Described and classified peripilar cast severity in FFA and ethnic hair characteristics.	Martínez-Velasco MA, Vázquez-Herrera NE, Misciali C, Vincenzi C, Maddy AJ, Asz-Sigall D, Tosti A. Frontal Fibrosing Alopecia Severity Index: a trichoscopic visual scale that correlates thickness of peripilar casts with severity of inflammatory changes at pathology. *Skin Appendage Disord.* 2018(Oct); 4(4):277-280. Martinez-Velasco MA, Perper M, Maddy AJ, Cervantes J, Eber AE, Verne SH, Vazquez-Herrera NE, Nouri K, Tosti A. *In vitro* determination of Mexican Mestizo hair shaft diameter using optical coherence tomography. *Skin Res Technol.* 2018(May); 24(2):274-277.

2018-2020	Clinical	Gaviria	John Harvey Gaviria, MD	Inbiotech, Colombia	Special interest and experience in the use of super oxide dismutase in frontal fibrosing alopecia (FFA)	
2018-2020	Clinical	Villar	Enoi Villar, Msc, MD	Universidade Federal Fluminense, Rio de Janeiro, Brazil	Contributed to the understanding of the histopathology of the cicatricial alopecias.	Teixeira MS, Gavazzoni Dias MFR, Trüeb RM, Rochael MC, Vilar EAG. Fibrosing Alopecia in a Pattern Distribution (FAPD) in 16 African-Descent and Hispanic Female Patients: A Challenging Diagnosis. Skin Appendage Disord. 2019 Jun;5(4):211-215. Dias MFRG, Dutra Rezende H, Furtado Cardoso de Moraes JR, Dlova N, Ekelem CN, Vilar EAG, Trüeb RM. New insights into lichen planus pigmentosus associated with cicatricial alopecia. *J Eur Acad Dermatol Venereol.* 2021 Mar;35(3):e200-e203.
2011	Clinical	Donati	Aline Donati, MD, PhD	Hospital dos Servidores Sao Paulo, Brazil	Described the facial papules in frontal fibrosing alopecia and provided evidence of vellus follicle involvement.	Donati A, Molina L, Doche I, Valente NS, Romiti R. Facial papules in frontal fibrosing alopecia: evidence of vellus follicle involvement. *Arch Dermatol.* 2011(Dec); 147(12):1424-7. Donati A, Gupta AK, Jacob C, Cavelier-Balloy B, Reygagne P. The Use of Direct Immunofluorescence in Frontal Fibrosing Alopecia. Skin Appendage Disord. 2017 Aug;3(3):125-128. doi: 10.1159/000469665. Epub 2017 Apr 1. PMID: 28879188; PMCID: PMC5582472.
2011	Clinical	Romiti, Donati, Valente	Trichology Group of the Department of Dermtology at the University of São Paulo, Brazil: Ricardo Romiti, MD, Aline Donati, MD, and Neusa Y. S. Valente, MD	University of São Paulo, Brazil	Started the first Trichology Unit in a Dermatology Department at a University in Brazil. Originally described the facial papules in frontal fibrosing alopecia (FFA).	Donati A, Molina L, Doche I, Valente NS, Romiti R. Facial papules in frontal fibrosing alopecia: evidence of vellus follicle involvement. *Arch Dermatol.* 2011(Dec); 147(12):1424-7.
2014	Clinical	Barboza-Martinez	Julia Barboza-Martinez, MD	Delgado Clinic	A randomized, active- and placebo-controlled study of the efficacy and safety of different doses of dutasteride versus placebo and finasteride in the treatment of male subjects with androgenetic alopecia. Dutasteride	Gubelin Harcha W, Barboza Martínez J, Tsai TF, Katsuoka K, Kawashima M, Tsuboi R, Barnes A, Ferron-Brady G, Chetty D. *J Am Acad Dermatol.* 2014(Mar); 70(3):489-498.e3.

					increased hair growth and restoration in men with androgenetic alopecia (AGA). The number and severity of adverse events were similar among treatment groups.	
2014	Clinical	Valente	Neusa Yuriko Sakai Valente, MD	University of São Paulo (Brazil) Hospital dos Servidores Estaduais de São Paulo	Histopathologic features in different types of alopecias	Pirmez R, Donati A, Valente NS, Sodré CT, Tosti A. Glabellar red dots in frontal fibrosing alopecia: a further clinical sign of vellus follicle involvement. *Br J Dermatol.* 2014(Mar); 170(3):745-6. Doche I, Romiti R, Hordinsky MK, Valente NS. "Normal-appearing" scalp areas are also affected in lichen planopilaris and frontal fibrosing alopecia: An observational histopathologic study of 40 patients. *Exp Dermatol.* 2020(Mar); 29(3):278-281.
2018	Clinical	Gálvez-Canseco	Aldo Gálvez-Canseco, MD	"Piel y Salud" Outpatient Clinic and Delgado Clinic	Lichen planopilaris (LPP) and frontal fibrosing alopecia (FFA) cannot be differentiated by histopathology. Histologic study with the largest number of patients to date that compared FFA and LPP. Noted only a few histologic features differ between FFA and LPP. Therefore, clinical correlation is essential to establish the diagnosis.	Gálvez-Canseco A, Sperling L. Lichen planopilaris and frontal fibrosing alopecia cannot be differentiated by histopathology. J Cutan Pathol. 2018 May;45(5):313-317. Epub 2018 Feb 23. PMID: 29369400.
2019	Clinical	Dias	Maria Fernanda Reis Gavazzoni Dias, MD	Universidade Federal Fluminense, Rio de Janeiro, Brazil	Described fibrosing alopecia in a pattern distribution (FAPD) and lichen planus pigmentosus (LPPpig) in dark skin patients	Dias MFRG, Dutra Rezende H, Furtado Cardoso de Moraes JR, Dlova N, Ekelem CN, Vilar EAG, Trüeb RM. New insights into lichen planus pigmentosus associated with cicatricial alopecia. *J Eur Acad Dermatol Venereol.* 2021 Mar;35(3):e200-e203. Epub 2020 Oct 1. PMID: 32885873. Griggs J, Trüeb RM, Gavazzoni Dias MFR, Hordinsky M, Tosti A. Fibrosing alopecia in a pattern distribution. *J Am Acad Dermatol.* 2020 Jan 8:S0190-9622(20)30030-X. Epub ahead of print. PMID: 31926219.
2020	Clinical	Doche	Isabella Doche, PhD, MsC, MD	Universidade de São Paulo, Brazil	Described the role of dioxins and neurogenic inflammation in lichen planopilaris (LPP) and frontal fibrosing alopecia (FFA). Published one of the first books on dermoscopy in Portuguese.	Doche I, Pagliari C, Hordinsky MK, Wilcox GL, Rivitti-Machado MCM, Romiti R, Valente NYS, Shaik JA, Saldanha M, Sotto MN. Overexpression of the aryl hydrocarbon receptor in frontal fibrosing alopecia and

						lichen planopilaris: a potential pathogenic role for dioxins?: an investigational study of 38 patients. *J Eur Acad Dermatol Venereol*. 2020 Jul;34(7):e326-e329. doi: 10.1111/jdv.16287. Epub 2020 Mar 10. PMID: 32043632 Doche I, Wilcox GL, Ericson M, Valente NS, Romiti R, McAdams BD, Hordinsky MK. Evidence for neurogenic inflammation in lichen planopilaris and frontal fibrosing alopecia pathogenic mechanism. Exp Dermatol. 2020 Mar;29(3):282-285. Epub 2019 Feb 12. PMID: 3040825
2020	Clinical	Rochael	Mayra Rochael, PhD, Msc, MD	Universidade Federal Fluminense, Rio de Janeiro, Brazil	Contributed to the understanding of the histopathology of the cicatricial alopecias.	Teixeira MS, Gavazzoni Dias MFR, Trüeb RM, Rochael MC, Vilar EAG. Fibrosing Alopecia in a Pattern Distribution (FAPD) in 16 African-Descent and Hispanic Female Patients: A Challenging Diagnosis. Skin Appendage Disord. 2019 Jun;5(4):211-215. Feb 25. PMID: 31367598; PMCID: PMC6615333.