

## Published Articles, Posters, Presentations, and Awards 2009-2021

### **PUBLISHED ARTICLES**

1. Kern, D.G., Draelos, Z.D., Meadows, C., Morr , D.J., Morr , D.M. "Controlling Reactive Oxygen Species in Skin at Their Source to Reduce Skin Aging." *Rejuvenation Research*. 2010 Apr-Jun;13(2-3):165-7.
2. Gopaul, R., Knaggs, H., Langerveld, A. "Reducing Skin Stress Response with Willow Bark-Derived Salicin." *Cosmetic and Toiletries*, (July, 2010): 32-36.
3. Gopaul, R., Gibson, M., Knaggs, H., Holley, K., Lephart, J. "An Evaluation of the Effects of a Topical Product Containing Salicin on the Visible Signs of Human Skin Aging." *Journal of Cosmetic Dermatology*, 9(3) 2010: 196-201.
4. Knaggs, H. "Innovation in the Personal Care Industry." *Journal of Cosmetic Science* 9(3) 2010; 260-263.
5. Bartlett, M. "Nutritional and genetic strategies for longevity." *Anti-Aging Medical News*. Winter 2010:36-40.
6. Gopaul, R., Knaggs, H., Wickett, R. "A Review of Genomic Techniques in Cosmetic Testing." *Cosmetics & Toiletries*. February 2011, pp. 112-117.
7. Tan, N., Barger, J., Zhang, Y., Prolla, T., Weindruch, R., Zhao, C., Bartlett, M., Zhu, J. "CordyMax Cs-4 restores aging-associated changes in gene expression and extends lifespan in normal aged mice." *Proceeding of the 10th Symposium of Mycology Societies Across Taiwan Strait*, Central China Agriculture University Publishing. 2011, pp 255-256.
8. Li, C., Tan, N., Barger, J., Zhang, Y., Ferguson, S., Prolla, T., Zhu, J. "Combined use of ageLOC whole-gene expression profiling technology and mouse lifespan test in anti-aging herbal product study." *Proceeding of New TCM Products Innovation and Industrial Development Summit*, Zhejiang University Publishing, Hangzhou. 27 Nov. 2011.
9. Chang, A., Lingala, B., Chang, T., Kern, D., Wood, S., Toyoda, H., Knaggs, H. "An Exploratory Study to Determine the Association Between Assessed Facial Skin Aging and Plasma Isoprostane Levels in Middle-Aged Japanese Women." Article first published online: 5 Dec. 2011 *Dermatological Surgery*.  
<http://onlinelibrary.wiley.com/doi/10.1111/j.1524-4725.2011.02235.x/abstract>.

10. Gopaul, R., Kern, D.G., Knaggs, H.E., Lephart, J.F. (2012) *Narcissus tazetta* and *Schizandra chinensis* to Regulate 'Youth Gene Clusters'—An In vitro Analysis. *Cosmetics & Toiletries*; 127, 6: 446-450.
11. Gopaul, R., Knaggs, H.E., Lephart, E.D. (2012), Biochemical investigation and gene analysis of equol: A plant and soy-derived isoflavonoid with anti-aging and antioxidant properties with potential human skin applications. *BioFactors*. doi: 10.1002/biof.191
12. Mastaloudis, A., Wood, S.M. Age-Related Changes in Cellular Protection, Purification and Inflammation-Related Gene Expression: Role of Dietary Phytochemicals. *Annals of the New York Academy of Sciences*. **1259**(1):112-120; 2012.
13. Mastaloudis, A. A Unique Nutritional Formulation to Promote Cellular Protection and Purification Via Induction of the Nrf2-mediated ARE/Phase II Detoxification Pathways. Second International Conference on Environmental Stressors in Biology and Medicine. Medimond s.l.r. Bologna, Italy. 11-17; 2012.
14. Holley, K.C., Knaggs, H.E. Why Don't I Look Younger? *Euro Cosmetics* 2013, 21: p. 32.
15. Barger, J.L., Vann J.M., Mastaloudis, A., Wood, S.M., Bartlett, M.R., Prolla, T.A. Weindruch, R. Identification of transcriptional targets of healthspan in adipose tissue and modulation by resveratrol. *Nutrition and Aging* 2014;2:157-63.
16. Meadows C, Morre DJ, Morre DM, Draelos ZD, and Kern D. Age-Related NADH Oxidase (arNOX)-Catalyzed Oxidative Damage to Skin Proteins. *Archives of Dermatological Research*, June 2014.  
<http://www.ncbi.nlm.nih.gov/pubmed/24906676>.
17. H Knaggs, S Wood, D Burke, J Lephart, J Namkoong. (2016). The Contribution of Dietary Nutrients and Supplements to Skin Health. In *Cosmetic Dermatology 2<sup>nd</sup> Edition* (pp. 357-363). West Sussex, UK: John Wiley & Sons.
18. Xu J, Spitale RC, Guan L, Flynn RA, Torre EA, Li R, Raber I, Qu K, Kern D, Knaggs HE, Chang HY, Chang AL. Novel Gene Expression Profile of Women with Intrinsic Skin Youthfulness by Whole Transcriptome Sequencing. *PLoS One*. 2016 Nov 9;11(11):e0165913
19. Wood, S.M.; Mastaloudis, A.F.; Hester, S.N.; Gray, R.; Kern, D.; Namkoong, J. and Draelos, Z.D. Protective effects of a novel nutritional and phytonutrient blend on ultraviolet radiation-induced skin damage and inflammatory response through aging defense mechanisms. *Journal of Cosmetic Dermatology*. 16(4):491-499; 2017.

20. Barger, J.L.; Vann, J.M.; Cray, N.L.; Pugh, T.D.; Mastaloudis, A.; Hester, S.N.; Wood, S.M.; Newton, M.A.; Weindruch, R. and Prolla, T.A. Identification of tissue-specific transcriptional markers of caloric restriction in the mouse and their use to evaluate caloric restriction mimetics. *Aging Cell*. 16(4):750-760; 2017. doi:10.1111/ace.12608
21. Hester SN, Mastaloudis A, Gray R, Antony J, Evans M, Wood SM. Efficacy of an anthocyanin and prebiotic blend on intestinal environment in obese male and female subjects. *Journal of Nutrition and Metabolism*, 2018 Sept:1-11.
22. Daveri, E.; Cremonini, E.; Mastaloudis, A.; Hester, S.N.; Wood, S.M.; Waterhouse, A.L.; Anderson, M.; Fraga, C.G. and Oteiza, P.I. Cyanidin and delphinidin modulate inflammation and altered redox signaling improving insulin resistance in high fat-fed mice. *Redox Biology*. 18:16-24; 2018
23. Cremonini E, Mastaloudis A, Hester SN, Verstraeten SV, Anderson M, Wood SM, Waterhouse AL, Fraga CG, Oteiza PI. Anthocyanins inhibit tumor necrosis alpha-induced loss of Caco-2 cell barrier integrity. *Food Function* 2017 Aug 1;8(8):2915-2923
24. Chen Q.; Ren Y.; Lu J., Bartlett M., Chen L., Zhang Y.; Guo X.; Liu C. A novel prebiotic blend product prevents irritable bowel syndrome in mice by improve gut microbiota and modulating immune responds. *Nutrients*. 9: 1341-1364; 2017
25. J Namkoong, DG Kern, HE Knaggs. Assessment of Human Skin Gene Expression by Different Blends of Plant Extracts with Implications to Periorbital Skin Aging. *Int. J. Mol. Sci.* 2018, 19(11), 3349; <https://doi.org/10.3390/ijms19113349>
26. Cremonini E, Daveri E, Mastaloudis A, Adamo AM, Mills D, Kalanetra K, Hester SN, Wood SM, Fraga CG, Oteiza PI. Anthocyanins protect the gastrointestinal tract from high fat diet-induced alterations in redox signaling, barrier integrity and dysbiosis. *Redox Biol*. 2019 Sep;26:101269. doi: 10.1016/j.redox.2019.101269. Epub 2019 Jul 5.
27. Serna E, Mastaloudis A, Martorell P, Wood SM, Hester SN, Bartlett M, Vina J. A Novel Micronutrient Blend Mimics Calorie Restriction Transcriptomics in Multiple Tissues of Mice and Increases Lifespan and Mobility in *C. elegans*. *Nutrients*. 2020;12(2):486. Published 2020 Feb 14.
28. Mastaloudis A, Sheth C, Hester SN, Wood SM, Prescott A, McGlade E, Renshaw P, Yurgelun-Todd D. Supplementation with a putative calorie restriction mimetic micronutrient blend increases glutathione concentrations and improves neuroenergetics in brain of healthy middle-aged men and women. *Free Radic Biol Med*. 2020, 153: 112-121

29. Woodby B, Schiavone ML, Pambianchi E, Mastaloudis A, Hester SN, Wood SM, Pecorelli A, Valacchi G. Particulate Matter Decreases Intestinal Barrier-Associated Proteins Levels in 3D Human Intestinal Model. *Int J Environ Res Public Health*. 2020;17(9):3234. Published 2020 May 6. doi:10.3390/ijerph17093234
30. Supplementation with cyanidin and delphinidin mitigates high fat diet-induced endotoxemia and associated liver inflammation in mice. Cremonini E, Iglesias DE, Matsukuma KE, Hester SN, Wood SM, Bartlett M, Fraga CG, Oteiza PI. *Food Funct*. 2022 Jan 4. doi: 10.1039/d1fo03108b.
31. A Nutritional Supplement Blend of Collagen Peptides, Lutein and Wheat Lipid Extract Improves Skin Attributes. Hester S, Wood SM, Gray R, Kern D, O'Donnell, R, Draelos ZD. *Dermatol & Cosmet JOJ* 2021;4(2):1-9.
32. Glucosamine Supplementation Improves Physical Performance in Trained Mice. De la Rosa A, Olaso-Gonzalez G, Garcia-Dominguez E, Mastaloudis A, Hester SN, Wood SM, Gomez-Cabrera MC, Viña J. *Med Sci Sports Exerc*. 2021 Oct 27.
33. A Novel Micronutrient Blend Mimics Calorie Restriction Transcriptomics in Multiple Tissues of Mice and Increases Lifespan and Mobility in *C. elegans*. Serna E, Mastaloudis A, Martorell P, Wood SM, Hester SN, Bartlett M, Prolla TA, Viña J. *Nutrients*. 2020 Feb 14;12(2):486.

## POSTERS

1. "New Skin Benefits for White Willow Bark Extract." The Society of Cosmetic Chemists Technology Showcase, December 2009. Gopaul, R., Langerveld, A., Lephart, J., Knaggs, H.
2. "Antioxidation and lifespan-extension activities of CordyMax in oxidative stress and aging models #A177." Oxidants and Antioxidants in Biology, Oxygen Club of California World Congress, March 17-20, 2010, Santa Barbara, CA. Zhu, J., Zhang, Y., Yang, J., Tan, N., Zhao, C., and Mastaloudis, A. (received DSM Research Award).
3. "Age-Related Oxidase (arNOX) Implicated in Aging-Related Oxidative Damage to Skin Proteins," Oxygen Club of California World Congress, March 2010, Santa Barbara, California. Morré, D.M., Morré, D.J., Meadows, C., Draelos, Z., and Kern, D.G.
4. "CordyMax extends the lifespan in an aging model: a preliminary report, Abstract #A310." Experimental Biology '10, April 24-28, 2010 Anaheim, CA. Tan, N., Zhang, Y., Yang, J., Zhao, C., and Zhu, J.S.
5. "Improvement of exercise metabolism and carotenoid antioxidant scores with CordyMax and LifePak in young Chinese elite athletes, Abstract #D356."

Experimental Biology '10, April 24-28, 2010 Anaheim, CA. Duan, L., Zhao, L., Liang, C., Lu, L., Gao, L., Li, G., Zhu, J.S.

6. "Maturational alteration of differential expressions of GC:AT-biased genotypes of *Cordyceps sinensis* fungi and *Paecilomyces hepiali* in *Cordyceps sinensis*, Abstract #B210." Experimental Biology '10, April 24-28, 2010 Anaheim, CA. Zhu, J.S., Gao, L., Yao, Y., Zhou, Y.
7. "Antioxidation activities of CordyMax in an oxidative stress model: a mechanism of its anti-aging properties, Abstract #311." Experimental Biology '10, April 24-28, 2010 Anaheim, CA. Yang, J., Tan, N., Zhao, C., Zhang, Y., and Zhu, J.S.
8. "Appearance in Japanese Women Correlates with Age-Related NADH Oxidase Levels and Blood Markers of Lipid Oxidation," Society for Investigative Dermatology; J. Invest Dermatol 130. S. 6 (May 2010). Morré, D.J., Morré, D.M., Kern, D.G., Wood, S.M.
9. "Regulating the Expression of Genes Associated with the Synthesis and Maintenance of Dermal Hyaluronan and Barrier Lipids Via Topical Treatment of Salicin—An In Vitro Analysis," Society for Investigative Dermatology; J. Invest Dermatol 130. S. 84, May 2010. Gopaul, R., Knaggs, H.
10. "Salicin Regulates the Expression of 'Functional Youth Gene Clusters' to Reflect a More Youthful Skin Profile," International Federation of Societies of Cosmetic Chemists Annual Meeting, May 2010, Buenos Aires, Argentina. Gopaul, R., Langerveld, A., Knaggs, H., Lephart, J.
11. "Inhibition by Coenzyme Q10 of Age Related Oxidase (arNOX) Caused Oxidative Damage in Skin Proteins," International Coenzyme Q Association Meeting, May 2010, Brussels, Belgium. Morré, D.M., Morré, D.J., Meadows, C., Draelos, Z., Kern, D.G.
12. "Appearance in Japanese Women Correlates with the Presence of Inositides and Lysolipids, Both Significant Inhibitors of Age-Related NADH Oxidase Levels," 40th Annual European Society for Dermatological Research, June 2010. Morré, D.J., Morré, D.M., Kern, D.G., Wood, S.M., Toyoda, H., Knaggs, H.
13. "Transcriptional Biomarkers of Mitochondrial Aging and Modulation by *Cordyceps Sinensis* Cs-4." Gordon Research Conference, Biology of Aging, Determinants of Health-Span: From Cells to Humans, Les Dablerets, Switzerland, August 21-27, 2010. Wood, S.M., Barger, J., Prolla, T.A., Weindruch, R., Mastaloudis, A., Ferguson, S.
14. "Anti-Aging Effects of Superoxide Reduction in Skin by the Application of Specific Inhibitors of Age-Related NADH Oxidase (arNOX)," International Federation of Societies of Cosmetic Chemists, September 2010, Buenos Aires, Argentina. Kern, D.G., Meadows, C., Fuller, B.B., Knaggs, H., Morré, D.M., Morré, D.J.
15. "Salicin Reduces the Expression of Genes Associated with Skin Inflammation—An In Vitro Analysis," Society for Investigative Dermatology; J. Invest Dermatol 130. S. 85, September 2010. Gopaul, R., Knaggs, H.

16. "Exploratory Study to Assess Association of Skin Aging with Plasma Isoprostane Levels in Healthy Middle-Aged Japanese Women." The American Academy of Dermatology's 69th Annual Meeting, February 2011, New Orleans, LA. Chang, A., Chang, T., Lingala, B., Kern, D., Wood, S., Toyoda, H., Knaggs, H.
17. "A PCR-based screen to identify natural compounds with the ability to influence Nrf2-mediated transcriptional induction of detoxification/antioxidant genes." Gordon Research Conference: Oxidative Stress & Disease. Emerging Research Areas in the Study of Oxidative Stress and Disease. March 13-18, 2011, Ventura, CA. Mastaloudis, A., Barger, J., Prolla, T., Weindruch, R., Ferguson, S., Wood, S.
18. "Cordyceps sinensis Cs-4 restores aging-associated changes in gene expression and extends lifespan in normal aged mice." Progress in Nutrition 2011. The 5th International Symposium, "Promoting Good Health and Developing a Sustainable Environment," Hong Kong, March 10-11, 2011. Zhu, J., Tan, N., Barger, J., Zhang, Y., Prolla, T., Weindruch, R., Zhao, C., Bartlett, M.
19. "ageLOC Vitality improves exercise endurance, glucose metabolism and antioxidant capacity in an aging model." Progress in Nutrition 2011. The 5th International Symposium, "Promoting Good Health and Developing a Sustainable Environment," Hong Kong, March 10-11, 2011. Zhu, J., Yang, J., Dong, Y., Zhao, C., Wu, Z., Zhang, Y., Tan, N., Lu, J., Bartlett, M.
20. "The lifespan-prolonging effect of Cordyceps sinensis Cs-4 in normal mice and its molecular mechanisms." FASEB J 2011 25(1): 599.1. Experimental Biology 2011, Washington, DC, Apr. 10, 2011. Tan, N., Barger, J., Zhang, Y., Prolla, T., Weindruch, R., Zhao, C., Bartlett, M., Zhu, J.
21. "ageLOC Vitality improves endurance exercise, exercise glucose metabolism and antioxidant capacity in an aging model." FASEB J 2011 25(1): 1049.2. Experimental Biology 2011, Washington, DC, Apr. 12, 2011. Yang, J., Dong, Y., Zhao, C., Wu, Z., Zhang, Y., Tan, N., Lu, J., Bartlett, M., Zhu, J.
22. "Cordyceps sinensis Cs-4 restores aging-associated changes in gene expression and extends lifespan in normal aged mice." FASEB J 2011 25(1): 1090.13. Experimental 2011, Washington, DC, Apr. 13, 2011. Tan, N., Barger, J., Zhang, Y., Prolla, T., Weindruch, R., Zhao, C., Bartlett, M., Zhu, J.
23. "An ageLOC Vitality formula improves endurance exercise in aged mice and energy metabolism in muscle mitochondria." FASEB J 2011 25(1): 1114.9. Experimental Biology 2011, Washington, DC, Apr. 13, 2011. Dong, Y., Lu, J., Yang, J., Zhao, C., Tan, N., Wu, Z., Zhang, Y., Gao, L., Bartlett, M., Zhu, J.
24. "Association of skin aging severity with blood isoprostane levels in healthy middle-aged Japanese women." Society for Investigative Dermatology (SID) May 2011, J. Invest Dermatol 131. S. 85 (2011). Chang, T., Lingala, B., Kern, D., Wood, S., Toyoda, H., Knaggs, H., Chang, A.
25. "CordyMax Cs-4 restores aging-associated changes in gene expression and extends lifespan in normal aged mice." Proceeding of the 10th Symposium of Mycology

Societies cross Taiwan Strait, Central China Agriculture University. 2011, pp 255-256. Oral presentation at: The 10th Symposium of Mycology Societies Cross Taiwan Strait, Wuhan, China, July 17, 2011. Tan, N., Barger, J., Ferguson, S., Zhang, Y., Prolla, T., Zhu, J.

26. "A Multifactorial Approach to Addressing Body Appearance Aging." European Society for Dermatological Research (ESDR) September 2011, *J. Invest Dermatol* 131. S. 54 (2011). Knaggs, H., Kern, D., Gopaul, R., Langerveld, A.
27. "A Multifactorial Gene Expression Approach to Understanding Skin Aging." *J. Invest Dermatol* 131. S. 57, September 2011. Knaggs, H., Kern, D., Bartlett, M., Wood, S., Mastaloudis, A., Ferguson, S., Langerveld, A.
28. "A Systematic Approach to Evaluate and Rank Natural Ingredients Based on Their Ability to Oppose Age-Related Changes in Gene Expression." Linus Pauling Institute Diet and Optimum Health Conference. Corvallis, OR. September 13-16, 2011. Wood, S., Mastaloudis, A., Barger, J., Prolla, T., Weindruch, R.
29. "A unique blend of natural compounds with the ability to oppose age-related changes in gene expression related to dysregulation of removal of cellular debris, cellular detoxification, antioxidant protection and inflammatory balance." Second International Conference on Environmental Stressors in Biology and Medicine. October 5-7, 2011, Centro Didattico, Policlinico Le Scotte Siena, Italy. Mastaloudis, A., Barger, J., Prolla, T., Weindruch, R., Bartlett, M., Wood, S.
30. "Whole-gene transcriptional profiling to detect aging-associated mitochondria dysfunction and to develop an anti-aging product." Proceeding of 2011 International Conference on Food Factors. Zhu, J.S., Dong, Y.Z., Barger, J.L., Lu, J.H., Tan, N.Z., Prolla, T.A., Weindruch, R., Bartlett, M. Invited Speaker at: The 2011 International Conference on Food Factors, Taiwan, November 20-23, 2011.
31. "Combination of ageLOC biochip whole-gene expression profiling and mouse lifespan test in CM anti-aging study." Proceeding of Summit of New TCM product Development and Industrial Development Strategy, China J Chinese Materia Medica Publishing. 2011. Li, C.L., Tan, N., Barger, J., Ferguson, S., Zhang, Y., Prolla, T., Zhu, J. Invited Speaker at: Summit of New TCM product Development and Industrial Development Strategy, Hangzhou, China, November 25-27, 2011.
32. "Influencing the Expression of Genes Associated with Skin Inflammation by Combining Narcissus Tazetta Bulb Extract and Schizandra Chinensis Fruit Extract—an in vitro Analysis." Society of Cosmetic Chemists Annual Scientific Seminar, New York, NY, December 2011. Gopaul, R., Knaggs, H., Kern, D.
33. "So Why Don't I Look Younger?" International Federation of Societies of Cosmetic Chemists, Bangkok, Thailand, December 14-15, 2011. Kern, D., Chang, A., Wood, S., Gopaul, R., Lephart, J., Knaggs, H.
34. Chang, A.L.S., Spitale, R., Torre, E., Lingala, B., Chang, H.Y., Kern, D.G., Wood, S.M., Knaggs, H. E. Transcriptional profiling to identify genes controlling human skin aging presented at the 70<sup>th</sup> Annual Meeting of the American Academy of

Dermatology in San Diego on March 16-20, 2012. *J Am Acad Dermatol* 66(4), AB32 (2012).

35. Gopaul, R., Kern, D.G., Knaggs, H.E. L. Digitata influences expression of genes related to vasculature and may therefore be beneficial for improving the appearance of cellulite presented at Society for Investigative Dermatology, May 9-12, 2012. Supplement to the *Journal of Investigative Dermatology* 132(1), S65 (2012).
36. Gopaul, R., Kern, D.G., Knaggs, H.E. L. Digitata influences gene expression relating to adipogenesis and lipolysis and thus may be used as an active ingredient for addressing cellulite presented at Society for Investigative Dermatology, May 9-12, 2012. Supplement to the *Journal of Investigative Dermatology* 132(1), S65 (2012).
37. Mastaloudis, A., Barger, J.L., Prolla, T.A., Weindruch, R., Wood, S.M. A unique blend of natural compounds opposes age-related changes in gene expression related to dysregulation of cellular detoxification and antioxidant protection. Society for Free Radical Research International, London, England. September 6-9, 2012.
38. Kern, D.G., Draelos, Z.D., Gopaul, R., Lephart, J., Knaggs, H.E. Microcurrent Skin Treatment Outperforms a Standard Retinol Topical in the Treatment of Cellulite Skin Topography presented at the 42<sup>nd</sup> Annual Meeting of the European Society for Dermatological Research in Venice, Italy on September 19-22, 2012.
39. Gopaul, R., Kern, D.G., Knaggs, H.E., Lephart, J.F. Regulating the Expression of Genes Associated with the Protection and Maintenance of Skin Structure via Topical Treatment of *Narcisscus Tazetta* Bulb Extract and *Schizandra Chinensis* Fruit Extract- an *In vitro* Analysis presented at the 42<sup>nd</sup> Annual Meeting of the European Society for Dermatological Research in Venice, Italy on September 19-22, 2012.
40. Gopaul, R., Knaggs, H.E., Kern, D.G., Lephart, J.F. Targeting Genes Related to Skin Firmness—an *in-vitro* Approach presented at the Annual Society of Cosmetic Chemists Meeting in New York, NY on December 6-7, 2012.
41. Wood, S.M., Poole, S., Burke, D., Bartlett, M., Mastaloudis, A. Weight management program, including a blend of natural compounds, facilitates weight loss in overweight men and women: a pilot study. *Experimental Biology*, Boston MA. *FASEB J* April 9, 2013 27:851.14.
42. Wood, S.M., Poole, S., Bartlett, M., Mastaloudis, A., Burke, D. Effects of a novel dietary supplement on physical and mental function in middle-aged adults: a double-blind, randomized, placebo-controlled trial. *Experimental Biology*, Boston, MA. *FASEB J* April 9, 2013 27:1076.8.
43. N-Z. Tan, J-Y. Yang, G. Yang, J-S. Zhu. ageLOC vitality improves memory and learning ability in memory impairment models. *Experimental Biology*, Boston MA. *FASEB J* April 9, 2013 27: 661.4.
44. L. Gao, Y-S. Yao, Z. Wu, J-S. Zhu. Changes in RAPD molecular marker polymorphism during *Cordyceps sinensis* maturation. *Experimental Biology*, Boston MA. *FASEB J* April 9, 2013 27: 1079.13.



45. L. Gao, Y. Zhang, J-H. Lu, N-Z. Tan, J-S Zhu. Cs-5 modulating immune response in a normal adult model. Experimental Biology, Boston MA. FASEB J April 9, 2013 27: 866.1.
46. J-Y. Yang, Y. Zhang, Y-Z. dong, N-Z. Tan, J-H. Lu and J-S. Zhu. *Cordyceps sinensis* Cs-5 enhances sexual functions in normal and impotent models. Experimental Biology, Boston MA. FASEB J April 9, 2013 27: 1167.8.
47. Kern, D.G., Stephens, T.J., Knaggs, H.E. An instrument-applied topical product affects skin microvasculature and may therefore be beneficial for improving the appearance of cellulite presented at the International Investigative Dermatology meeting on May 8-11, 2013 in Edinburgh, Scotland.
48. Kern, D.G., Knaggs, H.E., Gopaul, R., Bevis, D.J., Kilkuskie, R.E., Lehigh, E.A., Langerveld, A.J., Pfund, W.P. An in vitro method for identifying agents with lipofilling-like activity: Parallel Assessment of lipid accumulation, toxicity and gene expression presented at the International Investigative Dermatology meeting on May 8-11, 2013 in Edinburgh, Scotland.
49. Gopaul, R., Kern, D.G., Namkoong, J., Knaggs, H. Targeting Genes Related to Skin Firmness—an In Vitro Approach presented at Society of Cosmetics Chemist in December 12-13, 2013 in New York, New York.
50. A.S. Chang, R Spitale, R Li, E Torre, D.G. Kern, H.E. Knaggs. Identification of Gene Expression Signatures in Older Women with Youthful Appearing Skin presented at Society for Investigative Dermatology (SID) in Albuquerque, NM on May 7-10, 2014.
51. D.G. Kern, J. Namkoong, H.E. Knaggs, R. Gopaul, D.J. Bevis, R.E. Kilkuskie, E.A. Lehigh, A.J. Langerveld, W.P. Pfund. An in vitro Method for Identifying Agents with Lipofilling-like Activity: Assessment of Lipid Accumulation, Tissue Source, Age, and Gene Expression presented at Society for Investigative Dermatology (SID) in Albuquerque, NM on May 7-10, 2014.
52. Jin Namkoong. A Special Lunch Presentation: Nu Skin Company Highlighting Recent Scientific Posters presented at Happi's Anti-Aging Conference, September 17, 2014.
53. Namkoong, J, Cook, B, Larsen, K, Zhou, H, Landreth, B, Lehigh, E, Langerveld, A, Stevenson, D, Knaggs, H. Assessment of Jasmine essential oils on skin equivalents presented at 12<sup>th</sup> Biannual Conference of the Asian Societies of Cosmetic Chemists on April 28-30, 2015 in Cairns, Australia.
54. Namkoong, J, Kern, D, Gopaul, R, Lehigh, E, Langerveld, A, Knaggs, H. Epigenetic modulation of skin equivalents by cosmetic ingredients presented at the Society for Investigative Dermatology on May 6-9, 2015 in Atlanta, GA.
55. Xu, J, Spitale, R, Flynn, R, Torre, E, Li, Rui, Raber, I, Kern, D, Knaggs, H, Chang, H, Chang, A. Hyaluronan synthase 2 antisense transcript level associates with human

skin youthfulness as identified by transcriptome sequencing presented at the Society for Investigative Dermatology on May 6-9, 2015 in Atlanta, GA.

56. Stephens, B, Namkoong, J, Kern, D, Gopaul, R, Knaggs, H. Gene and epigenetic expression patterns of same-genome skin equivalent constructs exposed to single and combination of cosmetic ingredients presented at 23<sup>rd</sup> World Congress of Dermatology June 8-13, 2015. Vancouver, Canada.
57. Namkoong, J, Cook, B, Stevenson, D, Kern, D, Knaggs, H. A design strategy for comprehensive quality control of botanicals: a case study with essential oils presented at the International Federation of Societies of Cosmetic Chemists in Zurich Switzerland on September 22-23, 2015.
58. D Kern, J Namkoong, R Best, I Ansell, A Norman, O Godbold, H Innes, K Fuller, and H Knaggs. A Key Strategy to Support the Evolution of Personalized Skin Care. Presented at the International Federation of Societies of Cosmetic Chemists in Zurich Switzerland on September 22-23, 2015.
59. Wood, S.M.; Gray, R.; Kern, D.; Hester, S.N.; Mastaloudis, A.; Namkoong, J.; and Draelos, Z.D. Novel Nutritional Formula Protects Against Cellular Damage. *FASEB Journal* 30:692.5; April 2016.
60. Choy, Y.Y.; Hester, S.N.; Mastaloudis, A.; Wood, S.M.; Gray, R.; O'Donnell, R.P.; Barger, J.L.; Quifer-Rada, P.; Lamuela-Raventós, R.M. and Waterhouse, A.L. Nutritional Polyphenol Metabolites' Kinetics in Plasma, Urine, and Saliva Following Consumption by Normal, Healthy, Subjects. *FASEB Journal* 30:690.2; April 2016.
61. Cremonini, E.; Anderson, M.; Waterhouse, A.L.; Mastaloudis, A.; Wood, S.M.; Hester, S.N.; Verstraeten, S.; Fraga, C.G. and Oteiza, P.I. Anthocyanins inhibit tumor necrosis alpha-induced loss of Caco-2 cell barrier integrity. *Proceedings of the Oxygen Club of California 2016 World Congress; University of California at Davis, Davis, CA. A80; May 4-6, 2016.*
62. Mastaloudis, A.; Serna, E.; Wood, S.M.; Hester, S.N.; Weindruch, R.; Prolla T.A. and Vina, J. A Novel Nutrient Blend Mimics Calorie Restriction Transcriptional Patterns in Brain of Mice. *Proceedings of the Oxygen Club of California 2016 World Congress; University of California at Davis, Davis, CA. A105; May 4-6, 2016.*
63. J. Namkoong, B. Cook, D. Kern, H.E. Knaggs. Topical Treatments Improved Periorbital Aging. *Journal of Investigative Dermatology*, [May 2016](#) Volume 136, Issue 5, Supplement 1, Page S47. Poster presented at Society for Investigative Dermatology on May 11-14, 2016 in Scottsdale, AZ.

64. S. Wood, R. Gray, S. Hester, A. Mastaloudis, D. Kern, J. Namkoong, Z.D. Draelos. Nutritional Supplementation Improves Skin Health, [May 2016](#) Volume 136, Issue 5, Supplement 1, Page S103. Poster presented at Society for Investigative Dermatology on May 11-14, 2016 in Scottsdale, AZ.
65. Dale Kern, Kara C. Holley, Remona Gopaul, Melanie Riggs, Jin Namkoong, Helen E. Knaggs. Instrumental Enhancement of Topical Skin Care Product Performance. Poster presented at International Federation of Societies of Cosmetic Chemists on October 30-November 2, 2016 In Orlando, FL.
66. DG Kern, ZD Draelos, J Namkoong, M Riggs, and HE Knaggs. A Unique Sensitive Skin Cleansing Technology. Poster presented at the American Academy of Dermatology annual meeting on March 3-7 2017 in Orlando, FL.
67. S. Jones, D. A. Hart, A. Blythe, J. Ronsky, J. Namkoong, and D. Kern. The influence of a novel mechanical loading regimen on the molecular response of human facial skin cells. Poster presented at the Society for Investigative Dermatology meeting on April 26-29 in Portland, OR.
68. Jin Namkoong, Dale G. Kern, and Helen E. Knaggs. Preliminary Evaluation of Gene Expression Changes from Tape Strippings. Poster presented at the Society for Investigative Dermatology meeting on April 26-29 in Portland, OR.
69. Subramaniam, P.; Mastaloudis, A.; Wood, S.M.; Hester, S.N.; McGlade, E.C.; Renshaw, P.F. and Yurgelun-Todd, D.A. Alterations in Brain Connectivity Following Supplementation with a Putative Caloric Restriction Mimetic Blend of Nutrients and Phytochemicals. American Society of Clinical Psychopharmacology Annual Meeting, Miami, FL, May 29 - June 2, 2017.
70. Mastaloudis, A.; Serna, E.; Wood, S.M.; Hester, S.N.; Weindruch, R.; Prolla T.A. and Vina, J. A Novel Nutrient Blend Mimics Calorie Restriction Transcriptomics Differentially in Multiple Tissues of Mice. *Proceedings of the Oxygen Club of California 2016 World Congress*; Berlin, Germany. A235; June 21-23, 2017.
71. Mastaloudis, A.; Serna, E.; Wood, S.M.; Hester, S.N.; Weindruch, R.; Prolla T.A. and Vina, J. A Long-term supplementation with a novel nutrient blend mimics calorie restriction transcriptomics in multiple tissues of old mice. *Linus Pauling Institute Diet and Optimum Health Conference*; Corvallis, Oregon. A33; September 13-16, 2017.
72. DG Kern, J Namkoong, M Riggs, B Cook, ZD Draelos, HE Knaggs. A Novel Device for Skin Type-Based Treatment While Cleansing. Poster presented at the 47<sup>th</sup> Annual European Society of Dermatological Research on September 27-30, 2017 in Salzburg, Austria.

73. DG kern, J Namkoong, M Riggs, HE Knaggs. Digital image analysis of skin improvement following use of a novel treatment cleansing technology. Poster presented at International Federation of Societies of Cosmetic Chemistry in Seoul, Korea on October 23-25, 2017.
74. Mastaloudis, A.; Serna, E.; Wood, S.M.; Hester, S.N.; Weindruch, R.; Prolla T.A. and Vina, J. A novel nutrient blend mimics calorie restriction transcriptomics in multiple tissues of mice and increases vitality and lifespan in *C. elegans*. Invited Lecture; Society for Free Radical Research – International. Lisbon, Portugal. June 4-7, 2018
75. J. Lu, A. Mastaloudis, Y. Ren, M. Bartlett. A Putative Weight Loss Botanical Blend Opposed Gene Expression Changes Induced by a High Fat Diet in Mice. Published Online: 1 Apr 2017. Abstract Number:797.4. Poster presented at EB meeting April 21, 2017 in Chicago.
76. J. Lu, Y. Ren, D. Stevenson, M. Bartlett. Effects of ageLOC Defense Formula on Immune Regulation and Detoxification: Phenotype and Molecular Evaluation. Poster presented at Nutrition 2018 in Boston on June 8-12, 2018
77. Y. Ren, J. Lu, D. Stevenson, M. Bartlett. Lifespan and Healthspan Extension Effect of a Novel Nutritional Blend on *C. elegans* Supporting Aging Defense Mechanisms. Poster presented at Nutrition 2018 in Boston on June 8-12, 2018
78. J. Li, Y. Ren, J. Lu, Q. Chen, C. Liu, D. Stevenson, M. Bartlett. Proteomics Analysis of Mouse Colon after Treatment with a Novel Prebiotic Blend. Poster presented at Nutrition 2018 in Boston on June 8-12, 2018
79. DG Kern, ZD Draelos, J Namkoong, M Riggs, and HE Knaggs. Sensitive Skin Tolerance to Cleansing Tool Topographies and Cleansers. Poster presented at the American Academy of Dermatology annual meeting on February 16-20, 2018 in San Diego, California.
80. Linna Guan, Gefei Alex Zhu, Shufeng Li, Michaella Montana, Dale Kern, Helen Knaggs, Anne L. S. Chang. Differences in Skin Aging Characteristics in Women of East Asian vs European Descent Residing in the Same Geographic Location. Poster presented at the American Academy of Dermatology annual meeting on February 16-20, 2018 in San Diego, California.
81. Linna Guan, Gefei Alex Zhu, Shufeng Li, Michaella Montana, Dale Kern, Helen Knaggs, Anne L. S. Chang. Differences in Skin Aging Characteristics in Women of East Asian vs European Descent Residing in the Same Geographic Location. Poster presented at the International Investigative Dermatology meeting on May 16-19, 2018 in Orlando Florida.

82. Jin Namkoong, Dale G. Kern, Melanie Riggs, Kara C. Holley and Helen E. Knaggs. A Facial Treatment Cleansing Device Enhanced Delivery of Topical Skin Care Products. Poster presented at International Investigative Dermatology on May 16-19, 2018, in Orlando Florida.
83. Jin Namkoong, Dale Kern, Melanie Riggs, Kara C. Holley, Helen E. Knaggs. Progressive Improvement of the Skin Following a Novel Treatment Cleansing Technology. Poster presented at The International Federation of Societies of Cosmetic Chemists Congress on September 18-21, 2018 in Munich, Germany.
84. Linna Guan, Ludan Zhao, Jin Xu, Rui Li, Dale Kern, Helen Knaggs, and Anne L.S. Chang. Exploratory study to examine the gene expression effects of retinol on aging-related molecular pathways in individuals of East Asian descent poster presented at American Academy of Dermatology 77th Annual Meeting in Washington, D.C. on March 7-10, 2019.
85. Dale Kern, Jin Namkoong, Melanie Riggs, Kara C. Holley and Helen E. Knaggs. A facial treatment cleansing device improve acne skin poster presented at Society for Investigative Dermatology 77<sup>th</sup> Annual Meeting in Chicago, IL on May 8-11, 2019.
86. Linna Guan, Ludan Zhao, Jin Xu, Rui Li, Dale Kern, Helen Knaggs, and Anne L.S. Chang. Exploratory study to examine the gene expression effects of retinol on aging-related molecular pathways in individuals of East Asian descent poster presented at Society for Investigative Dermatology 77<sup>th</sup> Annual Meeting in Chicago, IL on May 8-11, 2019.
87. Linna Guan, Ludan Zhao, Jin Xu, Rui Li, Dale Kern, Helen Knaggs, and Anne L.S. Chang. Exploratory study to examine the gene expression effects of retinol on aging related molecular pathways in Individuals of East Asian descent poster presented at World Congress of Dermatology in Milan, Italy on June 10-15, 2019.
88. Dale Kern, Jin Namkoong, Melanie Riggs, Kara C. Holley and Helen E. Knaggs. Multi-directional Application of Topical Eye Creams for Improved Comfort and Efficacy poster presented at World Congress of Dermatology in Milan, Italy on June 10-15, 2019.
89. Cecilia Rodriguez-Lanzi, Eleonora Cremonini, Mirko Marino, Dario Iglesias, Angela Mastaloudis, Steve Wood, Shelly Hester, Cesar Fraga, Patricia Oteiza. Anthocyanidins promotes beiging of white adipose tissue in mice fed a high fat diet. Poster was presented at Society for Free Radical Research Europe (SFRRE) Annual Meeting Abstracts "Redox Homeostasis: From Signaling to Damage" 19-21 June 2019, in Ferrara, Italy. Abstract: Volume 139, Supplement 1, Pages S1-S58 (1 August 2019).

90. Dale Kern, Melanie Riggs, Kara C. Holley and Helen E. Knaggs. A Novel Microcurrent Device to Improve Skin Structure and Appearance poster presented at European Society for Dermatological Research in Bordeaux, France on September 18-21, 2019.
91. Brian Cook, Jin Namkoong, Melanie Riggs, Kara C. Holley, Dale Kern and Helen E. Knaggs. A Systematic Approach to Ingredient Substitution in a Topical Skin Care Product poster presented at International Federation of Societies of Cosmetic Chemists in Milan, Italy on September 30- October 2, 2019.
92. Brian Cook, Jin Namkoong, Melanie Riggs, Kara C. Holley, Dale Kern and Helen E. Knaggs. Evaluation of Extracts Containing Red Clover in the Development of a Scalp Treatment System Targeting Hair Loss and Hair Damage presented at Society for Investigative Dermatology (Virtual Conference) May 13-16, 2020.
93. Dale G. Kern, Melanie Riggs, and Helen E, Knaggs. Biphasic Modulated Pulsed Microcurrent Treatment of Skin presented at Society for Investigative Dermatology (Virtual Conference) May 13-16, 2020.
94. Collagen Supplement Improves Skin Attributes in Healthy Adults. Hester S, Wood S, Gray R, Kern D, Draelos Z. *Current Developments in Nutrition* 2021;5(6):321

## **ORAL PRESENTATIONS**

1. "Resveratrol mimics caloric restriction and retards aging in the heart." Oxidants and antioxidants in biology, Oxygen Club of California World Congress, Santa Barbara, CA, March 17-20, 2010. Prolla, T.
2. "Aging and Genes—the Link with Skin." New York Society of Cosmetic Chemists Meeting, March 2010, Knaggs, H.
3. "Transcriptional biomarkers of age and their modulation by dietary intervention." Invited Speaker: CoLONGY, The 1st International Congress on Controversies in Longevity, Health and Aging. Barcelona, Spain, June 24-27, 2010. Barger, J., Wood, S.M., Weindruch, R., Prolla, T.
4. "Mitochondria and Aging." Japan Symposium. Mechanisms of Ageing and Development, September 2010;13:449-450;480-486. Prolla, T.
5. "A nutritional strategy to oppose the genetic expression of aging and loss of vitality." 1st World Congress on Targeting Mitochondria, Strategies, Innovation and Clinical Applications, Berlin, Germany, November 18-19, 2010. Wood, S.M., Ferguson, S.B., Barger, J.L., Prolla, T.A., Weindruch, R., Bartlett, M.

6. "Targeting age-related gene expression improves mental and physical vitality." 1st World Congress on Targeting Mitochondria, Strategies, Innovation and Clinical Applications, Berlin, Germany, November 18-19, 2010. Ferguson, S.B., Tan, N., Dong, Y., Lu, J., Fisk, N.A., Wood, S.M., Zhu, J., Bartlett, M.
7. "Genes and Aging: Links to Skin," In-Cosmetics Asia; Bangkok, Thailand, November 2010. Knaggs, H.
8. "Why Do People Look Younger for Their Age," Asian Cosmetic Chemistry Society, Singapore, China, November 2010. Knaggs, H.
9. "A Review of Current Genomic Techniques Used in Gene Expression Profiling of the Skin," Society of Cosmetic Chemists Annual Meeting; New York, New York, December 2010. Gopaul, R.
10. "Transcriptional biomarkers of calorie restriction and their modulation by dietary interventions." Invited Speaker: Free Radicals, Nutrition and Aging: From Fundamental Aspects to Clinical Applications. Paris, France, June 15-17, 2011. Barger, J.
11. "CordyMax Cs-4 restores aging-associated changes in gene expression and extends lifespan in normal aged mice." The 10th Symposium of Mycology Societies Across Taiwan Strait, Wuhan, China, July 17, 2011. Tan, N., Barger, J., Ferguson, S., Zhang, Y., Prolla, T., Zhu, J.
12. "Transcriptional biomarkers of calorie restriction in adipose tissue and modulation by dietary interventions." Invited Speaker: Linus Pauling Institute Diet and Optimum Health Conference. Corvallis, OR, September 13-16, 2011. Barger, J.
13. "A unique nutritional formulation to promote cellular protection and purification via induction of the Nrf2-mediated ARE/Phase II detoxification pathways." Invited Speaker: Second International Conference on Environmental Stressors in Biology and Medicine. Centro Didattico, Policlinico Le Scotte Siena, Italy. October 5-7, 2011. Mastaloudis, A.
14. "Restructuring of the ECM in Human Skin by Equol: A Plant and Soy-Derived Isoflavonoid." Gene Expression and Protein Evidence presented at the 4th International Conference and Exhibition for Nutraceuticals and Functional Foods, Sapporo, Japan, November 2011. Gopaul, R., Knaggs, H., Lephart, E.
15. "Whole-gene transcriptional profiling to detect aging-associated mitochondria dysfunction and to develop an anti-aging product." Invited Speaker: The 2011

International Conference on Food Factors, Taiwan, November 20-23, 2011. Zhu, J., Dong, Y., Barger, J., Lu, J., Tan, N., Prolla, T., Weindruch, R., Bartlett, M.

16. "Combination of ageLOC biochip whole-gene expression profiling and mouse lifespan test in CM anti-aging study." Invited Speaker: Summit of New TCM product Development and Industrial Development Strategy, Hangzhou, China, November 25-27, 2011. Li, C., Tan, N., Barger, J., Ferguson, S., Zhang, Y., Prolla, T., Zhu, J.
17. Knaggs, H.E. Why Don't I Look Younger? Presented at HBA Global Expo in New York City, NY; June 2012.
18. "Experimental proof of lifespan extension property and the molecular mechanisms of anti-aging herbs *Cordyceps sinensis* and *Ganoderma lucidum*." Invited Speaker: TWGHs Sophia Wang Eddie Wang Integrated Chinese and Western Medicine Symposium 2012/13, Hong Kong, China, March 7, 2013. Zhu, Josh.
19. "Amplicon density-weighted algorithms analyze high dissimilarity and dynamic alterations of RAPD molecular marker polymorphisms in the integrated microecology *Cordyceps sinensis* with multiple fungi." The 11<sup>th</sup> Symposium of Mycol Societies cross Taiwan Strait, Beijing, China, May 17-19 2013. Zhu, Josh.
20. Barger, J. "Transcriptional biomarkers of aging and modulation by dietary interventions" International Association of Gerontology and Geriatrics: Seoul, South Korea, June 25, 2013.
21. Barger, J. "Conserved pathways to longevity and modulation by resveratrol" <sup>SEP</sup>Wine Health 2013: Sydney, Australia, July 19, 2013.
22. "Anti-oxidation and lifespan extension activities of *Cordyceps sinensis* Cs-4." The 7<sup>th</sup> International Medicinal Mushroom Conference, Beijing, China, August 26-29, 2013. Zhu, J., Wu, Z.
23. "Anti-oxidation and lifespan extension activities of *Cordyceps sinensis* Cs-4 and the anti-aging molecular mechanisms." Biennial Meeting of Society for Free Radical Research-Asia, Taiwan, October 16-19, 2013. Zhu, J., Tan, L.
24. Barger, J. "Resveratrol mimics health span effects of calorie restriction in white adipose tissue" <sup>SEP</sup>6th International Conference on Polyphenols and Health: Buenos Aires, Argentina, October 19, 2013.
25. Barger, J. "Nutrigenomic approaches to slowing the aging process" Vision 2020 Seminar series, University of Zurich, November 21, 2013.



26. "The Big Debate: Where Industry Professionals See the Future of the Industry Going." *Cosmetics Vision* March 5-7, 2014 in Cannes, France, King, Will, Pessikoff, Robert, and Knaggs, Helen.
27. "Brand Case Study: Exploring the Challenges and Opportunities in Doing Business in Global Markets." *HBA* June 12, 2014 in New York, NY. Knaggs, Helen.
28. "Identification of Novel Mechanisms behind Skin Aging." *Happi's Anti-Aging Conference*, September 16, 2014 in New Brunswick, NJ. Knaggs, Helen.
29. "Exploring the Challenges and Opportunities in Doing Business in Global Markets." *Happi's Anti-Aging Conference*, September 17, 2014 in New Brunswick, NJ. Knaggs, Helen.
30. Knaggs, Helen. Exploring mechanisms of antiaging-does one size fit all? Platform presentation at the 12<sup>th</sup> Biannual Conference of the Asian Societies of Cosmetic Chemists on April 28-30, 2015 in Cairns, Australia.
31. H Knaggs, B Cook. Essential Oil Presentation, Q&A, and round table discussion. *SkinCare Ingredients 2015*. Online Wednesday June 24.
32. "An approach for customizing skin care regimens." *Cosmetics & Personal Care Tech Asia 2016*, May 26-27<sup>th</sup>, 2016 in Shanghai, China. Knaggs, Helen.
33. "Essential Oils in Personal Care: A volatile mix of challenge and opportunity." *In-Cosmetics North America*, September 7, 2016 in New York, NY. Cook, Brian.
34. "An approach for customizing skin care." *European Dermocosmetologic Days*, January 30<sup>th</sup> and 31<sup>st</sup> in Lyon, France. Knaggs, Helen.
35. DG Kern. "Beneficial Skin Movement: In Vitro to In Vivo" presented at *Cosmetic R&D Technology Cooperation in Shanghai, CN* on May 8-9, 2017.
36. H Knaggs. "Future of formulations in cosmetics Efficacy – to formulate or to engineer?" presented at the 3<sup>rd</sup> *Future of Formulations In Cosmetics* in Barcelona, Spain on May 17-18, 2017.
37. Helen E. Knaggs Dale Kern, Jin Namkoong, Melanie Riggs. Digital Image Analysis of Skin Improvement Following Use of a Novel Treatment Cleansing Technology. Oral presentation at the *Intercontinental Personal Care Excellence Conference* on June 3-5, 2018 in Sestri Levante, Italy.
38. Helen Knaggs. Continuous technology innovation in Skin Care oral presentation at *TED Talks China Nu Skin* on July 1, 2019.

39. Ganesh Diwakar, Carlos Olmos, Melanie Riggs, Dale Kern, K.C. Holley, Helen Knaggs. Combination of charge balance pulse microcurrent and activating serums stimulates extracellular matrix proteins, nitric oxide and angiogenesis: In vitro and clinical results. Presented at the French Cosmetology Society on December 9, 2021.
40. Cook, B, Nelson, C, Knaggs, H. Variability in sourcing and potency of Cannabidiol (CBD) and Hemp-based extracts impact gene expression changes in-vitro, highlighting the need for reliable analytical methods and standards. Oral presentation at Society of Cosmetic Chemists Scientific Meeting & Showcase in New York City on December 13-15, 2021

## **AWARDS**

1. Angela Mastaloudis, Ph.D. Senior Scientist, Received the DSM Nutraceutical Research Award 2010.
2. Nu Skin Awarded Utah Innovation Award for ageLOC Vitality: Natural Products category, 2011.
3. 2012 Golden Bridge Awards—Dr. Joe Chang Most Innovative Person of the Year.
4. Nu Skin received Utah Innovation Honorable Mention Award for ageLOC R2: Consumer Products category, 2012.
5. Helen Knaggs named Gold Winner for Most Innovative Woman of the Year by Women in Business and the Professions, 2015.
6. Women Tech Council named Helen Knaggs a Finalist for Innovator of the Year 2015.
7. Nu Skin won the 2015 Good Design Award by Chicago Athenaeum for ageLOC Me.
8. ageLOC Me won the 2016 Techie Award for the Most Innovative Retail Product.
9. ageLOC Me received a 2016 platinum A' Design Award in the Beauty, Personal Care, and Products Design category for innovation, technology, design, and creativity.

10. Nu Skin Scandinavia won two awards in the 2016 Biotechnology awards, which showcase the very best discoveries from companies working within the anti-aging industry.
11. ageLOC Me received the Big Innovation award as a 2016 Top Innovation from a panel of industry experts.
12. ageLOC Me won the 2016 Best Beauty Supplement/Device/Skin Care Innovation category award.
13. ageLOC Me was awarded the Edison Award – Silver, 2017.
14. ageLOC Me was awarded the Best in Biz Award – Silver, 2017.
15. ageLOC Me won the Bronze Stevie for New Product or Service Introduction of the Year, 2017.
16. ageLOC LumiSpa received the Golden Bridge Award – Silver, 2017.
17. ageLOC Youth received Her World Beauty Awards for the anti-aging supplement category, 2017.
18. ageLOC Me received Marie Claire's Futuristic Top 20 award, 2017.
19. ageLOC Tru Face Essence Ultra Duet won The Pure Beauty Awards (UK): Best New Premium Skin Care Product, 2017.
20. ageLOC Tru Face Essence Ultra Duet won The Beauty Awards with OK Magazine! (UK): Best New Premium Skin Care Product, 2017.
21. Nu Skin was awarded in Direct Selling Australia for Product Innovation, 2017.
22. ageLOC LumiSpa was awarded at the WWD Best NEW Beauty Tech Products, in 2017.
23. ageLOC LumiSpa was awarded the Glamour Glammies Award in the Beauty Device Category, 2017.
24. ageLOC LumiSpa was a finalist at the 2017 Spark Product Design Awards.
25. ageLOC LumiSpa was the Bronze A' Design Award Winner for Beauty Personal Care and Cosmetic Products Design Category, 2017

26. ageLOC LumiSpa was listed as an "Expert certified product" in Taiwan's Fashion Guide Expert Report, 2018.
27. ageLOC LumiSpa awarded the Cosmo Beauty Awards 2018, Best Beauty Device-Reader's Choice (Hungary).
28. ageLOC LumiSpa was awarded the Cosmo Beauty Awards 2018, from the Beauty Magazine (Greater China).
29. ageLOC LumiSpa was awarded Bronze in the Innovation in Consumer Products & Services Category at the 2018 Asia-Pacific Stevie Awards.
30. ageLOC LumiSpa was awarded Silver in Personal Care Products at the International Invention, Innovation & Technology Exhibition, 2018.
31. ageLOC LumiSpa received the Good Innovation Mark Award at the International Invention, Innovation & Technology Exhibition, 2018.
32. ageLOC LumiSpa received Thailand's Smart Awards: Beauty Gadget Category, 2018.
33. ageLOC LumiSpa won Best New Premium Anti-Ageing Product at the 2018 Pure Beauty Awards.
34. ageLOC LumiSpa was a Best Use of Emerging Tech Finalist at The Techies 2018.
35. ageLOC LumiSpa was the Biotechnology Awards 2018 winner for Best Personal Care Product Manufacturer.
36. ageLOC LumiSpa was the Biotechnology Awards 2018 winner for Best Upcoming Skincare and Cleansing Product.
37. ageLOC LumiSpa won the Glamour Glammies 2018 Award in the Best Beauty Device Category.
38. ageLOC LumiSpa received the Prix de Beauté-Joy Hungary Award for Best Beauty Device, 2018.
39. ageLOC LumiSpa was awarded Best New Electrical Product at the Pure Beauty Global Awards, 2018.
40. ageLOC LumiSpa was awarded a Good Design Award in Personal Care, 2018.

41. ageLOC LumiSpa Accent was awarded the Bronze Stevie Award for Innovation in Product Design and Development Category, 2019.
42. ageLOC LumiSpa was awarded the PRIX D'EXCELLENCE DE LA BEAUTE (Best high tech) from Marie Claire, 2019.
43. Our device platform was the "The World's No.1 At-Home Beauty Instrument Brand" from Euromonitor International Ltd, 2019
44. ageLOC Lumispa was awarded the Cleo Beauty Hall Of Fame 2019: Best Beauty Gadget 2019 from CLEO Magazine Thailand, 2019
45. ageLOC LumiSpa Accent was featured as the Most Wanted Eye Tool from CLEO Magazine, 2019.
46. ageLOC LumiSpa was featured in Her Beauty Awards from Her World Magazine, 2019.
47. ageLOC LumiSpa was featured in Her Beauty Awards from Jelita Magazine, 2019.
48. ageLOC LumiSpa was featured in Her Beauty Awards from The Malaysian Women's Weekly, 2019.
49. ageLOC LumiSpa, Powerlips, Liquid Body Bar, and Smile Pop were featured as Pure Beauty Awards 2019: Winners revealed! From Cosmetics Business, 2019.
50. ageLOC LumiSpa Accent and IdealEyes were featured in Best Small Beauty Device: 2nd place from JOY Hungary - Jan/Feb issue, 2019.
51. ageLOC Boost received a Bronze in the Best New Consumer Household Product category at the International Business Awards (Stevie), US 2020.
52. ageLOC Boost was awarded a New Product of the Year award at the BIG Awards For Business, US 2020.
53. ageLOC Boost received a BIG Innovation Award in the Consumers Goods category, US 2020.
54. ageLOC Boost received a Gold in the Consumer Products category at the Golden Bridge Awards, US 2020.
55. ageLOC Boost was awarded Best Consumer Product at the Consumer Word Entry, US 2020.

56. ageLOC Facial Spa received a Reader's Choice Award at the 2020 InStyle Reader's Choice Awards, US 2020.
57. ageLOC Lumispa was awarded Best Cleansing Device at the NewBeauty Awards, US 2020.
58. ageLOC Boost received a 2020 MEIYI Award in the Home Beauty Device category, Greater China 2020.
59. ageLOC LumiSpa Accent and IdealEyes were award a 2020 Cosmopolitan Beauty Award Hungary, EMEA 2020.
60. ageLOC LumiSpa was the Beauty Insider's Choice Best Beauty & Grooming- Best Face Tool for cleansing at the Beauty & Wellness Awards 2020, Singapore.
61. ageLOC Nutriol Scalp & Hair Shampoo was the Reader's Choice for Best Hair Product-Best Shampoo for Shining & Volumizing at the Beauty Insider- Beauty & Wellness Awards 2020, Singapore.
62. ageLOC LumiSpa Accent received a Cosmopolitan Beauty Award in the Face Category, EMEA/RU 2020.
63. ageLOC LumiSpa and ageLOC Galvanic Body Trio received a Kobeica Marka Roku Award for Women's Brand of the Year in the Class and Style category, EMEA/PL 2020.
64. ageLOC LumiSpa received an Innovation of the Year award at the Cosmo Beauty Awards, EMEA/HU 2020.
65. ageLOC Nutriol Scalp and Hair Shampoo was recognized at Best New Hair Product at the Pure Beauty Awards, EMEA/NEU 2020.
66. ageLOC Galvanic Spa & Nutriol Serum was recognized in the Beauty Devices category at the Joy Prix De Beauté Awards, EMEA/HU 2020.
67. ageLOC Tru Face Essence Ultra was a Unicar Beaur Celebration Award Winner, EMEA/RO 2020.
68. ageLOC LumiSpa received a Best New Beauty Award in the Cleanser category by The Guru, Korea 2020.
69. ageLOC LumiSpa received a Best of the Best Brilliance Award from Cosmopolitan, Hong Kong 2020.

70. ageLOC beauty device systems was recognized as a Top 100 from Marie Claire, China 2020.
71. ageLOC You-SPAN received the Best Anti-Aging Supplement from Nutral Health Readers' Choice Awards, Malaysia 2021.
72. ageLOC LumiSpa received the Social Media Star Awards from SISTERS & Beauty Trend Beauty Awards, Malaysia 2020
73. ageLOC Boost received the Consumer Goods award from 2021 BIG Innovation Awards, U.S. 2021
74. ageLOC Boost received the Consumer Goods: Advanced Skin Care Edison Awards (bronze), U.S. 2021.
75. ageLOC Tr90 V-Shake received the Beauty Diamond award from Trusted Cosmetics, Poland 2021.
76. ageLOC LumiSpa Accent & IdealEyes received the Beauty Diamond award from Trusted Cosmetics, Poland 2021.
77. ageLOC LumiSpa Accent & IdealEyes received the Best Skin Wrinkle Cream from Marie Claire Beauty Awards, Hungary 2021.
78. ageLOC LumiSpa received the Innovation in Consumer Products & Services award from Asia-Pacific Stevie Awards (Silver), Singapore 2021.
79. ageLOC Boost received the Innovation in Consumer Products & Services award from the Asia-Pacific Stevie Awards (Bronze), Malaysia 2021.
80. ageLOC Boost received the Best Skin Care Device award from Unica Beauty Celebration, Romania 2021
81. ageLOC Boost received the Technologies award from Marie France, 2021.
82. ageLOC Boost received the Best Electrical Beauty Product (Gold) from the Scandinavia Global Makeup Awards, Scandinavia 2021
83. ageLOC Nutriol Shampoo receive the Best Shampoo (Gold) from the Scandinavia Global Makeup Awards, Scandinavia 2021
84. ageLOC Nutriol Conditioner received the Best Conditioner (Bronze) at the 2021 Scandinavia Global Makeup Awards, Scandinavia 2021.

85. ageLOC Boost received the Best Beauty Gadgets award from Cosmopolitan Beauty Awards, Russia 2021.
86. ageLOC Boost received the Beauty Find of the Day in Glamour Best of Beauty, Russia 2021.
87. ageLOC Boost received an International Innovation Award, Singapore 2021
88. ageLOC LumiSpa received the Product of the Year from BIG Awards for Business, U.S. 2021
89. ageLOC LumiSpa received the Best Cleansing Device from NewBeauty Awards, U.S. 2021