

Bernard William Downs – Curriculum vitae

EDUCATION:

- August 1971 – May 1972: Philadelphia College of Bible, Philadelphia, PA – Matriculated for 1 year then transferred to Penn State University. PCB accredited by Middle States Accreditation and all credits transferred accordingly.
- June 1975: Penn State University, University Park, PA - BS in Business Administration; emphasis on Marketing, Business Operations and Management Communications.
- Summer 1992 – Spring 1994: Montgomery County Community College, Blue Bell, PA. Undergraduate accredited course work in biosciences to prepare for Nutrition Science curriculum.
- Spring 1994 – August 1996: Immaculata College (Evening/weekend Program), Immaculata, PA. Pursued advanced degree in Dietetics & Nutrition Science. Transferred to Biological Chemistry curriculum. Maintained a 4.0 average. Post Graduate degree not completed.

INDEPENDENT (non-credited) STUDY:

- 1979 to Present: Ongoing independent study and profession related research of peer review scientific literature and educational literature on: nutrition, nutrigenomics, molecular and cellular biology, biochemistry, glycobiology, lipid metabolism & dyslipidemia, inflammatory disorders, obesity, diabetes, enzymology, free radical pathology and its role in chronic degenerative diseases; and environmental illness (see partial list of Scientific Publications below).
- 2002: Completed Proevity Continuing Medical Education (CME) Course, Newark, DE: Glycobiology; Certificate of Completion (CME 3 Credit value)

PROFESSIONAL EXPERIENCE:

- May 2008 to Present: President and CEO of LifeGen, Inc.; corporate offices in Lederach, PA and R & D offices in San Diego, CA. LifeGen is a nutrigenomic technology company that develops and provides patented and patent-pending gene-guided wellness solutions through nutritional genetics or “Gene Guided Precision Nutrition™”. LifeGen provides its global market customers with scientifically valid health products that improve and enable the effective management of mental and emotional health, which leads to a reduction in negative behaviors such as food (Sugar & Fat), drug, gambling and smoking addictions in order to achieve optimal health, well-being, a leaner body composition, happiness, and vitality in their lives.
- June 2003 to Present: President of Allied Nutraceutical Ingredients, LLC (ANI) and Allied Nutraceutical Research (ANR), Lederach, PA. Research and Development of proprietary nutraceutical ingredients and creation of integrated market development strategies. Scientific and Market Consultant to food & dietary supplement companies. Formulated customer/client products and developed proprietary raw material business and marketing model. Architect of market development strategy for AlgaeCal®, pure plant sourced calcium raw material. AlgaeCal plant calcium became the top selling form of calcium in the natural products industry within 18 months. As of July of 2011, 4 of the top 5 selling calcium products in the market are plant calciums because of AlgaeCal.
- January 2004 to December 2004: Executive Vice President, The Health Network, Hampton, VA. Network Marketing Company selling dietary supplements. Established corporate objectives and provided means to achieve diversification strategies. Long-standing distributor relationships enabled the transition to new management team and the achievement of corporate objectives. Leveraged 12 yrs as vendor/educator and product developer for HTN. Created Patent Pending weight loss technology.
- May 1991 to June 2003: Eastern Regional Sales Manager/Director of Technical Services; InterHealth Nutraceuticals, Inc., Benicia, CA, manufacturer of nutritional raw materials. Co-develop and sell InterHealth patented & trademarked ingredients for use in dietary supplements, beverages, foods and cosmetics. Developed algorithm for sales & marketing concepts & strategies to capitalize on published research, increasing market equity. Developed and negotiated collaborative co-op agreements and

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secured largest key accounts, producing 60% of total company revenues, with a market impact in excess of \$2 billion in consumer sales. Conducted numerous education and training seminars. Prepared complete product Dossiers for submission to European Union for approval of various InterHealth ingredients.

- October 1991 to 1996: Staff nutrition advisor to Dr. Bruce Morrison DO, Huntingdon Valley, PA: Developed nutrition practice business model and provided guidance of clinical applications of nutrition protocols in established medical practice for family medicine, sports medicine, performance nutrition and environmental illness. Designed nutrition programs for severe chronically ill patients and athletes.
- January 1991 to October 1991: Henderson Metabolic Services, Harford, MD: Sales, technical training and support of nutraceutical products to physicians. Agent for Biotics supplements and helped create sales campaign for new joint health products with the launch of “Cosamin” and “Cosaquin” (the first Human and Equestrian Glucosamine/Chondroitin products on market) under the newly created NutraMax® brand. Left during company reorganization to develop ingredient business and clinical practice.
- Fall 1986 to January 1991: Natural Organics, Melville, NY. Field sales representative for Natural Organics selling their Nature’s Plus brand to retail health food stores. Surpassed all sales quotas and received yearly sales achievement awards for excellence.

PROFESSIONAL ACCOMPLISHMENTS

- Designed, orchestrated and managed the Go-To-Market strategy for AlgaeCal raw material, a premium quality proprietary plant-form mineral source rich in calcium, magnesium and a complete range of minerals shown to reverse bone loss and improve bone health. Established semi-exclusive key account relationships to launch AlgaeCal in multiple channels, utilizing scientific papers, extensive media, PR, aggressive Co-Op advertising and customized training programs (i.e. New Chapter “Bone Strength Take Care” and Garden of Life “Raw Calcium”). The AlgaeCal launch was the most successful mineral launch in natural products history. AlgaeCal went from 89th most popular calcium supplement in the natural products industry to the 2nd most popular in 8 months. On the back of the AlgaeCal growth, New Chapter (the company marketing the finished product) went from the 4th largest company in the natural products industry to the largest company in the 18 month period.
- Created a Key Account Semi-Exclusive Co-Op market strategy model for CitriMax, a fat loss raw material that boosted natural product industry ‘collateral’ sales of the Garcinia ingredient category to over \$200 million in 3 years.
- Created Key Account Co-Op Ad model for proprietary chromium ingredient, ChromeMate that drove chromium market revenues, catapulting chromium nicotinate (proprietary and generic forms) popularity and consumer market growth to over \$50 million in 2 years (unseating the dominant competitive chromium).
- Helped validate and develop the go-to-market campaign for the first coral calcium product in North America (as sachets); catalyzing prolific market growth activities and consumer excitement; catapulting coral calcium to \$500 million in annual sales and making it the number 1 selling dietary supplement in the nutritional products industry in the late 1990s.
- Developed and implemented a novel and proprietary grape seed extract (ActiVin®) comprehensive Key Account Go-To-Market strategy driving market growth to make grape seed extract the 6th most popular nutritional ingredient (and ActiVin the #1 selling product) in the natural products industry in 1998.
- Developed business model and proprietary ingredient identity and branding strategy to achieve exceptional market penetration. Instituted “Layers of Branding” using co-branding, alternate branding and rebranding strategies for proprietary trademarked ingredients. This model is the paradigm that spurred explosion market growth.
- Personally responsible for expanding market equity of proprietary ingredients by more than \$2 billion.

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SCIENTIFIC PUBLICATIONS (PARTIAL LIST UP TO 2009 – SEE PUBMED FOR A MORE CURRENT LIST OF PUBLICATIONS):

1. **Downs BW**, Chen AL, Chen TJ, Waite RL, Braverman ER, Kerner M, Braverman D, Rhoades P, Prihoda TJ, Palomo T, Oscar-Berman M, Reinking J, Blum SH, DiNubile NA, Liu HH, Blum K. Nutrigenomic targeting of carbohydrate craving behavior: Can we manage obesity and aberrant craving behaviors with neurochemical pathway manipulation by Immunological Computable Substances (nutrients) using a Genetic Positioning System (GPS) Map? *Med Hypotheses*, 73(3):427-34. (2009)
2. Blum K, Chen AL, Chen TJ, Waite RL, **Downs BW**, Braverman ER, Kerner MM, Savarimuthu SM, Dinubile N. Repetitive H-Wave® Device Stimulation and Program Induces Significant Increases in the Range of Motion of Post Operative Rotator Cuff Reconstruction in a Double-Blinded Randomized Placebo Controlled Human Study. *BMC Musculoskelet Disord*. 2009 Oct 29;10(1):132. [Epub ahead of print]
3. Blum K, Chen TJH, **Downs BW**, Bowirrat A, Waite R, Braverman ER, Madigan M, Oscar-Berman M, DiNubile N, Gold M. Neurogenetics of Dopaminergic Receptor Super-sensitivity in Activation of Brain Reward Circuitry and Relapse: Proposing “Deprivation-Amplification Relapse Therapy” (DART). *Post Graduate Medicine* (In Press)
4. Eric R Braverman, Thomas JH Chen, Amanda LC Chen, Thomas J Prihoda, Vanessa Arcuri, Mallory Kerner, Anish Bajaj, Javier Carbajal, Dasha Braverman, **B. William Downs**, Kenneth Blum. Age-related increases in parathyroid hormone may be antecedent to both osteoporosis and dementia. *BMC Endocr Disord*. 2009 Oct 13;9:21.
5. Blum K, Chen TJH, Meskin B, **Downs BW**, Waite RL, Braverman ER, Arvuri V, Notaro A, Mengucci JF, Blum SH, Bagchi D, Bagchi M, Robarge A, Kaats G, Comings DE. Pharmacogenomics & Nutrigenomic Aspects of Neurobesigenics, A Genetic Pleiotropic Clinical Subtype of Reward Deficiency Syndrome (RDS). *Current Pharmacogenomics* (In Press).
6. Blum K, Chen T, Waite R, Dinublie N, Smith T, Callahan M, Prihoda T, Schoolfield J, **Downs W**, Arcuri V, Braverman ER, Notaro A, Morrisette H, Mengucci J, Blum S, Payte J, Palomo T, Kerner M, Floyd J, Williams L, and O'Brien D. "Reward" Gene Polymorphisms May Predict High Rates of Injury and Addiction in the Workforce: a Theoretical Review." *International Journal of Law & Psychiatry* (submitted)
7. Chen AL, Chen TJ, Waite RL, Reinking J, Tung HL, Rhoades P, **Downs BW**, Braverman E, Braverman D, Kerner M, Blum SH, DiNubile N, Smith D, Oscar-Berman M, Prihoda TJ, Floyd JB, O'Brien D, Liu HH, Blum K. Hypothesizing that brain reward circuitry genes are genetic antecedents of pain sensitivity and critical diagnostic and pharmacogenomic treatment targets for chronic pain conditions. *Med Hypotheses*. 2009 Jan;72(1):14-22.
8. Leighton K. Chong, Lawrence J. Udell and **Bernard W. Downs**. *Intellectual Property, Branding, Trademark and Regulatory Approvals in Nutraceuticals and Functional Foods*, Chapter 26; **Nutraceutical and Functional Food Regulations in the United States and Around the World**. Edited by Debasis Bagchi, Ph.D.; *Academic Press*, (Elsevier Food Science and Technology, International Series) ISBN: 978-0-12-373901-8 (July 2008).
9. Braverman ER, Chen T, Prihoda T, Sonntag W, Meshkin B, **Downs W**, Mengucci J, Blum S, Notaro A, Arcuri V, Varshavskiy M, Blum K. Plasma Growth Hormones, P300 Event-Related Potential and Test of Variables of Attention (T.O.V.A) Are Important Neuroendocrinological Predictors of Early Cognitive Decline in Clinical Setting: Evidence Supported by Structural Equation Modeling Parameter Estimates. *Age (Dordr)*. 2007 Sep;29(2-3):55-67. Epub 2007 May 12.
10. Kenneth Blum, Thomas JH Chen, Lonna Williams, Amanda LC Chen, **William B. Downs**, Roger L. Waite, T. Huntington, Simon Sims, Thomas Prihoda, Patrick Rhoads, Jeffrey Reinking, Dasha Braverman, Mallory Kerner, Seth H. Blum, Brien Quirk, Eric R Braverman. A short term pilot open

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- label study to evaluate efficacy and safety of LG839, a customized DNA directed nutraceutical in obesity: Exploring Nutrigenomics. *Gene Therapy & Mol. Biol.* 12: 371-382. 2008
11. Kenneth Blum, Thomas JH Chen, Amanda LC Chen, Patrick Rhoades, Thomas J Prihoda, **B. William Downs**, Debasis Bagchi, Manashi Bagchi, Seth H. Blum, Lonna Williams, Eric R. Braverman, Mallory Kerner, Roger L Waite, Brien Quirk, Lisa White, Jeffrey Reinking. Dopamine D2 Receptor Taq A1 allele predicts treatment compliance of LG839 in a subset analysis of pilot study in the Netherlands. *Gene Therapy & Mol. Biol.* 12: 129-140. 2008.
 12. Chen ALC, Blum K, Chen TJH, Rhinking J, Waite RL, **Downs BW**, Braverman ER, Arcuri V, Kerner M, Notaro A, Cassel K, Blum SH, Bagchi D, Bagchi M, Robarge A, Kaats G, Comings DE. The impact of biomimics technology and DNA directed anti-obesity targeting of the brain reward circuitry. *Gene Ther Mol Biol.* Vol 12: 45-68, 2008.
 13. Blum K, Chen AL, Chen TJ, Rhoades P, Prihoda TJ, **Downs BW**, Waite RL, Williams L, Braverman ER, Braverman D, Arcuri V, Kerner M, Blum SH, Palomo T. LG839: anti-obesity effects and polymorphic gene correlates of reward deficiency syndrome. *Adv Ther.* 2008 Sep;25(9):894-913.
 14. Brian Meshkin, Thomas JH Chen, Amanda LC Chen, Thomas JH Prihoda, Hayley Morrisette, Eric R. Braverman, Seth H. Blum, Kimberly Cassel, Lonna Williams, Roger L. Waite, **B. William Downs**, Howard Tung, Patrick Rhoades, Kenneth Blum. Health economics of nutrigenomics in weight management. *Gene Therapy & Mol. Biol.* 12: 25-30. 2008.
 15. Chen AL, Chen TJ, Braverman ER, Arcuri V, Kerner M, Varshavskiy M, Braverman D, Downs WB, Blum SH, Cassel K, Blum K. Hypothesizing that marijuana smokers are at a significantly lower risk of carcinogenicity relative to tobacco-non-marijuana smokers: evidenced based on statistical reevaluation of current literature. *J Psychoactive Drugs.* 2008 Sep;40(3):263-72.
 16. Blum K, Chen AL, Chen TJ, Braverman ER, Reinking J, Blum SH, Cassel K, **Downs BW**, Waite RL, Williams L, Prihoda TJ, Kerner MM, Palomo T, Comings DE, Tung H, Rhoades P, Oscar-Berman M. Activation instead of blocking mesolimbic dopaminergic reward circuitry is a preferred modality in the long term treatment of reward deficiency syndrome (RDS): a commentary. *Theor Biol Med Model.* 2008 Nov 12;5:24.
 17. Blum K, Chen AL, Braverman ER, Comings DE, Chen TJ, Arcuri V, Blum SH, **Downs BW**, Waite RL, Notaro A, Lubar J, Williams L, Prihoda TJ, Palomo T, Oscar-Berman M. Attention-deficit-hyperactivity disorder and reward deficiency syndrome. *Neuropsychiatr Dis Treat.* 2008 Oct;4(5):893-918.
 18. Chen T, Blum K, Waite R, Meshkin B, Schoolfield J, **Downs WB**, Braverman ER, Arcuri V, Varshavskiy M, Blum S, Mengucci J, Reuben C, Palomo T. Reward Deficiency Syndrome (RDS) and Substance Use Disorder (S.U.D.): The Gene Narcotic Attenuation Program (GNAP) including Haveos** (Synaptamine) Attenuates Addictive Related Behaviors. *Adv Ther.* 2007 Mar-Apr; 24(2): 402-14.
 19. Blum K, THJ Chen, **B W Downs**, Waite RL, Meshkin B, Braverman R. Nutrigenomics: A Scientific Wonderland. *J Soc Sci*, Life Science issue 2007 (French Journal National Academy Sciences of France).
 20. Chen T, Blum K, Kaats G, Braverman ER, Eisenberg A, Sherman M, Davis K, Comings D, Wood R, Pullin D, Arcuri V, Varshavskiy M, Mengucci J, Blum S, **Downs, B**, Meshkin B, Waite R, Williams L, Schoolfield J, Prihoda T, White L. "Chromium Picolinate (CrP) a putative anti-obesity nutrient induces changes in body composition as a function of the Taq1 dopamine D2 receptor polymorphisms in a randomized double-blind placebo controlled study." *Gene Ther Mol Biol.* Vol 11, 161-170, 2007.
 21. Chen TJH, Blum K, Mathews D, Fisher L, Schnautz N, Braverman ER, Schoolfield J, **Downs BW**, Blum SH, Mengucci J, Meskin B, Arcuri V, Bajaj A, Comings DE. Preliminary Association Of Both the Dopamine D2 Receptor (DRD2) [Taq1 A1 Allele] And The Dopamine Transporter (DAT1) [480 bp Allele] Genes With Pathological Aggressive Behavior, A Clinical Subtype Of Reward Deficiency Sybdrome (RDS) in Adolescents. *GeneTher Mol Biol.* Volume 11, 93-112, 2007.

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22. Chen TJH, Blum K, Kaats G, Braverman E, Pullin D, **Downs BW**, Martinez-Pons M, Blum SH, Mengucci J, Bagchi D, Bagchi M, Robarge A, Meshkin B, Arcuri V, Varshavskiy M, Notaro A, Comings DE, White L. Reviewing the role of putative candidate genes in "Neurobesigenics," a clinical subtype of Reward Deficiency Syndrome (RDS) *Gene Ther Mol Biol* Vol 11, 61-74, 2007.
23. Blum K, Chen TJ, Meshkin B, Waite RL, **Downs BW**, Blum SH, Mengucci JF, Arcuri V, Braverman ER, Palomo T. Manipulation of catechol-O-methyl-transferase (COMT) activity to influence the attenuation of substance seeking behavior, a subtype of Reward Deficiency Syndrome (RDS), is dependent upon gene polymorphisms: a hypothesis. *Med Hypotheses*. 2007;69(5):1054-60.
24. Chen, TJH, Blum, K, Waite R, Meshkin B, Schoolfield J, **Downs William B**, Braverman, ER, Arcuri V, Varshavskiy M, Blum S, Mengucci J, Reuben C, Palomo T. Gene Narcotic Attenuation Program Attenuates Substance Use Disorder, a Clinical Subtype of Reward Deficiency Syndrome. *Adv Ther*. Vol. 24, No.2, 402-14, March/April 2007
25. Ariel Robarge R.D. and **Bernard W. Downs B.Sc.** *The Atkins Paradigm, Chapter 24; Obesity: Epidemiology, Pathophysiology, and Prevention*. Edited by Debasis Bagchi, Ph.D and Harry G. Preuss, M.D. (2007) CRC Press, Taylor & Francis Group, Boca Raton, FL.
26. Kenneth Blum, Thomas J. H. Chen, **B. W. Downs**, Brian Meshkin, Seth H. Blum, Martinez-Pons M, Julie F. Mengucci, Roger L. Waite, Vanessa Arcuri, Michael Varshofsky, Eric R. Braverman. Synaptamine™ (SG8839), An Amino-Acid Enkephalinase Inhibition Nutraceutical Improves Recovery of Alcoholics, A Subtype of Reward Deficiency Syndrome (RDS). *Trends in Applied Sciences Research* 2 (2): 132-138, 2007.
27. Blum K, Chen TJH, Blum SH, Comings DE, Mengucci JF, Meshkin B, **Downs BW**, Braverman ER. Reward Deficiency Syndrome (RDS): Neurogenetic Aspects of Aging and Related Behavioral Disorders Specific To Dopaminergic Pathways. *Anti-Aging Therapeutics*, 8: 9-26 2006.
28. Blum K, Chen TH, Meshkin B, **Downs BW**, Gordon CA, Blum S, Mengucci JF, Braverman ER, Arcuri V, Varshavskiy M, Deutsch R, Martinez-Pons M. Reward deficiency syndrome in obesity: a preliminary cross-sectional trial with a Genotrim variant. *Adv Ther*. 2006 Nov-Dec; 23(6):1040-51.
29. Blum K, Chen TJ, Martinez-Pons M, Dinubile NA, Waite RL, Schoolfield J, Blum SH, Mengucci J, **Downs BW**, Meshkin B. The H-Wave small muscle fiber stimulator, a nonpharmacologic alternative for the treatment of chronic soft-tissue injury and neuropathic pain: an extended population observational study. *Adv Ther*. 2006 Sep-Oct; 23(5):739-49.
30. Blum K, Chen TJ, Meshkin B, **Downs BW**, Gordon CA, Blum S, Mangucci JF, Braverman ER, Arcuri V, Deutsch R, Pons MM. Genotrim™, a DNA-customized nutrigenomic product, targets genetic factors of obesity: Hypothesizing a dopamine-glucose correlation demonstrating reward deficiency syndrome (RDS). *Med Hypotheses*. 2007; 68(4):844-852.
31. Braverman ER, Chen TJ, Schoolfield J, Martinez-Pons M, Arcuri V, Varshavskiy M, Gordon CA, Mengucci J, Blum SH, Meshkin B, **Downs BW**, Blum K. Delayed P300 latency correlates with abnormal Test of Variables of Attention (TOVA) in adults and predicts early cognitive decline in a clinical setting. *Adv Ther*. 2006 Jul-Aug; 23(4):582-600.
32. Blum K, Meshkin B, **Downs BW**. DNA based customized nutraceutical "gene therapy" utilizing a genoscore: a hypothesized paradigm shift of a novel approach to the diagnosis, stratification, prognosis and treatment of inflammatory processes in the human. *Med Hypotheses*. 2006; 66(5):1008-18.
33. **Downs BW**, Bagchi M, Subbaraju GV, Shara MA, Preuss HG, Bagchi D. Bioefficacy of a novel calcium-potassium salt of (-)-hydroxycitric acid. *Mutat Res*. 2005 Nov 11; 579(1-2):149-62. Epub 2005 Aug 1. Review. PMID: 16055158 [PubMed - indexed for MEDLINE]
34. Chen TJ, Blum K, Mathews D, Fisher L, Schnautz N, Braverman ER, Schoolfield J, **Downs BW**, Comings DE. Are dopaminergic genes involved in a predisposition to pathological aggression? Hypothesizing the importance of "super normal controls" in psychiatric genetic research of complex

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- behavioral disorders. *Med Hypotheses*. 2005; 65(4):703-7. PMID: 15964153 [PubMed - indexed for MEDLINE]
35. Bagchi D, Misner B, Bagchi M, Kothari SC, **Downs BW**, Fafard RD, Preuss HG. Effects of orally administered undenatured type II collagen against arthritic inflammatory diseases: a mechanistic exploration. *Int J Clin Pharmacol Res*. 2002; 22(3-4):101-10. PMID: 12837047 [PubMed - indexed for MEDLINE]
 36. Bagchi D, Stohs SJ, **Downs BW**, Bagchi M, Preuss HG. Cytotoxicity and oxidative mechanisms of different forms of chromium. *Toxicology*. 2002 Oct 30; 180(1):5-22. PMID: 12324196 [PubMed - indexed for MEDLINE]
 37. D Bagchi, S J Stohs, **B W Downs**, M Bagchi, H G Preuss, Reply to the editor, *Toxicology*. 186: 175-177 (2003)

SCIENTIFIC PAPERS SUBMITTED FOR AND PENDING PUBLICATION

1. Kenneth Blum, Amanda Lin Chen, Thomas JH Chen, Thomas J Prihoda, Roger L Waite, Lonna Williams, **B. William Downs**, Mallory Kerner, Eric R. Braverman. A Randomized, Double-Blind, Placebo Controlled Investigation of the Anti-Anxiety Effects of Synaptamine Complex™, A Putative Dopaminergic Activator: Hypothesizing a Targeted Psychodermatological Nutraceutical to Reduce Stress and Improve Dermatologic Conditions. *J. Psychosocial Science* (Submitted).
2. Thomas JH Chen, Kenneth Blum, Daniel Mathews, Larry Fisher, Nancy Schnautz, Eric R. Braverman, John Schoolfield, **Bernard W. Downs**, and David E. Comings. Preliminary Association of both the *Taq1 A1* Allele of the Dopamine D2 Receptor Gene and the Dopamine Transporter (DAT1) 480 bp Allele with Pathological Aggressive Behavior in Adolescents. (*Submitted for Publication*)
3. Kenneth Blum, **Bernard W. Downs**, Thomas JH Chen, Cory A. Gordon, Seth H. Blum, Julie Mengucci, Debasis Bagchi, Manashi Bagchi, Eric R. Braverman, Brian Meshkin, Manuel Martinez-Pons, and D.E. Comings. A Paradigm Shift In The War Against Obesity: Using Mechanistic Pathways Of Novel Nutrients To Treat Neurogenobolic Deficiency Syndrome (NGDS): A Review.
4. Kenneth Blum, PhD, Thomas J. Chen, Ph.D. **B. William Downs**, B.Sc. Seth Blum, B.A. Julie F. Mangucci, R.N. Eric Braverman, M.D. Roger Deutch, A.Sc., Brian Meshkin B.Sc., Dopamine and Glucose in Obesity: Reward Deficiency Syndrome, A Link
5. Eric R. Braverman, M.D, Vanessa Acruri, Brian Meshkin, Manuel Martinez-Pons, **Bernard W. Downs**, Kenneth Blum, Ph.D. Can We Stop the Aging Process Through Gene Manipulation, Early Detection of Dementia, and Brain Chemistry Reconstruction? Unlocking the Secrets of Longevity.
6. Eric R. Braverman, Thomas J.H. Chen, John D. Schoolfield, Manuel Martinez-Pons, Julie F. Mengucci, Seth H. Blum, Cory A. Gordon, **Bernard W. Downs**, Brian Meshkin, Kenneth Blum., Test Of Variables Of Attention (TOVA), An Accurate Predictor Of Early Attentional Complaints In A Clinical Setting.
7. Eric Braverman, Manuel-Martinez-Pons, Thomas JH Chen, William Sonntag, **B William Downs**, Cory Gordon, Brian Meshkin, Seth H Blum, Julie Mengucci and Kenneth Blum., PATH analysis negatively correlates age and memory impairment: mediated by Dehydroepiandrosterone sulfate (DHEA), P300 event-related potentials and Test Of Variables of Attention (T.O.V.A.) decrements.
8. Kenneth Blum, **B. William Downs**, Thomas JH Chen, Manuel Martinez-Pons, Brian Meshkin, James E. Payne and Eric R. Braverman. Neurogenobolic Deficiency Syndrome (NGDS): Unlocking the Secrets of Anti-Obesity or "Leangevity" Genes.

RESEARCH PRESENTATIONS:

1. Blum K, Chen ALC, Chen TJH, Meshkin B, Prihoda TJ, **Downs BW**, Bagchi D, Bagchi M, Blum SH, Williams L, Braverman ER, Kerner M, Waite R, Quirk B, White L. Dopamine D2 Receptor Taq A1 allele predicts treatment compliance: Subset analysis of the D.I.E.T. pilot study demonstrates genetic

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association with the number of days of treatment persistency on Genotrim®. Poster presentation by **B Downs** at the Natural Products Association Scientific Session (Bronze Medal Winner) 2007, July 21, Las Vegas, NV.

2. H.G. Preuss, D. Bagchi, C.V.S. Rao, B.W. Echard, S. Satyanarayana, M. Bagchi, Effect of Hydroxycitric Acid on Weight Loss, Body Mass Index and Plasma Leptin Levels in Human Subjects. FASEB Journal, 16:(5) Abstract 742.16, March 22, 2002. Participated in Poster Session at Experimental Biology Symposium, New Orleans, Louisiana, April 20-24, 2002.
3. **B.W. Downs**, Beneficial Effects of Supplemental Grape Seed Extract, O-Coordinated Chromium Nicotinate, and Zinc Monomethionine on Various Parameters of Insulin Resistance, Cancer and Antioxidant Function. Presentation to the Ministry of Health and Board of Medicine, Moscow, Russia; July 10, 1998.

PUBLISHED ARTICLES (LAY LITERATURE):

1. Joint Health by Bill Downs; Health Products Business, Retail Sales Instructor Supplement (March 2003).
2. Numerous articles in Whole Foods Magazine, Vitamin Retailer, Energy Times, and other trade and consumer publications regarding various nutrition science topics.
3. Acknowledged by Dr. Vern Cherwatenko for the contribution to his book "The Diabetes Cure."

EDUCATIONAL MODULES:

1. NutriLearn: Certified Education Course for Professionals: Wrote the educational course and exam for "SierraSil, Nature's Ultimate Mineral."

PATENTS PENDING:

1. Compositions for Prevention and Treatment of Symptoms of Gastrointestinal Distress
2. Composition Combining Anti-Craving, Tryptophan-Enhancing and Thermogenic Agents for use in Controlling Excessive Pleasure Binging and Overeating, Inducing Stress Management, and Improving Energy Management Via Enhanced Energy Intake, Expenditure, and Storage
3. Nutrigenomic & Genetic testing kit allowing for 32 gene polymorphisms in Reward Deficiency Syndrome (National and International patents pending)
4. KB220IV, KB220IR, KB220sup formulae allows marketing the composition in any field of medicine with special emphasis for intravenous administration to treat Reward Deficiency Syndrome (RDS).
5. KB220 and KB220Z for Nutrigenomics and nutrigenetics of over 100 genes for well-being and happiness. Involves five Neurometabolic pathways.
6. A utility patent for the Genetic Addiction Risk Score panel (GARS) test to be utilized as way of determining hypodopaminergic genes as a method for RDS predisposition.

TRADEMARKS OWNED

Metallosaccharide and Metalloglycoside owned by Allied Nutraceutical Ingredients, LLC