

2023

Roy Upton, RH, DipAyu

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Date of birth: 5/23/57

Gender: Male

Nationality: American

Employment

1995-present President, Executive Director, Editor American Herbal Pharmacopoeia®. Oversee management and development of national standards for quality control of botanicals for use in dietary supplements and herbal medicines and management of critical reviews of therapeutic and safety data.

1988-present Director of Herbal research, Planetary Formulas, Scotts Valley, CA. Duties include product development, writing and editing label copy and product literature, raw material sourcing, quality control, development of raw material standards or identity, purity, and quality, consumer and staff education, legislative issues, liaison to the Standards, Raw Materials, and Analytical Committees of the American Herbal Products Association.

Education and Related Experience

1975 Graduated Peabody Veterans Memorial High School, Peabody, Massachusetts

1976-1986 Military service (Vietnam Era): U.S. Army. Accelerated promotions throughout term. Army commendation medals, Eight letters of outstanding service, honorable discharge. Rank: Sergeant E-5. Three years active, six years inactive.

1980-1981 Study of ethnobotany of the Western Shoshone. Meta-Tantay Indian Foundation, Carlin, Nevada

- 1981-1982 Study of the ethnobotany of the Tewa. Santa Fe, Taos and Cochiti Pueblos, New Mexico
- 1982-1985 Study of ethnobotany of the U.S. Virgin Islands.
Distance learning programs in herbal and nutritional studies
East-West School of Herbal Medicine, Santa Cruz, CA
Wild Rose College of Natural Healing, Calgary, Canada
Humbart Santillo -Master Herbalist Course, Phoenix, AZ
Werner Hoferlin Academy of Natural Medicine, Karlsruhe, Germany
Nutrition Studies Bachelors of Science and Masters of Science-American College of Holistic Nutrition, Birmingham, AL
Certificate of Completion-Nutrition Institute of America
- 1985-1988 California state-approved, three-year, 2200-hour clinical tutorial in traditional Chinese medicine and Acupuncture. East-West Acupuncture and Herb Center. Clinical supervisor, Michael Tierra, L.Ac., OMD.
- 1986-1988 Cabrillo Community College—Required pre-medical course work for clinical tutorial including nutrition studies.
- 1987-1988 Five Branches College of Traditional Chinese Medicine-Santa Cruz, Ca.
1997 Shanghai College of Traditional Chinese Medicine, Shanghai, China. 120-hour program in traditional Chinese herbal medicine and acupuncture; 120-hour hospital acupuncture residency, Longhua Hospital, Shanghai, China.
- 2006 Diploma in Ayurveda, Mt Madonna College of Ayurveda, Watsonville, CA

Biographical Information

Born May 23, 1957 in Boston, Massachusetts, Roy began his study of herbal medicine in 1981 after fulfilling a three-year term in the United States Army, attaining the rank of Sergeant (E-5).

His interest grew while traveling among different Native American communities throughout the Western United States. This study began while living at Meta-Tantay, a Native American community in Carlin, Nevada with a Cherokee man, Rolling Thunder, and a Western

Shoshone woman named Spotted Fawn, both renowned for their knowledge of herbs. During this time, Roy learned the medicinal uses of the local plants, how and when to pick and prepare them. From there he continued his study near the Spokane Indian Reservation in the state of Washington, learning the traditional local uses of plants of the Pacific Northwest with various people including Ojibwa Sun Bear and Norma Meyers from Canada. Roy's travels brought him to New Mexico where he spent most of his time between Taos and Cochiti Pueblos studying the Native American ethnobotanical use of medicinal plants.

From the Southwest, Roy spent four years studying the ethnobotany of the United States Virgin Islands from local West Indian people including Emmanuel Regis, Mary Francis and, most notably, the late Arona Peterson, the most well respected herbalist in St. Thomas. During this time, Roy had a private herbal consulting practice seeing approximately 30-40 clients per week. He then came to Santa Cruz, California and engaged in a formal, state approved three year training program in traditional Chinese medicine, which included two years pre-medical studies, training in Five Branches College of Traditional Chinese Medicine, three years residency with noted herbalist, author and licensed acupuncturist, Michael Tierra, and training at the Shanghai University of Traditional Chinese Medicine Shanghai, China. Later, Roy graduated with a Diploma in Ayurveda from the Mt Madonna College of Ayurveda.

Roy was a co-founder of the American Herbalists Guild (AHG), the only organization in the United States for herbalists specializing in the medicinal use of plants. He served as AHG president for four years, was the legislative liaison for 8 years, and was vice-president from 1996-2010. In 1996, Roy founded the American Herbal Pharmacopoeia, a 501(c)(3) educational corporation dedicated to the development of quality control standards for botanicals as well as the development of comprehensive and peer reviewed therapeutic monographs to encourage the highest degree of safety and effectiveness when using botanicals. The monographs of the American herbal Pharmacopoeia have been acknowledged

as among the best in the world and are widely used and accepted by academic and regulatory authorities in the Australia, Canada, Hong Kong, Taiwan, and the United States.

In 2004, Roy was the recipient of the James Lind Scientific Achievement Award as recognition for his scientific work with botanicals as well as his political advocacy for natural health care. In 2012, Roy was awarded the prestigious Varro E. Tyler Excellence in Botanical Research award from the American Society of Pharmacognosy for his many efforts in establishing a strong foundation for botanical medicine in the United States. In 2020, Roy was awarded Outstanding International Ethnopharmacologist Award by the International Society for Ethnopharmacology. Roy is one of the foremost experts in the country on the regulation, use, manufacture, quality control requirements, and practice of herbal medicine.

He is also a member of the Botanical Expert Advisory committees of Botanical Council and was a member of the General Chapters Committee of the United States Pharmacopeia from 2005-2010 and currently serves on the USP Botanical Dietary Supplements and Herbal Medicines, Pan-America Expert Panel.

Roy has worked for the California based herbal company Planetary Formulas since 1985. A company specializing in the manufacture of traditional Chinese, Ayurvedic and Western herbal compounds, Roy's duties have included all aspects of product development, manufacturing, sourcing raw materials, quality control, product education and research. Roy was co-author of the AHPA Botanical Safety Handbook, published by CRC Press. In addition, Roy has published two other popular herb books, one on St. John's wort and the other on Echinacea, both by Keats Publishing, is a co-author and editor of 40 American Herbal Pharmacopoeia *Monographs and Therapeutic Compendiums* and has authored numerous published articles and book chapters.

An avid lecturer, writer, advisor for numerous publications, and perpetual student of herbal medicine, Roy resides in Soquel, California.

Scientific Publications (partial)

- Avula B, Sagi S, Gafner S, **Upton R**, Wang YH, Wang M, Khan IA. 2016. *Ginkgo biloba* supplements adulteration identification using HPTLC and UHPLC-QTOF-MS. *Planta Medica* DOI: 10.1055/s-0036-1578621
- Avula B, Katragunta K, Wang YH, **Upton R**, Khan I. 2022. Analysis of crocetins and safranal Variations in Saffron (*Crocus sativus*) stigma samples and dietary supplements using HPLC/UHPLC-PDA-MS: Chemical profiling and chemometric analysis using LC-QToF. *Food Analytical Methods*. <https://doi.org/10.1007/s12161-022-02268-5>
- Bejar E, Gafner S. **Upton R**. 2020. Adulteration of rhodiola (*Rhodiola rosea*) rhizome and root extracts. Botanical Adulteration Prevention Program, American Botanical Council, Austin, TX.
- Colegate S, **Upton R**, Gardner DR, Panter KE, Betz, J. 2018. Potentially toxic pyrrolizidine alkaloids in *Eupatorium perfoliatum* and three related species. Implications for herbal use as boneset. *Phytochemical Analysis*. 2018;29:613–626. <https://doi.org/10.1002/pca.2775>
- Frommenweiler D, Nichols J, **Upton R**, Heubel G, Reich E. 2013. HPTLC – A suitable tool for proper identification of botanicals? Identification of licorice revisited. *Planta Med*; 79 - P116.
- Gafner S, Blumenthal M, Foster S, Cardellina JH, Khan IA, **Upton R**. 2022. Botanical ingredient forensics: detection of attempts to deceive commonly used analytical methods for authenticating herbal dietary and food ingredients and supplements. *J. Nat. Prod*. <https://doi.org/10.1021/acs.jnatprod.2c00929>
- Gray DE, **Upton R**, Chandra A, Porter A, Harris RK. 2006. Quantitative analysis of flavonol glycosides in *Ginkgo biloba*: a comparison of two analytical methods. *Phytochem Anal* Jan-Feb;17(1):56-62.
- Lin LZ, Harnly JM, **Upton R**. 2009. Comparison of the phenolic component profiles of skullcap (*Scutellaria lateriflora*) and germander (*Teucrium canadense* and *T. chamaedrys*), a potentially hepatotoxic adulterant. *Phytochemical Analysis* 20: 298-306.
- Russo E, Scicchitano F, Whalley BJ, Mazzitello C, Ciriaco C, Esposito S, Patane M, **Upton R**, Pugliese M, Chimirri S, Mammi M, Palleria C, De Sarro G. *Hypericum perforatum*: Pharmacokinetic, Mechanism of Action, Tolerability, and Clinical Drug–Drug Interactions. *Phytotherapy Research* DOI: 10.1002/ptr.5050.
- Upton R**. 1997. Herbal monographs push natural medicines into the 21st century. *JACM*. Winter; 3(4):397-399.
- Upton R**. 1999. Compounding: The basis of herbal healing. *Taste for Life*. February.
- Upton R**. 1999. Additional information and comments on guidelines for selecting an herbalist. *JACM*. Dec;5(6):503-504.
- Upton R**. 1999. Traditional Chinese medicine and the dietary supplement health and educational act. *JACM*. Apr;5(2):115-118.
- Upton R**. 2010. Use of high-performance thin layer chromatography by the American herbal Pharmacopoeia. *Journal of AOAC International*. 91(5): 1349-1354.
- Upton R**. 2001. Valerian Root: A Photoessay. *JACM*. Feb;7(1):15-17.

- Upton R.** 2001. Use of herbal medications before surgery. *JAMA*. Nov 28;286(20):2543-4 (letter to editor).
- Upton R.** Traditional Herbal Medicine, Pharmacognosy, and Pharmacopoeial Standards: A Discussion at the Crossroads. In Evidence-Based Validation of Herbal Medicine. Elsevier. 45-85.
- Upton R.** 2003. The "author" of the Nei Ching. *JACM*. Feb;9(1):535-538 (letter to editor).
- Upton R.** 2007. Natural alternatives to sleep medications. *Taste for Life*.
- Upton R.** 2006. Encyclopedia of Dietary Supplements, 1st ed. contributed chapters; Astragalus, *Angelica sinensis*. Informa Healthcare.
- Upton R.** 2010. Encyclopedia of Dietary Supplements, 2nd ed. contributed chapters; Astragalus, *Angelica sinensis*. Informa Healthcare.
- Upton R.** 1995. Essays on American Herbalism. American Herbalists Guild, Contributed chapters.
- Upton R, David B, Gafner S, Glasl S.** 2019. Botanical ingredient identification and quality assessment: strengths and limitations of analytical techniques. *Phytochem Rev*. July: <https://doi.org/10.1007/s11101-019-09625-z>
- Upton R.** 2006. Authentication and Quality Assessment of Botanicals and Botanical Products Used in Clinical Research. Proc. IVth IC on Quality and Safety in Botanicals. Acta Hort. 720, ISHS 2006.
- Upton R.** 2013. Stinging nettles leaf (*Urtica dioica* L.): Extraordinary vegetable medicine. Journal of Herbal medicine. <http://dx.doi.org/10.1016/j.hermed.2012.11.001>
- Upton R.** 2012. Skullcap *Scutellaria lateriflora* L.: An American nervine. Journal of Herbal medicine. 2: 76-96.
- Wu KM, Farrelly JG, **Upton R**, Chen J. 2007. Complexities of the herbal nomenclature system in traditional Chinese medicine (TCM): Lessons learned from the misuse of *Aristolochia*-related species and the importance of the pharmaceutical name during botanical drug product development. *Phytomedicine*. Apr; 14(4):273-279.
- Xie P, Chen S, Liang YZ, Wang XH, Tian RT, **Upton R.** 2006. Chromatographic fingerprint analysis—a rational approach for quality assessment of traditional Chinese herbal medicine. *Journal of Chromatography A*, Volume 1112, Issues 1-2, 21 April: 171-180.
- Zhang ML, Wang YF, Moore R, **Upton R**, Harrington PdB, Chen P. **2022**. Development of a metabolite ratio rule-based method for automated metabolite profiling and species differentiation of Four major cinnamon species. *Journal of Agriculture and Food Chemistry*. <https://doi.org/10.1021/acs.jafc.2c01245>

Scientific Honors and Awards

- American Herbal Products Association Herbal Insight Award recipient 2011.
- American Herbal Products Association Herbal Insight Award recipient 2012.
- James Duke Excellence in Botanical Literature Award (Technical) from the American Botanical Council recipient 2011.
- James Lind Scientific Achievement Award recipient 2004.
- American Society of Pharmacognosy: Varro E. Tyler Excellence in Botanical Research award recipient 2012.

- Nutrition Business Journal: Business Achievement Award, Efforts on Behalf of the Industry: Recipient 2019.
- International Society for Ethnopharmacology: Outstanding International Ethnopharmacologist Award– 2020

Membership in Professional Organizations

American Botanical Council
 American Herbalists Guild
 American Society of Pharmacognosy
 Society for Medicinal Plants and Natural Products

Board of Directors, Member

American Herbal Pharmacopoeia® 1994-present (President, Executive Director, Editor)

Editorial Committees

Encyclopedia of Dietary Supplements, Marcel Dekker, Inc., 2004
 Journal of Complementary and Alternative Medicine: MaryAnn Liebert Publishing, 1999-present
 Institute of Medicine: Dietary Supplements: A Framework for Evaluating Safety (reviewer)
 Taste for Life, 1998-present
 Chinese Herbal Medicines, June 28, 2019 to present
 World Journal of Traditional Chinese Medicine, June 2019 to present

Advisory Committees

American Botanical Council, Austin, TX
 American Herbal Products Association (AHPA), Herbs of Commerce, Botanical Safety Handbook 1991-present
 American Society of Pharmacognosy (ASP): Co-organizer, satellite conference on botanical pharmacognosy, 2004
 Food and Drug Administration (FDA), State of California: Task Force for Importation of Products, 1997-1999.
 International Conference on the Science of Botanicals (ICSB). National Center for natural Products research, University of Mississippi, Oxford, MS.
 Journal of Alternative and Complimentary Therapies, Mary Ann Liebert Publication: Editorial Advisor, 1999-present
 National Center for Complementary and Alternative Medicine (NCCAM): May 14, 2001. NCCAM Industry Colloquium. Colloquium Co-organizer
 National Institutes of Health, Office of Alternative Medicine, Federal Food and Drug Administration: Botanicals—A Role in U.S. Healthcare. Washington, DC Dec. 14-16, 1994. Conference Co-organizer
 National Institutes of Health, Office of Dietary Supplements: Consultant—A Strategic Plan for the Office of Dietary Supplements. 1996
 NSF International: Joint Dietary Supplement Committee, 2001-2010

United States Pharmacopeia: Expert Advisory Committee on Botanicals: General Chapters, 2002-2010.

United States Pharmacopeia: Botanical Pan-American Expert Panel. 2020-present

Appointments

Adjunct: Bencao Gangmu Institute, Beijing, PPRC

Adjunct: Ric Scalzo Center for Botanical Excellence, Tempe, AZ

Adjunct: Department of Chemistry and Biochemistry; University of California-Santa Cruz, Santa Cruz, CA

Authored/Co-authored Works (texts)

Astragalus: Encyclopedia of Dietary Supplements, Marcel Dekker, Inc.

Botanical Safety Handbook, CRC Press (co-author/editor)

Microscopic Characterizations of Botanical Medicines, CRC Press, (editor)

Dang gui: Encyclopedia of Dietary Supplements, Marcel Dekker, Inc.

Echinacea: Good Herb Series, Keats Publishing

Essays on American Herbalism, Crossing Press (contributing author)

St. John's Wort: Good Herb Series, Keats Publishing

Berberine and berberine-containing plants. Textbook of Natural Medicine 5th Edition.

Pizzorno J, Murray M. Churchill Livingston

Cannabis: Textbook of Natural Medicine 5th Edition. Pizzorno J, Murray M. Churchill Livingston

Editor and/or co-author: American Herbal Pharmacopoeia *Monographs and Therapeutic Compendiums*

Aloe vera Juice (quality)	<i>Aloe vera</i>
American Ginseng	<i>Panax quinquefolium</i>
Aristolochia	<i>Aristolochia fangchi</i> and related species
Ashwagandha	<i>Withania somnifera</i>
Astragalus	<i>Astragalus membranaceus</i>
Bilberry	<i>Vaccinium myrtillus</i>
Black Cohosh	<i>Cimicifuga racemosa</i>
Black Haw	<i>Viburnum prunifolium</i>
Blue Cohosh	<i>Caulophyllum thalictroides</i>
Boneset	<i>Eupatorium perfoliatum</i>
Cannabis (quality)	<i>Cannabis</i>
Chaste Berry	<i>Vitex agnus-castus</i>
Cramp Bark	<i>Viburnum opulus</i>
Cranberry	<i>Vaccinium macrocarpon</i>
Devil's club	<i>Oplopanax horridum</i>
Dong Quai	<i>Angelica sinensis</i>
Echinacea purpurea aerial	<i>Echinacea purpurea</i>
Echinacea angustifolia root	<i>Echinacea angustifolia</i>

Echinacea pallida root	<i>Echinacea pallida</i>
Echinacea purpurea root	<i>Echinacea purpurea</i>
Echinacea purpurea aerial	<i>Echinacea purpurea</i>
Feverfew herb	<i>Tanacetum parthenium</i>
Ginkgo	<i>Ginkgo biloba</i>
Goldenseal	<i>Hydrastis canadensis</i>
Hawthorn berry	<i>Crataegus laevigata</i> (syn. <i>C. oxyacantha</i> & <i>C. monogyna</i>)
Hawthorn lf/fl	<i>Crataegus</i> spp.
Lemon balm herb	<i>Melissa officinalis</i>
Lycium fruit	<i>Lycium barbarum</i> , <i>L. chinensis</i>
Motherwort	<i>Leonurus cardiaca</i> , <i>L. quinquelobatus</i>
Nettles leaf	<i>Urtica dioica</i>
Nettles root	<i>Urtica dioica</i>
Osha root	<i>Ligusticum porteri</i> and related species
Red clover herb	<i>Trifolium pratense</i>
Reishi mushroom	<i>Ganoderma lucidum</i>
Schizandra	<i>Schisandra chinensis</i>
Skullcap aerial	<i>Scutellaria lateriflora</i>
Slippery elm bark	<i>Ulmus rubra</i>
Star anise fruits	<i>Illicium</i> spp.
St. John's wort	<i>Hypericum perforatum</i>
Uva Ursi	<i>Arctostaphylos uva-ursi</i>
Valerian root	<i>Valeriana officinalis</i>
Vibhitaka	<i>Terminalia belirica</i>
Willow	<i>Salix</i> spp.
Yerba santa	<i>Eriodictyon</i> spp.

Lectures and Presentations (partial)

- 1st International Symposium on Echinacea. Sponsored by the American Herbal Products Association. Moderator: Quality Control, Regulation and Substantiated Structure and Function Claims. Kansas City, MO. June 4-6 1999.
- 1st International Symposium on Saw Palmetto *Serenoa repens* Sponsored by the American Herbal Products Association. Naples, FL.
- 1st International Symposium on St. John's Wort *Hypericum perforatum*. Development of the American Herbal Pharmacopoeia Monograph for St. John's wort. Sponsored by the American Herbal Products Association March 16-18. 1997. Anaheim, CA.
- 1st International Symposium on Women's Health; Moderator. Sponsored by the American Herbal Products Association. Feb. 2002.
- 2nd Annual Natural Pharmacy West: Herbal Medicines; Standardization, Quality Control, and Safety Issues. Marriott's Rancho Las Palmas, Palm Springs June 4-6th 1999.
- Alpha Chemical and Biomedical Laboratories: Adulterants or Acceptable Substitutions. Workshop; 2000.

American Association of Acupuncture and Oriental Medicine. Regulation of Herbal Medicines in the United States, Chicago, IL.

American Association of Acupuncture and Oriental Medicine: 1994. Chicago, IL Regulation of Botanical Products in the US.

American Herbalists Guild Annual Symposium of Herbal Medicine: 1987-2002.

Botanical Quality Control and the Need for Multiple Methods of Detection and Quantitation. Analytical Methods for Botanicals and Dietary Supplements. June 6, 2002. Sponsored by NSF International, Las Vegas.

Breitenbush Herbal Gathering 1984-1992.

California Acupuncturists Association. Legal and Regulatory Issues of Herbal Products.

California Dietetic Association: San Jose Peninsula February 27, 1999. Trends in Nutrition: Popular Medicinal Herbs.

California Dietetic Association: San Jose Peninsula February, 1998. Trends in Nutrition: Popular Medicinal Herbs.

Complimentary Medicine Symposium: Integrative Approaches to Management of Cancer: Cabrillo College, Aptos, CA. May 30-31, 2000.

Drug Information Association: 1998, 2001.

Earthwatch: Preservation and Recording of Herbal Medicine of the U.S. Virgin Islands. Project informant and field co-coordinator. 1991

Green Nations Herbal Gathering. 1999.

Herb Fest-American Herbalists Guild 1995: Rediscovering Our Roots. Norway, IA. Herbalism in the 21st Century and Management of HIV+ and AIDS.

Hong Kong PolyTechnic University. Regulation of Herbal Products in the United States. 2004.

International Conference on Chemometrics and Bioinformatics. Interface of Chemometrics and Quality Control of Chinese Herbal Medicines. Shanghai, China, 2004.

International Conference on the Modernization of Traditional Chinese Medicine. 1999. Beijing, China.

International Conference on the Modernization of Traditional Chinese Medicine. 2000. Guangzhou, China.

International Conference on the Modernization of Traditional Chinese Medicine. 2001. Chengdu, China.

International Conference on the Modernization of Traditional Chinese Medicine. 2002. Hong Kong, China

International Conference on the Modernization of Traditional Chinese Medicine. 2003. Hong Kong, China

Knowledge Foundation: Applying scientific methods to ensure and market the integrity of your product—a scientific forum. Conference Co-Chair. October 25-26, 1999. Baltimore, MD

Knowledge Foundation: Development, substantiation, and harmonization of analytical methods. Applying scientific methods to ensure and market the integrity of your product—a scientific forum. October 25-26, 1999. Baltimore, MD.

Medicines for the Millenium: 10th Annual Acupuncture and Oriental Medicine Convention; California Association of Acupuncture and Oriental Medicine. March 26-29, 1999. San Francisco, CA.

Medicines from the Earth: Jun 1-3 1996. Natural Health Care Management of HIV and AIDS: A Review of Clinical Protocols Used Throughout the United States.

Medicines from the Earth: Jun 3-5 2001. Rediscovering the Roots of Herbalism. Blue Ridge Assembly Black Mountain North Carolina: Traditional Approaches to Chronic Disease: A Focus on Asthma; Herbal Formulation: Traditional Chinese and Western Approaches; Introduction to Traditional Chinese Diagnosis.

Modernization of Traditional Chinese Medicine: Chengdu, China. Nov 4-7, 2002

National Institutes of Health, Office of Alternative Medicine, Federal Food and Drug Administration: Panel discussion: How Can We Know That These Botanicals Are Safe? Botanicals: A Role in U.S. Healthcare. Washington, DC Dec. 14-16, 1994.

National Institutes of Health, Office of Alternative Medicine, Federal Food and Drug Administration: Panel discussion: How Regulations Affect the Marketplace and Impact the Cost of Health Care. Botanicals: A Role in U.S. Healthcare. Washington, DC Dec. 14-16, 1994.

National Institutes of Health. Workshop on Analytical Methods Development. Bethesda, MD. April 2001.

National Nutritional Foods Association. 1999. Standards in herbals and Botanicals. July 9. Las Vegas, NV.

National Nutritional Foods Association. Traditional Use of Caribbean Medicinal Plants. 2000. Lecture cruise Cozumel, Mexico.

National Nutritional Foods Association-Northwest, Quality Control in the Herb Industry. October 20, 2001.

Nutracon 1999. Las Vegas: The Role of the American Herbal Pharmacopoeia in Establishing National Standards of Quality Control.

Southwest Conference on Botanical Medicine 1996: Scottsdale, AZ. Natural Health Care Management of HIV and AIDS: A Review of Clinical Protocols Used Throughout the United States.

Southwest Conference on Botanical Medicine 1996: Scottsdale, AZ. Traditional Chinese Principles for the Treatment of Gynecological Imbalances.

State Drug Administration: Regulation of Herbal Products in the US. March 2001. Beijing, China.

Thin Layer Chromatography and Quality Control of Botanical Raw Materials. Feb 2001. Guangzhou, China. Sponsored by State Drug Administration, China.

University of Vienna, Institute for Pharmacognosy. Regulation of Herbal Products in the US. 1999.

Validation and harmonization of analytical methods: Natural Products: Applying Scientific Methods to Ensure and Market the Integrity of Botanical Products—A Scientific Forum. Sponsored by the Knowledge Foundation, Boston, MA. Oct. 25-26, 1999 Baltimore, MD.