

CHRISTOPHER CONRAD

— *Court-qualified cannabis expert* —

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Summary and highlights of experience

Curriculum vitae, July 1, 2024

Chris Conrad has studied and written about cannabis hemp (marijuana) since 1988. He is author of *The Newbie's Guide to Cannabis and the Industry*, *Cannabis Yields and Dosage*, *Hemp for Health*, *Hemp: Lifeline to the Future* and contributed to others. Has DRE, blood testing and urine evaluation training. Familiar with many books and scientific studies, including National Institute on Drug Abuse and Drug Enforcement Administration (DEA) data. Presented at the *Fifth National Clinical Conference on Cannabis Therapeutics* (2008), Int. Pharmaceutical Academy (2014, 2015), CA Assn. of Toxicologists (2012), Uruguay Ministry of the Interior (2014). Consults with government agencies. Reported on dispensaries for California state legislators. Testified before National Academy of Science, Institute of Medicine. Regularly consults with patients, providers and physicians, including some of the world's foremost authorities on cannabis.

Has worked internationally to research cannabis since 1991. Hands-on experience in breeding, growing and processing cannabis in Holland and Switzerland. Examined cannabis gardens in US, Canada, Spain, Argentina, Uruguay; industrial hemp in China, France, Germany and Holland. Observed and participated in indoor, outdoor and greenhouse gardens, harvests and processing.

Court-qualified as cannabis expert witness more than 385 times on preparation, consumption, sex, cultivation, odor, genetics, cloning, crop yields, medical use, personal use, dosage, commercial intent, sales, activities, etc. Testimony cited by California Courts of Appeals and Supreme Court, including *People v Kelly*. Qualified in at least 38 counties: Alameda, Butte, Calaveras, Colusa, Contra Costa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Inyo, Kern, Lake, Los Angeles, Madera, Marin, Monterey, Napa, Nevada, Orange, Placer, Plumas, Riverside, Sacramento, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, Shasta, Siskiyou, Solano, Sonoma, Stanislaus, Tulare, Tuolumne, Ventura and Yolo. Also US Courts Martial and US Ninth Circuit Courts in California Northern, Southern and Eastern Districts and Louisiana Fifth Circuit Middle Dist. Also in States of Arizona, Colorado, Florida, Idaho, Maryland, Michigan, North Dakota, Oklahoma, Oregon, Pennsylvania, Utah, Commonwealth of Virginia, Washington and Wyoming.

Consulted on than 2,850 criminal cases. Reviewed tens of thousands of police reports, narratives, search warrants, documents, photos, transcripts, evidence logs, diagrams, videos, audio files, training documents, etc. Examined, evaluated, weighed, and/or measured forensic material at least 600 times, including microscopic exams, photos, root count, site visit and plant manicure. Heard law enforcement testify at least 500 times. Interviewed hundreds of defendants and witnesses.

Taught accredited CLE courses for NORML Criminal Defense Lawyers Committee, Orange and San Joaquin County (CA) Public Defenders, Sonoma Bar Assn. and Santa Cruz Criminal Defense Attorneys. Lectured or taught classes on cannabis at institutions including UC Berkeley, USC, IPA, Mills College, Learning Annex, Omega Institute, etc. Curator, Hash-Marijuana-Hemp Museum of Amsterdam and Oaksterdam Museum, with cannabis indoor gardens.

Bachelor's degree *magna cum laude* from California State University. Accredited training by California Medical Association, Institute of Health Professionals, International Assn. for Cannabis as Medicine, American University, International Pharmaceutical Academy, Patients Out of Time and Nova Institut (Germany). Acquainted with four patients in the federal Investigational New Drug (IND) medical marijuana program.

Detailed legal qualifications, field research, scientific analysis, literature reviews

- 2024: Qualified as cannabis expert witness in Sacramento County.
- 2023: Qualified as cannabis expert witness in Sacramento, Solano counties.
- 2022: Qualified as cannabis expert witness in Siskiyou, Solano counties, US Ninth Circuit Courts in Northern and Central California,
- 2021: Qualified as cannabis expert witness in Pennsylvania, counties of San Mateo, Solano,
- 2020: Qualified as cannabis expert witness in California county of Alameda, Amador and remotely in Goshen County, Wyoming. Qualified as regarding issues including consumption, dosages, detection of cannabis odor, cultivation, yields, processing, indicia of sales. Attended International Cannabis Business Association, Taught or presented at Oaksterdam University, Sustainable Foods Summit, California Hemp Business Workshops. Curator, Oaksterdam Cannabis Museum.
- 2019: Qualified as cannabis expert witness in California counties of Alameda, Los Angeles, Sacramento and Shasta, as well as the Federal Eastern District of California, in Salt Lake City, Utah and telephonically in Orange County, Florida. Qualified as regarding issues including consumption, dosages, detection of cannabis odor, cultivation, yields, processing, indicia of sales. Attended CA Norml CLE sessions on drug recognition, impairment risk assessments and evaluation. International Cannabis Business Association, Spannabis (Spain), Cannabis Consciousness Summit (Canada), California Bureau of Cannabis Control, International Cannabis Business Association, New West Summit. Taught or presented at Oaksterdam University, California Hemp Business Workshops, Portland Global March, Tahoe Wellness Ctr., ExpoWeed (Mexico), Canna-One Cannabis Business Expo, the Emerald Cup. Board member of 420 Archives. Curator, Oaksterdam Cannabis Museum.
- 2018: Qualified as cannabis expert witness in California counties of Mendocino, San Mateo and Santa Clara, as an unrecognized expert in Alameda, as well as the Federal Eastern District of California and Maricopa County, Arizona. Purchased first legal retail cannabis sale in California. Qualified regarding issues including consumption, dosages, detection of cannabis odor, cultivation, yields, processing, indicia of sales. Attended presentations of California Bureau of Cannabis Control, International Cannabis Business Association, California Cannabis Industries Association, National Cannabis Industry Association, Cal NORML MCLE presentation. Taught or presented at Conscious Life Expo (Los Angeles), Oaksterdam University, California Hemp Business Workshops, Seattle Hempfest and Hemposium, Santa Barbara Technology and Industry Association, Portland Hemp Stock.
- 2017: Qualified as cannabis expert witness in California counties of Butte, Lake, Mendocino, Sacramento, Santa Clara and Shasta; Commonwealth of Virginia, County of Virginia Beach; State of Idaho, Kootenai County; State of Washington, Kitsap County. Attended MCME training at International *Clinical Conference on Cannabis Therapeutics*. Provided MCLE training for The Seminar Group and Pincus Professional Education. Attended presentations by Bureau of Cannabis Control. Went through application process as director of Zen Brands Collective, issued three cannabis licenses by the City of Greenfield. Passed LiveScan reviews. Participated in El Cerrito town hall meetings on regulation. Gave speaking tour in The Netherlands, Spain and Ireland. Attended numerous presentations by BCC on regulation. Toured Kentucky hemp fields, attended U of Kentucky presentations on hemp agronomics at Hemp Industries Association convention. Attended International Cannabis Business Conference, Cannabis Business Summit, National Cannabis Industry Association, California Cannabis Industry Association and California Hemp Association events and the International Drug

- Policy Reform Conference in Atlanta. Oaksterdam University faculty. Board of 420 Archives. Gave presentations at Mendocino Cannabis Resource Conference, High Times Medical Cup, Seattle Hempfest Hemposium stage moderator, the Emerald Cup.
- 2016: Qualified as cannabis expert witness in California counties of Amador, Contra Costa, El Dorado, Lake, Mendocino, Napa, Placer, Sacramento, San Joaquin, San Mateo, Santa Clara and Tuolumne. Qualified in Commonwealth of Virginia. Keynote speaker via video for Global Hemp Forum in Kyoto, Japan. Released book, *The Newbie's Guide to Cannabis and the Industry*. Spoke at International Cannabis Business Conference in San Francisco, Mendocino Cannabis Resource Conference and Grassroots Cannabis Conference. Attended presentations by Bureau of Medical Cannabis Regulation in Sacramento and San Francisco. Prepared informational Powerpoint presentations and spoke about California's laws and Proposition 64 at events and on podcasts and radio programs throughout the state. Prepared comparison chart of pre- and post-Prop. 64 laws and penalties. Presented at a Seminar Group CLE in Los Angeles. Spoke at Seattle HempFest. Curator of the Oaksterdam Cannabis Museum. Faculty of Oaksterdam University, Board of 420 Archives.
- 2015: Qualified as cannabis expert in California counties of Yolo, Los Angeles, Shasta, Butte, Napa, Santa Clara, San Joaquin, Tehama, Lake, Solano, Sonoma, El Dorado, Sacramento, San Mateo, Alameda, Contra Costa, Mendocino and the State of Arizona. Attended and gave presentation on medical marijuana in Sydney, Australia. Attended Society of Cannabis Clinicians conference in Oakland, California. Attended medical marijuana conference and gave three presentations for International Pharmaceutical Academy, Toronto, Canada, on medical marijuana, introduction to cultivation, and advanced cultivation. Gave presentation on history of medical marijuana, International Canna Pro Expo, Orlando, Florida. Presented MCLE training on California marijuana law for the Sonoma County Bar Assn. Taught History and Political Science for Oaksterdam University in Oakland, California, and Las Vegas, Nevada. Curated Oaksterdam Cannabis Museum. Co-chaired Museum Committee, Board of 420 Archives Historical Society. Met with Oakland Museum of California to discuss upcoming "Altered States: Marijuana" exhibition. Spoke at numerous events and radio shows. Received Lifetime Achievement Award at California Emerald Cup.
- 2014: Qualified as cannabis expert in California counties of Amador, El Dorado, Inyo, Kern, Kings, Lake, San Mateo, Santa Clara, Shasta and Tulare; States of Arizona, Georgia, Hawaii, Michigan, Utah (by stipulation); Federal Eastern District of California. Gave presentations on issues related to cannabis to government officials and at various educational institutions and public events in the nations of Argentina, Canada, Chile and Uruguay (*Conferencia Sobre Pericias Cannábicas*). Attended *Foro internacional de actualización en usos terapéuticos y medicinales del cannabis* (Uruguay) and *CannaMed* (Argentina) medical marijuana conferences. Taught cannabis related CME for the International Pharmaceutical Academy in Toronto, Canada. Taught cannabis related MCLE for California Defense attorneys hosted in Stockton, California. Gave presentations at Seattle Hempfest, Indo Expo (Denver CO), Canna Talk (Redding CA), the Emerald Cup (Santa Rosa CA) and State of Marijuana (Los Angeles). Curator of Oaksterdam Cannabis Museum and US Hemp Museum. Faculty member at Oaksterdam University. Accepted to Board of 420 Archives Historical Society.
- 2013: Qualified as cannabis expert in Kern County Juvenile Court, and in the California Superior Courts of Alameda, Butte, Colusa, Contra Costa, Del Norte, El Dorado, Fresno, Humboldt, Los Angeles, Mendocino, Placer, Sacramento, San Mateo, Shasta, Solano, Sonoma and Tehama Counties on many of the same issues as described in the years below. Qualified as cultivation and processing expert in

- Michigan court, testified telephonically. Attended presentations on medical marijuana and cultivation at numerous educational events throughout the country including the Bay Area Hempfest, Emerald Cup, International Cannabis and Hemp Expo, International Drug Policy Reform Conference, Rossmore Medical Marijuana Club, Seattle Hempfest, etc. Consulted with the Washington State I-502 implementation team. Prepared educational video for Cannabiz. Curator of the Oaksterdam Cannabis Museum. Faculty member at Oaksterdam University.
- 2012: Presented research on Cannabis Yields and Dosage at NIDA co-sponsored *California Association of Toxicologists Biennial Conference*. Attended CME accredited *Seventh International Clinical Conference on Cannabis Therapeutics* in Arizona. Qualified as a cannabis expert in California Courts in the counties of Butte, Colusa, Contra Costa, El Dorado, Fresno, Humboldt, Los Angeles, Marin, Sacramento, San Diego, San Francisco, San Mateo, Santa Clara, Shasta, Siskiyou, Solano, Sonoma, Tehama, Tuolumne and Yolo. Qualified as a cannabis expert in the State of Maryland. Qualified as a cannabis expert in federal US court, California northern district. Topics include cultivation, yields, consumption, medical use, personal consumption, sales, commercial intent, odor, collective associations' activities, etc. Examined police files, medical records, financial records, transcripts, photos, videos, audiotapes, weighed, photographed, and examined forensic evidence, interviewed defendants, investigated garden sites, heard police testimony and reviewed police training materials. Visited numerous cannabis gardens and dispensaries, met with patient collectives throughout California. Spoke with many cannabis consumers, growers, experts and providers. Curator of the Oaksterdam Cannabis Museum. Faculty member of Oaksterdam University.
- 2011: Qualified as a cannabis expert in Fresno, Kern, Lake, Los Angeles, Napa, Nevada, Sacramento, San Diego, San Francisco, San Luis Obispo, San Mateo, Solano and Yolo Counties. Qualified as a cannabis expert in State of Colorado. Topics include cultivation, yields, consumption, medical use, personal consumption, sales, commercial intent, odor, collectives, etc. Examined police files, medical records, financial records, transcripts, photos, videos, audiotapes, weighed, photographed, and examined forensic evidence, interviewed defendants, investigated garden sites, heard police testimony and reviewed police training materials. Visited numerous cannabis gardens and dispensaries, met with patient collectives throughout California. Spoke with other experts as well as numerous cannabis consumers, growers and providers. Curator of Oaksterdam Cannabis Museum. Faculty member of Oaksterdam University. Consulted with other experts nationally and internationally.
- 2010: Testimony discussed by California Supreme Court in *People v Kelly*. Qualified in numerous counties as an expert on cannabis cultivation, yields, dosage, usage, processing, patient collective organizations, cultivation and operations, lawful and illicit distribution, and related issues in previous years and various counties as detailed below. Qualified as expert on cultivation, medical use, dosage and intent to sell in the Commonwealth of Virginia in Chesterfield County. Taught Mandatory Continuing Legal Education (MCLE) classes in California. Taught accredited CLE for Federal Defenders Of Eastern Washington & Idaho. Examined police files, medical records, financial records, transcripts, photos, videos, audiotapes, weighed, photographed, and examined forensic evidence, interviewed defendants, investigated garden sites, heard police testimony and reviewed police training materials. Consulted with other experts. Faculty of Oaksterdam University. Published revised seventh edition of *Cannabis Yields and Dosage*.
- 2009: Qualified in numerous California counties as an expert on cannabis cultivation, yields, dosage, usage, processing, patient collective organizations, cultivation and operations, lawful and illicit distribution,

and related issues in various counties previously listed. Taught accredited CLE in Oregon. Attended session of the UN High Commission on Narcotic Drugs in Vienna, Austria. Examined and discussed cannabis plants under cultivation in Amsterdam, The Netherlands. Examined personal indoor and outdoor cannabis gardens in Argentina. Participant in the Medical Cannabis Safety Commission. Examined police files, medical records, financial records, transcripts, photos, videos, audiotapes, weighed and examined forensic evidence visually and by microscope, interviewed defendants, investigated garden sites, and heard police testimony as to their training, experience, observations and opinions, thereby familiarizing myself with law enforcement investigative techniques. Viewed numerous indoor and outdoor cannabis gardens. Visited numerous cannabis dispensaries, met with patient collectives throughout California. Consulted with other experts nationally and internationally. Faculty of Oaksterdam University.

- 2008: Qualified as a cannabis expert in Kern, San Diego, numerous other California counties previously listed, and the State of North Dakota. Qualified as an expert on cannabis cultivation, yields, dosage, usage, processing, patient collective organizations and operations, lawful and illicit distribution, and related issues in various counties previously listed. Presented findings on *Cannabis Yields and Dosage* at the CME-accredited *Fifth National Clinical Conference on Cannabis Therapeutics*. Participant in the Medical Cannabis Safety Commission. Attended accredited NORML CLE in Colorado. Attended conferences, examined personal indoor and outdoor cannabis gardens in Argentina. Examined police files, medical records, financial records, transcripts, photos, videos, audiotapes, weighed and examined forensic evidence visually and by microscope, interviewed defendants, investigated garden sites, heard police testimony and reviewed police training materials. Consulted with other experts. Viewed numerous cannabis gardens. Visited cannabis dispensaries, met with patient collectives throughout the state. Faculty member at Oaksterdam University.
- 2007: Qualified as an expert on cannabis cultivation, yields, dosage, usage, in various counties previously listed. Examined police files, medical records, financial records, transcripts, photos, videos, audiotapes, weighed and examined forensic evidence visually and by microscope, interviewed defendants, investigated garden sites, heard police testimony and reviewed police training materials, familiarizing myself with law enforcement investigative techniques. Consulted with other experts. Viewed numerous cannabis gardens. Visited numerous dispensaries, met with patient collectives, individual patients and caregivers throughout the state. Served on San Francisco DA's Medical Marijuana Advisory Group. Faculty member at Oaksterdam University. Gave presentation on medical marijuana regulation to Hawaii State legislators.
- 2006: Qualified as an expert on cannabis odor and detection in federal Northern California district, and in US Courts Martial in Wurzburg, Germany on cultivation, yields, consumption and indicia of intent. Qualified as cannabis expert in California Superior courts of Amador, Fresno, Lake, Humboldt, Los Angeles, Mendocino, Merced, San Bernardino, San Francisco, San Mateo, Santa Clara, Santa Cruz, Siskiyou, Sonoma, and other counties. Research cited to Washington State DOH when it considered the question as to what would constitute a presumptive 60-day medical supply amount. Qualified as an expert on cannabis packaging, consumption, storage and toxicity in Oregon court. Attended CME-accredited *Fourth National Clinical Conference on Cannabis Therapeutics*, UC Santa Barbara. Examined police files, medical records, financial records, transcripts, photos, videos, audiotapes, weighed and examined forensic evidence visually and by microscope, interviewed defendants, investigated garden sites, heard police testimony and reviewed police training materials, familiarizing

myself with law enforcement investigative techniques. Consulted with other experts. Viewed numerous gardens. Visited numerous dispensaries, met patient and collectives throughout the state. Served on San Francisco DA's Medical Marijuana Advisory Group.

- 2005: Qualified as cannabis expert in California Superior courts of Los Angeles, Calaveras, Lake, Santa Clara, Santa Cruz, Sacramento, Siskiyou, Solano and Orange counties. Participated in San Francisco DA's medical marijuana advisory group. Received two days instruction at Leiden University, The Netherlands, from the International Association for Cannabis as Medicine conference. Toured the Dutch national medical marijuana garden operated by Bedrocan, B.V. Examined numerous indoor and outdoor cannabis gardens in and around Amsterdam and medical marijuana gardens in California and Oregon. Examined police files, medical records, financial records, transcripts, photos, videos, weighed and examined forensic evidence visually and by microscope, interviewed defendants, investigated garden sites, heard police testimony and reviewed police training materials, familiarizing myself with law enforcement investigative techniques. Consulted with other experts. Viewed gardens, interviewed growers, sellers and consumers of cannabis throughout the state. Attended and taught a CLE on cannabis expert issues at the NORML Legal Seminar in Florida. Testimony received favorable mention in California Court of Appeals ruling *People v Urziceau* (2005) 132 Cal.App.4th.
- 2004: Authored and published *Cannabis Yields and Dosage*. Qualified as cannabis expert in the California Superior courts of Humboldt, Alameda, Lake, Yolo, San Francisco, Santa Cruz, Santa Clara, Los Angeles and San Mateo, on issues of cultivation, medical use, consumption, processing, and personal versus commercial intent. Qualified as cannabis expert in State of Oklahoma. Testimony received favorable mention in California Court of Appeals ruling *People v Arbacauskas* (2004) Cal.App.3rd. Examined police files, medical records, financial records, transcripts, photos, videos, weighed and examined forensic evidence visually and under microscope, interviewed defendants, investigated garden sites, heard police testimony and reviewed police training materials, familiarizing myself with police investigative techniques. Consulted with other experts. Viewed gardens, interviewed growers, sellers and consumers of cannabis throughout the state.
- 2003: Qualified as cannabis expert in the California Superior courts of Butte, El Dorado, Fresno, Inyo, Los Angeles, Monterey, Nevada, Sacramento, San Mateo, Santa Cruz, Ventura and Yolo Counties. Qualified as cannabis expert in the Southern District of the Ninth Circuit Federal Court. Examined police files, medical records, financial records, transcripts, photos, videos, weighed and examined forensic evidence visually and under microscope, interviewed defendants, investigated garden sites, heard police testimony and reviewed police training materials, familiarizing myself with police investigative techniques. Taught Continuing Legal Education (CLE) for Defense Attorneys of Santa Cruz County. Viewed gardens, interviewed growers, sellers and consumers of cannabis throughout the state. Consulted on SB 420. Discussed medical marijuana policy with DA Terrence Hallinan of San Francisco and DA Paul Gallegos in Humboldt. Consulted with Senator John Vasconcellos office regarding SB 420. Member of citizen advisory panel that drafted Senate Bill 420, the California Medical Marijuana Program Act. Attended CLE on cannabis law at NORML Legal Seminar, Florida.
- 2002: Testimony discussed by California Supreme Court in *People v Mower*. Qualified as cannabis expert in the California Superior courts of Los Angeles, El Dorado, Riverside, Sacramento, San Joaquin, Santa Cruz, Tulare and Yolo Counties on issues of cultivation, medical use, consumption, processing, and personal versus commercial intent. Examined police files, medical records, financial records, transcripts, photos, videos, weighed and examined forensic evidence visually and under microscope,

interviewed defendants, investigated garden sites, heard police testimony and reviewed police training materials, familiarizing myself with police investigative techniques. Took 12 hours of accredited training in medical marijuana from Institute for Health Professionals, Portland Oregon. Spent three weeks in Holland where I observed at least 12 cannabis gardens and one week in Italy. In both countries I engaged cannabis cultivators in discussion of their gardens, and yields.

- 2001: Testified as a cannabis expert in California Superior courts of Alameda, Del Norte, Orange, San Joaquin, Sonoma and Ventura Counties on issues of cultivation, medical use, consumption, preparation, and indicia of personal versus commercial intent. Heard court testimony by police officers and other experts. Reviewed numerous court transcripts, search warrants, police reports, evidence lists and case files. Examined medical records, forensic evidence visually and under microscope, analyzed photos and videos, interviewed defendants, reviewed police training materials, and investigated garden sites. Testified as cannabis expert in the Sacramento CA federal district court, on issues of cultivation, consumption, and yields. Gave presentation on yields and consumption to Berkeley, CA, Health and Safety Commission. Taught an accredited CLE for Orange County Public Defenders office.
- 2000: Testified as cannabis expert in California Superior courts of Butte, Calaveras, Contra Costa, El Dorado, Humboldt, Napa, Placer, Plumas, San Mateo, Shasta, Siskiyou, Santa Cruz, Sonoma and Stanislaus Counties. Qualified on issues of indoor and outdoor cultivation, crop yields, plant sex, olfactory identification (smell), means and rates of consumption, genetic characteristics, indicia of commercial intent, personal and/or medicinal use of cannabis and cannabis preparations, both smoking and otherwise. Investigated cases and provided expert legal services in numerous other counties. Heard court testimony by police officers and other experts. Received seven hours of California Medical Association-accredited training on medical cannabis. Reviewed court transcripts, search warrants, police reports, evidence lists and case files, familiarizing myself with police investigative techniques. Attended and taught a CLE on expert issues involving cannabis at the NORML Legal Seminar in Florida. Examined forensic evidence and medical records, analyzed photos and videos, interviewed defendants, provided declarations. Researched all aspects of cannabis cultivation and use. Discussed use patterns with at least 30 medical cannabis patients and numerous doctors. Spent four weeks in Amsterdam, where I designed informational exhibits on cannabis and observed indoor cannabis cultivation, curing and processing. Returned in the fall for 10 days observing and discussing cultivation, processing, marketing and consumption with hundreds of American, Dutch and international growers and consumers.
- 1999: Testified as cannabis expert in California Superior courts of Butte, Calaveras, El Dorado, Humboldt, Lake, Los Angeles, Marin, Placer, Santa Clara, Shasta, Solano and Sonoma Counties on issues of cultivation, yields, commercial intent, joint size, rate of consumption, personal and/or medicinal use of cannabis and cannabis preparations, both smoking and otherwise. Investigated cases and provided expert legal services in Alameda, Stanislaus, Napa, Plumas, Sacramento, San Francisco, San Mateo, Santa Barbara and Santa Cruz Counties. Reviewed numerous court transcripts, search warrants, investigator's reports and case files, familiarizing myself with police investigative techniques. Heard court testimony by police officers and other experts. Examined forensic evidence, analyzed photos and videos, inspected garden sites, interviewed witnesses and defendants, provided declarations and reports. Examined numerous California patients' legal cannabis gardens. Discussed use patterns with at least 150 medical cannabis patients and numerous doctors. Read numerous studies and reports by

the DEA, NIDA, and other federal government agencies regarding the cultivation, miscellaneous effects, and personal consumption of cannabis. Attended numerous conference presentations on medical marijuana and industrial hemp. Went to the Netherlands to research and monitor legal cannabis cultivation, breeding, distribution and consumption. Examined numerous cannabis gardens in Holland, Germany and Spain. Traveled to Germany to study legal industrial hemp fields and processing facilities, the Hanf (hemp) Museum, and CannaBusiness, an international hemp and cannabis business expo.

- 1998: Testified as qualified expert in the California Superior courts of Butte, Humboldt and Tuolumne Counties regarding cannabis cultivation, yields, plant sex, maturity, preparation, quality, usability, commercial intent versus personal and/or medicinal use, consumption rates, genetics and cannabis preparations, both smoking and otherwise. Reviewed case documents, physical evidence and photos. Investigated cases and/or filed declarations in Alameda, Marin, Merced, Nevada, Placer, San Diego, San Mateo, Santa Cruz, and Sonoma Counties. Examined and evaluated numerous California patients' legal cannabis gardens. Attended numerous conference presentations on medical marijuana and industrial hemp. Read and analyzed *Cannabis Yields*, a cultivation and yield report by the federal DEA and numerous studies by NIDA, and other government agencies regarding the, miscellaneous effects, and personal consumption of cannabis. Discussed use patterns with at least 250 medical cannabis patients and numerous doctors.
- 1997: Testified as qualified expert in the California Superior court of Marin County regarding crop yields, medical marijuana and personal consumption. Reviewed case documents, physical evidence and photos. Authored *Hemp for Health*. Researched medical literature, visited and surveyed patient gardens. Chapters cover cannabis history, botany, pharmacology, clinical research, homeopathy, Ayurvedic medicine, herbalism, therapeutic potential, cannabinoids, side effects, safety tips, recipes for smoked and eaten preparations, and specific symptomatic relief, including diagrams and reference tables, topical applications, nutrition and holistic health care. Attended CannaBusiness Expo, in Germany. Visited patient gardens and buyers clubs throughout California. Conducted the first survey of state dispensaries at the request of Assemblyman Senator John Vasconcellos office. Consulted and participated in a legal outdoor cannabis harvest in Switzerland of at least six hectares of plants grown by subcontractors for CannaBioLand, a legal commercial enterprise. Selected and harvested cannabis based on sex, ripeness and mold infestation. Participated in sexing, selecting, cutting, curing, manicuring, and otherwise preparing herb for consumption. Investigated legal cannabis outlets throughout Switzerland. Addressed a hearing of the National Academy of Science on medical marijuana. Visited and surveyed patient buyers clubs and discussed medical use of cannabis with at least 300 patients and 20 doctors. Read at least 100 abstracts, studies and peer reviewed medical literature regarding the therapeutic utility of cannabis.
- 1996: Attended numerous scientific presentations and surveys of scientific studies regarding specific medical and personal use of cannabis including pharmacology and symptomatic relief. Discussed use patterns with at least 400 medical marijuana patients and numerous doctors. Monitored legal cannabis indoor cultivation projects at Sensi Seed Bank, the Hash-Marijuana-Hemp Museum, and at Positronics, b.v., in Amsterdam. Observed and interviewed patients, doctors, caregivers and cannabis culture in the US, Canada and Europe.

- 1995: Monitored legal cannabis indoor cultivation projects at Sensi Seed Bank, the Hash-Marijuana-Hemp Museum, and at Positronics, b.v., in Amsterdam. Discussed medical cannabis and use patterns with at least 300 patients and numerous doctors.
- 1994: Qualified as expert witness in the California Superior court of Madera County on industrial hemp and hempseed. Studied and consulted on Hemp Agrotech's research crop of industrial hemp grown in the Imperial Valley (California) in conjunction with the US Department of Agriculture research station. Met and had informal consultations with owners of Hempline, the first Canadian group to grow a research crop of industrial hemp in North America. Toured hemp stores and museums throughout the US and Canada. Monitored legal cannabis indoor cultivation projects at Sensi Seed Bank, the Hash-Marijuana-Hemp Museum, Positronics, b.v., and at numerous other cannabis gardens located in Amsterdam. Discussed medical use and patterns with at least 100 patients and numerous doctors.
- 1993: Authored *Hemp: Lifeline to the Future*, a comprehensive study of the cannabis plant, including a chapter on cannabis botany. Read at least 100 abstracts, studies and peer reviewed medical literature regarding the therapeutic and industrial utility of cannabis. Spent six months in The Netherlands where I designed and arranged informational exhibits and curated the Hash-Marijuana-Hemp Museum in Amsterdam; collected items, prepared and labeled informational displays and explanatory materials, produced handouts for visitors, maintained a library about cannabis, supervised a legal indoor cannabis "grow room" exhibit featuring hydroponic systems, soil, plants from seed and clones, sexing to maturity, harvest, cure and manicure. Utilized various lighting systems and cycles; evaluated growing techniques and yields, planting densities, and pruning patterns; advised in the design of and adjustments to the system and its operation. Field research included investigation and discussion of social use, customs, commercial sales, consumption patterns, medical case histories, regional cultures, kif and hash making, evaluating quality and use of herbal cannabis. Experimented with raw stalk, fibers, hempseed foods and cannabis medicinal preparations including derivatives, tinctures and poultices. Traveled through France, Holland and Hungary researching legal commercial hemp farms and processing. Made a national tour of Dutch cannabis outlets and interviewed the proprietors, staff and clientele. Monitored legal cannabis indoor cultivation projects at Sensi Seed Bank, the Hash-Marijuana-Hemp Museum, and at Positronics, b.v., in Amsterdam. Discussed use patterns with at least 200 medical marijuana patients.
- 1992: Spent six weeks in The Netherlands working at "Cannabis Castle," a primary facility of Sensi Seed Bank, at the time, the world's largest legal and licensed cannabis research and breeding company. Participated and monitored all aspects of cultivation from starting seedlings and rooting clones to sexing plants, genetic selection and pollination, hybridization, seed selection and processing for indoor, outdoor and greenhouse varieties. Monitored flower development, resin enhancement, yields, curing, processing and manicure. Researched various genetic materials for characteristics. Met with researchers at Wageningen University (Netherlands) research facility on industrial and horticultural aspects of cannabis hemp. Made a national tour of regional Dutch cannabis outlets and interviewed the proprietors, staff and clientele.
- 1989-Present: National and international conferences. Ongoing cannabis research, reviewing scientific, law enforcement and media reports. Personally discussing the production, processing and consumption of cannabis products with thousands American, Dutch, Argentine, Canadian and other international consumers, patients, growers and providers.

Formal Education and Trainings

- 2019 CA Norml CLE sessions including drug recognition, impairment risk assessments and evaluation.
- 2018 MCLE presentation, Cal NORML. Attended sessions of California Bureau of Cannabis Control, Int. Cannabis Business Assn, California Cannabis Industries Assn, National Cannabis Industry Assn.
- 2017: MCME training at International *Clinical Conference on Cannabis Therapeutics*. Received and provided MCLE training with The Seminar Group and Pincus Professional Education. Attended presentations by Bureau of Cannabis Control. Attended U of Kentucky presentations on hemp agronomics.
- 2016: Attended presentations by Bureau of Medical Cannabis Regulation in Sacramento and San Francisco. Attended Seminar Group CLE in Los Angeles.
- 2015: Attended medical marijuana symposium in Sydney, Australia. Attended two medical marijuana conferences and gave three presentations for International Pharmaceutical Academy, Toronto, Canada. Attended Society of Cannabis Clinicians conference in Oakland, California.
- 2014: Attended International Pharmaceutical Academy *Marihuana for Medical Purposes* (Toronto, Canada) *Foro internacional de actualización en usos terapéuticos y medicinales del cannabis* (Montevideo, Uruguay), *CannaMed* (Buenos Aires (etc.), Argentina). Presented at several of these, as well.
- 2012: Attended CME and university accredited *Seventh International Clinical Conference on Cannabis Therapeutics* in Arizona.
- 2008: Attended and presented findings on *Cannabis Yields and Dosage* at the CME-accredited *Fifth Biennial Clinical Conference on Cannabis Therapeutics*, Asilomar California.
- 2006: Attended CME-accredited *Fourth Biennial Clinical Conference on Cannabis Therapeutics*, Santa Barbara California.
- 2005 Received two days instruction at Leiden University, The Netherlands, at the *International Association for Cannabis as Medicine* conference.
- 2002: CME-accredited *Second Biennial Clinical Conference on Cannabis Therapeutics*, 12 hours accredited training in medical marijuana, Institute for Health Professionals, Portland Oregon
- 2000: Attended 7 hours California Medical Association CME-accredited training at the “Cannabis Therapy: Science, Medicine and the Law” symposium at Cal State University San Francisco.
- 1995: Attended 20 hours European university-accredited training in cannabis botany, agriculture, horticulture, plant pharmacology, industrial technologies and medical use at *Biofach* international symposium, Nova Institute, Frankfurt Germany.
- 1993: Attended 18 hours accredited training in cannabis botany, agriculture, horticulture, pharmino-chemistry, industrial technologies, medical use and policy at *Journee du Cannabis*, Paris, France.
- 1980: Bachelor’s degree. Fine Arts / Communication, California State University Dominguez Hills, Los Angeles California. Graduated *Magna cum laude*. Biology course included botany.
- 1973: Associate’s degree in Humanities / Fine Arts, Frederick Community College, Frederick Maryland. Graduated *Cum laude*. Biology course included botany.
- 1967-69: Attended Maryknoll Catholic Seminary, Chesterfield, Missouri.

Books authored or assisted

- 2016: Coauthored *The Newbie's Guide to Cannabis and the Industry* with Jeremy Daw (Reset.me Press, Atlanta Georgia)
- 2014: Authored chapter for English language version of *Cannabis Medical*, co-authored *Cannabis en Argentina* (Spanish, Argentina).
- 2013: Authored chapter for *Cannabis Medical* (French, Paris, France).
- 2004-2015: *Cannabis Yields and Dosage*, as revised and expanded. (USA. Tenth edition published, 2015.)
- 2001: Second edition of *Human Rights and the US Drug War* (Creative Xpressions).
Hemp for Health translated into Portuguese as *Hemp: O uso medicinal de maconha*.
- 2000: Revised edition of *Shattered Lives: Portraits from America's Drug War* (Creative Xpressions).
- 1999: Contributed to revised *The Very Best of Sinsemilla Tips* (New Moon). Co-authored *Human Rights and the US Drug War* (Creative Xpressions).
- 1998: *Hemp for Health* translated *Heilpflanze Haschisch* (German, Knaur), and *Cannabis para la Salud* (Spanish, M. Roca). Co-authored *Shattered Lives: Portraits from America's Drug War* (Norris, Conrad, Resner. Creative Xpressions).
- 1996: Authored *Hemp for Health* (Inner Traditions), reviewing scientific data on medical, physiological and psychological effects of cannabis. It discusses medical cannabis in allopathy, homeopathy, herbalism and Ayurveda; THC and other cannabinoids, hempseed nutrition, uses of seed oil, holistic and ecological value of hemp as a restorative resource. Bibliography, footnotes and appendices. *Hemp, Lifeline to the Future* Australian edition published; *Cannabis, 1 mille usi di una pianta miracolosa*. (Italian, Carravecchi)
- 1995: Contributed portions on the development of the modern hemp industry and fuel potential of industrial hemp to *The Great Book of Hemp*, by Rowan Robinson (Inner Traditions).
- 1994: Contributed a chapter on market potentials to *Hemp Today* compilation (Quick American).
- 1993: Authored *Hemp, Lifeline to the Future* (Creative Xpressions), a comprehensive review of the industrial, medicinal and social / spiritual applications of cannabis with technical data on how to grow and process cannabis, its history, commerce, technologies, botany, ecology, cultivation and medical uses. Contributed chapter to *Le Premier Journee Internationale du Cannabis* (French: Lezard).
- 1990: Designed and edited *The Emperor Wears No Clothes*, by Jack Herer (Hemp Publishing).

California Court cites, legislative / advisory consultations; presentations, conferences, classes, lectures, symposia

- 2016: Spoke at International Cannabis Business Conference in San Francisco, Mendocino Cannabis Resource Conference in Willits and Grassroots Cannabis Conference in Oakland. Prepared informational Powerpoint presentations and spoke about California's laws and Proposition 64 at events and on podcasts and radio programs throughout the state. Prepared comparison chart of pre- and post-Prop. 64 laws and penalties. Presented at Seminar Group CLE in Los Angeles.
- 2015: Cited in *People v Anderson* (CA) appellate ruling. Gave three presentations for International Pharmaceutical Academy medical marijuana conference, Toronto, Canada, on medical marijuana, introduction to cultivation, and advanced cultivation. Gave presentation on history of medical

- marijuana, International Canna Pro Expo, Orlando, Florida. Presented MCLE training on California marijuana law for the Sonoma County Bar Assn.
- 2014 Cited in *People v Jackson* and *People v Mitchell* (CA) appellate rulings. Consulted with government officials in Hawaii, Uruguay, Argentina and Chile. Presented research at International Pharmaceutical Academy CME. Taught CLE in Stockton CA.
- 2012: Presented research on Cannabis Yields and Dosage at NIDA co-sponsored CME hosted by *California Association of Toxicologists Biennial Conference*.
- 2011: Curator, Oaksterdam Cannabis Museum. Qualified as court expert on cultivation in state of Colorado.
- 2010: Testimony discussed by California Supreme Court in *People v Kelly*. Taught accredited CLE for Federal Defenders Of Eastern Washington & Idaho.
- 2008 – 2009: Participant in the Medical Cannabis Safety Commission, based in Berkeley CA. Attended UN International Drug Control Treaty Assessment and Review in Vienna as representative of NGO.
- 2008: Presented findings on *Cannabis Yields and Dosage* at the CME-accredited *Fifth Clinical Conference on Cannabis Therapeutics*.
- 2007: Gave presentation on medical marijuana regulation to Hawaii State legislators.
- 2005 - 2009: Member of San Francisco District Attorney Kamala Harris's Cannabis Advisory Panel.
- 2004: Testified before the Oakland City Council and Humboldt County Board of Supervisors.
- 2003: Testified before the County Board of Supervisors for the counties of Kern and San Francisco, Oakland Public Safety Committee. Taught CLE seminar for Santa Cruz Criminal Defense Attorneys.
- 2002: Testimony discussed by California State Supreme Court in *People v Mower*.
- 2001: Presented expert testimony and prepared displays on issues of cannabis cultivation and consumption and presented a report to Berkeley Public Health and Safety Commission; guest lectured in political science at University of California, Berkeley. Consulted with Sonoma Alliance for Medical Marijuana in developing guidelines adopted by County District Attorney.
- 2000: Keynote speaker on medical marijuana at Alameda Medical Group staff dinner. Guest lectured at Mills College. Presented expert testimony for the City of Martinez (CA) on the federal IND medical marijuana program, garden yields and consumption. Presented data on medical marijuana use and cultivation at the Drug Policy Foundation conference, Washington DC. Gave presentations at Santa Cruz Industrial Hemp Expo (CA). Gave two presentations at Cannabis College (Amsterdam).
- 1999: Guest lectured at Mills College; gave presentations at University of California Davis Forum, UC Berkeley Global Crisis Solutions Conference, CannaBusiness (Germany), Cannabis College (Netherlands), Natural Products Expo, and Santa Cruz Industrial Hemp Expo.
- 1998: Taught cannabis at the Omega Institute (NY). Testified at National Academy of Science / Institute of Medicine hearings on medical marijuana (Irvine). Presented report on medical cannabis to SSSP sociologists convention. Gave presentations at the Hemp Industries Association convention, Santa Cruz Industrial Hemp Expo, VisionQuest, State of the World Forum and National Organization to Reform Marijuana Laws (NORML). Debated former DEA head Peter Bensing at Cal State University, Northridge.
- 1997: Participated in legislative advisory panel for California medical marijuana research bill SB 535. Supported legislative efforts on industrial hemp bills in 12 state legislatures. Taught classes on medical cannabis at Learning Annex, Five Branches Institute, and California legal patient groups.

- Lectured on hemp at Eco Expo, Natural Products Expo, and on cannabis research at the Drug Policy Foundation (DPF) conference plenary session.
- 1996: Consulted on hemp legislation with State Representatives Fred Maslack of Vermont and David Tarnas of Hawai'i. Authored the industrial hemp plan for the Jamaican government). Coordinated petitioners for California medical marijuana initiative, Prop. 215 (passed). Testified at Oakland City Council and Contra Costa County Supervisors on medical cannabis, regulations and options. Lectured at Stanford University. Lectured at Eco Expo and Whole Life Expo (CA). Participant in State of the World Forum (CA). Panelist in DPF conference (Washington DC) plenary session on medical cannabis.
- 1995: Met with European Cities on Drug Policy staff to discuss the Frankfurt Resolution on cannabis policy. Testified at Colorado State Senate Agriculture Committee hearing on economic and agricultural value of low-THC industrial hemp as a farm crop, European hemp regulations and subsidies, infrastructure and other commercial aspects, and genetic and environmental influences that maintain the non-drug characteristic of industrial hemp. Panelist in DPF conference plenary session on hemp. Spoke at Land, Air and Water legal conference (Oregon), Chapman University (CA), Whole Earth Expo (CA), Winnipeg University (Canada), European Cannabis Consumers Organization organizing conference (Netherlands). Attended four day *Biorohstoff Hanf* symposium (Nova Institut, Frankfurt, Germany).
- 1994: Had discussions with Eric Fromberg, head of The Netherlands National Institute on Alcohol and Drugs, and other Dutch officials regarding their policy of tolerance, regulation and control of cannabis distribution. Panelist in ACLU drug policy forum (Los Angeles CA). Chapman University (CA). Presented hemp seminars throughout Holland and the US.
- 1993: Presenter at *Le Premier Journee Internationale du Cannabis* (Paris, France). Had discussions with Eric Fromberg, head of the Dutch National Institute on Alcohol and Drugs, and other officials regarding their policy of regulation and control of cannabis distribution.
- 1992: Testified on hemp development and regulatory options at the US Congressional Hearings on Improving the Operations and Activities of the United Nations (Los Angeles, CA).
- 1991: Consulted with Senator Joseph Galiber (NY) to develop separate industrial hemp and cannabis bills. Guest lectured at University of Southern California (USC) program for substance abuse counselors.

Selected Honors and Awards

- 2019: Cannies Lifetime Achievement Award
- 2015: Emerald Cup Lifetime Achievement Award, Santa Rosa, California.
- 2014: *Junta Nacional de Drogas* accreditation (Uruguay),
AECU award for contributions to the national cannabis library (Uruguay),
Activist of the Year (Seattle Hempfest)
- 2010: Lifetime Achievement Award, Oaksterdam University
- 2008: Freedom Fighter of the Year, Los Angeles NORML
- 2004: Achievement in Citizen Activism, from NORML
- 2002: Strathmore's Who's Who
- 2001: Lindesmith Center "Robert Randall Award." Strathmore's Who's Who
- 2000: San Francisco *Bay Guardian* Local Hero Award.
Hemp Awareness Group Award.

- 1999: Top 10 Activist of the Century, High Times magazine.
- 1998: Hemp Industries Association President's Award.
- 1991: Long Beach Area Citizens Involved Achievement Award.
- 1980: Who's Who in American Colleges and Universities
- 1972: Who's Who in American Junior Colleges.