

Curriculum Vitae

Name: Steven John Laken, Ph.D.

Current Position: President and CEO

Work Address: Cephos Corp.
P.O. Box 45
Tyngsboro, MA 01879
(d) 978.703.4725 x301
(f) 978.703.4726

Education: The Johns Hopkins School of Medicine
Ph. D., Cellular and Molecular Medicine
Advisor: Bert Vogelstein, M.D.
August 1994 – June 1999

University of Minnesota
BS in Genetics and Cell Biology
August 1991 - June 1993

Colorado State University
August 1989 - June 1991

Awards: Johns Hopkins University
David Israel Macht Award
Young Investigators Day May 1999

Technology Review 100 Finalist
100 Young Innovators Under 35
Massachusetts Institute of Technology
2002

Experience: Cephos Corp.
Founder, President and CEO
June 2003 - Present

Exact Sciences, Inc.
April 1999 – June 2003

The Johns Hopkins School of Medicine
Ph. D., Cellular and Molecular Medicine
Advisor: Bert Vogelstein, M.D.
August 1994 – June 1999

Publications:

Kozel, F.A., **Laken, S.J.**, Johnson, K.A., Boren, B., Mapes, K.S., Morgan, P.S., George, M.S. Replication of Functional MRI Detection of Deception. Open Forensic Sci J. 2009. Jan 1;2:6-11.

Jin, B., Strasburger, A., **Laken, S.J.**, Kozel, F.A., Johnson, K.A., George, M.S., Lu, X. Feature selection for fMRI-based deception detection. BMC Bioinformatics. 2009 Sep 17;10 Suppl 9:S15.

F. Andrew Kozel, M.D., M.S.C.R., Kevin A. Johnson, B.E., Emily L. Grenesko, B.A., **Steven J. Laken, Ph.D.**, Samet Kose, M.D., Xinghua Lu, Ph.D., Dean Pollina, Ph.D., Andrew Ryan, Ph.D., & Mark S. George, M.D. Functional MRI Detection of Deception Testing After Committing a Mock Sabotage. *J Forensic Sci.* 2009 Jan; 54(1):220-31. Epub 2008 Nov 29.

Kozel, F. Andrew, Johnson, Kevin A., **Laken, Steven J.**, Grenesko, Emily L., Walker, John & George, Mark S. Can simultaneously acquired electrodermal activity improve accuracy of fMRI detection of deception? *Soc Neurosci.* 2009; 4(6):510-7.

Johnson, K.A., Kozel, F.A. Kozel, **Laken, S.J.** George, M.S. The Neuroscience of Functional Magnetic Imaging for Deception Detection. *The American Journal of Bioethics*, 7(9): 1-3, 2007.

Kozel, F.A., Johnson, K.A., Mu, Q., Grenesko, E.L., **Laken, S.J.**, George, M.S. Detecting deception using functional magnetic resonance imaging. *Biol Psychiatry.* 2005 Oct 15; 58(8):605-13. Epub 2005 Sep 26.

Thiagalingam, S., **Laken, S.**, Willson, J.K., Markowitz, S.D., Kinzler, K.W., Vogelstein, B., Lengauer, C. Mechanisms underlying losses of heterozygosity in human colorectal cancers. *Proc Natl Acad Sci U S A.* 2001 Feb 27;98(5):2698-702. Epub 2001 Feb 13.

Yan, H., Papadopoulos, N., Marra, G., Perrera, C., Jiricny, J., Boland, CR., Lynch, HT., Chadwick, R., de la Chapell, A., Berg, K., Eschlaman, JR., Yuan, W., Markowitz, S, **Laken, SJ.**, Lengauer, C., Kinzler, KW., Vogelstein, B. Conversion of Diploidy to Haploidy 2000 Feb 17;403(6771):723-4.

da Costa, LT., He, TC., Yu, J., Sparks, AB., Morin, PJ., Polyak, K., **Laken, S.**, Vogelstein, B., Kinzler, KW., CDX2 is Mutated in Colorectal Cancer With Normal APC/B-catenin signaling. *Oncogene* 1999. 18(35):5010-4.

Laken, SJ., Papadopoulos, N., Petersen, GM., Gruber, SB., Hamilton, SR., Giardiello, FM., Brensinger JD., Vogelstein, B., Kinzler, KW. Analysis of Masked Mutations in Familial Adenomatous Polyposis. *Proceedings of the National Academy of Science.* 1999. 96(5):2322-6.

Laken, SJ., Jackson, PE., Kinzler, KW., Vogelstein, BV., Strickland, PT., Groopman, JD., Friesen, MD. Genotyping by Mass Spectrometric Analysis of Short DNA Fragments. *Nature Biotechnology* 1998. 16:1352-1356.

Gruber, SB., Entius, MM., Petersen, GM., **Laken, SJ.**, Longo, PA., Boyer, R., Levin, AM., Mujumdar, UJ., Trent, JM., Kinzler, KW., Vogelstein, B., Hamilton, SR., Polymeropoulos, MH., Offerhaus, GJ., Giardiello, FM. Pathogenesis of Adenocarcinoma in Peutz-Jeghers Syndrome. *Cancer Research* 1998. (58):5267-5270.

Brensinger, JD., **Laken, SJ.**, Luce, MC., Powell, S., Vance, G., Ahnen, D., Petersen, GM., Hamilton, SR., Giardiello, MD. Variable Phenotype of Familial Adenomatous Polyposis in Pedigrees with 3' Mutation in the APC Gene. *Gut* 1998. (43):548-552.

Woodage, T., King, SM., Wacholder, S., Hartage, P., Struewing, JP., McAdams, M., **Laken, SJ.**, Tucker, MA., Brody, LC. A Community-Based Study of the APC I1307K Allele in Ashkenazi Jews: Association with Increased Risk of Cancers Including Colorectal and Breast Cancer. *Nature Genetics* 1998. 20:62-65.

Laken, SJ., Petersen, GM., Gruber, SB., Oddoux, C., Ostrer, H., Giardiello, FM., Hamilton, SR., Hampel, H., Markowitz, A., Klimstra, D., Jhanwar, S., Winawer, S., Offit, K., Kinzler, KW., Vogelstein, B. An APC Mutation Associated with Familial Colorectal Cancer in Ashkenazi Jews. *Nature Genetics* 1997. 17:79-83.

Giardiello, FM., Petersen, GM., Piantadosi, S., Gruber, SB., Traboulsi, EI., Offerhaus, GJA., Muro, K., Krush, AJ., Booker, SV., Luce, MC., **Laken, SJ.**, Kinzler, KW., Vogelstein, B., Hamilton, SR. APC Gene Mutations and Extraintestinal Phenotype of Familial Adenomatous Polyposis. *Gut* 1997. 40:521-525.

Inaba, T., Inukai, T., Yoshihara, T., Seyschab, H., Ashmun, RA., Canman, CE., **Laken, SJ.** Kastan, MB., Look, AT. Reversal of Apoptosis by the Leukaemia-Associated E2A-HLF Chimaeric Transcription Factor. *Nature* 1996. 382(6591):541-544.

Durham-Pierre, D., King, RA., Naber, JM., **Laken, S.**, Brilliant, MH. Estimation of Carrier Frequency of a 2.7 KB Deletion Allele of the P Gene Associated with OCA2 in African-Americans. *Human Mutation* 1996. 7(4):370-373.

Meeting Abstracts:

Englert D, Wilson DJ, **Laken S.** Amplification of mRNA from formalin-Fixed Paraffin-Embedded (FFPE) Breast Cancer Tissues without 3' Bias and Multiplex Expression Analysis on Flow-Through Microarrays. San Antonio Breast Cancer Symposium. San Antonio, TX. December 9 -13, 2009.

F. Andrew Kozel, Wayne Huang, Bryon Adinoff, **Steven J. Laken**, Shawn M. McClintock, Mustafa M. Husain, Kimberly S. Neural Correlates of Successful Inhibition in Late Life Depression. American College of Neuropsychopharmacology. Hollywood, FL. December 6-10, 2009.

F. Andrew Kozel*, **Steven J. Laken**, Kevin A. Johnson, Bryant Boren, Kimberly Mapes, Paul S. Morgan, Ketan Patel, Kym Levine, Michael, P. Fernald, Mark S. George. Replication of fMRI Detection of Deception at Two Independent Sites Using 3.0 Tesla and 1.5 Tesla MR Scanners. American College of Neuropsychopharmacology. Boca Raton, FL. December 9-13, 2007.

Markus J.P. Kruesi, Kevin A. Johnson, **Steven J. Laken**, F. Andrew Kozel, Tal Herbsman, Psychiatry, Paul S. Morgan, Douglas K. Christie. Roper v. Simmons: An fMRI Perspective Study. American Academy of Child and Adolescent Psychiatry. Honolulu, Hawaii. October 27-November 1, 2009.

Bo Jin, Alvin Strasburger, **Steven J Laken**, F Andrew Kozel, Kevin A Johnson, Mark S George, Xinghua Lu. Feature selection for fMRI-based deception detection. Proceedings of the 2009 AMIA Summit on Translational Bioinformatics. San Francisco, CA. March 15-17, 2009.

F. Andrew Kozel, Kevin A. Johnson, Emily L. Grenesko, **Steven J. Laken**, Samet Kose, Xinghua Lu, Dean Pollina, Andrew Ryan, Mark S. George. Detection of Deception using fMRI after Committing a Mock Sabotage Crime. Human Brain Mapping. Chicago, IL. June 10-14, 2007.

Frank A. Kozel, Kevin A. Johnson, Qiwen Mu, Emily L. Grenesko, **Steven J. Laken**, Mark S. George. Developing Functional MRI Detection of Deception. San Juan, Puerto Rico. December 12-16, 2004.

Thiagalingam, S., **Laken, S.**, Willson, JKV., Markowitz, SD., Hamilton, SR., Kinzler, KW, Vogelstein, BV. The Mechanisms Underlying Losses of Heterozygosity is Specific to the Chromosome. *Cancer Genetics and Tumor Suppressor Genes.* Cold Spring Harbor. August 19-23, 1998.

Brensinger, JD., **Laken, SJ.**, Luce, MC., Powell, S., Vance, G., Ahnen, D., Petersen, GM., Hamilton, SR., Giardiello, MD. Variable Phenotype of Familial Adenomatous Polyposis in Pedigrees with 3' Mutation in the APC Gene. *Digestive Disease Week.* May 17-20, 1998.

Inaba T., Inukai T., Yoshihara T., Seyschab H., Ashmun RA., Canman CE., **Laken SJ.**, Kastan MB., Look AT. The Oncogenic E2A-HLF Fusion Protein Protects Leukemic B-Precursor Cells From Apoptosis. The American Society of Hematology. December 1-5, 1995.

Oetting, WS., Wiesner, G., **Laken, S.**, Lee, H., Sellers, TS., King, RA. Analysis of Short Tandem Repeat Polymorphisms Using Infrared Fluorescence with M13 Tailed Primers. American Society of Human Genetics. October 1994.

Invited Presentations:

Laken, S.J. The Truth About Lies: The Neuroscience, Ethics and Law of Lie Detection Technologies. May 24-25, 2012.

Laken, S.J. The Second Raymond and Beverly Sackler U.S.A.-U.K. Scientific Forum. March 2 -3, 2011. Irvine, CA.

Laken, S.J. Licensed Private Detectives of Massachusetts, October 15, 2010. Marlborough, MA.

Laken, S.J. Canadian Association of Police Polygraph, September 10, 2010. Ottawa, Ontario.

Laken, S.J. Licensed Private Detectives Association of Massachusetts, December 7, 2009. Dedham, MA.

Laken, S.J. New Hampshire Licensed Investigators Annual Meeting, November 14, 2009. Concord, NH.

Laken, S.J. Section for Magnetic Resonance Technologists, October 17, 2009. Boston, MA.

Laken, S.J. Psychology Class, August 20, 2009. Dartmouth Psychology. Hanover, MA.

Laken, S.J. Neuroethics Society First Annual Meeting, November 12-14, 2008. Washington, D.C.

Laken, S.J. Neuroscience, Law and Government, September 25-26, 2008. Akron Ohio Law School, Akron, OH.

Laken, S.J. Siemens Customer Education Symposium, July 28 – 31, 2008. Las Vegas, NV.

Laken, S.J. Association of American Law Schools, June 3-6, 2008. fMRI Lie Detection. Cleveland, OH.

Laken, S.J. The National Judicial College. Neuroscience Symposium. November 14 – 15, 2007. Reno, NV.

Laken, S.J. fMRI of Deception Detection. The Law and Ethics of Brain Scanning: The Next Big Thing Coming Soon to a Courtroom Near You? April 13, 2007. Sandra Day O'Connor Federal Courthouse.

Laken, S.J. The National Academies Committee on Science, Technology, and Law. March 22-23, 2007. Washington, D.C.

Laken, S.J. fMRI of Deception Detection. Reading Minds: Lie Detection, Neuroscience, Law, and Society. March 10, 2006. Stanford Law School.

Laken, S.J. Vogelstein, B., Kinzler, K.W. Genetic Intervention of Colorectal Cancer. Danish Cancer Society, August 17-20, 1997. Symposium of Colorectal Cancer.

Laken S.J., Papadopoulos, N., Vogelstein, B., Kinzler, K.W. Identification of Refractory Mutations in Familial Adenomatous Polyposis. Keystone Symposia, Jan. 27 - Feb. 2, 1997. Genetics of Human Cancer: Pathogenesis and Diagnosis.

Patents:

U.S. Patent Number 7,729,755. Questions and control paradigms for detecting deception by measuring brain activity.

U.S. Patent Number 7,565,193. Questions and control paradigms for detecting deception by measuring brain activity.

U.S. Patent Number 6,503,718. Methods for detecting mutations using primer extension for detecting disease.

U.S. Patent Number 6,498,012. Methods for detecting mutations using primer extension for detecting disease.

U.S. Patent Number 6,013,461. APC mutation associated with familial colorectal cancer in Ashkenazi Jews.

U.S. Patent Number 5,879,890. APC mutation associated with familial colorectal cancer in Ashkenazi Jews.

Expert Testimony:

Commonwealth v. Prasad
Attorney David Yannetti
Norfolk Superior Court, Dedham, MA
March 7, 2011

Commonwealth v. Jewell
Attorney Robert Butler
Springfield District Court, Springfield, MA
January 14, 2011

United States v. Semrau
Attorney J. Houston Gordon
U.S. District Court, Memphis, TN
May 12-13, 2010

Commonwealth v. Andrade
Attorney James Murphy
Bristol County Superior Court, New Bedford, MA
November 12, 2009

Commonwealth v. Matson
Attorney Roland Milliard
Ayer District Court, Ayer, MA
October 26, 2009

State v. Freiburger
Attorney John Blume
South Carolina Court of Appeals, Charleston, SC
November 21, 2008