



**AUGUST 2010**

**SCOTT P. LAYNE MD** is a physician-scientist who is known for cross-disciplinary work involving biology, virology, applied physics, and policy-related issues. He is Professor Emeritus of Epidemiology, and Environmental Health Sciences at the University of California Los Angeles School of Public Health and past Member of the California NanoSystems Institute. He is an author of over 45 publications, including three U.S. patents on methods to access and operate automated high-throughput laboratory systems.

Dr. Layne pioneered the development of the *High Speed, High Volume Laboratory Network for Infectious Diseases* along with Dr. Tony J. Beugelsdijk at the Los Alamos National Laboratory. The program, funded by congressionally directed Department of Defense investments and a grant from the California Office of Homeland Security, aims to enable near-real time laboratory testing and situational awareness for major infectious disease outbreaks, pandemics and bioattacks.

Dr. Layne served as the Principal Investigator of the *Center for Rapid Influenza Surveillance and Response (CRISAR)*, which was a NIAID Center of Excellence for Influenza Research and Surveillance. From 2007 to 2009, CRISAR undertook national and international surveillance on animal and human derived influenza strains, and actively contributed to NIAID's Pandemic Public Health Research Response Plan. Participating institutions included UCLA, University of California Davis, University of Alaska Fairbanks, Wildlife Conservation Society, and Los Alamos National Laboratory.

Dr. Layne is an editor of *Firepower in the Lab: Automation in the Fight Against Infectious Diseases and Bioterrorism* (Joseph Henry Press, 2001) and also of *Jane's Chem-Bio Handbook*, 2nd and 3rd editions. In 1988, he organized the workshop *A National Effort to Model AIDS Epidemiology* for the Office of Science and Technology Policy and oversaw the publication of a White House report that influenced HIV/AIDS research priorities in the United States. In 1999, he also organized the meeting *Automation in Threat Reduction and Infectious Disease Research: Needs and New Direction* under the auspices of the Institute of Medicine and National Academy of Engineering. From August 2008 to May 2010, he served as a Member of the National Biosurveillance Advisory Subcommittee as authorized by Homeland Security Presidential Directive/HSPD-21.

From 1994 to 2010, Dr. Layne taught graduate level courses at UCLA on infectious diseases and public health preparedness for biological emergencies. He maintains guest scientist status at LANL and serves as an instructor on bioterrorism preparedness for the U.S. Department of Homeland Security and has lectured throughout the country in this capacity. He also maintains a clinical practice in adult infectious diseases and internal medicine in Los Angeles, CA.

Dr. Layne earned a *Bachelor of Arts* in chemistry from DePauw University in 1976 and *Doctor of Medicine* from Case Western Reserve University in 1980. He earned board certifications in internal medicine (1997-2007) and infectious diseases (1998-2008), with a fellowship in adult infectious diseases. He served as a postdoctoral fellow and staff member at the Los Alamos National Laboratory (LANL) from 1982-1986 and as a physicist at the Lawrence Livermore National Laboratory from 1986-1992. While at the national laboratories, he focused on numerical simulations and laser spectroscopy investigations for bioenergetic solitons in proteins, and on numerical simulations and laboratory investigations of human immunodeficiency virus' (HIV's) physical-chemical properties. His ground-breaking work on humoral immunity remains relevant to developing of HIV vaccines and included key measures of viral infectious stability, infectious fraction and neutralization kinetics with immunoglobulins and soluble blockers.

## **Scott Peter Layne MD — Curriculum vitae**

### **BACKGROUND**

Born October 10, 1954 in Chicago, IL USA

Married with 2 children

### **Education**

09/72 - 06/76 Bachelor of Arts, Chemistry, DePauw University  
09/76 - 05/80 Medical Doctor, Case Western Reserve University  
11/80 - 11/81 Internship, Psychiatry, Loma Linda University  
06/86 - 09/87 Graduate Study, Applied Physics, Stanford University  
06/92 - 06/94 Residency, Internal Medicine, UCLA Department of Medicine  
07/94 - 06/96 Fellowship, (adult) Infectious Diseases, UCLA Department of Medicine

### **Employment and Positions / Past**

06/80 - 08/80 Intern, Medical Service  
University of California, San Francisco, CA  
11/80 - 11/81 Intern, Psychiatry Service  
Loma Linda University Medical Center, Loma Linda, CA  
05/82 - 08/82 Physician, Medical Service  
Veterans Administration Hospital, Loma Linda, CA  
09/82 - 12/85 Postdoctoral Fellow, Center for Nonlinear Studies  
Los Alamos National Laboratory, Los Alamos, NM  
01/86 - 05/86 Staff Member, Chemistry Division  
Los Alamos National Laboratory, Los Alamos, NM  
06/86 - 06/87 Collaborator, Center For Nonlinear Studies  
Los Alamos National Laboratory, Los Alamos, NM  
06/86 - 09/87 Research Assistant, Applied Physics  
Stanford University, Stanford, CA  
06/86 - 02/96 Physicist, V-Division  
Lawrence Livermore National Laboratory, Livermore, CA  
06/87 - 08/88 Collaborator, Theoretical Division  
Los Alamos National Laboratory, Los Alamos, NM  
08/88 - 04/92 Staff Member, Theoretical Division  
Los Alamos National Laboratory, Los Alamos, NM  
06/92 - 06/94 Resident, Internal Medicine  
University of California, Los Angeles, CA  
07/94 - 06/95 Acting Associate Professor of Epidemiology, School of Public Health  
University of California, Los Angeles, CA  
07/94 - 06/96 Clinical Fellow, Infectious Diseases  
University of California, Los Angeles, CA  
07/95 - 06/07 Associate Professor (Tenured) of Epidemiology, School of Public Health  
University of California, Los Angeles, CA  
04/07 - 06/10 Member, California NanoSciences Institute  
University of California, Los Angeles, CA  
07/07 - 06/10 Professor of Epidemiology, School of Public Health  
University of California, Los Angeles, CA  
07/08 - 06/10 Professor of Environmental Health Sciences, School of Public Health  
University of California, Los Angeles, CA  
08/08 - 05/10 Special Govt. Employee, National Biosurveillance Advisory Subcommittee  
HHS/Centers for Disease Control and Prevention, Atlanta, GA

### **Employment and Positions / Present**

02/96 - now Guest Scientist, Chemistry Division  
Los Alamos National Laboratory, Los Alamos, NM  
06/01 - now Instructor, Academy of Counter-Terrorist Education

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07/02 - now U.S. Department of Homeland Security / Louisiana State University, LA  
Private Practice, Adult Infectious Diseases and Internal Medicine  
Los Angeles, CA  
06/10 - now Professor Emeritus of Epidemiology  
University of California, Los Angeles, CA

### **Medical Certifications**

1981 - now Diplomat, National Board of Medical Examiners  
1981 - now Medical License, California  
1983 - now Medical License, New Mexico  
1997 - 2007 Diplomat, Internal Medicine, American Board of Internal Medicine  
1998 - 2008 Diplomat, (Adult) Infectious Diseases, American Board of Internal Medicine

### **Active Hospital Privileges (Infectious Diseases / Internal Medicine)**

2005 Santa Monica UCLA Medical Center  
2005 Saint John's Health Center  
2005 Daniel Freeman Marina Hospital  
2005 Kindred Hospital Los Angeles

### **Honors**

1976 Phi Beta Kappa, DePauw University  
1976 Rhodes Scholarship Candidate, DePauw University  
1996 Delta Omega

## **RESEARCH**

### **Peer Reviewed Research and Policy Articles**

1. Peter S. Lomdahl, **Scott P. Layne**, Irving J. Bigio. Solitons in Biology. Los Alamos Science 10, 2 - 22 (1984).
2. **Scott P. Layne**. A Possible Mechanism for General Anesthesia. Los Alamos Science 10, 23 - 26 (1984).
3. Harvey J. Wasserman, Robert R. Ryan, **Scott P. Layne**. Structure of Acetanilide at 113 K. Acta Cryst. C41, 783 - 785 (1985).
4. **Scott P. Layne**, Irving J. Bigio, Alwyn C. Scott, Peter S. Lomdahl. Transient Fluorescence in Synchronously Dividing Escherichia coli. Proc. Natl. Acad. Sci. USA 82, 7599 - 7603 (1985).
5. **Scott P. Layne**, I. J. Bigio. Raman Spectroscopy of Bacillus Megaterium Using an Optical Multi-Channel Analyzer. Physica Scripta 33, 91 - 96 (1986).
6. Gottfried Mayer-Kress, **Scott P. Layne**. Dimensionality of the Human Electroencephalogram. Ann. N. Y. Acad. Sci. 504, 62 - 87 (1987).
7. **Scott P. Layne**, Thomas G. Marr, Stirling A. Colgate, James M. Hyman, E. Ann Stanley. The Need For National HIV Databases. Nature 333, 511 - 512 (1988).
8. Stirling A. Colgate, E. Ann Stanley, James M. Hyman, **Scott P. Layne**, Clifford R. Qualls. Risk Behavior-Based Model of the Cubic Growth of Acquired Immunodeficiency Syndrome in the United States. Proc. Natl. Acad. Sci. USA 86, 4793 - 4797 (1989).
9. **Scott P. Layne**, John L. Spouge, Micah Dembo. Quantifying the Infectivity of Human Immunodeficiency Virus. Proc. Natl. Acad. Sci. USA 86, 4644 - 4648 (1989).

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10. Stirling A. Colgate, E. Ann Stanley, James M. Hyman, Clifford R. Qualls, **Scott P. Layne**. AIDS and a risk-based model. *Los Alamos Science* 18, 2 - 23 (1989).
11. **Scott P. Layne**, Micah Dembo, John L. Spouge. The Kinetics of HIV Infectivity. *Los Alamos Science* 18, 91 - 109 (1989).
12. John L. Spouge, **Scott P. Layne**, Micah Dembo. Analytic Results for Quantifying HIV Infectivity. *Bull. Math. Biol.* 51, 715 - 730 (1989).
13. **Scott P. Layne**, John L. Spouge, Micah Dembo. Measuring HIV Infectivity. *Lecture Notes in Biomathematics* 83, 80 - 110 (1989).
14. **Scott P. Layne**, Michael J. Merges, Micah Dembo, John L. Spouge, Peter L. Nara. HIV Requires Multiple gp120 Molecules for CD4-Mediated Infection. *Nature* 346, 277 - 279 (1990).
15. **Scott P. Layne**, Michael J. Merges, John L. Spouge, Micah Dembo, Peter L. Nara. Blocking of HIV Infection Depends on Cell Density and Viral Stock Age. *J. Virology* 65, 3293 - 3300 (1991).
16. **Scott P. Layne**, Micah Dembo. The Auto-Regulation Model: A Unified Concept of How HIV Regulates its Infectivity, Pathogenesis and Persistence. *International Reviews of Immunology* 8, 1 - 32 (1992).
17. **Scott P. Layne**, Michael J. Merges, Micah Dembo, John L. Spouge, Shawn R. Conley, John P. Moore, Jawahar L. Raina, Herbert Renz, Hans R. Gelderblom, Peter L. Nara. Factors Underlying Spontaneous Inactivation and Susceptibility to Neutralization of Human Immunodeficiency Virus. *Virology* 189, 695 - 714 (1992).
18. **Scott P. Layne**, Tony J. Beugelsdijk. Laboratory Firepower for Infectious Disease Research. *Nature Biotechnology* 16, 825 - 829 (1998).
19. **Scott P. Layne**, Tony J. Beugelsdijk. Mass Customized Testing and Manufacturing via the Internet. *Robotics and Computer-Integrated Manufacturing* 14, 377 - 387 (1998).
20. John L. Spouge, **Scott P. Layne**. A Practical Method for Simultaneously Determining the Effective Burst Sizes and Cycle Times of Viruses. *Proc. Natl. Acad. Sci. USA* 96, 7017 - 7022 (1999).
21. Jeffery K. Taubenberger, **Scott P. Layne**. Diagnosis of Influenza Virus: Coming to Grips with the Molecular Era. *Journal Molecular Diseases* 6, 291 - 305 (2001).
22. **Scott P. Layne**, Tony J. Beugelsdijk. High-Throughput Laboratories for Homeland and National Security. *Biosecurity and Bioterrorism* 1, 123 - 130 (2003).
23. Tony J. Beugelsdijk, **Scott P. Layne**. The Role of High-Throughput Laboratories in Homeland Security. *Journal Association Laboratory Automation* 8(5), 11 - 18 (2003).
24. **Scott P. Layne**. Human Influenza Surveillance: the Demand to Expand. *Emerging Infectious Diseases* 12, 562 - 569 (2006).
25. Emily Kajita, Justin Okano, Erin N. Bodine, **Scott P. Layne**, Sally Blower. Modeling an outbreak of an emerging pathogen. *Nature Reviews Microbiology* 5, 1 - 10 (2007).

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26. **Scott P. Layne**, Arnold S. Monto, Jeffrey K. Taubenberber. Pandemic Influenza: An Inconvenient Mutation. *Science* 323, 1560 – 1561 (2009).

### **Patents**

1. **Scott P. Layne**, Tony J. Beugelsdijk. Method and Apparatus for Globally-Accessible Automated Testing. U.S. Patent Number 5,841,975 (1998).
2. **Scott P. Layne**, Tony J. Beugelsdijk. Apparatus for Testing for Infection by a Retrovirus. U.S. Patent Number 5,925,514 (1999).
3. **Scott P. Layne**, Tony J. Beugelsdijk. Apparatus for Automated Testing of Biological Specimens. U.S. Patent Number 5,968,731 (1999).

### **Book Chapters**

1. **Scott P. Layne**, Alwyn C. Scott. A Hypothesis of Barbiturate Action Mediated Via Membrane and Cytoskeletal Proteins. in *The Neurobiology of Pain* (editors A. V. Holden, W. Winlow). Manchester University Press, 309 - 335 (1984).
2. **Scott P. Layne**. The Modification of Davydov Solitons By The Extrinsic H-N-C=O Group. in *Nonlinear Electrodynamics in Biological Systems* (W. R. Adey, A. F. Lawrence, editors). Plenum Press, 531 - 548 (1984).
3. James A. Krumhansl, Gary M. Wysin, Denise M. Alexander, Angel Garcia, Peter S. Lomdahl, **Scott P. Layne**. Further Theoretical Studies of (Nonlinear) Conformational Motions in Double-Helix DNA. in *Structure and Motion: Membranes, Nucleic Acids and Proteins* (E. Clementi, G. Corongiu, M. H. Sarma, R. H. Sarma, editors). Adenine Press, 407-416 (1985).
4. Irving J. Bigio, Clifford T. Johnston, **Scott P. Layne**. Experiments for the Detection of Solitons in Biopolymers. in *Dynamical Problems in Soliton Systems* (editor S. Takeno). Springer-Verlag Press, 236-241 (1985).
5. **Scott P. Layne**, Gottfried Mayer-Kress, Joachim Holzfuss. Problems with the Dimensional Analysis of Electroencephalogram Data. in *Dimensions and Entropies in Chaotic Systems* (G. Mayer-Kress, editor). Springer-Verlag Press, 246 - 256 (1986).
6. **Scott P. Layne**. Raman Activity in Synchronously Dividing Bacteria? in *Computer Analysis for Life Science* (A. R. Bishop, C. Kawabata, editors). Ohmsha Press, 279 - 287 (1986).
7. **Scott P. Layne**, Tony J. Beugelsdijk. Laboratory Firepower for AIDS Research. in *Firepower in the Lab: Automation in the Fight Against Infectious Diseases and Bioterrorism*. Washington, DC: Joseph Henry Press, 61 - 91 (2001).
8. **Scott P. Layne**, Tony J. Beugelsdijk, Kumar Patel. Tackling Grand Challenges with Powerful Technologies. in *Firepower in the Lab: Automation in the Fight Against Infectious Diseases and Bioterrorism*. Washington, DC: Joseph Henry Press, 5 - 28 (2001).
9. **Scott P. Layne**. Virtually Assured Detection and Response: Utilizing Science, Technology, and Policy Against Bioterrorism. in *Biological Threats and Terrorism: Assessing the Science and Response Capabilities*, Board on Global Health, Institute of Medicine. Washington, DC: National Academy Press, 211 - 217 (2002).
10. **Scott P. Layne**. The Technical Policy Connection. in *The Office of Science and Technology Policy Blue Ribbon Panel on the Threat of Biological Terrorism Directed Against*

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Livestock (T. K. Kelly, P. Chalk, J. Bonomo, J. Parachini, B. A. Jackson, G. Cecchine, editors). Santa Monica, CA: RAND Corporation, 153 - 164 (2004).

### **Books, Reports**

1. **Scott P. Layne** (editor). A National Effort to Model AIDS Epidemiology: Report of a Workshop Held at Leesburg, Virginia, July 25 - 29, 1988. Office of Science and Technology Policy, Executive Office of the President, Washington, D.C. U.S. Government Printing Office (1988).
2. **Scott P. Layne**, Tony J. Beugelsdijk, C. Kumar N. Patel (editors). Firepower in the Lab: Automation in the Fight Against Infectious Diseases and Bioterrorism. Washington, DC: Joseph Henry Press (2001). <http://www.nap.edu/catalog/9749.html>
3. Frederick R. Sidell, William C. Patrick, Thomas R. Dashiell, Ken Alibek, **Scott Layne** (editors). Jane's Chem-Bio Handbook, Second edition. Alexandria, VA: Jane's Information Group (2002).
4. Ken Alibek, Thomas R. Dashiell, Adrian Dwyer, **Scott P. Layne**, William C Patrick III, John Rinard, Donald R Ponikvar and Frederick R Sidell. Jane's Chem-Bio Handbook, Third edition. Alexandria, VA: Jane's Information Group (2005).

### **Editorials**

1. James M. Hyman, E. Ann Stanley, Stirling A. Colgate, **Scott P. Layne**. Building Large-Scale Models to Understand the AIDS Epidemic. Cray Channels 10 (3), 10 - 12 (1988).
2. Victor R. DeSantis, **Scott P. Layne**, Tony Beugelsdijk. From Conception to Construction: Establishing an Automated Laboratory from the Ground Up. Advance Laboratory 6 (7), 34 - 38 (1997).
3. Kumar Patel, Tony Beugelsdijk, **Scott Layne**. Automation in Threat Reduction and Infectious Disease Research: Needs and New Directions. Journal of the Association for Laboratory Automation 4, 51 - 54 (1999).
4. **Scott P. Layne**, Tony J. Beugelsdijk, C. Kumar N. Patel, Jeffery K. Taubenberger, Nancy J. Cox, Ian D. Gust, Alan J. Hay, Masato Tashiro, Daniel Lavanchy. A Global Lab Against Influenza. Science 293, 1729 (2001).
5. **Scott P. Layne**, Claire M. Fraser. Scientific Speed is the Key in Fighting Bioterror. Los Angeles Times, May 1, page B13 (2002).
6. **Scott P. Layne**, Michael H. Sommer. A Virus-Fed Doomsday. Los Angeles Times, October 10, page B21 (2002).
7. **Scott P. Layne**. Put High-Tech Labs Into the Fight Against SARS and Bioterrorism. Los Angeles Times, April 4, page B17 (2003).
8. **Scott P. Layne**. Swine Flu: Remain Vigilant. Huffington Post. Posted May 7, 2009; 10:22 AM (EST).

### **Abstracts, Invited Presentations**

1. **Scott P. Layne**. A Mathematical Model that Describes Protection by Soluble CD4 Protein In Vivo. 4th International AIDS Conference Abstract No. 3522, 147 (1988).

## **Scott Peter Layne MD — Curriculum vitae**

2. **Scott P. Layne**, Thomas. G. Marr, Stirling A. Colgate, James M. Hyman, E. Ann Stanley. The Design of an HIV Database that Facilitates Data Sharing. 4th International AIDS Conference Abstract No. 4668, 228 (1988).
3. E. Ann Stanley, Stirling A. Colgate, James M. Hyman, **Scott P. Layne**. Partner Choice in Mathematical Models for the Transmission of HIV. 4th International AIDS Conference Abstract No. 4696, 235 (1988).
4. Stirling A. Colgate, James M. Hyman, E. Ann Stanley, **Scott P. Layne**, Clifford. R. Qualls. A Risk-based Model of the Early Growth of AIDS in the United States. 4th International AIDS Conference Abstract No. 4697, 235 (1988).
5. **Scott P. Layne**, John L. Spouge, Micah Dembo. Quantifying HIV Infectivity. 5th International AIDS Conference Abstract No. Th.C.P.100, 633 (1989).
6. Stirling A. Colgate, E. A. Stanley, James M. Hyman, **Scott P. Layne**, Clifford R. Qualls. A Risk Behavior Based Model of the Cubic Growth of AIDS in the United States. 5th International AIDS Conference Abstract No. T.A.O.39, 61 (1989).
7. **Scott P. Layne**, Michael J. Merges, Micah Dembo, John L. Spouge, Peter L. Nara. gp120 Cooperativity: A New Finding that Pertains to Vaccine Development and Receptor / Anti-Receptor Therapies. 6th International AIDS Conference Abstract No. F.A.317, 155 (1990).
8. **Scott P. Layne**, Michael J. Merges, Micah Dembo, John L. Spouge, Hans R. Gelderblom, Peter L. Nara. Determining Basic Molecular Requirements for Blocking Therapies and HIV Vaccines in vitro. Laboratory of Tumor Cell Biology Annual Meeting. National Institutes of Health. August 11 - 17 (1990).
9. **Scott P. Layne**, Michael J. Merges, Micah Dembo, John L. Spouge, Peter L. Nara. Determining Basic Molecular Requirements for Blocking Therapies and HIV Vaccines in vitro. Modern Approaches to New Vaccines Including Prevention of AIDS. Cold Spring Harbor Laboratory. September 12 - 16 (1990).
10. **Scott P. Layne**, Michael J. Merges, Micah Dembo, John L. Spouge, Peter L. Nara. Envelope Shedding and High Cell Density: Barriers to Vaccine and Immunotherapy Development. 7th International AIDS Conference Abstract No. M.A.1270 (1991).
11. **Scott P. Layne**, Michael J. Merges, Micah Dembo, John L. Spouge, Peter L. Nara. Relationships Between Envelope Shedding, Cell Density, and Humoral Blocking Activity. Laboratory of Tumor Cell Biology Annual Meeting. National Institutes of Health. September 1-8 (1991).
12. **Scott P. Layne**, Michael J. Merges, Micah Dembo, John L. Spouge, Peter L. Nara. High physiologic cell CD4+ cell densities overcome the neutralizing activity of antibodies: A mechanism of HIV persistence. Modern Approaches to New Vaccines Including Prevention of AIDS. Cold Spring Harbor Laboratory. September 19 - 23 (1991).
13. **Scott P. Layne**, Micah Dembo, John L. Spouge, Hans R. Gelderblom, Herbert Renz, Michael J. Merges, Peter L. Nara. Factors Regulating the Spontaneous Inactivation of HIV and its Susceptibility to Neutralization. Laboratory of Tumor Cell Biology Annual Meeting. National Institutes of Health. August 9 - 16 (1992).
14. Peter L. Nara, Michael J. Merges, John L. Spouge, Shawn R. Conley, **Scott P. Layne**. Determinants of both Viral and Cellular Origin in Addition to the Biophysical Properties of

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Immunoglobulins Influence the Neutralization of HIV-1. Modern Approaches to New Vaccines Including Prevention of AIDS. Cold Spring Harbor Laboratory. September 16 - 20 (1992).

15. **Scott P. Layne**. Evidence for the Extracellular Regulation of HIV Infection. First Annual UCLA AIDS Institute Symposium: Basic Sciences. UCLA AIDS Institute. October 27 (1992).

16. **Scott P. Layne**, Michael J. Merges, John L. Spouge, Hans R. Gelderblom, Peter L. Nara. Extensive and Fundamental Investigations of How Humoral Immunity Blocks HIV Infection. 9th International AIDS Conference Abstract No. 996 (1993).

17. John L. Spouge, Peter L. Nara, Michael J. Merges, **Scott P. Layne**. Viral Multiplicity of Adsorption: A Quantitative Analogue of Target-Cell Multiplicity of Infection. Laboratory of Tumor Cell Biology Annual Meeting. National Institutes of Health. August 22 - 28 (1993).

18. Michael J. Merges, **Scott P. Layne**, John L. Spouge, Peter L. Nara. HIV-1 V3-Specific Neutralization: Valency, Reversibility, and the State of the Virion Determine In Vitro Efficacy. Laboratory of Tumor Cell Biology Annual Meeting. National Institutes of Health. August 22 - 28 (1993).

19. Michael J. Merges, **Scott P. Layne**, John L. Spouge, Peter L. Nara. Valency, Reversibility, and the State of the Virion Determine In Vitro HIV 1 V3-Specific Neutralization Efficacy. First National Conference on Human Retroviruses and Related Infections Poster No. 71. American Society for Microbiology. December 12 - 16 (1993).

20. John L. Spouge, Peter L. Nara, Michael J. Merges, **Scott P. Layne**. Viral Multiplicity of Attachment and its Implications for HIV Therapies. First National Conference on Human Retroviruses and Related Infections Poster No. 604. American Society for Microbiology. December 12 - 16 (1993).

21. **Scott P. Layne**, Michael J. Merges, John L. Spouge, Peter L. Nara. Neutralization of HIV-1 by Immunoglobulin Depends on Valency and Reversibility. Annual AIDS Institute Symposium. UCLA AIDS Institute. November 11 (1994).

22. **Scott P. Layne**, Tony J. Beugelsdijk. Automating HIV Research. University of California Directed Research and Development Activities for Fiscal Year 1996. LA-UR-97-2770 (1997).

23. **Scott P. Layne**, Tony J. Beugelsdijk, Victor DeSantis. AIDS Research, Laboratory Automation and the Internet. Fifth Annual Bay Area Conference on Life Science Facilities. April 27 - 28 (1997).

24. **Scott P. Layne**, Tony J. Beugelsdijk, Victor DeSantis. The UCLA - Los Alamos National Laboratory TRONLAB Program. The NASDAQ International Technology Summit. June 11 - 12 (1997).

25. **Scott P. Layne**, Tony J. Beugelsdijk. Automating HIV Research. University of California Directed Research and Development Activities for Fiscal Year 1997. LA-UR-98-3702 (1998).

26. **Scott P. Layne**, Tony J. Beugelsdijk. Automating HIV Research. University of California Directed Research and Development Activities for Fiscal Year 1998. LA-UR-99-3456 (1999).

27. **Scott P. Layne**. An Overview of Emergency Response Issues. Bioterrorism: Homeland Defense Symposium. February 8 - 10 (2000).



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28. **Scott P. Layne**. High-throughput Automated Lab for Countering Bioterrorism. Bioterrorism: Homeland Defense Symposium. February 8 - 10 (2000).
29. **Scott P. Layne**. Invited Lecture: Global Surveillance Laboratory Against Bioterrorism. Gordon Research Conference on Illicit Substance Detection. June 24 - 28 (2001).
30. **Scott P. Layne**. Invited Lecture: Global monitoring of flu. AAAS Annual Meeting. February 14 - 19 (2002).
31. **Scott P. Layne**. Invited Presentation: High-Speed Laboratory for Biological Security. UC System wide Bioterrorism Meeting. June 11 (2002).
32. **Scott P. Layne**. Invited Lecture: Technological Advances in the Rapid Detection of Bioweapons and Emerging Infectious Agents. 7th Duma/NFID Annual Press Conference and Symposium of Infectious Diseases. July 18 (2002).
33. **Scott P. Layne**. Invited Lecture: Health and Security Challenges of Bioterrorism. University of the Pacific, McGeorge School of Law Workshop: Creating a Model Syllabus for Bioterrorism and Public Health Law. March 20 - 21 (2003).
34. **Scott P. Layne**. Invited Lecture: A New Vision of High-Throughput Labs for Homeland and National Security. Gordon Research Conference on Chemical and Biological Terrorism Defense. March 23 - 28 (2003).
35. **Scott P. Layne**. Invited Panelist: Industrial and Government Perspectives on Influenza Control. Texas Heart Institute: 1st Symposium on Influenza and Cardiovascular Disease. April 26 (2003).
36. **Scott P. Layne**, Eve Slater. Real-Time Global Surveillance and Analysis of Infectious Diseases with High-Throughput Laboratories Made Available via the Internet. Call for Ideas: Grand Challenges in Global Health. June 15 (2003).
37. **Scott P. Layne**, Tony J. Beugelsdijk. High-Throughput Lab Network. August 18 (2003).
38. **Scott P. Layne**. High-Throughput Laboratories for Biological Security. June 12 - 16 (2004).
39. **Scott P. Layne**. A World View of Significant Infectious Diseases. November 6 (2004).
40. **Scott P. Layne**. High-Throughput Laboratories for Biological Security: The Case for Influenza. February 3 (2005).
41. **Scott P. Layne**. High-Throughput Laboratory Network for Influenza and Emerging Diseases. Emergence of New Epidemic Viruses through Host Switching. September 6 - 8 (2005).
42. **Scott P. Layne**, Victor DeSantis. High-Throughput Laboratory Network. Summit on Facilities for Emerging Sciences. April 10 - 11 (2006).
43. Bob Hancock, John Hepburn, **Scott P. Layne**, Alan Barbour, Rafick Sekaly. White Paper on Emerging Infectious Diseases. Canada-California Strategic Innovation Partnership. June 10 - 12 (2006).
44. **Scott P. Layne**. UCLA High Speed, High Volume Laboratory Network for Infectious Diseases. Los Angeles, CA. June 29 (2006).

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45. **Scott P. Layne**, Tony J. Beugelsdijk. UCLA/LANL High Speed, High Volume Laboratory Network for Infectious Disease. Los Alamos, NM. November 2 (2006).
46. **Scott P. Layne**. High Speed, High Volume Laboratory Network for Infectious Diseases. CNSI Membership Presentation. April 11 (2007).
47. **Scott P. Layne**. Center for Rapid Influenza Surveillance and Research (CRISAR). NIAID Site Visit. Los Angeles, CA. April 19 (2007).
48. **Scott P. Layne**. Center for Rapid Influenza Surveillance and Research (CRISAR). First Annual NIAID/CEIRS Meeting. Bethesda, MD. May 7 (2007).
49. **Scott P. Layne**. UCLA High Speed, High Volume Laboratory Network for Infectious Diseases. American Society for Microbiology. Los Angeles Spring Symposium. April 21 (2007).
50. **Scott P. Layne**, Tony J. Beugelsdijk. Technical Overview and Discussion on High-throughput systems; Laboratory methods and procedures; Containment space and configuration; Research and pandemic surge capacity modes; Information sharing and management. Scientific Advisory Board. Los Angeles, CA. April 25 (2007).
51. **Scott P. Layne**. High-Throughput Global Lab Against Influenza. California Association of Public Health Laboratory Directors. Los Angeles, CA. October 18 (2007).
52. **Scott P. Layne**. UCLA/LANL High Speed, High Volume Laboratory Network for Infectious Diseases. Biothreat Nonproliferation Conference. Santa Fe, NM. December 4 - 6 (2007).
53. **Scott P. Layne**. High Speed, High Volume Laboratory Network for Infectious Diseases. Canada-California Infectious Diseases Collaboration Workshop. Los Angeles, CA. March 2 (2008).
54. **Scott P. Layne**. New High-Throughput Laboratory for Molecular Surveillance of Influenza. Wadsworth Laboratory Presentation. Albany, NY. April 30 (2007).
55. **Scott P. Layne**. New High-Throughput Laboratory for Molecular Surveillance of Influenza. National Foundation for Infectious Diseases: 10th Annual Conference on Vaccine Research. Baltimore, MD. May 2 (2007).
56. **Scott P. Layne**. Melding Local, National and International Public Health Concerns. Los Angeles TEW/RAND Conference. Santa Monica, CA. May 9 (2008).
57. **Scott P. Layne**. Identifying, Evaluating and Forecasting Infectious Diseases Threats. Institute for Advanced Studies 2008. Albuquerque, NM. May 22 (2008).
58. **Scott P. Layne**. Near Real-Time Surveillance of Infectious Diseases. Google/SciFoo 2008. Mountain View, CA. August 8 (2008).
59. **Scott P. Layne**. Center for Rapid Influenza Surveillance and Research. Indo-US Vaccine Action Program. Hyderabad, India. October 16 (2008).
60. **Scott P. Layne**. Near Real-Time Surveillance of Infectious Diseases Globally. UCLA Global Health Workshop. Los Angeles, CA. October 23 (2008).

## Scott Peter Layne MD — *Curriculum vitae*

61. **Scott P. Layne**, Michele Bergeron, Marc Madou. Speed in Diagnostics for Better Global Health and to Contain Emerging Threats in Infectious Diseases. Canada-California Infectious Diseases Collaboration. University Laval. Quebec, Canada. October 27 (2008).
62. **Scott P. Layne**, Tony J. Beugelsdijk. Connecting Surveillance with the High-Throughput Laboratory. Scientific Advisory Board. Los Angeles, CA. December 11 (2008).
63. **Scott P. Layne**, Tony Beugelsdijk. High-Throughput Laboratory Network Program. Centers for Disease Control and Prevention. Atlanta, GA. January 20-21 (2009).
64. Alex Roth, Torsten Staab, **Scott P. Layne**. Processing of Mass Surveillance and Sample Information at a High-Throughput Laboratory. LabAutomation 2009. Palm Springs, CA January 27 (2009).
65. **Scott P. Layne**, Tony Beugelsdijk. Overview of Genotyping System. HTLN Sequencing Pilot Summit for CDC/UCLA/LANL. Los Alamos, NM. March 11 (2009).
66. **Scott P. Layne**. Connecting Surveillance with the High-Throughput Laboratory Network. CNSI Membership Luncheon. Los Angeles, CA. January 29 (2009).
67. **Scott P. Layne**. How UCLA's New Global BioLab Will Dramatically Improve Response Capabilities During a Pandemic. H1N1 Virus: What UCLA Experts Have to Say. Los Angeles, CA. May 13 (2009).

### White Papers

1. **Scott P. Layne**. Identifying, Evaluating and Forecasting Infectious Diseases Threats. December 18, 2006.
2. **Scott P. Layne**, Tony J. Beugelsdijk. High Speed, High Volume Laboratory Network for Infectious Diseases and Center for Rapid Influenza Surveillance and Research. September 22, 2008.

### TEACHING AT UCLA

Year	Title, Course No.	Quarter	Hours
1994 - 1995	Introduction to Epidemiology, 200 (core)	Fall	4
	Emerging Infectious Diseases, 221	Winter	2
	Infectious Diseases Seminar, 290	Winter	2
1995 - 1996	Introduction to Epidemiology, 200 (core)	Fall	4
	Emerging Infectious Diseases, 221	Winter	4
	Infectious Diseases Seminar, 290	Winter	2
1996 - 1997	Introduction to Epidemiology, 200 (core)	Fall	4
	Emerging Infectious Diseases, 221	Winter	4
	Infectious Diseases Seminar, 290	Spring	2
1997 - 1998	Introduction to Epidemiology, 200 (core)	Fall	4
	Emerging Infectious Diseases, 221	Winter	4
	Infectious Diseases Seminar, 290	Spring	2
1998 - 1999	Introduction to Epidemiology, 200 (core)	Fall	4
	Emerging Infectious Diseases, 221	Winter	4
	Infectious Diseases Seminar, 290	Spring	2

## Scott Peter Layne MD — *Curriculum vitae*

1999 - 2000	Introduction to Epidemiology, 200 (core)	Fall	4
	Emerging Infectious Diseases, 221	Winter	4
	Responses to Bioterrorism, 226	Spring	2
2000 - 2001	Infectious Disease Epidemiology, 220 (core)	Fall	4
	Sabbatical	Winter	—
	Responses to Bioterrorism, 226	Spring	2
2001 - 2002	Infectious Disease Epidemiology, 220 (core)	Fall	4
	Terrorism and Mass Destruction, 250	Winter	2
	Responses to Bioterrorism, 226	Spring	2
2002 - 2003	Infectious Disease Epidemiology, 220 (core)	Fall	4
	Epi, Medical, and Math Aspects of Disease, 280	Winter	4
	Responses to Bioterrorism, 226	Spring	4
2003 - 2004	Infectious Disease Epidemiology, 220 (core)	Fall	4
	Epi, Medical, and Math Aspects of Disease, 280	Winter	4
	Responses to Bioterrorism, 226	Spring	4
2004 - 2005	Infectious Disease Epidemiology, 220 (core)	Fall	4
	Epi, Medical, and Math Aspects of Disease, 280	Winter	4
	Responses to Bioterrorism, 226	Spring	4
	Graduate Seminar, 290	Spring	2
2005 - 2006	Infectious Disease Epidemiology, 220 (core)	Fall	4
	Sabbatical	Winter	—
	Responses to Bioterrorism, 226	Spring	4
2006 - 2007	Infectious Disease Epidemiology, 220 (core)	Fall	4
	Sabbatical	Winter	—
	Responses to Bioterrorism, 226	Spring	4
2007 - 2008	Infectious Disease Epidemiology, 220 (core)	Fall	4
	Buy Out	Winter	—
	Measures for Bio-Emergencies, 226 (EBB M226)	Spring	4
2008 - 2009	Infectious Disease Epidemiology, 220 (core)	Fall	4
	Buy Out	Winter	—
	Measures for Bio-Emergencies, 226 (EBB M226)	Spring	4
2009 - 2010	Infectious Disease Epidemiology, 220 (core)	Fall	4
	Buy Out	Winter	—
	Measures for Bio-Emergencies, 226 (EBB M226)	Spring	4

## SERVICE

### Meetings Organized

1988 **A National Effort to Model AIDS Epidemiology.** July 25 - 29 in Leesburg, VA.  
Sponsors: Executive Office of the President / Office of Science and Technology Policy, Health and Human Services, National Science Foundation.

## **Scott Peter Layne MD — *Curriculum vitae***

1999 **Automation in Threat Reduction and Infectious Disease Research: Needs and New Directions.** April 29 - 30 1999 in Washington, DC. Sponsors: Association for Laboratory Automation, Centers for Disease Control and Prevention, Department of Energy, Department of Health and Human Services, Institute of Medicine, Los Alamos National Laboratory, National Academy of Engineering, University of California Los Angeles.

2000 **Bioterrorism: Homeland Defense Symposium.** February 8 - 10 in Santa Monica, CA. Sponsors: American Society for Industrial Security, Batelle Memorial Institute, Lawrence Livermore National Laboratory, Los Alamos National Laboratory, Los Angeles Sheriff's Department, Pepperdine University, RAND, and Sandia National Laboratory.

### **Testimony, Policy Formulation**

2001 National Academy of Sciences. Committee on Biological Threats to Agricultural Plants and Animals. November 15 in Washington, DC.

2001 Institute of Medicine. Biological Threats and Terrorism: How Prepared are We? Assessing the Science and Response Capabilities. November 27 - 29 in Washington, DC.

2003 Office of Science and Technology Policy in the Executive Office of the President. The Technical Policy Connection. BIO-AG Blue Ribbon Panel. December 8 - 9 in Washington, DC.

2005 Chair of the Assembly Budget Committee on Health and Human Services California Assembly. California's Preparedness for an Outbreak of Avian Influenza. November 4 in Los Angeles, CA.

2009 NIH National Library of Medicine. Pandemic Information Sharing and Community Resilience Workshop. Lead on surveillance and situational awareness panel. June 26 in Bethesda, MD.

### **Committees, Peer Reviews, Special Appointments**

1991 National Institute for Allergy and Infectious Diseases. Advisory Panel for Primate Challenge Viral Stocks. October 15 in Marco Island, FL.

1991 National Cancer Institute. Advisory Panel for AIDS Antiviral Drug Discovery. November 14 - 15 in Bethesda, MD.

1994 American Institute for Biological Science. Peer Review Panel for U.S. Army Medical Research and Development Command. May 19 in Washington, DC.

2001 UCLA Medical Center. Bioterrorism Task Force. Established in October and meets regularly.

2001 County of Los Angeles. Los Angeles County Task Force on Health Services Preparedness for Bioterrorism. Established by the Board of Supervisors in October and meets regularly.

2003 National Institute for Allergy and Infectious Diseases. Peer Review Panel for Food and Waterborne Diseases Integrated Research Network. February 26 - 27 in Washington, DC.

2003 National Institute for Allergy and Infectious Diseases. Peer Review Panel for Regional Centers of Excellence for Biodefense and Emerging Infectious Disease Research. May 28 and 30 in Washington, DC.

## **Scott Peter Layne MD — Curriculum vitae**

2007 National Institute for Allergy and Infectious Diseases. Chairperson, Special Emphasis Panel: Cooperative Research Partnerships for Influenza Product Development. January 24 - 25 and January 29 - 30 in Washington, DC.

2007 Member, Executive Committee. NIH/NIAID Centers of Excellence for Influenza Research and Surveillance.

2008 Member, National Biosurveillance Advisory Subcommittee under authority of Homeland Security Presidential Directive/HSPD-21. Appointment as Special Government Employee effective August 6, 2008 to May 3, 2010.

2010 American Institute for Biological Science. Peer Review Panel of the Infectious Disease Clinical Research Program for the Uniformed Services University of the Health Sciences. May 19 - 21 in Washington, DC.

### **Consultant**

1997 San Juan Capistrano School District. Medical-Legal.

2000 Cedars Sinai Medical Center. Medical-Legal.

2000 U.S. Department of Commerce. Bioterrorism and Export Regulations.

2001 Centers for Disease Control and Prevention. Bioterrorism and Laboratory Design.

2006 Quidel Corporation. Scientific Advisory Board Member.

2006 Kleiner Perkins Caufield & Byers. Pandemic Preparedness and BioDefense Initiative.

2007 HX Diagnostics. Scientific Advisory Board Member.

2009 Quidel Corporation. Scientific Advisory Board Member (reappointment).

2010 Expert consultant, medical-legal cases.

### **Memberships**

1992 American Society for Microbiology

2001 Infectious Disease Society of America

2001 Infectious Disease Association of California

2004 American College of Physicians

### **NEWS OF ACTIVITIES**

1. Editorial. Beat Bioterror with Batch Science. Nature Biotechnology 16, 793 (1998).

2. Colin Macilwain. News. Automation 'Could Crack the Big Problems in Science'. Nature 399, 9 (1999).

3. Jeffrey L. Fox. Current Topics. BW Threat: Some Practical Considerations. ASM News 65, 467 - 468 (1999).

4. Jeffrey L. Fox. Current Topics. Building Lab 'Firepower' against Infectious Diseases, BW Threats. ASM News 65, 469 - 470 (1999).

5. Gary Taubes. The Hot Zone. UCLA Magazine 12, 44 - 47, Summer Issue (2000).

6. Alison Abbott. News Feature: The flu HQ. Nature 414, 10 - 11 (2001).

## Scott Peter Layne MD — *Curriculum vitae*

### RESEARCH SUPPORT (UCLA YEARS)

**Principal Investigator:** SCOTT P. LAYNE

**Co-Investigator:** Tony J. Beugelsdijk

**Title:** UCLA High Speed, High Volume Laboratory Network for Infectious Diseases

**Agency:** Congressional Appropriation through Department of Defense, Defense Threat Reduction Agency

**Costs:** \$5,327,000

**Duration:** 2007 - 2008

**Brief Synopsis:** First year of congressionally-directed (federal) funding for the high-throughput laboratory network program. Participating institutions included UCLA and LANL.

**Principal Investigator:** LINDA A. ROSENSTOCK

**Co-Investigator:** Scott P. Layne

**Title:** UCLA High Speed, High Volume Laboratory Network for Infectious Diseases

**Agency:** State of California, Office of Homeland Security

**Costs:** \$9,000,000

**Duration:** 2007

**Brief Synopsis:** State-directed funding for the high-throughput laboratory network program.

**Principal Investigator:** SCOTT P. LAYNE

**Co-Investigator:** Walter Boyce

**Title:** Center for Rapid Influenza Surveillance and Research (CRISAR)

**Agency:** National Institutes of Health / National Institute for Allergy and Infectious Diseases

**Duration:** 2007 - 2009

**Cost:** \$4,951,635

**Brief Synopsis:** One of six contracted NIAID Center of Excellence for Influence Research and Surveillance. Participating institutions included UCLA, UC Davis, University of Alaska Fairbanks, Wildlife Conservation Society, and Los Alamos National Laboratory.

**Principal Investigator:** SCOTT P. LAYNE

**Co-Investigator:** Tony J. Beugelsdijk

**Title:** UCLA High Speed, High Volume Laboratory Network for Infectious Diseases

**Agency:** Congressional Appropriation through Department of Defense, Defense Threat Reduction Agency

**Costs:** \$5,328,160

**Duration:** 2008 - 2009

**Brief Synopsis:** Second year of congressionally-directed (federal) funding for the high-throughput laboratory network program. Participating institutions included UCLA and LANL.

**Principal Investigator:** THOMAS B. SMITH

**Co-Investigator:** Scott P. Layne

**Title:** Effects of Avian Migration and Anthropogenic Change on the Distribution and Transmission Risks of Avian Influenza

**Agency:** National Institute for Allergy and Infectious Diseases

**Costs:** \$2,513,348

**Duration:** 2006 - 2010

**Brief Synopsis:** RO1-funded research program on avian influenza with surveillance sites in North, Central and South American.

**Scott Peter Layne MD — *Curriculum vitae***

**Principal Investigator:** SCOTT P. LAYNE

**Co-Investigator:** Tony J. Beugelsdijk

**Title:** UCLA High Speed, High Volume Laboratory Network for Infectious Diseases

**Funding Mechanism/Agency:** Congressional Appropriation through Department of Defense, Defense Threat Reduction Agency

**Costs:** \$3,672,795

**Duration:** 2009 - 2010

**Brief Synopsis:** Third year of congressionally-directed (federal) funding for the high-throughput laboratory network program. Participating institutions included UCLA and LANL.

**###**