



OCTOBER 2008

SCOTT P. LAYNE, MD, is a Professor of Epidemiology at the University of California Los Angeles School of Public Health and is known for cross-disciplinary work involving biology, physics, and policy-related issues. He has authored over 45 publications, including three U.S. patents on methods to access and operate high-throughput laboratories.

Dr. Layne is the Principal Investigator of the *Center for Rapid Influenza Surveillance and Response (CRISAR)*, which is one of six NIAID Centers of Excellence for Influenza Research and Surveillance. With \$20.5 million over five years, CRISAR will undertake national and international surveillance on animal and human derived influenza strains, and will actively contribute to NIAID's Pandemic Public Health Research Response Plan. Participating institutions include UCLA, University of California Davis, University of Alaska Fairbanks, Wildlife Conservation Society, and Los Alamos National Laboratory.

Dr. Layne is also leading the development of the *High Speed, High Volume Laboratory Network for Infectious Diseases* in collaboration with Los Alamos National Laboratory. The program, funded by congressionally directed Department of Defense investments and a grant from the California Office of Homeland Security that amount to \$25 million, will improve the nation's ability to make rapid and critically important decisions to save lives in the event of bioterrorist attacks or infectious disease outbreaks. The laboratory will enable public health experts to track diseases in near real time and dramatically shorten the time needed to produce effective vaccines. The program will expedite widespread collection and testing of influenza samples within a few days of collection and thereby guide emergency outbreak control efforts. The laboratory will test and analyze many more viruses than are currently examined by state laboratories and enhance capacity should laboratories be overloaded.

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. In August 2008, he was appointed to be a Member of the National Biosurveillance Advisory Subcommittee as authorized under Homeland Security Presidential Directive/HSPD-21.

Dr. Layne teaches graduate level courses at UCLA on infectious diseases (EPI 220) and public health measures for biological emergencies (EPI 226). He is also an instructor on bioterrorism preparedness for the U.S. Department of Homeland Security and lectures throughout the country in this capacity.

Dr. Layne received a *Bachelor of Arts* in chemistry from DePauw University in 1976 and *Doctor of Medicine* from Case Western Reserve University in 1980. He has 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, as a physicist at the Lawrence Livermore National Laboratory from 1986-1992, and maintains guest scientist status at LANL.

Professor Scott Peter Layne, MD — *Curriculum vitae*

Address

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<http://www.ph.ucla.edu/epi/layne/> website

BACKGROUND

Born October 10, 1954 in Chicago, IL
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

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, 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 Tenured Associate Professor, School of Public Health
University of California, Los Angeles, CA
02/96 - now Guest Scientist, Chemistry Division
Los Alamos National Laboratory, Los Alamos, NM
06/01 - now Instructor, Academy of Counter-Terrorist Education
U.S. Department of Homeland Security / Louisiana State University

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04/07 - now Member, California NanoScience Institute
University of California, Los Angeles, CA
07/07 - now Professor of Epidemiology, School of Public Health
University of California, Los Angeles, CA
07/08 - now Professor of Environmental Health Sciences, School of Public Health
University of California, Los Angeles, CA
08/08 - now Special Govt. Employee, National Biosurveillance Advisory Subcommittee
HHS/Centers for Disease Control and Prevention

Certifications

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

Active Hospital Privileges (Internal Medicine / Infectious Diseases)

2007 UCLA Medical Center
2005 Santa Monica UCLA
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

I. 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 Electro-encephalogram. 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).

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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).
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).

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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).

II. 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).

III. 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).

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

IV. 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).

V. 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).

VI. 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).

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).

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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 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).

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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).
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).

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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. June 29 (2006).

TEACHING

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

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	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
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
	—	Winter	—
	Measures for Bio-Emergencies, 226 (EBB M226)	Spring	4
2008 - 2009	Infectious Disease Epidemiology, 220 (core)	Fall	4

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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.

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.

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.

Professor 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.

2008 Member, National Biosurveillance Advisory Subcommittee under authority of Homeland Security Presidential Directive/HSPD-21. Five year appointment as Special Government Employee effective August 6, 2008.

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.

2003 Medical-Legal firms.

2006 Quidel Corporation. Scientific Advisory Board Member.

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

2007 HX Diagnostics. Scientific Advisory Board Member.

Memberships

1992 American Society for Microbiology

2000 Los Angeles Academy of Medicine

2001 Infectious Disease Society of America

2001 Infectious Disease Association of California

2004 American College of Physicians

Hospital Privileges: Internal Medicine, Infectious Diseases

- Santa Monica-UCLA Medical Center, Santa Monica, CA
- UCLA Medical Center, Los Angeles, CA
- Saint Johns Health Center, Santa Monica, CA
- Kindred Hospital, Los Angeles, CA
- Marina del Rey Hospital, , Santa Monica, CA

SUPPORT, GRANTS, CONTRACTS (ACTIVE)

Principal Investigator: SCOTT P. LAYNE

Co-Investigator/Collaborators: Tony J. Beugelsdijk (Co-PI, LANL)

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

Funding Mechanism/Agency: Congressional Appropriation through Department of Defense, Defense Threat Reduction Agency (W81XWH-07-2-0015)

Costs: \$6,000,000 DoD FY06 Line Item / \$5,327,000 Available

Duration: 1 year (3/16/2007 - 4/15/2008)

Brief Synopsis: First year of funding for project that aims to develop a new high speed, high volume (high-throughput) laboratory capability that will be linked in a network and operated by several premier institutions. The automated, networked capability will make us stronger against natural diseases and bioterrorist attacks. Participating institutions include UCLA and Los Alamos National Laboratory.

Principal Investigator: LINDA A. ROSENSTOCK

Lead Faculty: Scott P. Layne

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

Funding Mechanism/Agency: State of California, Office of Homeland Security (Grant #2005-0015, OES ID# TBA)

Costs: \$9,000,000

Professor Scott Peter Layne, MD — *Curriculum vitae*

Duration: Through 12/31/2007

Brief Synopsis: The project will provide funds for: 1) employing a high-throughput laboratory manager; 2) improving shell space within the California NanoSystems Institute; 3) purchasing an archiving system and associated equipment; 4) developing an improved public health response network; and 5) implementation of field use handhelds for influenza and emerging infectious disease surveillance efforts.

Principal Investigator: SCOTT P. LAYNE

Co-Investigator/Collaborators: Tony J. Beugelsdijk (Co-PI, LANL)

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

Funding Mechanism/Agency: Congressional Appropriation through Department of Defense, Defense Threat Reduction Agency (W81XWH-07-2-0015)

Costs: \$6,000,000 DoD FY07 Line Item / \$5,328,160 Available

Duration: 1 year (3/26/2008 - 4/25/2009)

Brief Synopsis: Second year of funding for project that aims to develop a new high speed, high volume (high-throughput) laboratory capability that will be linked in a network and operated by several premier institutions. The automated, networked capability will make us stronger against natural diseases and bioterrorist attacks.

Principal Investigator: THOMAS B. SMITH

Co-Investigator/Collaborators: Scott P. Layne (Co-PI, UCLA), Anne Rimoin (Co-PI, UCLA)

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

Funding Mechanism/Agency: National Institute for Allergy and Infectious Diseases (RO1 AI074059-01)

Costs: \$2,513,348

Duration: 4 years (09/15/2006 - 09/14/2010)

Brief Synopsis: The project will examine the role that North American migratory birds play in the dispersion of avian influenza strains between breeding sites in Canada and the U.S. and wintering sites in Mexico and Central and South America. It will determine the geographic distribution of viral strains in relation to migratory pathways and will examine how anthropogenic environmental changes affect the prevalence and transmission dynamics of avian influenza strains between migratory and non-migratory birds associated with humans. In addition, it will examine patterns of transmission between birds and humans.

Principal Investigator: SCOTT P. LAYNE

Co-Investigator/Collaborators: Walter Boyce (Co-PI, UCD)

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

Funding Mechanism/Agency: National Institutes of Health / National Institute for Allergy and Infectious Diseases (HHSN266200700009C)

Costs: \$20,478,892

Duration: 5 years (03/30/2007 - 03/29/2012)

Brief Synopsis: The project will be a collaborative and synergistic consortium of investigators at universities, government, private institutions in Alaska, California, New Mexico, and New York with established international activities. It will closely manage and undertake outstanding multi-disciplinary and collaborative surveillance and research on influenza, and actively contribute to NIAID's Pandemic Public Health Research Response Plan. Participating institutions include UCLA, UC Davis, University of Alaska Fairbanks, Wildlife Conservation Society, and Los Alamos National Laboratory.

Principal Investigator: SCOTT P. LAYNE

Co-Investigator/Collaborators: Tony J. Beugelsdijk (Co-PI, LANL)

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

Professor Scott Peter Layne, MD — *Curriculum vitae*

Funding Mechanism/Agency: Congressional Appropriation through Department of Defense, Defense Threat Reduction Agency (W81XWH-07-2-0015)

Costs: \$4,000,000 DoD FY08 Line Item / \$3,672,795 Available

Duration: 1 year (3/26/2009 - 4/25/2010)

Brief Synopsis: Third year of funding for project that aims to develop a new high speed, high volume (high-throughput) laboratory capability that will be linked in a network and operated by several premier institutions. The automated, networked capability will make us stronger against natural diseases and bioterrorist attacks.

Principal Investigator: SCOTT P. LAYNE

Co-Investigator/Collaborators: Tony J. Beugelsdijk (Co-PI, LANL)

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

Funding Mechanism/Agency: Congressional Appropriation through Department of Defense, Defense Threat Reduction Agency (W81XWH-07-2-0015)

Costs: \$5,000,000 DoD FY09 Line Item

Duration: 1 year (3/26/2010 - 4/25/2011)

Brief Synopsis: Fourth year of funding for project that aims to develop a new high speed, high volume (high-throughput) laboratory capability that will be linked in a network and operated by several premier institutions. The automated, networked capability will make us stronger against natural diseases and bioterrorist attacks.

SUPPORT, GRANTS, CONTRACTS (SUBMITTED / IN REVIEW)

Principal Investigator: SCOTT P. LAYNE

Co-Investigator/Collaborators: Hilary Godwin (UCLA), Christina Kitchen (UCLA), Rashi Iyer (LANL), Torsten Staab (LANL)

Title: Public Health Science and Technology Collaborative Program

Funding Mechanism/Agency: University of California, Lab Research Program (UC LRP)

Costs: \$6,000,000

Duration: 3 years (January 2009 - December 2012)

Brief Synopsis: The proposal was submitted on 8/02/2008 and assigned tracking #116487. Award will create an integrated program to foster collaborative research and training in Public Health science and technology between researchers at UCLA and our partners at LANL. It will focus on collaborative training in three core areas: infectious diseases, nanotoxicology, and computational biology. Each of these cores is represented by one or more Centers of Excellence at UCLA and resonates with strategic missions of the national laboratories. It will leverage existing funding and will specifically be used to support: 1) innovative collaborative research between UCLA faculty and LANL scientists; 2) opportunities for postdoctoral fellows and graduate students to obtain unique training at UCLA and LANL; and 3) joint synergistic meetings in the three core research areas.

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).

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

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