

March 6, 2016



Signature

**STEPHEN A. LERNER, M.D.**

SS # Supplied on Request

**ADDRESS**

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**PERSONAL DATA**

Citizenship: U.S.A.  
Married

**EDUCATION**

1955 - 1959 A.B., Magna cum Laude, Biochemical Sciences, Harvard University, Cambridge, MA  
1959 - 1963 M.D., Magna cum Laude, Harvard Medical School, Boston, MA

**POSTGRADUATE TRAINING**

1963 - 1965 Intern and Resident in Medicine, Peter Bent Brigham Hospital, Boston, MA  
1965 - 1968 Research Associate and Special Fellow (NIH), Laboratory of Biochemistry, National Cancer Institute, National Institutes of Health  
1968 - 1971 Special Fellow (NIH), Department of Biochemistry, Stanford University  
June 1970 Course in Animal Cell Culture, Cold Spring Harbor Laboratory, New York  
1971 Fellow in Infectious Disease, Boston City Hospital, Boston, MA

1971                Fellow in Infectious Disease, Massachusetts General Hospital, Boston, MA

### **FACULTY APPOINTMENTS**

1972 - 1978	Assistant Professor of Medicine (Infectious Disease), University of Chicago, Chicago, IL
1975 - 1978	Research Associate (Assistant Professor) in Microbiology, University of Chicago, Chicago, IL
1978 - 1980	Associate Professor of Medicine (Infectious Disease) and Research Associate (Associate Professor) in Microbiology, University of Chicago, Chicago, IL
1980 - 1985	Clinical Associate (Associate Professor) in Medicine (Infectious Disease), Research Associate (Associate Professor) in Microbiology and Surgery (Otolaryngology), University of Chicago, Chicago, IL
1985 - 1986	Associate Professor of Medicine (Infectious Disease), University of Chicago, Chicago, IL
1986 - Present	Professor of Medicine, (Tenured), Wayne State University School of Medicine, Detroit, MI
1986 - 2002	Vice Chief, Division of Infectious Diseases, Wayne State University School of Medicine,
1986 - 2002	Director of Research, Division of Infectious Diseases, Wayne State University School of Medicine, Detroit, MI
1988 - Present	Adjunct Graduate Faculty (Professor), Department of Biochemistry and Molecular Biology, Wayne State University School of Medicine, Detroit, MI
2002 - 2008	Associate Dean for Faculty Affairs, Wayne State University School of Medicine, Detroit, MI
2009 – 2015	Associate Vice Chair for Faculty Affairs, Department of Internal Medicine, Wayne State University School of Medicine, Detroit, MI

### **MEDICAL LICENSURE**

Licensure: Michigan (-1/31/17)

### **HONORS AND AWARDS**

1959	Phi Beta Kappa
1959	AB Degree, Magna Cum Laude
1962	Alpha Omega Alpha
1963	Borden Undergraduate Research Award in Medicine
1963	MD Degree, Magna Cum Laude (for a thesis in a special field)
1973 - 1975	Alpha Omega Alpha Faculty Secretary-Treasurer, University of Chicago
1975 - 1986	Alpha Omega Alpha Faculty Councillor, University of Chicago
1981	Sigma Xi
1981 - 1986	Sigma Xi (Council of the University of Chicago Chapter)
1993	International Society of Chemotherapy, Medal of Service
1994-present	Who's Who in America, 49th, 50th, 51st eds.
1994	Division A Lecturer, American Society for Microbiology
1998, 2001, 2010	Wayne State University School of Medicine College Teaching Award
1999	Award for Leadership and Teaching Excellence in Continuing Medical Education, Wayne State University School of Medicine

## **SERVICE**

### University of Chicago

1978 - 1986	Pharmacy and Therapeutics Committee, University of Chicago, Chicago, IL (Chairman 1983-86)
1979 - 1986	Institutional Biosafety Committee, University of Chicago, Chicago, IL (Subcommittee on Recombinant DNA; Subcommittee on Chemical Carcinogens; Chairman, Subcommittee on Infectious Agents); Biological Safety Officer
1985 - 1986	Quality Control Committee, University of Chicago, Chicago, IL

### Wayne State University: Department of Medicine

1987 - 1990; 1993 – 2002; 2010 - present	Promotion and Tenure Committee, Department of Medicine, Wayne State University School of Medicine; Chairman, 1994-2002;  also Selective Salary Committee 1993 – 2002, 2010 - present
1987 - 1991; 1997 - 2002; 2009 - 2013	Research Committee, Department of Medicine, Wayne State University
1989	Morbidity and Mortality Review Committee. Department of Medicine, Harper Hospital, Detroit, MI
1990 - 1998	Department of Medicine Quality Assurance Committee, Harper Hospital,

Detroit, MI

1993 -1997	Department of Medicine Merit and Compensation Committee
1993 -1994	Department of Medicine Committee on Research Support Guidelines
1994 - 2002	Department of Medicine Research Reserve Fund Advisory Committee
1998	Chair, Department of Medicine Measures Implementation Team
1998	Department of Medicine Search Committee for Core Biostatistician
1998	Department of Medicine Implementation Team on Faculty Effort Threshold of Research Commitment
1999-2002	Department of Medicine Research Mentor Advisory Committee
1999-2002	Department of Medicine Committee for Protected Time for Research

Wayne State University: Division of Infectious Diseases

1989 - 2000	Chairman, Division of Infectious Diseases Quality Assurance Committee, Harper Hospital, Detroit, MI
2010 – present	Infectious Diseases Fellow Selection Committee

Wayne State University School of Medicine

1991 - 1992	Internal Review Committee for the Department of Medicine, Wayne State University; Chair, Subcommittee on Divisions; Subcommittee on Research
2009 – present	Executive Committee of the Faculty Senate President-Elect, 2009-2011; President, 2011 – 2013; Secretary, 2013 - present
2011 – present	Budget Advisory Committee
2012 – present	Departmental Faculty Development Liaison (DFDL)

Wayne State University

1989	University Advisory Panel for the College of Pharmacy and Applied Health Professions, Wayne State University
1991, 1992	University Committee on Promotion and Tenure, Wayne State University
2009	Human Investigation Committee PH1



2011 – 2012	AAUP/AFT Union Council, Council Representative
2012 – present	At-Large Member, AAUP/AFT Executive Board
2013 – present	WSU Academic Senate School of Medicine Member (2013-2014) At-Large Member (2014-present) Member of the Budget Committee (2013-present)

#### Detroit Medical Center

1986 - 1998	Pharmacy and Therapeutics Committee, Harper Hospital, Detroit, MI; Vice Chairman, 1987-1988; Chairman, 1988 - 1998
1988 - 1991	Infection Control Committee, Harper Hospital, Detroit, MI
1990 - 1991; 1993	Laboratory Utilization Subcommittee, Harper Hospital, Detroit, MI
1991 - 1998	Chairman, Antibiotic Utilization Subcommittee, Harper Hospital, Detroit, MI
1995 -1996	Board of Physician Advisors for Patient-Focused Care, Harper Hospital, Detroit, MI
1996 -1998	Harper Hospital QECRM Care of the Elderly Subcommittee
1998 – 2002	Harper Hospital Medication Use Committee; Chair, 1998-2002
1998 - Present	Detroit Medical Center Pharmacy and Therapeutics Committee; Vice Chair, 1998 – 2008 Antimicrobial Agents (Stewardship) Subcommittee, 1998 – Present; Chair, 1998-2008

#### Veterans Administration

1987 - 1989	VA Research and Development Committee, VA Medical Center, Allen Park, MI
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#### PROFESSIONAL SERVICE

Committee on Sexually Transmitted Diseases, Chicago Board of Health (Chairman, Subcommittee on Laboratories), 1979 - 1983

#### American Society for Microbiology

Chairman-Elect, Division A (Antimicrobial Chemotherapy), 1986 - 1987

Chairman, Division A (Antimicrobial Chemotherapy), 1987 - 1988  
Division A Nominating Committee, 1995, 1996  
Divisional Group I Representative (General Meeting Program Committee), 1990 - 1992  
Alternate Councilor, Division A (Antimicrobial Chemotherapy), 1989 - 1990  
Councilor, 1990 - 1992  
Ad Hoc Committee on International Activities, 1991-1992  
Committee on Divisions, 1991-1992  
Committee on Divisional Restructuring, 1993  
General Meeting Task Force, 1993  
Nominating Committee, 1993  
International Committee, 1993-2005; Chair, 1996-2003; Chair, International Seminars Task Force, 2004-2005  
Conferences Committee 1993-1996; Chair, 1993-1996  
Chair, Ortho/McNeil Predoctoral Fellowship Selection Committee, 1993-1995  
Meetings Board, 1994-1996  
Council Policy Committee, ex officio, 1999-2003  
International Professorship Selection Committee, 2001-2007  
Professional Development Committee, 2004-2007  
Awards Nomination Committee, 2014

Fellow, American Academy of Microbiology (honorific, for life)  
Committee on Awards, 1993-1996

Fellow, Infectious Diseases Society of America (honorific, for life)

Inter-American Society for Chemotherapy  
Co-Chairman, Section on Bacteria, 1983-86  
President-Elect, 1985-86  
President, 1986-88  
Board of Directors, 1988-2000; Chairman, 1988-1993  
Nominating Committee, 1994-2000

International Society of Chemotherapy  
Council, 1985-2002  
Executive Committee, 1987-1995  
Awards Committee, 1993-1995

Alliance for the Prudent Use of Antibiotics  
Scientific Advisory Board, 1995 - present

Michigan Antibiotic Resistance Reduction (MARR) Coalition, 1998-present  
Executive Councilor, 1999-2014  
Governing Councilor, 1999-present  
Chair, Healthcare Provider Education Task Force, 2000-2014  
Chair, Board of Directors, 2014-present

Muskegon Coalition for Appropriate Antimicrobial Therapy, 2000-2008

U.S. National Committee for the International Union of Microbiological Societies, 2001-2006;  
Chair, 2005-2006

International Union of Microbiological Societies  
Executive Board Member-at-Large, 2008-2011  
Executive Board Vice-President, 2011 – present

### SCHOLARLY SERVICE

#### Grant Review Committees : National

Veterans Administration Merit Review Subcommittee for Infectious Diseases, Ad Hoc 1997,  
Regular 1998-2001

#### Editorial Board Membership

1981 – 2007	Antimicrobial Agents and Chemotherapy, Editorial Board
1991 -1992	Co-Editor, Proceedings of the First International Congress on Biological Response Modifiers, Canadian Journal of Infectious Diseases
1992 - 2008	European Journal of Clinical Microbiology and Infectious Diseases, Editorial Board
1997 - Present	Drug Resistance Updates, Editorial Board

#### Other Scholarly Service

Scientific Program Committee, First, Second, Third, and Fourth International Congresses on Biological Response Modifiers (1991, 1993, 1995, 1997)

Scientific Program Committee, 18th International Congress of Chemotherapy (1993);  
19th International Congress of Chemotherapy (1995)

International Advisory Committee, 4th and 5th Western Pacific Congress on Chemotherapy and Infectious Diseases, 1994, 1996.

Commission on Goals, American Society of Health-System Pharmacists, 1993-1995

Advisory Panel on Impacts of Antibiotic-Resistant Bacteria, Office of Technology Assessment (U.S. Congress), 1994-1995

Advisory Committee to the U.S. Food and Drug Administration on the Request for Over-the-



Counter Status for Acyclovir, 1995.

International Organizing Committee, 10th Mediterranean Congress of Chemotherapy, 1996.

Pan American Health Organization Technical Advisory Group on Antibiotic Resistance in Latin America, 1999-Present (Developed revised guidelines for antimicrobial treatment in Latin America, published in 2009 and revised in 2011 and 2013)

### Other Service

Service associated with the position of Associate Dean for Faculty Affairs, 2002-2008

### TEACHING

University of Chicago, 1972 – 1986

Wayne State University, 1986 – Present

Undergraduate students:      Mentor for three undergraduate WSU students in the MedStart Program, 2004 – 2008

Medical students:              Year II: Immunology/Microbiology case discussions. Years III/IV: Lectures on antibiotics; clinical consultations.

Residents/Fellows:      Lectures on antibiotics (clinical use, mechanisms of resistance), clinical consultations, Infectious Diseases Journal Club, and Infectious Diseases Grand Rounds

Faculty:                      Infectious Diseases Journal Club and Infectious Diseases Grand Rounds.

Mentorship:                Students, postdoctoral fellows, Infectious Diseases fellows, faculty within Infectious Diseases; and, generally in the SoM as Associate Dean for Faculty Affairs (2002-2008); since 2009, faculty development within Internal Medicine.

Dissertation Directed: Ph.D. student dissertation: Ruben Gomez, Biochemistry. Currently Assistant Professor of Surgery

Course or Curriculum Development:  
Manuscript Writing Course for junior faculty in SoM (2004-2006)

Michigan Antibiotic Resistance Reduction Coalition: “Antibiotics and You” (a presentation on microbes and antibiotics for grades 4-6 children) (2003 and ongoing updates)



2009-2012: Michigan Antibiotic Resistance Reduction Coalition: Developed a three-hour CME curriculum, "Promoting Appropriate Management of Upper Respiratory Tract Infections," as a CDC-supported webinar (see below under Previously Funded Grant). Presented a one-hour lecture in the program, "Antibiotic Resistance."

2010: Under the auspices of the International Union of Microbiological Societies (IUMS): Developed the curriculum for a 3-day minicourse on "Antimicrobial Resistance in Bacteria, Fungi, and Viruses," for students, trainees, and junior professionals in Southeast Asia, which took place in Singapore, June, 2010

2012: Under the auspices of the International Union of Microbiological Societies (IUMS): Developed a Session on Antimicrobial Resistance in the First international Conference on Infectious Diseases and Nanomedicine, Kathmandu, Nepal, December, 2012

2013: Under the auspices of the International Union of Microbiological Societies (IUMS): Developed the curriculum for a three-day Conference (together with the Instituto Pedro Kouri of Tropical Medicine in Havana, Cuba) on Antimicrobial Resistance. The venue was in Havana. The target audience was Cuban microbiologists and physicians, and I brought three other speakers from the US besides me.

2014: Under the auspices of the International Union of Microbiological Societies: Organized a Session on Antimicrobial Resistance for the Latin American Congress of Microbiology, Cartagena, Colombia, November, 2014,

2015: Under the auspices of the International Union of Microbiological Societies: Organized a Session on Antimicrobial Resistance for the 5<sup>th</sup> Annual Conference of the Clinical Infectious Diseases Society of India, New Delhi, India, August, 2015.

2011 - 2015: Under the auspices and CDC funding of the Michigan Antibiotic Resistance Reduction Coalition, I led the development of two 50-minute educational modules on microbes, antibiotics, and antibiotic resistance for use in ninth- and tenth-grade biology and health classes in the State of Michigan. In December, 2011, I delivered the modules to a class in the Kalamazoo Math and Science Center. In 2012, I prepared and delivered a two-hour instructional video for science teachers to prepare them to present the modules to their students. In 2013 and 2014 I presented an introduction to this program at the Annual Conference of the Michigan Science Teachers Association. Since then I have had conferences with high school teachers on their experience with the program and modifications they have made.

2011 - 2013: With the Executive and Professional Development group of WSU, I organized a highly successful Leadership Development Program (13 monthly sessions) for selected Department of Medicine faculty during 2011

and into 2012. This activity was continued as a followup series of four sessions into 2013.

## GRANTS, CONTRACTS, AND OTHER FUNDING

### Ongoing Funded Grant

1/1/10-9/30/15      Centers for Disease Control and Prevention (CDC), „Educational Campaign: Promote Appropriate Antibiotic Use --- Get Smart: Know When Antibiotics Work in the Community.“ An annual subgrant to the Michigan Antibiotic Resistance Reduction (MARR) Coalition (\$67,513) .within the „Epidemiology and Laboratory Capacity for Infectious Diseases Cooperative Agreement“ from the CDC to the Michigan Department of Community Health.

*(As Executive Councilor and Chairman of the Board of Directors of the MARR Coalition, I serve as PI for the MARR subgrant. The principal activity under this grant has been to develop and present a three-hour CME program, „Promoting Appropriate Management of Upper Respiratory Tract Infections: Antibiotic Resistance, Treatment Guidelines, and Patient Satisfaction,“ under the auspices of the WSU School of Medicine CME Office. This program, in which I contributed the portion on „Antibiotic Resistance,“ was videotaped in September, 2009 and is archived for physicians and pharmacists to receive CME credit. We also presented the entire program in person at the Annual Scientific Meeting of the Michigan State Medical Society in October, 2009. The subgrant also supports the updating of an innovative program for elementary school students, „Antibiotics and You,“ which discusses the differences between bacteria and viruses, the nature of antibiotic resistance in bacteria, and the need to reduce unnecessary antibiotic usage to reduce the emergence and spread of antibiotic resistance. The presentation of this program to school classes has been conducted primarily by Pharmacy students at the three pharmacy schools in Michigan. (Please see earlier description of the high school educational modules on microbes, antibiotics, and antibiotic resistance for 9th and 10th grade students in Michigan under Curriculum Development.)*

### Previously Funded Grants and Contracts

1986	Miles Pharmaceuticals, “Controlled, Randomized, Double-Blind Comparison of Intravenous Ciprofloxacin With Intravenous Ceftazidime in the Treatment of Selected infections,” Co-Investigator, \$125,880
1987	Merrell Dow Research Institute, “A Randomized, Blinded Comparative Study of Teicoplanin Versus Vancomycin the Treatment of Non-Vascular



	Access Associated Bacteremia/Endocarditis Caused by Gram-Positive Bacteria,” Co-Investigator, \$118,512
4/87 - 3/90	NIH (NIGMS), “Delivery Systems for Enzyme Inactivators,” University of Chicago Consortium Agreement, 10% Time, \$121,650
09/87 - 1992	Pfizer Pharmaceuticals, “A Prospective, Stratified, Randomized, Double-Blinded Comparison of the Safety and Efficacy of Cefoperazone Plus Piperacillin Versus Cefoperazone Plus Amikacin in Therapy of Infected Solid Tumor Patients Receiving Cisplatin,” Co-Investigator, \$274,600
11/87 - 1992	Merrell Dow Research Institute, “An Open Study of Teicoplanin in the Intravenous Drug Abuse Associated Bacteremia/Endocarditis Caused by Gram-Positive Bacteria,” Principal Investigator, \$76,241
2/88 - 1992	E.R. Squibb and Sons, Inc., “A Multicenter Randomized Clinical Trial Comparing Aztreonam with an Aminoglycoside in Patients at High Risk for Developing Nephrotoxicity,” Principal Investigator, \$445,527
1/1/89-1993	Bristol Myers, “A Comparative Study of Cefepime and Ceftazidime in the Treatment of Patients with Lower Respiratory Tract Infections and Serious Bacterial Infections,” Co-Principal Investigator, \$445,527
3/1/89-1994	Merrell Dow, “An Open Study of Teicoplanin in the Treatment of Intravenous Drug Abuse Associated Endocarditis Caused by Gram-Positive Bacteria,” Co-Investigator, \$37,166
6/1/89-1994	Merrell Dow, “A Multi-center Randomized Blinded comparative Study of Teicoplanin Dosing Regimens and Vancomycin in the Treatment of Endocarditis and Bacteremia of Non-Cardiac Origin Caused by Gram-Positive Bacteria,” Principal Investigator, \$118,512
10/1/89-1992	Eli Lilly, “Daptomycin versus Conventional Therapy in Endocarditis and Bacteremia,” Co-Investigator, \$55,427
10/1/90-Completion	Beecham Laboratories, “Characterization of a Mutant TEM $\beta$ -Lactamase That Confers Resistance to the Combination of Ampicillin Plus Clavulanic Acid,” Principal Investigator, \$35,000
1/1/91-12/31/92	Zambon Laboratories, “Fosfomycin Tromethamine Versus Ciprofloxacin in Uncomplicated Urinary Tract Infections,” Principal Investigator, \$41,584
8/1/92-7/30/95	NIH, 1 RO1 AI 33170, “Mechanisms of Processes of the TEM-1 $\beta$ -Lactamase,” Total Direct Costs = \$353,210, Co-Principal Investigator, 15% effort; P.I.: Shahriar Mobashery.
12/15/91-12/15/92	Sandoz, “Evaluation of the Effect of Two Sandoz Compounds on Efflux-

	Mediated Mechanisms of Resistance to Antibiotics," Principal Investigator, \$5,000
3/1/92-6/5/92	Abbott, "A Multicenter, Double-Blind, Randomized, Comparative Study of the Efficacy and Safety of Temafloxacin Intravenous/Oral Sequential Therapy Versus Cefuroxime with or without Erythromycin Intravenous/Oral Sequential Therapy in the Treatment of Hospitalized Patients with Community Acquired Pneumonia," Principal Investigator, \$32,936
9/1/92-8/30/93	Roerig/Pfizer, "Mechanistic Studies of the TEM $\beta$ -Lactamase with Substrates and Sulbactam," Principal Investigator, \$44,611
12/1/92-11/20/94	Smith-Kline Beecham, "Mechanistic Studies of the TEM $\beta$ -Lactamase with Substrates and Clavulanic Acid," Principal Investigator, \$103,652
12/1/92-11/30/93	Roerig/Pfizer, "Isolation and Characterization of a Species-Specific DNA Probe for <i>Candida krusei</i> and its Use in the Detection of <i>C. Krusei</i> by Polymerase Chain Reaction," Principal Investigator, \$49,558
1/93-1/94	WSU Interdisciplinary Research Seed Fund, "Mycobacterial Targets for Design of Novel Chemotherapeutic Agents," Principal Investigator, \$10,000
9/1/93-1/31/94	American Cyanamid, "A Double-Blind, Randomized, Comparative, Multicenter, Safety, Tolerance and Efficacy Study of Parenteral Biapenem (CL 186,815) versus Imipenem/Cilastatin in the Treatment of Hospitalized Patients with Acute Nosocomial Pneumonia, Principal Investigator, \$3,571
10/1/93-1/31/94	Rhone-Poulenc Rorer, JRV-203 Dose Ranging, Double-Blind, Randomized Multicenter Study of Synercid (RP 57669/RP 54476) vs. Ceftriaxone in the Treatment of Acute Bacterial Pneumonia, Principal Investigator, \$17,000
10/1/93-9/30/95	Rhone-Poulenc Rorer, Study of the Treatment of Infections Due to Vancomycin-Resistant <i>Enterococcus faecium</i> (V.R.E.F.) with Synercid, Principal Investigator, \$3,390
10/1/94-9/30/95	Bristol-Myers Squibb, Selection and Characterization of Mutant Derivatives of the TEM-1 $\beta$ -Lactamase that Confers Resistance to Ceftazidime or Cefepime, Principal Investigator, \$17,700
10/94 - 1/95	Lederle Laboratories, A Randomized, Double-Blind, Comparative, Multicenter, Safety, Tolerance and Efficacy Study of Parenteral 4.5g Piperacillin/Tazobactam (ZOSYN), Principal Investigator, \$4,000
5/1/96-4/30/98	Rhone-Poulenc Rorer, Study, Phase III Population Pharmacokinetic Study for the Determination of Plasma Levels of Synercid in Treated Patients, Principal Investigator, \$13,500



2/97-3/98	Merck & Co, Inc., A Prospective Multicenter Double-Blind, Randomized Comparative Study to Evaluate the Safety, Tolerability and Efficacy of L-749,345 versus Ceftriaxone Sodium plus Metronidazole in the Treatment of Serious Complicated Intra-Abdominal Infections of Mild to Moderate Severity in Adults, Principal Investigator, \$42,246
7/1/97-3/98	Pharmacia and Upjohn, U-100766 in the Treatment of Gram-Positive Bacteremia: An Open Label Phase II Study of Intravenous Therapy with Optional Oral Continuation, Principal Investigator, \$42,500
10/1/96-9/30/99	Department of Veterans Affairs Merit Review, A Novel Gentamicin Resistance Gene in Enterococci, \$188,600; Co-Investigator; P.I.: Joseph W. Chow
7/96-6/00	NIH, AI 33170, Class A $\beta$ -Lactamases, \$535,087; Co-Principal Investigator; P.I.: Shahriar Mobashery
1/1/00-6/30/01	Bristol-Myers Squibb, The Effect of Formulary Conversion from Ceftazidime to Cefepime on the In Vitro Sensitivities of <i>Pseudomonas aeruginosa</i> , <i>Enterobacter cloacae</i> , and <i>Klebsiella pneumoniae</i> to Selected Antibiotics, \$10,000; Co-Principal Investigator; P.I.: Diane Cappelletty
7/01-4/02	Blue Cross/Blue Shield of Michigan Foundation, Evaluation of Change in Antimicrobial Prescribing Patterns Following a Healthcare Provider Educational Intervention, \$10,000; Principal Investigator
10/1/00-9/30/03	Department of Veterans Affairs Merit Review, Aminoglycoside Resistance in Enterococci, \$427,500; Co-Investigator; P.I.: Joseph W. Chow
7/1/04-6/30/09	Department of Veterans Affairs Merit Review, Aminoglycoside Resistance in Enterococci, \$785,600, Co-Investigator; P.I.: Joseph W. Chow [Declined, since Dr. Chow left Wayne State University and the VA]
2016 -	Cempra Pharmaceuticals, Open-Label, Non-Randomized Single-Arm Multicenter Study to Evaluate Oral Sodium Fusidate (CEM102) for the Treatment of Staphylococcal Bone or Joint Infections in Subjects for Whom Chronic Antibiotic Suppressive Therapy Is Indicated., \$16,689 per patient; Site Investigator

## **PUBLICATIONS**

### **Peer-Reviewed Publications**

Reports of Original Work

1. Lin ECC, SA Lerner, and SE Jorgensen: Method for isolating constitutive mutants for carbohydrate-catabolizing enzymes. *Biochem Biophys Acta* 60:422, 1962.
2. Lerner SA, TT Wu, and ECC Lin: Evolution of a catabolic pathway in bacteria. *Science* 146:1313, 1964.
3. Tanaka S, SA Lerner, and ECC Lin: Replacement of a phosphoenolpyruvate-dependent phosphotransferase by a nicotinamide adenine dinucleotide-linked dehydrogenase for the utilization of mannitol. *J Bacteriol* 93:642, 1967.
4. Finley R, ED Kieff, S Thomsen, J Fennessy, M Beem, SA Lerner, and JA Morello: Bronchial brushing in the diagnosis of pulmonary disease in patients at risk for opportunistic infection. *Amer Rev Resp Dis* 109:379, 1974.
5. Stiffler PW, SA Lerner, M Bohnhoff, and JA Morello: Plasmid DNA in clinical isolates of *Neisseria gonorrhoeae*. *J Bacteriol* 122:1293, 1975.
6. Morello JA, SA Lerner, and M Bohnhoff: Characteristics of atypical *Neisseria gonorrhoeae* from disseminated and localized infections. *Infect Immunity* 13:1510, 1976.
7. Pogwizd SM and SA Lerner: *In vitro* activity of gentamicin, amikacin, and netilmicin (SCH 20569) alone and in combination with carbenicillin against *Serratia marcescens*. *Antimicrob Agents Chemother* 10:878, 1976.
8. Lerner SA, R Seligsohn, and GJ Matz: Comparative clinical studies of ototoxicity and nephrotoxicity of amikacin and gentamicin. *Amer J Med* 62:919, 1977.
9. Meislin HW, SA Lerner, MH Graves, MD McGehee, FE Kocka, JA Morello, and P Rosen: Cutaneous abscesses: anaerobic and aerobic bacteriology and outpatient management. *Ann Intern Med* 87:145, 1977.
10. Robison LR, R Seligsohn, and SA Lerner: Simplified radioenzymatic assay for chloramphenicol. *Antimicrob Agents Chemother* 13:25, 1978.
11. Bhattacharya I, R Seligsohn, and SA Lerner: Effects of radiopharmaceuticals on radioenzymatic assays of aminoglycoside antibiotics: interference by gallium-67 and its elimination. *Antimicrob Agents Chemother* 14:448, 1978.
12. Sirisanthana T and SA Lerner: Effect of clavulanic acid on the *in vitro* synergism between carbenicillin and gentamicin against *Serratia marcescens*. *Antimicrob Agents Chemother* 15:630, 1979.
13. Rusthoven JJ, TA Davies, and SA Lerner: Clinical isolation and characterization of aminoglycoside-resistant small colony variants of *Enterobacter aerogenes*. *Amer J Med* 67:702-706, 1979.



14. Lerner SA and GJ Matz: Suggestions for monitoring patients during treatment with aminoglycoside antibiotics. *Otolaryngol Head Neck Surg* 87:222, 1979.
15. Perlin MH and SA Lerner: Amikacin resistance associated with a plasmid-borne aminoglycoside phosphotransferase in *Escherichia coli*. *Antimicrob Agents Chemother* 16:598, 1979.
16. Lerner SA, EL Friedman, EJ Dudek, G Kominski, M Bohnhoff, and JA Morello: Absence of acetohydroxyacid synthetase in a clinical isolate of *Neisseria gonorrhoeae* requiring isoleucine and valine. *J Bacteriol* 142:344, 1980.
17. Janda WM, M Bohnhoff, SA Lerner, and JA Morello: Epidemiology of pathogenic neisseria in homosexual men. *J Homosexuality* 5:289, 1980.
18. Janda WM, M Bohnhoff, JA Morello, and SA Lerner: Prevalence and site-pathogen studies of *Neisseria meningitidis* and *gonorrhoeae* in homosexual men. *J Amer Med Assoc* 244:2060, 1980.
19. Perlin MH and SA Lerner: Localization of an amikacin 3'-phosphotransferase in *Escherichia coli*. *J Bacteriol* 147:320, 1981.
20. Lum AM, RJ Wassersug, MJ Potel, and SA Lerner: Schooling behavior of tadpoles: a potential indicator of ototoxicity. *Pharmacol Biochem Behavior* 17:363, 1982.
21. Perlin MH and SA Lerner: Decreased susceptibility to 4'-deoxy-6'-N-methylamikacin (BB-K 311) conferred by a mutant plasmid in *Escherichia coli*. *Antimicrob Agents Chemother* 22:78, 1982.
22. Lerner SA, R Seligsohn, I Bhattacharya, R Hinojosa, and GH Matz: Aminoglycoside Levels in the Inner Ear Perilymph of Man, Nephrotoxicity and Ototoxicity of Drugs, JP Fillastre (Editor), Institut National de la Sante et de La Recherche Medicale (INSERM), 1982, pp 387-405.
23. Dudek EJ, JD Stephenson, and SA Lerner: Susceptibility of *Neisseria meningitidis* and *Neisseria gonorrhoeae* isolates to N-formimidoyl thienamycin. *Antimicrob Agents Chemother* 22:926, 1982.
24. Lerner SA and SH Fox: Clinical microbiology and infectious disease in China: a personal view. *Clin Microbiol Newsl* 4:149, 1982.
25. Janda WM, JA Morello, SA Lerner, and M Bohnhoff: Characteristics of pathogenic *Neisseria* spp. isolated from homosexual men. *J Clin Microbiol* 17:85, 1983.
26. Cheung K-S, SA Wasserman, E Dudek, SA Lerner, and M Johnston: Chloroalanyl and propargylglycyl dipeptides. Suicide substrate containing antibacterials. *J Med Chem* 26:1733, 1983.

27. Lerner SA, EJ Dudek, WE Boisvert, and KO Berndt: Effect of highly potent antipseudomonal  $\beta$ -lactams alone and in combination with aminoglycosides against *Pseudomonas aeruginosa*. Rev Infect Dis 6:S678, 1984.
28. Lerner SA, ES Lyon, and VC Wald: The treatment of urinary tract infections with amoxicillin/clavulanate. Postgrad Med, Sept-Oct 1984, pp 225-228.
29. Hinojosa R, R Seligsohn, and SA Lerner: Ganglion cell counts in the cochleae of patients with normal audiograms. Acta Otolaryngol 99:8, 1985.
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31. Lerner SA and JP Quinn: Emergence of resistance to  $\beta$ -lactam antibiotics in *Pseudomonas aeruginosa* during treatment with new  $\beta$ -lactams. Chemioterapia 4:95, 1985.
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43. Illuminati LA, S Price, BA Jackiw, P Green, RP Gaynes, and SA Lerner: Purification and characterization of an aminoglycoside phosphotransferase [APH(3')] that confers high-level resistance to amikacin, American Society for Microbiology, (A-1), 1989.
44. Green P, SA Lerner, and RP Gaynes: Transfer of a plasmid containing an amikacin resistance gene encoding a novel phosphotransferase [APH(3')] from a clinical isolate of *Serratia marcescens*, American Society of Microbiology, (A-4), 1989.
45. Rybak MJ, SA Lerner, DP Levine, LM Albrecht, PL McNeil, GA Thompson, and MT Kenny: Teicoplanin (T) pharmaco-kinetics (PK) in intravenous drug abusers (IVDAs) being tested for bacterial endocarditis (BE), 29th Interscience Conference on Antimicrobial Agents and Chemotherapy, (No. 1343), 1989.

46. Manavathu EK, SA Lerner, T Fekete, MH Perlin, E Ziaja, and S Price: Characterization of a mutant TEM  $\beta$ -lactamase that confers resistance to ampicillin plus clavulanic acid, 30th Interscience Conference on Antimicrobial Agents and Chemotherapy, (No. 281), 1990.
47. Oren I, EK Manavathu, and SA Lerner: Isolation of a species-specific DNA fragment for rapid detection of *Candida albicans* by polymerase chain reaction (PCR), American Society for Microbiology, (D-46), 1991.
48. Manavathu EK, SA Lerner, and S Mobashery: Effect of amino acid substitution at position 241 of TEM-1  $\beta$ -lactamase inactivators, 31st Interscience Conference on Antimicrobial Agents and Chemotherapy, (No. 16), 1991.
49. Siregar J, SA Lerner, and S Mobashery: Kinetic comparison of a purified aminoglycoside 3'-phosphotransferase type II with a new mutant enzyme, American Society for Microbiology, (A-10), 1992.
50. Manavathu EK, G Zafaralla, S Mobashery, and SA Lerner: Resistance to ampicillin/clavulanate synergism by mutation of Arg-244 in the TEM-1  $\beta$ -lactamase, American Society for Microbiology, (A-114), 1992.
51. Lerner SA, DP Levine, P McNeil, MJ Rybak, P Chandrasekar, L Albrecht, and S Schwan: Blinded comparative study of teicoplanin vs. vancomycin for gram-positive coccal bacteremia: Failures of therapy with teicoplanin in conventional doses, VIIth International Symposium on Staphylococci and Staphylococcal Infections, 1992.
52. Manavathu EK, SA Lerner, and S Mobashery: A clavulanate-resistant mutant of the TEM-1  $\beta$ -lactamase (R-244-S) is suppressed intracistronically to clavulanate sensitivity by a second mutation (R-164-S) that produces ceftizidime (CAZ) resistance, 32nd Interscience Conference on Antimicrobial Agents and Chemotherapy, (No. 578), 1992.
53. Lerner SA, EK Manavathu, and S Mobashery: Clavulanate resistance of the Arg-244-Ser mutant of the TEM-1  $\beta$ -lactamase is reversed by a second mutation (Arg-164-Ser) that produces ceftazidime resistance, 3rd Western Pacific Congress of Chemotherapy and Infectious Diseases, 1992.
54. Manavathu EK, J Grewal, and SA Lerner: A comparative study of the  $\beta$ -lactamases from *Nocardia asteroides* and *Nocardia brasiliensis*, American Society for Microbiology, (A-87), 1993.
55. Alangaden GJ, EK Manavathu, and SA Lerner: Selection of fluoroquinolone resistance in *Mycobacterium tuberculosis* (MTB), 31st Annual Meeting, Infectious Diseases Society of America, (No. 112), 1993.
56. Taibi P, Y Cho, S Vakulenko, S Lerner, and S Mobashery: Long-range structural influences on catalysis: Enhancement of activity of the TEM-1  $\beta$ -lactamase against third-generation cephalosporins, American Chemical Society, Great Lakes and Central Regional Joint



Meeting, 1994.

57. Durbin AP, M Manavathu, SA Lerner, and EK Manavathu: Differential susceptibility of the  $\beta$ -lactamases from *Nocardia asteroides* and *Nocardia brasiliensis* to  $\beta$ -lactamase inactivators, American Society for Microbiology, (A-54), 1994.
58. Alangaden GJ, EK Manavathu, and SA Lerner: Activity of ciprofloxacin, ofloxacin, sparfloxacin, and five investigational fluoroquinolones against quinolone-resistant strains of *Mycobacterium tuberculosis*, 5th International Symposium on New Quinolones (No. 25), 1994.
59. Vakulenko SB, P Taibi, EK Manavathu, S Mobashery, and SA Lerner: Mutant TEM-1  $\beta$ -lactamases with replacement of Asp-179 confer resistance to ceftazidime, 34th Interscience Conference on Antimicrobial Agents and Chemotherapy, (C-92), 1994.
60. Vakulenko SB, EK Manavathu, N Obedeau, and SA Lerner: A species-specific fragment of DNA from *Candida krusei* for development of PCR detection, 32nd Annual Meeting, Infectious Diseases Society of America, (No. 80), 1994.
61. Alangaden GJ, EK Manavathu, and SA Lerner: Susceptibility of quinolone-resistant strains of *Mycobacterium tuberculosis* (MTB) to ciprofloxacin (CIP), ofloxacin (OFL), sparfloxacin (SPL), and five investigational fluoroquinolones (FQs), 32nd Annual Meeting, Infectious Diseases Society of America, (No. 176), 1994.
62. Manavathu EK, GH Alangaden, and SA Lerner: Selection and characterization of azole-resistant mutants of *Aspergillus fumigatus*, 95th General Meeting, American Society for Microbiology, (A-36), 1995.
63. Manavathu EK, GJ Alangaden, and SA Lerner: A comparative study of the micro- and macrobroth dilution techniques for the determination of *in vitro* susceptibility of *Aspergillus fumigatus*, 95th General Meeting, American Society for Microbiology, (C-356), 1995.
64. Manavathu EK, GJ Alangaden, and SA Lerner: Isolation and characterization of itraconazole-resistant mutants of *Aspergillus fumigatus*, 35th Interscience Conference on Antimicrobial Agents and Chemotherapy, (C-101), 1995.
65. Lerner SA, SB Vakulenko, M Toth, P Taibi, and S Mobashery: Exploration of the  $\Omega$ -loop of the TEM-1  $\beta$ -lactamase by mutational replacements, Keystone Symposium on Molecular Basis for Drug Resistance in Bacteria, Parasites and Fungi, (No. 302), 1996.
66. Gomez R, SB Vakulenko, and SA Lerner: Selection of a mutant derivative of P99  $\beta$ -lactamase by growth on cefepime, 96th General Meeting, American Society for Microbiology, (A-39), 1996.
67. Vakulenko SB, M Toth, P Taibi, S Mobashery, and SA Lerner: Effect of omega-loop mutations on activity of the TEM-1  $\beta$ -lactamase, 96th General Meeting, American Society



for Microbiology, (A-40), 1996.

68. Alangaden GJ, FR Igno, NM Zvonok, and SA Lerner: Mechanism(s) of amikacin and streptomycin resistance in *M. tuberculosis* (MTB), 96th General Meeting, American Society for Microbiology, (U-77), 1996.
69. Alangaden GJ, FR Igno, NM Zvonok, EK Manavathu, and SA Lerner: Mechanism(s) of kanamycin (KM) and amikacin (AK) resistance in *Mycobacterium tuberculosis* (MTB), 36th Interscience Conference on Antimicrobial Agents and Chemotherapy, (C-136), 1996.
70. Gomez R, SB Vakulenko, and SA Lerner: Effect of mutations in P99  $\beta$ -lactamase on cefepime resistance, 97<sup>th</sup> General Meeting, American Society for Microbiology, (A1), 1997.
71. Alangaden GJ, BN Kreiswirth, A Aouad, M Khetarpal, S Moghazeh, EK Manavathu, and SA Lerner: Mechanism of high-level kanamycin and amikacin resistance in clinical isolates of *Mycobacterium tuberculosis*, 37<sup>th</sup> Interscience Conference on Antimicrobial Agents and Chemotherapy, (C-3), 1997.
72. Vakulenko SB, B Geryk, and SA Lerner: Effects on  $\beta$ -lactam resistance produced by mutations at position 293 in the class C P99  $\beta$ -lactamase, 37<sup>th</sup> Interscience Conference on Antimicrobial Agents and Chemotherapy, (C-202), 1997.
73. Vakulenko SB, B Geryk, L Kotra, S Mobashery, and SA Lerner: Selection and characterization of  $\beta$ -lactam/ $\beta$ -lactamase inactivator-resistant mutants following PCR mutagenesis of the TEM-1  $\beta$ -lactamase gene, 98<sup>th</sup> General Meeting, American Society for Microbiology, (V-130), 1998.
74. Vakulenko SB, B Geryk, A Bulychev, S Mobashery, and SA Lerner: A mutant derivative of the class C P99  $\beta$ -lactamase with proline replacing leucine at position 293 (P99-L293P) confers resistance to cefepime, 38<sup>th</sup> Interscience Conference on Antimicrobial Agents and Chemotherapy, (C-165), 1998.
75. Vakulenko SB and SA Lerner: Evolution of the TEM-1  $\beta$ -lactamase to confer resistance to cefepime (CPM) and/or ceftazidime (TAZ) following intensive mutagenesis, 99<sup>th</sup> General Meeting, American Society for Microbiology, (A-27), 1999.
76. Vakulenko SB and SA Lerner: Mutational alteration in substrate specificity of class C P99  $\beta$ -lactamase, International Congress on  $\beta$ -Lactamases, L'Aquila, Italy, 1999.
77. Vakulenko SB, S Mobashery, and SA Lerner: Extended-spectrum (E-S), inhibitor-resistant mutants of the TEM-1  $\beta$ -lactamase, 39<sup>th</sup> Interscience Conference on Antimicrobial Agents and Chemotherapy, (2048), 1999.
78. Lee HK, S Vakulenko, SA Lerner, DB Clewell, and JW Chow: PCR-generated mutations in the *aph(2'')-Ic* gentamicin resistance gene of *Enterococcus* are associated with increased levels of aminoglycoside resistance, 41<sup>st</sup> Interscience Conference on Antimicrobial Agents

and Chemotherapy, (C-165), 2001

79. Lee H, SB Vakulenko, SA Lerner, JW Chow: Mutants of the enterococcal APH(2'')- Ic enzyme confer differential levels of aminoglycoside resistance, 42<sup>nd</sup> Interscience Conference on Antimicrobial Agents and Chemotherapy, (C-1616), 2002.
80. Lee HK, SB Vakulenko, C Kim, SA Lerner, JW Chow: Overexpression, purification, and substrate specificity of the His-258-Leu mutant of aminoglycoside 2''-phosphotransferase type Ic from *Enterococcus gallinarum*, 103<sup>rd</sup> General Meeting, American Society for Microbiology, (A-102), 2003.
81. Juzych NS, E Bissonnette, M Eley, and SA Lerner: Resistance Ranger: Teaching schoolchildren about antimicrobial resistance, 2<sup>nd</sup> International Conference on Improving Use of Medicines, Abstr. 531, 2004.
82. Juzych NS, M Banerjee, L Essenmacher, and SA Lerner: Changes in antimicrobial prescribing patterns following a health care provider educational intervention, 2<sup>nd</sup> International Conference on Improving Use of Medicines, Abstr. 532, 2004.
83. Roth, L, SA Lerner, and M Feder: Workshop (developed by the participants) on Integrating Clinician-Educators into the Governance of a Medical School Faculty, Annual Meeting of the Group on Faculty Affairs of the Association of American Medical Colleges, 2008.
84. Geist, L, SA Lerner, K Gillam, and VA Mulhern: Workshop (developed by the participants) on Senior Faculty Transitions: Retirement: The Last Promotion; Lerner SA: A Bottleneck in Recycling of Tenured Faculty Positions, Annual Meeting of the Group on Faculty Affairs of the Association of American Medical Colleges, 2011.

#### Presentations (Symposia and Selected Invited Lectures)

1. Lerner, SA: Ototoxicity of antimicrobial agents in man, Symposium on Toxicity of Antimicrobial Agents, 17th Interscience Conference on Antimicrobial Agents and Chemotherapy, 1977.
2. Lerner SA and GJ Matz: Guidelines for monitoring patients during treatment with aminoglycoside antibiotics, American Academy of Otolaryngology, 1978.
3. Lerner SA: Comparative antibacterial activity and ototoxicity of aminoglycoside antibiotics, Conference on Aminoglycoside Antibiotics, University of Minnesota School of Medicine, 1978.
4. Lerner SA: Lectures on aminoglycoside toxicity and bacterial resistance to aminoglycosides, Stockholm, Eskilstuna, Malmo, Lund, and Gothenburg, Sweden; University of Ghent, University of Leuven (Louvain), and Institut Jules Bordet (University of Brussels), Belgium, 1979.



5. Lerner SA, GJ Matz, and JE Hawkins Jr: Convenors of the International Conference on Aminoglycoside Ototoxicity, 1979.
6. Lerner SA, R Seligsohn, I Bhattacharya, R Hinojosa, and GJ Matz: Pharmacokinetics of aminoglycosides in the inner ear perilymph of man, International Conference on Aminoglycoside Ototoxicity, 1979.
7. Matz GJ and SA Lerner: Prospective studies of aminoglycoside ototoxicity in adults, International Conference on Aminoglycoside Ototoxicity, 1979.
8. Lerner SA: Chairman of panel discussion on guidelines for monitoring and prevention of aminoglycoside ototoxicity, International Conference on Aminoglycoside Ototoxicity, 1979.
9. Lerner SA: Comparative susceptibility of clinical isolates to dibekacin and gentamicin, US Workshop on Dibekacin, 1979.
10. Lerner SA: Development of resistance to aminoglycosides in gram-negative bacteria, Section of Infectious Diseases, University of Illinois School of Medicine, 1979.
11. Lerner SA: Studies on aminoglycoside resistance in gram-negative bacteria, Section of Infectious Diseases, University of Arizona School of Medicine, 1980.
12. Lerner SA, R Seligsohn, I Bhattacharya, R Hinojosa, and GJ Matz: Aminoglycoside levels in the inner ear perilymph of man, Second International Conference on Antibiotic Nephrotoxicity, Rouen, France, 1981.
13. Lerner SA: Visiting Scholar of the Chinese Academy of Medical Sciences, 1981. Lectures on "Aminoglycoside Antibiotics: Their Use and Toxicity" and "Development of Resistance to Aminoglycosides by Gram-Negative Bacteria," and scholarly exchange on research and clinical infectious diseases: Capital Hospital Medical College, Institute of Antibiotics, and Institute of General Medical Research, Beijing; Shanghai First Medical College and Institute of Pharmacology, Shanghai; Chongqing Medical College, Chongqing; Sichuan Medical College, Chengdu; and Yunnan Medical College, Kunming.
14. Lerner SA: Comparative studies of aminoglycoside ototoxicity, US Netilmicin Symposium, 1982.
15. Lerner SA: Development of resistance to aminoglycosides in gram-negative bacteria, Section of Infectious Diseases, Medical University of South Carolina, 1982.
16. Lerner SA: The role of aminoglycosides in urinary tract infection, Chicago Urological Society, 1983.
17. Lerner SA: Mechanisms of resistance to antibiotics, Illinois Society for Microbiology, 1983.



18. Lerner SA: Synergistic combinations of cefsulodin and other antibiotics, *Pseudomonas aeruginosa* - Biology, Immunology and Therapy: A Cefsulodin Symposium, 1983.
19. Lerner SA: The development of chemotherapy in the twentieth century, Charles E. Culpeper Foundation Symposium (Morris Fishbein Center, University of Chicago), 1983.
20. Lerner SA: Experimental  $\beta$ -lactam antibiotics, Northern Illinois Society of Hospital Pharmacists, 1984.
21. Lerner SA: The role of inducible  $\beta$ -lactamases in antimicrobial resistance, Issues of Current and Future Antimicrobial Therapy, 1984.
22. Lerner SA: Emergence of  $\beta$ -lactam resistance of *Pseudomonas aeruginosa* during treatment with new  $\beta$ -lactams, Workshop on Emergence of Resistance During Therapy with the Newer  $\beta$ -Lactam Antimicrobial Agents, sponsored by the Mediterranean Society of Chemotherapy, 1984.
23. Lerner SA: Comparative toxicity of aminoglycosides. Emergence of resistance to new  $\beta$ -lactams, Henry Ford Hospital (University of Michigan School of Medicine), 1985.
24. Lerner SA: Are there clinically important differences in the toxic potential of the newer aminoglycosides? in the Symposium "Is There Presently a Role for Aminoglycosides in the Therapy of Bacterial Infections?," 25th Interscience Conference on Antimicrobial Agents and Chemotherapy, 1985.
25. Lerner SA: Future role of aminoglycoside antibiotics, First Annual Clinical Pharmacy Symposium, Michigan Pharmacists Association, 1985.
26. Lerner SA: Lessons learned from aminoglycosides, Infectious Disease Dinner, Central Society for Clinical Research, 1985.
27. Lerner SA: Clinical ototoxicity of aminoglycosides, Aminoglycoside Therapy: A New Decade, A Worldwide Perspective, 1986.
28. Lerner SA: Optimal duration of treatment of urinary tract infections in different clinical situations, Inpharzam Medical Forum on The Single Dose Therapy of Urinary Tract Infections. Facts and Perspectives, 1986.
29. Lerner SA: Concerns with current antibiotic therapy, Aztreonam, the First Monobactam: Its Role in the Treatment of Gram-Negative Infections, 1986.
30. Lerner SA: Mechanisms for interbacterial transfer of drug resistance, Panel on Antibiotic Resistance and Cross Resistance, 1986.
31. Lerner SA: Bacterial resistance to aminoglycoside antibiotics, Section of Infectious

Diseases, Brown University School of Medicine, 1986.

32. Lerner SA: Toxicity of aminoglycoside antibiotics, First Latin American Congress of Chemotherapy, Buenos Aires, Argentina, 1986.
33. Lerner SA: Development of bacterial resistance to amikacin, Instituto de Investigaciones Bioquimicas (Dir: Luis F. Leloir), Buenos Aires, Argentina, 1986.
34. Lerner SA: Ototoxicity of aminoglycoside antibiotics, Third Pan-American Congress of Infectious Disease and Chemotherapy, San Juan, Puerto Rico, 1986.
35. Lerner SA: Resistance to imipenem, Third Pan-American Congress of Infectious Diseases and Chemotherapy, San Juan, Puerto Rico, 1986.
36. Lerner SA, S Price, and S Kulkarni: Microbiological studies of fosfomycin trometamol *in vitro*, New Trends in Urinary Tract Infections: Single-Dose Therapy, 1987.
37. Lerner SA: Development of resistance to amikacin, Servicio de Microbiologia, Centro Especial Ramon y Cajal, Madrid, Spain, 1987.
38. Lerner SA: Convenor of Symposium on Mechanisms of Antibiotic Resistance, Wayne State University School of Medicine, 1987.
39. Lerner SA: Development of resistance to amikacin, Symposium on Mechanisms of Antibiotic Resistance, Wayne State University School of Medicine, 1987.
40. Lerner SA: Emerging antibiotic resistance: mechanisms and implications, South Central Association for Clinical Microbiology, 1987.
41. Lerner SA: Emergence of resistance to antibiotics during therapy, Michigan Branch, American Society for Microbiology, 1987.
42. Lerner SA: Resistance to imipenem in *P. aeruginosa*, Conference on New Developments in Resistance to  $\beta$ -Lactam Antibiotics Among Non-Fastidious Gram-Negative Organisms, Bowness-on-Windermere, United Kingdom, 1987.
43. Lerner SA: Assessment of glycopeptide ototoxicity, Teicoplanin Investigators Workshop, New York, NY, 1987.
44. Lerner SA: The effect of cation supplementation on the synergistic activity of netilmicin and piperacillin against *Pseudomonas aeruginosa*, The Impact of Novel Dosing Regimens on the Safety and Efficacy of Aminoglycosides, Sorrento, Italy, 1987.
45. Lerner SA: Convenor of Symposium on Controversies in Clinical Trials of Antimicrobial Agents, 4th Annual Conference, Inter-American Society for Chemotherapy, 1988.



46. Lerner SA: Problems of antibiotic resistance and perspectives on the use of various groups of antibiotics, National Research Institute of Antibiotics, Moscow, USSR, 1988.
47. Lerner SA: Development of antibacterial resistance to "backup antibiotics", imipenem and amikacin, Department of Medicine, Chicago Medical School, 1988.
48. Lerner SA: Microbiological rationale for once daily dosing with aminoglycosides, New Perspectives of Dosing in Antibiotic Therapy with Aminoglycosides, Caracas, Venezuela, 1988.
49. Lerner SA, SM Navashin, and RC Moellering, Jr.: Convenors of the 1st Soviet-American Symposium on Antibiotics and Chemotherapy, Moscow, USSR, 1988.
50. Lerner SA: Aminoglycoside-modifying enzymes and aminoglycoside resistance, 1st Soviet-American Symposium on Antibiotics and Chemotherapy, Moscow, USSR, 1988.
51. Lerner SA: Emergence of resistance to antibiotics, Department of Biochemistry, Wayne State University School of Medicine, 1988.
52. Lerner SA: Selection of new resistance to ampicillin-clavulanic acid, 5th Annual Conference of the Inter-American Society for Chemotherapy, Buenos Aires, Argentina, 1988.
53. Lerner SA: New resistance to aminoglycoside antibiotics, 5th Annual Conference of the Inter-American Society for Chemotherapy, Buenos Aires, Argentina, 1988.
54. Lerner SA: Mechanisms of resistance to antibiotics, Department of Medicine, Veterans Administration Medical Center, University of North Dakota School of Medicine, 1988.
55. Lerner SA: Emergence of bacterial resistance to antibiotics, Department of Infectious Diseases, University Hospital of Lund, Lund, Sweden, 1989.
56. Lerner SA: Clinical studies on the treatment of serious gram-positive coccal infections with teicoplanin, Department of Infectious Diseases, General Hospital (University of Lund), Malmo, Sweden, 1989.
57. Lerner SA: Emergence of bacterial resistance to antibiotics, Department of Clinical Microbiology, Karolinska Institute, Stockholm, Sweden, 1989.
58. Lerner SA: Mechanisms of emergence of resistance to antibiotics, Division of Infectious Disease, Duke University School of Medicine, 1989.
59. Lerner SA: Development of resistance to antibiotics: A model of bacterial evolution, Department of Biology, University of Louisville, 1989.
60. Lerner SA: Emergence of bacterial resistance to antibiotics, Department of New Drug

Development, Abbott Laboratories, 1989.

61. Lerner SA: Overview of lomefloxacin, 16th International Congress of Chemotherapy, Jerusalem, Israel, 1989.
62. Lerner SA: The role of APH(3') enzymes in resistance to amikacin, 2nd Hellenic - British - Scandinavian Meeting on Chemotherapy, Thessaloniki, Greece, 1989.
63. Lerner SA: Emergence of resistance to antibiotics, Division of Infectious Disease, Syracuse University School of Medicine, 1989.
64. Lerner SA: Emergence of resistance to new antibiotics, Division of Infectious Disease, University of Minnesota VA Medical Center, 1989.
65. Lerner SA: Recent development of bacterial resistance to amikacin, 9th International Symposium on Future Trends in Chemotherapy, Geneva, Switzerland, 1990.
66. Lerner SA: Ciprofloxacin in the treatment of serious infections, 3rd International Congress of Internal Medicine, Buenos Aires, Argentina, 1990.
67. Lerner SA: Management and treatment of the septic patient, 3rd International Congress of Internal Medicine, Buenos Aires, Argentina, 1990.
68. Lerner SA: Resistance to amikacin (AK) by enzymatic phosphorylation, 7th Mediterranean Congress of Chemotherapy, Barcelona, Spain, 1990.
69. Lerner SA: Development of resistance to ampicillin plus clavulanic acid as the result of mutation in the structural gene of the TEM-1  $\beta$ -lactamase, Annual Conference of the Hungarian Society of Chemotherapy, Hajduszoboszlo, Hungary, 1990.
70. Lerner SA: Participant, NIH Workshop on Antibiotic Resistance, Annapolis, MD, 1990.
71. Lerner SA: Aminoglycosides in the 1990s, Chicago Infectious Disease Society, 1990.
72. Lerner SA: Dose adjustment of antibiotics: What is needed to minimize toxicity? 25th Annual Midyear Clinical Meeting, American Society of Hospital Pharmacists, 1990.
73. Lerner SA: Resistance to ampicillin plus clavulanic acid in *E. coli* as the result of mutational alteration of the TEM-1  $\beta$ -lactamase to resistance to inactivation by clavulanic acid, 2nd Western Pacific Congress of Chemotherapy and Infectious Diseases, Jomtien, Thailand, 1990.
74. Lerner SA: Failures based on emergence of antimicrobial resistance, 17th International Congress of Chemotherapy, Berlin, Germany, 1991.
75. Lerner SA: Guidelines for the evaluation of therapy of acute uncomplicated urinary tract



infections in women, 5th European Congress of Clinical Microbiology and Infectious Disease, Oslo, Norway, 1991.

76. Lerner SA: Tolerance of high-dose teicoplanin: Experience at Detroit Receiving Hospital, Second Teicoplanin Investigators Workshop on Endocarditis, Tucson, AZ, 1992.
77. Lerner SA: Is the addition of an aminoglycoside to a  $\beta$ -lactam necessary in serious infections? 8th Mediterranean Congress of Chemotherapy, Athens, Greece, 1992.
78. Lerner SA: Conventional or single-dose treatment of urinary tract infections, VIIth Brazilian Congress of Infectious Diseases, Sao Paulo, Brazil, 1992.
79. Lerner SA: Review of current therapy for urinary tract infections, U.S. Investigators Meeting on Cefepime, San Diego, CA, 1993.
80. Lerner SA: New mechanisms of bacterial resistance to antibiotics, Seminar on Current Trends in Infectious Disease, St. Louis College of Pharmacy, St. Louis, MO, 1993.
81. Lerner SA: Structure-function relationships of  $\beta$ -lactamase, American Society for Microbiology General Meeting, Las Vegas, NV, 1994.
82. Lerner SA: Clinical use of quinolones in mycobacterial diseases, 5th International Symposium on New Quinolones, Singapore, 1994.
83. Lerner SA:  $\beta$ -Lactamases in  $\beta$ -lactam resistance, 4th Western Pacific Congress of Chemotherapy and Infectious Diseases, Manila, 1994.
84. Lerner SA: Mycobacterial resistance to antimicrobial agents, 4th Western Pacific Congress of Chemotherapy and Infectious Diseases, Manila, 1994.
85. Lerner SA: Bacterial antibiotic resistance: Tarnishing the silver bullet, Pacific Northwest Meeting, Association of Official Analytical Chemists, Olympia, WA, 1995.
86. Lerner SA: The physician's responsibility in preventing medication misadventures, American Society of Health-System Pharmacists Annual Meeting, Las Vegas, NV, 1995.
87. Lerner SA: Rational approach to antibiotic therapy, 3rd Russian National Congress "Man and Medicine," Moscow, 1996.
88. Lerner SA: Clinical aspects of antibiotic resistance, 3rd Russian National Congress "Man and Medicine," Moscow, 1996.
89. Lerner SA: Antibiotics and antibiotic resistance: Implications for society, Pacific Northwest Meeting, Association of Official Analytical Chemists, Bellingham, WA, 1996.
90. Lerner SA: Invited Participant, Ciba Symposium on Antibiotic Resistance, London, 1996.

91. Lerner SA: Classification and structure of  $\beta$ -lactamases, 10th Mediterranean Congress of Chemotherapy, Antalya, Turkey, 1996.
92. Lerner SA: Control of antibiotic usage in a hospital setting, 21st National Congress of Infectology and Clinical Microbiology/3rd National Congress of Antimicrobials and Chemotherapy, Guadalajara, Mexico, 1996.
93. Lerner SA: Structure-function relationships of  $\beta$ -lactamases, 5th Western Pacific Congress of Chemotherapy and Infectious Diseases, Singapore, 1996.
94. Lerner SA: Structure-function relationships in  $\beta$ -lactamases, 20<sup>th</sup> International Congress of Chemotherapy, Sydney, Australia, 1997.
95. Lerner SA: Clinical significance of antibiotic resistance, Republic of Tatarstan Seminar on Antimicrobial Chemotherapy, Kazan, Russia, 1997.
96. Lerner SA: Means of reducing costs of antibacterial therapy, Republic of Tatarstan Seminar on Antimicrobial Chemotherapy, Kazan, Russia, 1997.
97. Lerner SA: Antibiotic resistance issues, Ferris State University School of Pharmacy, Big Rapids, MI, 1997.
98. Lerner SA: Clinical impact of antibiotic resistance, Conference on Maternal-Perinatal Health, Michigan State Medical Society, Dearborn, MI, 1998.
99. Lerner SA: Clinical impact of antibiotic resistance, Nurse Practitioners Association for Continuing Education National Meeting, Chicago, 1998.
100. Lerner SA: Recent developments in antibiotic resistance, Division of Infectious Diseases, Henry Ford Medical Center, 1998.
101. Lerner SA: Appropriate and cost-effective use of out-patient antibiotics, Michigan State Medical Society, Dearborn, MI 1998.
102. Lerner SA: Antibiotic resistance in sexually transmitted diseases, 6<sup>th</sup> Western Pacific Congress of Chemotherapy and Infectious Diseases, Kuala Lumpur, Malaysia, 1998.
103. Lerner SA: Antibiotic resistance in clinical medicine, International Diarrheal Disease Research Institute, Dhaka, Bangladesh, 1998.
104. Lerner SA: Strategies to control antibiotic usage, Pan American Health Organization Symposium on Addressing Problems of Antibiotic Resistance in Latin America, Asuncion, Paraguay, 1999.



105. Lerner SA: Antibiotic-resistant organisms and their impact on treatment strategies, length of stay, and discharge planning issues, Continuing Medical Education of Blue Cross-Blue Shield of Michigan, Flint and Southfield, MI, 1999.
106. Lerner SA: Clinical impact of antibiotic resistance, 16<sup>th</sup> Annual Infectious Disease Symposium, St. John Northeast Community Hospital, Detroit, 1999.
107. Lerner SA: Rational use of antibiotics, Update on Infectious Disease, Michigan State Medical Society, Dearborn, 1999.
108. Lerner SA: Regulation of antibiotic usage in the hospital, 6<sup>th</sup> Peruvian Congress of Infectious and Tropical Diseases, Lima, 1999.
109. Lerner SA:  $\beta$ -Lactamases and their role in  $\beta$ -lactam resistance, 6<sup>th</sup> Peruvian Congress of Infectious and Tropical Diseases, Lima, 1999.
110. Lerner SA: Evolution of  $\beta$ -lactamase-mediated resistance to  $\beta$ -lactam antibiotics, 7<sup>th</sup> International Symposium on Molecular Aspects of Chemotherapy, Gdansk, Poland, 1999.
111. Lerner SA: Evolution of  $\beta$ -lactamase-mediated resistance to  $\beta$ -lactam antibiotics, Serum and Vaccine Research Laboratory, Polish Academy of Medical Sciences, Warsaw, 1999.
112. Lerner SA: Resistance in gram-negative bacteria, Antimicrobial Resistance in the 1990s, Wayne State University School of Medicine Continuing Medical Education, Novi, MI, 1999.
113. Lerner SA: Mechanisms of antibiotic resistance and implications for treatment, School of Medicine of Ho Chi Minh City, Ho Chi Minh City (Saigon), Vietnam, 1999.
114. Lerner SA: Clinical impact of antibiotic resistance, Michigan Pharmacists Association, Dearborn, 2000.
115. Lerner SA: Antibiotic resistance in primary care, Reproductive Health Care 2000, Seattle, 2000.
116. Lerner SA: Strategies to address antibiotic resistance in the hospital, Pan American Health Organization Task Force on Addressing Problems of Antibiotic Resistance in Latin America, Miami, 2000.
117. Lerner SA: Development and implementation of policies for control of antibiotic usage, Joint Symposium of the Interregional Association of Clinical Microbiology and Antimicrobial Chemotherapy and the American Society for Microbiology, Antibiotics and Drug Resistance at the Dawn of the New Millennium, Moscow, 2000.
118. Lerner SA: The threat of antibiotic resistance, Michigan Public Health and Preventive Medicine Physicians, Dearborn, 2000.

119. Lerner SA: Quinolone antibiotics and their role in clinical practice, Update on Infectious Disease, Michigan State Medical Society, Dearborn, 2000.
120. Lerner SA: Addressing the challenges of antibiotic resistance in the hospital setting, University of Malaysia School of Medicine, Kuala Lumpur, 2000.
121. Lerner SA: Antimicrobial strategies for the control of resistant gram-negatives in hospitals, 7th Western Pacific Congress of Chemotherapy and Infections Diseases, Hong Kong, 2000.
122. Lerner SA: Chair of a Symposium on "Antibiotic Resistance: Improvement of Appropriate Use of Antibiotics in the Americas," 10<sup>th</sup> Pan-American Congress of Infectious Disease, Guadalajara, Mexico, 2001; Lerner SA: The role of international health organizations in the control of antibiotic resistance, presented in this symposium.
123. Saubolle M, S Sharp, and SA Lerner: Workshop on antibiotic susceptibility testing and its significance, Annual Conference of the Interregional Association for Clinical Microbiology and Antimicrobial Chemotherapy, Moscow, Russia, 2001.
124. Lerner SA: Problems and impact of antibiotic resistance in hospital and daily clinical practice, Annual Congress of the Indonesian Society of Microbiology, Yogyakarta, Indonesia, 2001.
125. Lerner SA: Detection and significance of extended-spectrum  $\beta$ -lactamases, 35<sup>th</sup> Brazilian Congress on Clinical Pathology, Salvador da Bahia, Brazil, 2001.
126. Lerner SA: Organized and chaired a symposium on "Antibiotic Resistances: Global Threat and Local Responses," Annual Meeting of the American Public Health Association, Atlanta, GA, 2001; Lerner SA: A state initiative on antibiotic resistance: The MARR coalition.
127. Lerner SA: Structure-function relationships of  $\beta$ -lactamases. Latin American Congress of Microbiology, Havana, Cuba, 2002.
128. Saubolle, M, S Sharp, and SA Lerner: Workshop on antibiotic susceptibility testing and its clinical significance, Tomsk, Omsk, and Novosibirsk, Russia, 2002.
129. Lerner SA: Resistance Ranger: Teaching schoolchildren about antimicrobial resistance, 2<sup>nd</sup> International Conference on Improving Use of Medicines (sponsored by the WHO), Chiang Mai, Thailand, 2004.
130. Lerner SA: Impact of antibiotic resistance on the approach to URIs and other infections, Michigan Academy of Family Physicians, Mackinac Island, Michigan, 2004.
131. Lerner SA: Interventions in the community to reduce inappropriate treatment with antibiotics, 34<sup>th</sup> National Congress of the Mexican Society of Microbiology, Cancun, Mexico, 2004.



132. Lerner SA: The use of drug formularies and clinical treatment guidelines, Symposium on Lessons Learned in the Partnership between the Pan American Health Organization (PAHO) and the U. S. Agency for International Development (USAID), Pan American Health Organization, Washington, DC, 2004.
133. Lerner SA: The importance and legacy of Leonid S. Stratchounski and the Institute of Antimicrobial Chemotherapy, Dedication of the Institute of Antimicrobial Chemotherapy of the Smolensk State Medical Academy, Smolensk, Russia, 2005.
134. Lerner SA: Antibiotic resistance as a key to establish antibiotic policies, VIII International IACMAC Congress, Moscow, Russia, 2006.
135. Lerner SA: Management strategy of infectious complications in patients with diabetes, VIII International IACMAC Congress, Moscow, Russia, 2006.
136. Lerner SA: The MARR coalition: Promoting appropriate antibiotic use through education, Symposium in memory of Leonid S. Stratchounski, Smolensk State Medical Academy, Smolensk, Russia, 2006.
137. Lerner SA: Impact of education for behavioral change in prescribing, XIII Pan-American Congress of Infectious Disease, Punta Cana, Dominican Republic, 2007.
138. Lerner SA: Antimicrobial Formularies: Tools in the Optimization of Antimicrobial Therapy, X Congress of the Interregional Association for Clinical Microbiology and Antimicrobial Chemotherapy, Moscow, Russia, 2008.
139. Lerner SA: Integrating Clinician-Educators into Faculty Governance: The Wayne State University School of Medicine Experience, AAMC Group on Faculty Affairs Conference, Pittsburgh, 2008.
140. Lerner SA: Development and management of antimicrobial formularies in General Hospitals, Russian Far East Conference of the Interregional Association of Clinical Microbiology and Antimicrobial Chemotherapy, Khabarovsk, Russia, 2009.
141. Lerner SA: The Clinical Impact of Antibiotic-Resistant *Streptococcus pneumoniae*, Annual Scientific Program, Michigan State Medical Society, Detroit, 2009.
142. Lerner SA: Origin, Evolution, and Mechanisms of Antibacterial Resistance, in Minicourse on "Antimicrobial Resistance in Bacteria, Fungi, and Viruses," Singapore, 2010.
143. Lerner SA: Clinical Impact of Bacterial Resistance and Strategies of Control of Antibiotic Usage, in Minicourse on "Antimicrobial Resistance in Bacteria, Fungi, and Viruses," Singapore, 2010.

144. Lerner SA: Appropriate Use of Antibiotics in Hospitals --- Antibiotic Stewardship, III Central Russian Conference on Antimicrobial Chemotherapy (in Memory of Leonid Stratchounski), Smolensk, Russia, 2012.
145. Lerner SA: Antibiotic Resistance: Evolution for Bacterial Survival (in a session I was invited to organize on "Antibiotic Resistance: State of the Problem and Possible Strategies to Control It") First International Conference on Infectious Diseases and Nanomedicine, Kathmandu, Nepal, 2012.
146. Lerner SA: Coping with Antibiotic Resistance (in a session I was invited to organize on "Antibiotic Resistance: State of the Problem and Possible Strategies to Control It"), First International Conference on Infectious Diseases and Nanomedicine, Kathmandu, Nepal, 2012.
147. Lerner SA: A New High School Science Curriculum on Bacteria, Viruses, and Antibiotic Resistance, Michigan Science Teachers Association Annual Conference, Ypsilanti, Michigan, 2013.
148. Lerner SA: Resurrection of Old Drugs for Multidrug-Resistant Gram-Negative Bacteria: Fosfomycin, IUMS Conference on Antimicrobial Resistance, Havana, Cuba, 2013.
149. Lerner SA: Resurrection of Old Drugs for Multidrug-Resistant Gram-Negative Bacteria: Education about Antibiotic Resistance in the Community, IUMS Conference on Antimicrobial Resistance, Havana, Cuba, 2013.
150. Lerner SA: Resurrection of Old Drugs for Multidrug-Resistant Gram-Negative Bacteria: New Drugs on the Horizon, IUMS Conference on Antimicrobial Resistance, Havana, Cuba, 2013.
151. Lerner SA: Multidrug Resistance in Gram-Negative Bacilli: Mechanisms of Resistance and Strategic Approaches to Overcome the Problem, Opening Lecture at a Workshop on Host-Microbe Interaction of the Israeli Society of Microbiology, Nazareth, Israel, 2013.
152. Lerner SA: A High School Science Curriculum on Bacteria, Viruses, and Antibiotic Resistance, Michigan Science Teachers Association Annual Conference, Lansing, Michigan, 2013.
153. Lerner SA: So What Shall We Do About Antibiotic Resistance?, Latin American Congress of Microbiology, Cartagena, Colombia, 2014..
154. Lerner SA: Antibiotic Resistance --- And What To Do About It, 19<sup>th</sup> Annual DMC Infectious Disease and Critical Care Symposium, Dearborn, Michigan, 2015.
155. Lerner SA: Education on Antibiotic Resistance in the Community, 5<sup>th</sup> Annual Conference of the Clinical Infectious Diseases Society of India, New Delhi, India, 2015.



156. Lerner SA: Antibiotic Stewardship, Conference of the 85<sup>th</sup> Anniversary of the Kazakh National Medical University, Almaty, Kazakhstan, 2015.
157. Lerner, SA: Education on Antibiotic Resistance in the Community, Conference of the 85<sup>th</sup> Anniversary of the Kazakh National Medical University, Almaty, Kazakhstan, 2015.