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EDUCATIONAL BACKGROUND

- SM** 1971 Sloan School of Management, Massachusetts Institute of Technology
Concentration in System Dynamics and Public Sector Systems Analysis
- SB** 1969 Sloan School of Management, Massachusetts Institute of Technology
Concentration in System Dynamics

PROFESSIONAL EXPERIENCE

- 1980- INDEPENDENT MANAGEMENT CONSULTANT AND CREATOR OF LEARNING ENVIRONMENTS**
Specializing in Strategic Management and Planning for Organizations in Health Care, Business, and Education; Development of System Dynamics models for organizations and for public policy problems; Creation of Learning Environments that help people in these fields deal with change.
- 1969-1980 PUGH-ROBERTS ASSOCIATES, INC. DIRECTOR, HEALTH AND SOCIAL SYSTEMS AREA**
Managed all projects and professional activities for a six-person staff concentrated on Strategic Planning and Management in Health Care and Human Services organizations.

BOOKS

Reorienting Health Services: Applications of a Systems Approach, with C. O. Pannenberg, K. Barnard, and A. van der Werff, New York, Plenum Press, 1984

Dynamics of Human Service Delivery, with G. Levin, E. Roberts, N. Roberts, D. Kligler, and J. Wilder, Cambridge, Ballinger Publishing, 1976

The Persistent Poppy: A Computer-Aided Search for Heroin Policy, with G. Levin and E. Roberts, Cambridge, Ballinger Publishing, 1975

PUBLISHED ARTICLES AND BOOK CHAPTERS

“Dynamic Strategies for Successful Health Collaboratives”, with K. Isaacs and R. Wageman, Stanford Social Innovation Review, Summer, 2022

“AAMC’s Local Area Physician Workforce Modeling Project”, with M. Dill, Academic Medicine, October, 2021

“Unnecessary Catastrophe Facing US Hospitals and Healthcare Heroes”, The Hill, July 9, 2020

“Simulating System Dynamics of the HIV Care Continuum to Achieve Treatment as Prevention”, with M. Weeks, D. Lounsbury, J. Li, M. Berman, D. Green, L. Rohena, R. Gonzalez, J. Montezuma-Rusca, S. Jackson, PLOS ONE. March 19, 2020

“System Dynamics Modeling to Rethink Health System Reform”, with J. Homer and B. Milstein, in Complex Systems and Population Health, Y. Apostolopoulos, K. Lich, and M. Lemke (Editors), Oxford, England, Oxford University Press, 2020

“A Model-Based Governance and Planning Tool for HIV/AIDS Services in Vietnam”, with J. Rice, in Enabling Collaborative Governance through Systems Modeling Methods, C. Bianchi, L. Luna-Reyes, and E. Rich (Editors), Cham, Switzerland, Springer Nature, 2020

“System Dynamics Applications to Health Care in the United States”, with J. Homer in System Dynamics: Theory and Applications, B. Dangerfield (Editor) New York, Springer Publishing, 2020

“Combined Regional Investments Could Substantially Enhance Health System Performance and Be Financially Affordable”, with J. Homer, B. Milstein, and E. Fisher, Health Affairs, August, 2016

“NASPAA's Student Simulation Competition: Reforming the US Health Care System within a Simulated Environment”, with L. McFarland, E. Reineke, B. Milstein, R. Niles, J. Homer, A. Desai, D. Andersen, R. MacDonald, R. Irving, and E. Cawvey, Journal of Public Affairs Education, July, 2016

“Reducing Early Childhood Caries in a Medicaid Population: A Systems Model Analysis”, with B. Edelstein, M. Frosh, and J. Kumar, Journal of the American Dental Association, April, 2015

“System Dynamics Applications to Health and Health Care” with J. Homer and A. Tomoaia-Cotisel, System Dynamics Review, Virtual Issue, published online 12 January, 2015

“Using Simulation to Compare Established and Emerging Interventions to Reduce Cardiovascular Disease Risk in the United States” with J. Homer, K. Wile, B. Yarnoff, J. Trogdon, L. Cooper, R. Soler, and D. Orenstein, Preventing Chronic Disease, November, 2014

“Using Simulation to Compare Four Categories of Intervention for Reducing Cardiovascular Disease Risks”, with J. Homer, J. Trogdon, K. Wile, and D. Orenstein, American Journal of Public Health, July, 2014

“Understanding Social Forces Involved in Diabetes Outcomes: A Systems Science Approach to Quality-of-Life Research”, with D. Lounsbury, C. Schwartz, and C. Vega, Quality of Life Research, published online 24 September, 2013

“County Officials Embark on New, Collective Endeavors to ReThink Their Local Health Systems”, with B. Milstein and K. Minyard, Journal of County Administration, March/April, 2013

‘Measuring the Uncertainties of Pandemic Influenza’, with J. Fair, D. Powell, R. LeClaire, L. Moore, M. Wilson, L. Dauelsberg, M. Samsa, S. DeLand, and B. Bush, Int. J. Risk Assessment and Management, 2012

“A Simulation Model for Designing Effective Interventions in Early Childhood Caries”, with B. Edelstein, M. Frosh, and T. Anselmo, Preventing Chronic Disease, March, 2012

“Analyzing National Health Reform Strategies with a Dynamic Simulation Model”, with J. Homer and B. Milstein, American Journal of Public Health, May, 2010

“A System Dynamics Model for Planning Cardiovascular Disease Interventions”, with J. Homer, E. Evans, and A. Zielinski, American Journal of Public Health, April, 2010

“System Dynamics Applications to Health Care in the United States”, with J. Homer, in Encyclopedia of Complexity and Systems Science, R. Meyers (ed), New York, Springer Publishing, 2009

“Chronic Illness in a Complex Health Economy: The Perils and Promises of Downstream and Upstream Reforms” with J. Homer and B. Milstein, System Dynamics Review, Summer/Fall, 2007

"Using System Dynamics Modeling to Understand the Impact of Social Change Initiatives", with R. Levine and R. Miller, American Journal of Community Psychology, June, 2007

“System Dynamics Modeling for Public Health: Background and Opportunities” with J. Homer, American Journal of Public Health, March, 2006

“SymBanc™: A Simulator for Microfinance Institutions”, with J. Rosengard, G. Stuart, and D. Johnston, Finance for the Poor (a publication of the Asian Development Bank), December, 2005

“Models for Collaboration: How System Dynamics Helped a Community Organize Cost Effective Care for Chronic Illness”, with J. Homer, M. Pierson, and M. Minniti, System Dynamics Review, Fall, 2004

“Teaching Physics with Dynamic Simulation”, Science Teacher, December, 2002

"Microworlds and Generic Structures as Resources for Integrating Care and Improving Health", with C. S. Immediato, System Dynamics Review, Fall, 1999

"Integrated Care: Fit to Be Tried", with R. Gregg, Hospitals & Health Networks, November, 5, 1997

"Responding to Managed Care: A Roadmap for the Therapist", with M. Dworkin, Psychotherapy in Private Practice, June, 1994

"Mastering the Transition to Capitation", with J. Kemeny, Healthcare Forum Journal, May-June, 1994

"The Strategy Checkup: How Healthy is Your Strategic Plan?", with M. Klein and L. Butler, Trustee, January, 1990

"A System Dynamic View of Substance Abuse" with G. Levin and E. Roberts in J. Lowinson and P. Ruiz (Editors) Substance Abuse: Clinical Problems and Perspectives, Baltimore, Williams and Wilkins, 1981

"Prevention and Rehabilitation as a Means of Cost-Containment: The Example of Myocardial Infarction", with W. Luginbuhl et al, Journal of Public Health Policy, June, 1981

"System Dynamics Modeling in Health Care", Simuletter, Summer, 1977

"A Simulation Model for "What If?" Questions in Plan Development", with D. Henderson-James, American Journal of Health Planning, July 1977

"Projecting a Teaching Hospital's Future Utilization" with B. Forsyth et al, Journal of Medical Education, November, 1976

"Strategic Modeling for Health Care Managers", with E. Roberts, Health Care Management Review, Winter, 1976

"A New Framework for Projecting Dental Manpower Requirements", with W. Killingsworth, Inquiry, June, 1975

"Evaluating HMO Policies with a Computer Simulation Model", with S. Miller, Medical Care, August, 1974

"Measuring and Improving the Productivity of Police Patrol", with L. Riccio, Journal of Police Science and Administration, June, 1974

"Narcotics and the Community: A System Simulation", with G. Levin and E. Roberts, American Journal of Public Health, June, 1972

CONFERENCE PRESENTATIONS AND MONOGRAPHS

“Understanding the Impacts of Incarceration on Health”, with R. Niles and K. Wile, International Conference of the System Dynamics Society, Chicago, Illinois (Virtual) July, 2021

“The ReThink Health Model: Supporting Multi-Stakeholder Collaboration in Local Communities”, Innovations in Collaborative Modeling, East Lansing, MI, June 14-15, 2016

“Understanding the Impacts of Incarceration on Health”, Report to the Minnesota Department of Public Health, with K. Wile, R. Niles, S. Becker, and L. Alexander, March, 2016

“The Puerto Rico Emergency Preparedness Model”, with H. Centeno, International Conference of the System Dynamics Society, Cambridge, Ma., July, 2015

“Local Area Physician Workforce Planning Model Pilot”, with M. Dill and E. Yunker, International Conference of the System Dynamics Society, Cambridge, Ma., July, 2015

“Systems Thinking and Simulations in the US Public Policy Community: NASPAA's Student Simulation Competition”, with L. McFarland, E. Reineke, B. Milstein, R. Niles, E. Cawvey, J. Homer, A. Desai, D. Andersen, and R. MacDonald, International Conference of the System Dynamics Society, Cambridge, Ma., July, 2015

“How Will Mandated Medicare Payment Rate Reductions Affect Hospitals and Patients to 2050?” with J. Homer and L. Cai, INFORMS Annual Meeting, San Francisco, CA, November 9-12, 2014

“A Model-Based Governance and Planning System for HIV/AIDS Services in Vietnam”, with J. Rice, M. Pham, T. Nguyen, Y. Vu, A. Doan, and S. Wilhelmsen, International Conference of the System Dynamics Society, Delft, The Netherlands., July, 2014

“ReThink Health Dynamics: Understanding and Influencing Local Health System Change” with J. Homer, B. Milstein, L. Scherrer, C. Ingersoll, L. Landy, J. Sterman, and E. Fisher, International Conference of the System Dynamics Society, St. Gallen, Switzerland, July, 2012

“Deceased Donor Potential for Organ Transplantation: A System Dynamics Framework”, with K. Saeed, K. McCleary, and K. Meyer, International Conference of the System Dynamics Society, St. Gallen, Switzerland, July, 2012

“A Simulation Model for Designing Effective Interventions in Early Childhood Caries”, with B. Edelstein, T. Anselmo, and M. Frosh, International Conference of the System Dynamics Society, Washington, DC, July, 2011

“Chronic Marijuana Use in Detroit: A Systemic View” with K. Asabigi and C. Trent, City of Detroit, Department of Health and Wellness Promotion, November, 2009

“The “HealthBound” Policy Simulation Game: An Adventure in US Health Reform”, with B. Milstein and J. Homer, International Conference of the System Dynamics Society, Albuquerque, NM, July, 2009

“Learning Environment Simulator: A Tool for Local Decision Makers and First Responders”, with R. LeClaire and A. Bandlow, International Conference of the System Dynamics Society, Albuquerque, NM, July, 2009

“Computer Gaming as a Learning Environment for Health Care Management, Policymaking, and Emergency Preparedness”, Games for Health Conference, Boston, MA, June, 2009

“The Value of Model-Based Simulators for Teaching Systems Thinking Principles and Subject Matter with Dynamic Content”, Systems Thinking and Dynamic Modeling Conference, Wellesley, MA., June, 2008

“A Prototype Desktop Simulator for Infrastructure Protection: An Application to Decision-Support for Controlling Infectious Disease Outbreaks”, with R. LeClaire et al, International Conference of the System Dynamics Society, Boston, Ma., July, 2007

“Expanding Health Coverage and Access for the Uninsured: A Model of Common Factors in the Experience of Several States”, International Conference of the System Dynamics Society, Nijmegen, The Netherlands, July, 2006

“A Generic Model of Contagious Disease and Its Application to Human-to-Human Transmission of Avian Influenza”, International Conference of the System Dynamics Society, Nijmegen, The Netherlands, July, 2006

“Packaged Simulators and Simulation-Based Learning Environments: An Alternative to Model-Building That Can Expand the Audience for System Dynamics”, The Creative Learning Exchange, Spring, 2006

“Achieving Health Care Reform in the United States: Toward a Whole System Understanding” with J. Homer, G. McDonnell, and B. Milstein, International Conference of the System Dynamics Society, Boston, Massachusetts, July, 2005

“Designing Simulation-Based Learning Environments: Helping People Understand Complex Systems”, International Conference of the System Dynamics Society, Boston, Massachusetts, July, 2005

“SymBanc™: A Simulator for Microfinance Institutions”, with J. Rosengard, G. Stuart, and D. Johnston, International Conference of the System Dynamics Society, Boston, Massachusetts, July, 2005

“Modeling the Consequences of Major Incidents for Health Care Systems” International Conference of the System Dynamics Society, Oxford, England, July, 2004

“Modeling the Dynamics of Health Care Services for Improved Chronic Illness Management”, with J. Homer, International Conference of the System Dynamics Society, Oxford, England, July, 2004

“Teaching Economics to High School Students with a System Dynamics Simulator”, International Conference of the System Dynamics Society, New York, July, 2003

“Models for Collaboration: How System Dynamics Helped a Community Organize Cost Effective Care for Chronic Illness” with J. Homer, M. Pierson, and M. Minniti, International Conference of the System Dynamics Society, New York, July, 2003

“A Strategy Simulator for Newspapers: Overcoming the "Silos" to Do Whole-Enterprise Planning”, with V. Giuliano and M. Winnig, International Conference of the System Dynamics Society, New York, July, 2003

“How Do We Increase Port Security without Imperiling Maritime Commerce? Using Flight Simulators and Workshops to Begin the Discussion” with S. Conrad et al, International Conference of the System Dynamics Society, New York, July, 2003

"Can School Reform Get in the Way of Reforming Education? A Simulator for Exploring Reform Strategies", Systems Thinking and Dynamic Modeling Conference, Durham, NH, June, 2002

"Using Dynamic Simulation as a Real-World Laboratory to Better Understand Physics", Systems Thinking and Dynamic Modeling Conference, Durham, NH, June, 2002

“Using Dynamic Simulation to Teach Physics in a Real-World Context”, International Conference of the System Dynamics Society, Palermo, Italy, July, 2002

"Design of Simulators to Enhance Learning: Examples from a Health Care Microworld", with C. S. Immediato, International Conference of the System Dynamics Society, Quebec City, Canada, July, 1998

"A Model of Educational Innovation", International Conference of the System Dynamics Society, Quebec City, Canada, July, 1998

"Innovation in Schools: A Model to Help Structure the Discussion and Guide the Search for Strategies", Creative Learning Exchange, (Acton, Ma.) 1998

"Cardiovascular Disease in the Dutch Population: A Model-Based Approach to Scenarios", with W. Wils, Conference on Health Care Scenarios, The Hague, Netherlands, August, 1984.

AWARDS

- 2011** Member of a team winning the Applications Award of the System Dynamics Society given for the “Best Real-World Application of System Dynamics: Prevention Impact Simulation Model (PRISM) for Chronic Disease Policymaking”, presented July 25, 2011 at the 29th International Conference of the System Dynamics Society, Washington, DC
- 2008** Member of a team winning the prize in Applied Systems Thinking for work entitled “Understanding the Dynamic Dimensions of Health Protection Policies”, awarded July 25, 2008 by the Applied Systems Thinking Institute, Arlington, Va.

VOLUNTEER AND PROFESSIONAL ACTIVITIES

- 2005-** **METROWEST FREE MEDICAL PROGRAM, INC.**
FOUNDER AND PRESIDENT, BOARD MEMBER
MWFMP is an organization that provides free health care to people without adequate health insurance living in the area west of Boston.
- 2003-** **SYSTEM DYNAMICS SOCIETY**
HEALTH POLICY SPECIAL INTEREST GROUP
FOUNDER, PRESIDENT, MEMBER
Group devoted to furthering the application of System Dynamics to health policy, population health, and care delivery.
- 2007-2010** **HARVARD-MIT DIVISION OF HEALTH SCIENCE AND TECHNOLOGY**
ADJUNCT FACULTY
Supervised student project groups in course HST 921: Information Technology in the Health Care System of the Future
- 1982-1991** **WAYLAND PUBLIC SCHOOLS FOUNDATION, INC.**
FOUNDER AND PRESIDENT, BOARD MEMBER
Organization dedicated to raising private funds for curriculum enrichment in the public schools of Wayland, Massachusetts.
- 1972-1980** **MIT SPECIAL SUMMER PROGRAM IN HEALTH SYSTEMS**
CO-DIRECTOR AND FACULTY MEMBER
One-week program on the application of System Dynamics to health care.