

Charles Lee, MD

First Databank
2000 Aerial Center Parkway
Suite 101
Morrisville, NC 27560

Phone: (919) 653-4391
Email: cleefdbhealth.com

Personal Statement

My professional area of interest is in leveraging technology-based resources to improve communication and healthcare access for underserved populations, particularly those with low health literacy and limited English proficiency. As a postdoctoral fellow in instructional design at the Office of Medical Education Research and Development (OMERAD) at MSU and later as a National Library of Medicine fellow in medical informatics at UNC/Duke, I studied extensively on how information technology could be utilized to disseminate information and effectively reach traditionally underserved populations. I have worked on many academic and non-academic software projects, some designed for doctors, nurses, pharmacists and others designed for use by children and consumers. My particular expertise is in developing simple, concise interactive instructional material that addresses the needs of low health literacy, visually representing complex topics (e.g. medication devices, physiologic pathways, etc) in easier-to-understand instructional modules, low reading levels and document readability, and language barriers. I have received numerous NIH grants related to educating and communicating information to patients with limited English proficiency.

Professional Experience:

- 2017 – Present Senior Advisor, Health Literacy and Language Barriers; Senior Director, Clinical Knowledge – Meducation, First Databank (FBD)
- 2015 – Present Co-Chair, Louis Sullivan Institute for Healthcare Innovation, Care Coordination Workgroup
- 2014 – Present Member, FDA Risk Communication Advisory Committee
- 2013 – 2014 Consultant, FDA Risk Communication Advisory Committee
- 2013 – Present Adjunct Assistant Professor, University of North Carolina School of Pharmacy, Chapel Hill, NC
- 2001 – 2017 Founder and President, Polyglot Systems, Inc., Morrisville, NC. Polyglot is a health information technology company with a focus on improving care and access for underserved patient populations - particularly those with low health literacy and limited English proficiency
- 1997 - 2001 VP & Director of Technology, Medeor Interactive, Inc., Chapel Hill, NC, Recruited to develop and oversee the production of the professional continuing education editions of the Nutrition in Medicine® series created at the University of North Carolina at Chapel Hill.
- 1996 - 2004 Director of Software Development & Clinical Assistant Professor, The University of North Carolina at Chapel Hill, Chapel Hill, NC – Recruited to create the Nutrition in Medicine® series to teach nutrition curriculum in medical schools.
- 1995 – 1996 Vice-President, Applied New Technologies, LLP, Durham, NC. Created the Duke Basketball Interactive CD-ROM in conjunction with Duke University Sports Information Office. Invented the 3D Hoop Cam™ and developed interface technology for live basketball cybercasts.
- 1994 - 2005 CEO & Founder, Alexor Software Group, LLC, Research Triangle Park, NC
Company's goal is to create and promote educational software technology for health professionals and consumers.
- 1994-1996 Fellow, National Library of Medicine, Medical Informatics at Duke/UNC Chapel Hill
- 1993-1994 Fellow, General Medicine/Office of Medical Education Research and Development

Education

- 1994-1996 Duke / UNC - Chapel Hill, NC, National Library of Medicine Fellow, Medical Informatics
- 1993-1994 Michigan State University - East Lansing, MI, Fellow, Faculty Dev. / Research
- 1993-1994 Aultman Hospital - Canton, OH, General Internal Medicine, Fellow
- 1990-1993 Aultman Hospital - Canton, OH, Internal Medicine, Resident

1986-1987 University of Akron - Akron, OH, Mechanical Engineering / Computer Science
1985-1986 & NEOUCOM - Rootstown, OH, Medicine
1987-1990
1983-1985 Kent State University - Kent, OH, Natural Sciences

Professional Activities:

2016 – Present Member, CARIN Alliance
2016 – Present ONC MedList Project
2014 – Present Duke Clinical Research Institute’s Medication Adherence Alliance
2013 – Present Pharmacy Quality Alliance
2011 – 2104 Member of the National Consumer Consortium on eHealth
2010 – 2014 Member, Association of Clinicians for the Underserved
2005 – 2008 Member, North Carolina Healthcare Information and Communication Alliance.
2005 Panel member, Health Disparity and Information Technology, AHRQ and OMH.
2000 – 2002 Board of Advisors, HealthCare Entrepreneurs Technology Roundtable, RTP, NC
1999 – 2008 Member, Council for Entrepreneurial Development, RTP, NC
1993 The American Board of Internal Medicine

Patent Applications

Inter-Language Dual Screen System, 2002. Inventor: Lee, CS. 60/420,372.
Inter-Language Translation Device, 2002. Inventor: Lee, CS. 60/375,037.
Methods And Systems For Conveying Instructions for Medications, 2004. Inventor: Lee, CS. 11/303,519
User Interface for Entry of Step Changes, 2006. Inventor: Lee, CS.

Honors and Awards:

2017 50+ Innovation Leaders Award, AARP
2007 Healthcare Hero Award – Triangle Business Journal
2004 Carolina Silver Reel of Excellence – Media Communication Association, Inc. – Carolinas Chapter
2003 Notable Children’s Computer Software List – Association for Library Services to Children (American Library Association)
2003 Technology & Learning’s Award of Excellence for “Exploring the World of Thomas Day”, Technology & Learning Magazine.
2003 Children’s Software Review, All Star Award
2001 6th Annual Tibbets Award, United States Small Business Administration
2001 Silver Axiem Award for “Nutrition and Growth” , Absolute eXcellence in Electronic Media
1999 Outstanding Quality Award for “Nutrition in Medicine” series, Prevention Technology Games
1999 Silver Apple Award for “Diabetes & Weight Management” series, National Education Media Network
1998 Bronze Apple Award for “Nutrition and Cancer” series, National Education Media Network
1997 Bronze Apple Award for “Nutritional Anemias” series, National Education Media Network
1994 National Library of Medicine Fellowship in Medical Informatics

Software / Publications

2016 Davis SA, Carpenter D, Cummings DM, Lee C, Blalock SJ, Scott JE, Rodebaugh L, Ferreri SP, Sleath B. Patient adoption of an Internet based diabetes medication tool to improve adherence: a pilot study. Patient Education and Counseling. Under review, 2016.
2016 Lee C., “The Move To Patient Centered Pharmacy: How To Get There From Here”, Health IT Outcomes, 2016 July 19
2016 Sleath B, Carpenter D, Blalock S, Davis S, Hickson R, Lee C, Ferreri S, Scott J, Rodebaugh L, Cummings D. Development of a new diabetes medication self-efficacy scale and its association with both reported problems in using diabetes medications and self-reported adherence. Patient

Preference and Adherence. In Press, 2016.

2015 Lee C., "Patient Understanding: The Cornerstone of Medication Adherence", Pharmacy Times, 2015 May 18

2014 Care Triage – Clinical Analytics, Polyglot Systems, Inc. / Community Care North Carolina / Glaxo

2014 Carpenter DM, Lee C, Blalock SJ, Weaver M, Reuland D, Sleath B. Using videos to teach children inhaler technique: a pilot randomized controlled trial. J Asthma 2014 Jul 31, 1-17. PMID: 25025548

2013 Lee C., "The Informed Patient", Pharmacy Times, 2013 Dec 16

2013 MedGap (Medication Risk Assessment and Pharmacist Intervention Software) – Polyglot Systems, Inc. / Walgreens

2013 Smart Choices – Contraceptive Education Module – RTI International

2012 MeducationRS (Multilanguage medication regimen summary) – Polyglot Systems

2012 TimeView (Adherence Visualization of Fill/Claims History) – Polyglot Systems, Inc.

2011 MeducationDC (Multilanguage Discharge Instructions) – Polyglot Systems

2011 AMELTA – Automated Multilanguage Emergency Triage Assister – Polyglot Systems

2009 TDARS: Translated Document Assembly and Retrieval System. SBIR Phase I Prototype

2008 Meducation: Medication instruction resource for non-English speaking and low health literate patients (commercial version of ProLingua Rx).

2008 AVA: Audio Visual Application – Alabama Medicaid/CHIP application program

2007 ProLingua MP – Polyglot Systems, Inc.

2006 HealthPort – Language Line Services, Inc.

2004 Nutrition in Medicine®: Nutrition & Sports (Academic Edition) – UNC at Chapel Hill

2003 ProLinguasm – Polyglot Systems, Inc.

2003 Supermarket Tour – University of Arkansas Medical School

2003 Lee, C., Nutrition in Medicine. Nutrición Clínica. 2003, Vol. 6, No. 2, S67-70.

2002 US Sales Training – Cisco Systems, Inc. RTP, NC

2002 Nutrition in Medicine®: Nutrition for the Second Half of Life (Academic Edition) – UNC at Chapel Hill

2002 IBM ThinkPad at School – IBM, RTP, NC

2002 IBM ThinkPad University – IBM, RTP, NC

2001 CPC Technical Training - Marconi Commerce Systems, Greensboro, NC

2001 NutriCase™: Brown University Medical School – Alexor Software Group, LLC

2001 Universal Manageability: IBM Competitive Advantage – IBM, RTP, NC

2001 Nutrition in Medicine®: Dietary Supplements & Fortified Foods (Academic Edition) – UNC at Chapel Hill

2000 IBM: Value of Deploying Systems with Universal Manageability – IBM, RTP, NC

2000 Nutrition in Medicine®: Nutrition & Growth (Academic Edition) – UNC at Chapel Hill

2000 IBM System Installation Toolkit – IBM, Research Triangle Park, NC

2000 Nutrition in Nursing™: Maternal and Infant Nutrition (Nursing Edition) – UNC at Chapel Hill

2000 Online Course Prototype: Engineering Research Center for Particle Science, UFL at Gainesville

2000 Nutrition in Nursing™: Nursing and Cancer: A Nutrition Perspective (Nursing Edition) – UNC at Chapel Hill

1999 Canopy: Case Management (Internal Web Site Design) – Future HealthCare, Inc., Chapel Hill, NC

1998 NutraQuiz: Online Quiz Bank – UNC at Chapel Hill

1999 Nutrition in Medicine®: Maternal and Infant Nutrition (Academic Edition) – UNC at Chapel Hill

1999 Nutrition in Medicine®: Diabetes and Weight Management (Physician Edition) – UNC at Chapel Hill

1999 ELA: Survey Tool – Info-Link-Technologies, Miami, FL

1999 Nutrition in Medicine®: Diet, Obesity & Cardiovascular Disease (Physician Edition) – UNC at Chapel Hill

1998 Nutrition in Medicine®: Nutrition and Cancer (Physician Edition) – UNC at Chapel Hill

1998 Nutrition in Medicine®: Diabetes and Weight Management (Academic Edition) – UNC at Chapel Hill

- 1998 Nutrition in Medicine®: Diet, Obesity & Cardiovascular Disease (Academic Edition) – UNC at Chapel Hill
- 1997 ResLog™: Residency Automated Scheduling Software – Alexor Software Group, LLC
- 1997 Nutrition in Medicine®: Nutrition and Stress (Academic Edition) – UNC at Chapel Hill
- 1997 Nutrition in Medicine®: Nutritional Anemias (Academic Edition) – UNC at Chapel Hill
- 1996 Lee, C., et al. A Comparison of Interactive Computerized Medical Education Software with a Traditional Teaching Format. Teaching and Learning in Medicine. 1997, Vol. 9, No. 2, 111-115.
- 1996 Nutrition in Medicine®: Nutrition and Cancer (Academic Edition) – UNC at Chapel Hill
- 1996 Duke Basketball Interactive 1996 – Applied New Technologies, LLP
- 1996 Visible Human Project Male Index: National Library of Medicine's Visible Human Project®
- 1996 Exploring the World of Thomas Day (Prototype for funding) – Thomas Day Education Project, RTP, NC
- 1996 AIDS 1996 (Prototype) – University of Tennessee, School of Medicine
- 1995 Clinical Acid-Base – Alexor Software Group, LLC