

SUMMARY PROFESSIONAL

NAME: Karl B. Kelly
Director of Operations
Center for Human Genetics
Self Regional Hall

EDUCATION: A.A., Greenville Technical College, 1976
B.A., Political Science, Clemson University, 1978
Master of City and Regional Planning, Clemson University, 1981

PROFESSIONAL AFFILIATIONS: InBIA (International Business Incubation Association)

EXPERIENCE SUMMARY:

Over thirty - seven years of experience in management/administration, teaching, facility planning, real estate, lab management, technology transfer/commercialization, engineering and construction services. Over twelve years of experience in university research includes grant management, lab design planning, construction management, facility maintenance and operations. Institutional fund raising includes public and private donors for Clemson University including capital programs and research. Teaching experience includes undergraduate and graduate courses in the College of Business and Center for Corporate Learning.

Specific experience includes the sectors of life sciences, biotechnology, genetics and related sectors including energy, enzymes, biopharmaceuticals, food additives and biochemicals. Management and project experience include (public and private) research center operations management, federal grants, facility contract negotiation, regulatory compliance, project management, facility planning, and site location. International and domestic experience includes United States, Europe, Asia, Mexico, Caribbean, Australia and Canada.

SPECIFIC EXPERIENCE:

- Direct facility operations for the Center of Human Genetics, Self Regional Hall including building operation, maintenance, safety planning, regulatory compliance,

fund raising and public relations. Manage all contracts for landscaping, building maintenance and retrofits serving as onsite representative for campus services including safety(campus safety and compliance), emergency planning, facilities, IT, healthcare services and student services.

- Managed DoE Bioenergy Collaborative for Clemson University including public and private research partners. Public research institutions include Savannah River National Laboratory, private engineering firms, Australia state government and ethanol manufacturing companies. The four-year DoE grant research includes the development of cellulosic conversion of switchgrass, bagasse, coastal loblolly pin and sweet sorghum to ethanol. The collaborative included additional grant funding from an international ethanol manufacturer and the Queensland Government - Queensland, Australia. Total grant funding for the research term is estimated to exceed \$3.7 million from public and private sources.
- Directed fund raising and design development for the Clemson University Center of Human Genetics including over \$10 million in cash and in-kind contributions to fund research and building construction.
- Assisted and supported the development of pharmaceutical and biopharmaceutical products and related manufacturing facilities for start-up and existing domestic and international companies. Consulting support included site location/evaluation of manufacturing and research operations, negotiation of incentives, development of financing strategies, project scope development and related.
- Managed real estate assets for a multinational pharmaceutical firm with responsibility for corporate planning, acquisition, and coordination of manufacturing, research and office facilities. Managed real estate in excess of 1 million square feet of pharmaceutical research, development and manufacturing space.
- Created and directed the Technology Villages program supporting the development of five centers in South Carolina and over 100 technology companies from 2009 until 2016. The concept was privatized in 2017 and is currently developing centers in Alabama in conjunction with state supported public universities. Developed a director training course taught through the Clemson University Institute for Economic and Community Development from 2009 until 2016. Director training course was gifted to InBIA in 2017 and currently under development as a certificate for rural incubator directors available February 2019.

- Directed the SC Biotechnology Incubation Program, SC Bio, supporting the creation of new companies pursuing life science product research and development. The program assisted, through lab incubators and business development services, emerging research from state university and private sources in developing new biotech companies. Program received 2006 Palmetto Vision Award, SC Chamber of Commerce, and assisted over 50 companies in formation from 2003 – 2007.
- Teaching experience includes Clemson University Center for Corporate Learning - Open Innovation, MBA 899 Open Innovation, Entrepreneurial Resources undergraduate course 3020 College of Business and Incubator Center Director Training.
- Founding faculty for the Economic Development Leadership Academy participating in curriculum development and teaching. The EDLA University Consortium includes Clemson University, Texas Christian University, University of Southern Mississippi and University of Alabama. 2018 – Current.
- Participate annually as guest instructor in the University of Alabama, Academy of Economic Development AED Honors Class. Class teaches basic incubator development as an element of economic development programs.
- Authored an online entrepreneurial orientation course under a US Department of Labor grant for community and technical college freshmen and sophomore undergraduates (2015).
- Conducted and directed site location studies for a broad range of manufacturing and research operations, including biotechnology, pharmaceuticals, paper, chemicals, plastics, corn wet milling, warehousing, metals, energy, electronics, automotive, and corporate headquarters relocations in the U.S., Europe, Canada and the Caribbean. (1981-1992).
- Developed and implemented marketing and related direct sales for an international engineering and construction company for biotechnology and pharmaceutical projects.
- Managed the sales and marketing department for a national construction services company with sales in FY 2000-2001 exceeding \$550 million. Offices include Orlando, Greenville, Boston, Raleigh, Atlanta, Birmingham and Richmond. Position

included comprehensive responsibility for all sales, advertising, marketing and related activities. Major markets include pharmaceuticals, biotechnology, plastics, chemicals, fibers, foods, hospitality, entertainment, textiles, industrial and the public sector.

- Developed, implemented and directed the marketing program for a major metro area economic development agency including specific programs and strategies to assist developing companies including the development of a medical/pharmaceutical recruiting program and international research relationships with Ireland.

ACADEMIC AND INDUSTRY AWARDS:

- 1979 HUD Fellowship - Clemson University, City and Regional Planning
- 1979 Graduate Student Scholastic Award, SC Chapter of the American Planning Association.
- 1980 National Planning Student Award, The American Planning Association.
- 1980 Tau Sigma Delta, Honor Society in Architecture, Clemson University Phi Chapter.
- 2006 Palmetto Vision Award, SC Chamber of Commerce.
- 2007 Queensland Premier's Champion Award – Queensland, Australia

PUBLICATIONS/PAPERS:

- "Determinants of Expenditures and Revenues in Rural Counties in South Carolina," Clemson University, 1981.
- "Site Location Characteristics and Trends of Biotechnological Manufacturing Facilities," American Society of Mechanical Engineers, Presentation San Francisco, California, December 1989.
- "Developing a Biopharmaceutical Facility," BT Catalyst, March 1993.
- "How Small-Town Incubators Can Be Successful". InBIA Webinar, July 18, 2017.
- "Technology Villages Director Training Course". Clemson University 2009-2016.
- "Funding a Rural Incubator". InBIA Webinar December 6, 2018.

- “Building Successful Entrepreneurial Ecosystems”. Mini-Course, Advanced Economic Development Leadership Academy. Founding Faculty. University Consortium of Clemson University, Texas Christian University, University of Southern Mississippi and University of Alabama. February 8, 2018 Fort Worth, Texas.
- US Department of Labor/SC Accelerate online course, “An Introduction to Entrepreneurship”, 2016.

SPECIFIC WORK HISTORY:

- Fluor Daniel, Project Director, Siting and Consulting Services; Greenville, South Carolina.
- Genentech, Inc., Coordinator of Real Estate and Facility Planning; South San Francisco, California
- Fluor Daniel, Director of Business Development, Biotechnology and Pharmaceuticals; Greenville, South Carolina.
- Birmingham Metropolitan Development Board, Executive Vice President; Birmingham, Alabama.
- Senior Vice President of Sales and Marketing, Suitt Construction Company, Greenville, South Carolina.
- CEO, South Carolina Biotechnology Incubation Program
Biotechnology Incubation Program
- Current: Lecturer, Clemson University (Director of Operations – Center for Human Genetics, Greenwood, SC).

COMMUNITY AND PROFESSIONAL ACTIVITIES:

- 1984 - 86 Sciences Advisory Committee, Greenville Technical College.
- 1989 - 18 Advisory Board, Blue Ridge Council, BSA.

- 1993 - 93 Advisory Board, Center of Applied Technology, Clemson University
- 1996 - 02 Biotechnology Association of Alabama, Founding Member
- 2000 - 02 SC Biotechnology Incubator Program, Board of Governors
- 2002 - 05 Lander University Board of Visitors
- 2002 - 05 Medical University of South Carolina Foundation for Research Board
- 2003 - 14 Stephen Minister – Main Street United Methodist Church
- 2003 - 15 State of Queensland, Australia – Queensland Biotechnology Advisory Council
- 2004 - 07 Palmetto Biotechnology Alliance, Founding Director
- 2004 - 09 Greenville Technical College, Biotechnology Advisory Board
- 2008 - 11 Chair/Board Director, South Carolina Biomass Council
- 2010 - 16 Adjunct Faculty, CU Institute for Economic Community Development