

## **CURRICULUM VITAE**

### **The Hon., Dr. Thomas A. Cellucci**

Contact Information: tom@cellucciassociates.com



### **EDUCATION**

- PhD, Physical Chemistry, University of Pennsylvania; Philadelphia, 3.95/4.00 (1984)
- MBA, Strategic Management and Marketing, Rutgers University; Camden, New Jersey, 3.83/4.00 (1991)
- BS Chemistry, Fordham University; Bronx, New York, 3.50/4.00 (1980)
- Wharton School of Business, University of Pennsylvania – Executive Education Program (1996)
- Harvard Business School – Executive Management Program (2002)
- MIT Sloan School of Business – Executive New Product Development Program (2002)
- Kellogg School of Management – Executive Mergers and Acquisitions Program (2002)

### **CAREER ACCOMPLISHMENTS**

- Recognized expert in the practical commercialization of new and emerging technologies in both the Private and Public Sectors (the first Chief Commercialization Officer in the US Federal Government's Executive Branch). Appointed the first Director of the Research & Development (R&D) Group at the US Department of Homeland Security with multi-billion dollars of assets responsibility and leadership of over 1300 people.
- US Department of Homeland Security's first Chief Commercialization Officer (accepted a non-political five year appointment) having established the Department's First Commercialization Office.
- Developed and implemented unique, far-reaching programs to leverage the resources of the Private Sector to rapidly develop products and services for DHS and its ancillary markets such as the First Responder community with more than \$3.6 billion offered to DHS from the Private Sector in less one year.
- Re-engineered the US Department of Homeland Security's First Responder Requirements Development Framework for all US First Responders (federal, state, local and tribal).
- First Federal Official invited to join the Council on Competitiveness (see [www.compete.org](http://www.compete.org)).
- Well-respected authority in rapid time-to-market new product development and license vehicle development processes.
- Member of the Manufacturing Technologies Working Group of the Committee on Science and Technology for the Executive Office of the President and Science & Technology Official on the US Department of Homeland Security's Policy Working Group.
- Became the youngest member of the American National Standard Institute's Committee chartered to write the first standard on the Safe Use of Lasers in Educational Institutions (ANSI Standard Z136.5).
- Authored or co-authored over 156 articles on innovative public-private partnerships, nanotechnology, laser spectroscopy, vibration control, sales and marketing, and MEMS/MOEMS test and measurement.

## PERSONAL and CONFIDENTIAL

- Regularly invited to join the Boards of Directors for many of firms, across many industries.
- Subject of numerous interviews for high-profile media publications like CNN, ABC World News Tonight, Frost & Sullivan's Technical Insights, Executive R&D Magazine, Wall Street Journal, Defense Daily, Homeland Security, Micro/Nano News and C/Net.
- Frequently requested to provide seminars, speeches and presentations at both business and/or high-technology institutes like Harvard, MIT, Kellogg, Texas A&M, Rice, Brown, MIT Enterprise Forum and others.
- Directly responsible for briefing President Clinton and President George W. Bush that resulted in the creation of the National Nanotechnology Initiative (NNI) passed by Congress with an initial \$3.9 billion budget.
- Established Zyvex as one of the world's leading nanotech firms with exceptional growth and financial performance, growing sales over 197% in less than three years.
- Developed and implemented Zyvex's transition from a technology-push to a market-driven enterprise widely recognized in both business and technical circles and through several worldwide business alliances.
- Founded a highly successful consulting firm, Cellucci Associates, Inc., with high profile, worldwide clients.
- Obtained and managed several large (multi-million dollar) governmental contracts and grants from a variety of agencies and often speak on the key processes involved in securing government contracts while an executive in the private sector.
- Established Etec, Inc. as the MEMS/MOEMS test and measurement industry leader with a rapid increase (>50%) of orders and shipments from 2000 to 2001 and sales revenue growth of over 100% from 2001 to 2002.
- Played key role in the financial turnaround of Newport Corporation in 1993 to 1994 by increasing the profitability of the Scientific and Laboratory business by over 34%. This group produced the vast majority of profits for the firm and generated the cash to invest in both external and internal business development efforts.
- Possess a substantial "rolodex" of contacts throughout both the Private and Public sectors from which to draw valuable knowledge and experience.

## PROFESSIONAL EXPERIENCE

- Senior Executive Management
  - **Chairman and Chief Executive Officer**  
Bravatek Solutions, Inc. (Boulder, Colorado)  
Asked within only one month of joining the Board of this publicly-traded high-tech firm to become the CEO because of my experience of building, turning around and selling four high-technology firms  
2014-Present
  - **Founding and Managing Partner**  
Union Core Technology Partners LLP (New York and Washington DC)  
Founded and manage this unique \$2B+ private equity fund (invitation only) dedicated to monetizing security, intelligence and defense-related disruptive and enabling technologies  
2014-Present
  - **Founder, Chairman & CEO**  
Cellucci Associates, Inc. (Cambridge, MA , New York, NY, Stockholm, Sweden, Rome, Italy, Dallas, TX, Astana, Kazakhstan, St. John's, Canada, Jakarta, Indonesia and Washington DC)  
1999 – Present  
Founded highly successful high-tech marketing firm that focuses on developing business and marketing plans for worldwide hi-tech firms.
  - **Chief Executive Officer and Chairman of the Board**  
DCI-"Dependable Critical Infrastructure" (Sterling, VA)  
Leader in high-technology security systems used to protect borders and critical infrastructure/key resources.  
DCI owns Viking Telecom Services with installations all around the globe.  
2014-2016

## PERSONAL and CONFIDENTIAL

- **Executive Director**  
AGVE –“Alliance for Government Virtual Engagements” (Washington, DC)  
2013-Present  
Lead this 501 c (3) non-profit dedicated to fostering technology-focused bridges, best practices and communications between government and the private sector to enable high performance/price business operations for government
- **First Chief Commercialization Officer of the United States of America, Director of Public-Private Partnerships Office and Executive Director of R&D Partnerships Group**  
US Department of Homeland Security and the White House (Washington DC)  
2007-2011  
This five year special appointment by both Presidents Bush and Obama accomplished significant results for the benefit of the US Department of Homeland Security and taxpayers because of the unique partnering models we developed with the Private Sector. More than \$5.6 billion in R&D was expended by the private sector to develop products and services for DHS, First Responder and Critical Infrastructure and Key Resource (CI/KR) markets. The success of developed federal programs like SECURE, FutureTECH and our detailed commercialization process through the establishment of the Commercialization Office in DHS received substantial press and represented a new paradigm in Private-Public partnerships evidenced by 60-70 invitations per week to speak at both business and technical events. In addition, it has been conservatively estimated that our Requirements Development Initiative will save over \$2.5 Billion in DHS resources per year; the Commercialization process will save over \$10 Billion annually at DHS at full implementation; and our S&T Private Sector Outreach program will save over \$350 Million in S&T budget and opportunity costs alone. I interacted regularly at the C-level with literally thousands of small, medium and large private and public corporations throughout the world. The success of these endeavors culminated in our ability to not only interact with and throughout the highest levels of DHS, but also at the highest levels throughout other government agencies to share the programs and processes we established for replication in other Federal government arenas. We have wrote twelve widely published books, detailed tutorials, articles and other training materials for dissemination not only throughout DHS, but other government agencies focused on developing detailed requirements. In 2010, while continuing to serve as Chief Commercialization Officer, I was appointed the Director of the Office of Public-Private Partnerships which oversees the Long Range Broad Agency Announcement (LRBAA) procurement process, Office of SAFETY Act Implementation (OSAI), Small Business Innovation Research (SBIR) Office as well as the Commercialization Office. In addition, I was named Executive Director of the Research and Development (R&D) Partnerships Group responsible to leverage the billions of dollars in assets and the expertise of more than 1300 team members through the group’s investments in national labs, universities, international partners, the private sector and government interagency partners to develop technologies and products for the Homeland Security Enterprise (HSE). Within the first year of serving as Executive Director, increased the number of SAFETY Act approvals by 33% as well as the number of direct and indirect partners with whom RDP collaborates by 2,282% (over 30,000 contacts). Briefed and work with the DHS Secretary, Deputy Secretary and Operating Component Leaders of the Department on a regular basis as well as the US Cabinet, President’s CTO and CPO and many other members of the White House.
- **President and Chief Operating Officer**  
Zyvex Corporation (Richardson, TX)  
2003 – 2006  
Led effort to transition the company from technology-push to market-driven firm focused on high volume nanotechnology applications. Completed Strategic Marketing Plan, Strategic Business Plan, and New Product Development Process in less than three months. Recognized as pioneer in commercializing nanotechnology by providing real-world products for real-world applications today. Grew sales over 197% in less than three years. In first quarter 2006, obtained a 45% increase in sales over same period in 2005 with a 68% increase in cash flow.
- **Chief Marketing Officer and Vice President, Products**  
Zyvex Corporation (Richardson, TX)  
July – December 2002
- **President & CEO**  
Etec, Inc. (Peabody, MA)  
2000 – 2002  
Was asked by this Cellucci Associates, Inc. client to take on a leadership role. Established Etec, Inc. as the leader in MEMS/MOEMS test and measurement. Substantially increased orders and shipments by more than 50% from 2000 to 2001. Grew sales revenue by more than 100% from 2001 to 2002.
- **Executive VP & General Manager**  
Integrated Dynamics Engineering (Boston, MA and Frankfurt, Germany)  
1996 – 1999  
Was responsible for P&L of this high-tech company which designs and manufactures active vibration control,

## PERSONAL and CONFIDENTIAL

acoustic isolation, electromagnetic interference compensation, motion control, robotics, and wafer handling systems. Developed worldwide strategic plan, built strong executive management team and grew worldwide business over 200% in less than three years. Extensive experience working with investment bankers, management consultants and strategic alliance/acquisition partners.

- Teaching

- **Professor**  
National Agrarian University (Almaty, KZ)  
2016-Present  
Teach Commercialization of Technology to graduate students.
- **Professor of Physics and Laser/Electro-Optic Technology**  
Camden County College (Blackwood, NJ)  
1988 – 1990  
Taught advanced laser physics and applications lecture/ laboratory to upper level students in Laser/Fiber Optic Programs.
- **Lecturer, Department of Chemistry**  
Princeton University (Princeton, NJ)  
1989 – 1991  
Lectured in both Chemistry and Physics Departments on laser physics, laser spectroscopy, and analytical instrumentation.
- **Adjunct Faculty, Department of Chemistry**  
University of Pennsylvania (Philadelphia, PA)  
1982 – 1984  
Only graduate student elevated to rank of Instructor. Taught Physical Chemistry laboratory to juniors and seniors in the College of Arts and Sciences. Lectured and instructed qualified seniors in basic laser theory and applications (frequency and time domain) in Advanced Physical Chemistry laboratory courses.
- **Adjunct Faculty, Department of Chemistry**  
Fordham University (Bronx, NY)  
1978 – 1980  
Lectured in both Chemistry and Chemistry Laboratory.

- Industrial

- **Associate Research Chemist**  
Analytical Department  
Shell Development Company (Houston, TX)  
1984 – 1987  
Was responsible for solving both routine and advanced analytical problems from all areas of Shell's research and development – Polymers, Detergents, Catalysis, Elastomers, Fuels and Lubricants, Chemicals, Exploration and Production, and Toxicology. Routine techniques included Fourier Transform Infrared (macro and micro) and Raman spectroscopy (macro and micro), UV-VIS absorption and Fluorescence spectroscopy.

- Executive Management

- **Senior Director, Vibration Control Business**  
Newport Corporation (Irvine, CA)  
1995 – 1996  
Responsible for worldwide P&L of Vibration Control Business. Developed and successfully implemented plan for Newport's market leadership position in market niches through major strategic alliances and new product development. Grew business by over 30% in 1995 and over 40% in 1996. Reduced manufacturing overhead by approximately 41% through new manufacturing process development and improved planning methods. Also, worked directly with President and CEO on long-range strategic plans for the entire firm.
- **Senior Director, Scientific and Laboratory Products**  
Newport Corporation (Irvine, CA)

## PERSONAL and CONFIDENTIAL

1993 – 1995

Managed Newport's largest business with P&L responsibility. Coordinated all marketing and business development activities worldwide for the Vibration Control, Optics, Photonics, and Component businesses. Increased sales in a declining R&D market and increased operating income by over 34%, enabling the funding of the corporation's expansion into industrial niche markets, such as fiber alignment for the Telecommunications industry. Led effort that produced Newport's first worldwide catalog with over 300 new product introductions. Active member in the company's Quality Control Council which resulted in the firm's ISO 9002 certification.

- Invited Talks (Some Examples)
  - Asia-Pacific Homeland Security Summit - Honolulu, Hawaii, 2010
  - Homeland Security Investor Forum, Washington, D.C., 2010
  - Temple University - Fox School of Business Mayors' Technology Summit, 2010
  - IEEE International Conference on Technologies for Homeland Security, Boston, Massachusetts, 2010
  - Wisconsin Procurement Institute - Wisconsin in Washington, Washington, D.C., 2010
  - Smart Security 2010 - Towards Seamless Interoperability and Trust, United Kingdom, 2010
  - New Mexico State University - National Security Technology Conference, 2010
  - Rutgers Business School - Guest Lecture, Camden, New Jersey, 2010
  - United Kingdom Trade and Investment - Home Office Scientific Development Branch Security Exhibit, 2010
  - Michigan Security Network - Northern Border Conference, Detroit, Michigan, 2010
  - Second Annual National Security Technology Incubator Conference, Albuquerque, New Mexico, 2010
  - University of Texas at Austin - Masters of Science in Technology Commercialization, Guest Lecture, 2010
  - University of Texas at Austin - Texas Wireless Summit, Austin, Texas, 2010
  - MANCEF - Commercialization of Micro-Nano Systems Conference, Albuquerque, New Mexico, 2010
  - Massachusetts Institute of Technology, Lincoln Labs - Guest Lecture, 2010
  - Stanford University - Aspen Institute Roundtable "How the Venture Capital Community Can Help to Secure the Homeland", 2009-10
  - Homeland Security Finance Forum, Washington, D.C., 2010
  - United Kingdom Defense Academy, 2010
  - Charleston Defense Contractors Association - 2009 C5ISR Conference, Charleston, South Carolina, 2010
  - American Bar Institute - Homeland Security Law Institute Conference, Washington, D.C., 2009
  - NDIA - Homeland Security Symposium, Washington, D.C., 2009
  - Hong Kong University of Science and Technology - Guest Lecture, 2009
  - American Chamber of Commerce - Hong Kong, 2009
  - Western Kentucky University - Think Tank Institute, 2009
  - Security 500 Conference, New York City, 2009
  - Euro-Atlantic Stakeholders' Conference, Stockholm, Sweden, 2009
  - Maritime Security Conference, Long Beach, California, 2008

## PERSONAL and CONFIDENTIAL

- Global Border Security Conference, Austin, Texas, 2008
- Marketing and Sales
  - **Director of Worldwide Market Development, Vibration Control and Bio-Instruments Products and Western Regional Sales Manager**  
Newport Corporation (Fountain Valley, CA)  
1993  
Was responsible for overseeing all marketing and engineering management functions for both the Vibration Control and Bio-Instruments product lines. In addition, managed all regional sales managers, dealers, and representatives for all product lines at the special request of the CEO.
  - **Director of Worldwide Market Development, Vibration Control Products**  
Newport Corporation (Fountain Valley, CA)  
1991 – 1993  
Was responsible for providing strategic direction and marketing plans to put Newport’s vibration control division (regarded as the “crown jewel” of the corporation) back on a growth path. Introduced over eighteen new products and capabilities to the marketplace within a year. Also, introduced a completely new vibration control performance theorem and set of specifications now adopted by the entire industry as the standard by which to measure vibration control performance.
  - **Manager, Eastern Regional Office**  
Newport Corporation (Fountain Valley, CA)  
1989 – 1990  
Was responsible for technical sales and marketing functions for the East Coast territory composed of 15 states. Was heavily involved in negotiating several million dollar blanket orders, as well as, assessing market demand and assisted in generating company-wide strategic marketing plans for various business segments. Involved in the establishment of Just-in-Time contracts for many customers (e.g. Bell Labs) and novel product differentiation selling strategies.
  - **Senior Sales Engineer**  
Laser Products Division  
Coherent, Inc. (Philadelphia, PA)  
1987 – 1989  
Responsible for total sales (Scientific and OEM) for the states of New Jersey, Pennsylvania and Ohio. Managed over 10 million dollars of laser/electro-optic equipment for several companies and institutions such as AT&T, Bell Communications, Research, Exxon, NASA and Princeton University. Was invited to present at many technical seminars at institutions such as Harvard University and Yale University on the use of lasers to solve problems and enhance productivity. Also, recruited personnel for field sales/service and management positions.

## GRADUATE RESEARCH

- Matrix-isolation Spectroscopy  
1980 – 1984  
Extensive experimental and theoretical use of this technique was used to study the effects of host-guest interactions in solids by means of laser-induced fluorescence, Raman, FTIR, UV-VIS absorption, and pulsed laser experiments.

## PROFESSIONAL AFFILIATIONS

- Chairman, Board of Trustees, Virginia International University (2015-Present)
- Member, World Bank’s ISCB (2016-Present)
- Chairman, Board of Directors, Bravatek Solutions, Inc. (2014-Present)
- Chairman, Board of Directors, DCI (2014-2016)
- Member, Board of Directors, SafeAmerica Foundation (2014-2015)
- Member, Independent Certification Board, Professional Capture Management Certification Forum (2014-Present)
- Chairman, ‘Be Safe America’ National Campaign Drive for Returning Veterans (2014)

## PERSONAL and CONFIDENTIAL

- Member, Board of Directors, Eurasian Economic Club of Scientists Association (2014-Present)
- Member, National Press Club, Washington DC (2013-Present)
- Member, Board of Directors, Security Industry Association (SIA) in Washington, D.C. (2013-Present)
- Strategic Partner, Board of Directors, County Executives of America (CEA), Washington DC (2013-Present)
- Member, Board of Directors, AET System, Inc. (2013-Present)
- Member, Board of Directors, Union Core Technology Partners LLP (2012-Present)
- Member, Board of Directors, Miraculum Applications AB (2012-2015)
- Member, Board of Directors, MG Enterprise Solutions AB (2012-2015)
- Member, Board of Directors, National Interagency Confederation of Biological Research (2010-2012)
- Member, Board of Directors, California Molecular Electronics Corporation (1997-Present)
- Member, Board of Directors, QCR Corporation (1997-Present)
- Member, Board of Directors, Edmund Industrial Optics, Inc. (1998 – 2008)
- Member, Board of Directors, Zyvex Corporation (2003 – 2006)
- Member, Board of Directors, Laser Institute of America (2003 – 2007)
- Member, Board of Directors, Micro- and Nano-Commercialization Education Foundation (2002 – 2007)
- Member, Board of Directors, Etec, Inc. (2000 – 2002)
- Member, Board of Directors, Laser Energetics, Inc. (1993 – 1995)
- Member, Board of Directors, Texas Navy Association (2009-Present)
- Member, Harvard Business School Club of Washington DC and Dallas (2005 – Present)
- Member, Wharton School Club of Washington DC (2007 – Present)
- Member, Board of Advisors, Boston Analytics, Inc. (2005 – Present)
- Member, Bioengineering Advisory Board, University of Pennsylvania (2005)
- SSC-5 Committee Secretary, American National Standards Institute (2005-Present)
- Member, Executive Office of the President: Office of Science and Technology (2009-Present)
- Member, Emerging Technologies Interagency Board, White House (2010-Present)
- Mentor, University of Pennsylvania's Fel Institute of Government (2010-Present)
- Chairman, Business Advisory Council for Texas (2005)
- Member of the Societe des Amis du Louvre (2005-Present)
- First Federal Official Member, Council on Competitiveness as US Department of Homeland Security's representative (2008-Present)
- Member, American National Standards Institute (ANSI) Board that published Standard Z136.5 for "The Safe Use of Lasers in Educational Institutions" (1991 – Present)
- Mentor, Homeland Security Fellows Program (2008-Present)
- Member, Palaver: Cosmos Club-Washington DC (2009-Present)
- Member, Senatorial Trust (2003 – 2006)
- Fellow, James Smithson Society of the Smithsonian (2003 – 2007)
- American Chemical Society (1980 – Present)
- Laser Institute of America (1980 – Present)
- American Management Association (1989 – 1995)
- Advisory Board, Princeton University's Advanced Photonics and Opto-electronics Materials Center (1989 – 1992)
- American Institute of Chemists Award (1980)
- Optical Society of America (1980 – 1997)
- President, Phi Lambda Upsilon (1984)
- Big Brothers – Big Sisters Program (1984 – 1990)
- Inducted into the Gruppo Etnico Sandonatese Corp. (2005)
- Notary Public of New Jersey (1989 – 1991)

## PERSONAL and CONFIDENTIAL

### AWARDS

- Security Industry Award with Chief Security Officer of Microsoft, Inc. (November 2014)
- Security Magazine's Most Influential Security Executive for 2010 (November 2010)
- US Department of Homeland Security Exemplary Performance Award (October 2009)
- Presidential Who's Who (2009-Present)
- Order of Merit Award from the United States Congress (2006)
- Received highest honor for a Texas citizen: a commission as an Admiral, effective April 16, 2008 for pioneering the commercialization of nanotechnology in the Private Sector and the commercialization of advanced technologies to protect the nation as the first Chief Commercialization Officer in the Federal Executive Branch
- State of Hawaii Adjutant General's Award for Excellence (2008)
- 2005 Businessman of the Year, The Business Advisory Council and Congressional Committee (The Wall Street Journal)
- Recipient of the Ronald Reagan Gold Medal Award for Business-Washington DC (2005)
- Marquis' Who's Who in Science and Engineering (1993) and the International Who's Who (1995)

### SECURITY CLEARANCES

- Possess active Top Secret clearance from CIA and NRO. Worked closely with various functions and agencies within the US government including NIST, NRO, DOD, DOE, NASA, Sandia National Laboratories and members of government including several US Senators, members of the US House of Representatives, the US Senate Majority leader, Presidential advisors and three Presidents of the United States as a member of the Private Sector. Currently possess active *TS/SCI* clearance ("Yankee White") with an "Authority to Operate" across ALL of Government and the DoD

### PUBLICATIONS (Examples Only)

- Cellucci, T.A., "Critical Infrastructure & Key Resources (CIKR) Development: Using Commercialization to Develop Solutions Efficiently and Effectively", Barnan, 423 pages (March 2017).
- Cellucci, T. A., "A Guide to Innovative Public-Private Partnerships: Utilizing the Resources of the Private Sector for the Public Good", Rowman & Littlefield Publishing Group, Inc. 352 pages (February 2011).
- Cellucci, T.A., "Program Prioritization Index (PPI), US Department of Homeland Security (August 2010)
- Cellucci, T.A., "Innovative Public-Private Partnerships: Pathway to Effectively Solving Problems", US Department of Homeland Security (July 2010).
- Cellucci, T.A. and Hooks, R., "Commercialization: Transformational Change beyond DHS", US Department of Homeland Security (May 2010).
- Cellucci, T.A. and Office of Infrastructure Protection, eds., "Critical Infrastructure & Key Resources: Using Commercialization to Develop Solutions Efficiently and Effectively", US Department of Homeland Security, 420 pages (January 2010).
- Cellucci, T.A. and Smith, D., "Harnessing the Valuable Experiences and Resources of the Private Sector for the Public Good", US Department of Homeland Security, 682 pages (June 2010)
- Cellucci, T.A. and Kikla, R. "Capstone Integrated Product Teams and Beyond...", US Department of Homeland Security (October 2009)
- Cellucci, T.A., "Helping Everyday Heroes Get What They Need: A Systematic Approach to Understanding First Responder Requirements and Delivering Cost-Effective Solutions", US Department of Homeland Security (July 2009).



## PERSONAL and CONFIDENTIAL

- Cellucci, T. A., “Commercialization Office: Offering Transformational Change Beyond DHS”, US Department of Homeland Security (June 2009).
- Cellucci, T. A. and Zeller, R., eds., “First Responders Capstone IPT: Delivering Solutions to First Responders”, US Department of Homeland Security, 322 pages (May 2009).
- Cellucci, T. A., “FutureTECH: Guidance to Understanding Future DHS S&T Critical Research/Innovation Focus Areas”, US Department of Homeland Security (April 2009).
- Cellucci, T. A., “Focus on Small Business”, US Department of Homeland Security (March 2009).
- Cellucci, T. A., ed., “Harnessing the Valuable Experiences and Resources of the Private Sector for the Public Good”, published by US Department of Homeland Security, 561 pages (February 2009).
- Cellucci, T. A., “DHS: Leading the Way to Help the Private Sector Help Itself”, US Department of Homeland Security (February 2009).
- Cellucci, T. A. “Program Prioritization Index”, Internal-US Department of Homeland Security (February 2009).
- Cellucci, T.A., “Commercialization: The First Responders’ Best Friend”, US Department of Homeland Security (January 2009).
- Cellucci, T. A., editor, “Developing Operational Requirements Version 2”, published by US Department of Homeland Security , 352 pages (November 2008).
- Cellucci, T.A., “Private Sector Outreach Statistics Overview” (November 2008)
- Cellucci, T.A., “Bridging the ‘Communications Gap’ between the Public and Private Sector—Making it Easier to do Business with DHS”, US Department of Homeland Security (October 2008).
- Cellucci, T.A., “DHS: Global Outreach Efforts-Looking for the Best Technology and Products—Period”, US Department of Homeland Security (October 2008).
- Cellucci, T.A., “Making it Easier to Work with DHS: The Critical Role of Detailed Operational Requirements, US Department of Homeland Security (October 2008).
- Cellucci, T.A.,”Innovative New Partnership Programme Creates ‘Wins’ for Taxpayers, Private & Public Sectors”, Safety & Security International, Edition IV, p. 28 (September 2008).
- Cellucci, T. A., ed., ”Developing Operational Requirements--A Guide to the Cost-Effective and Efficient Communication of Needs”, book published by the US Department of Homeland Security, 194 pages (May 2008).
- Cellucci, T.A., ed., “Requirements Development Guide”, published by the US Department of Homeland Security, 149 pages (April 2008).
- Cellucci, T.A., “Commercialization: It’s Not Business as Usual at DHS”, *LIA Newsletter* (June 2008).
- Cellucci, T. A., “Innovative New Partnership Program creates ‘Wins’ for Taxpayers and the Private & Public Sectors”, US Department of Homeland Security (September 2008).
- Cellucci, T.A., “DHS Makes Transition from Acquisition to Commercialization”, US Department of Homeland Security (August 2008).
- Cellucci, T. A., “Program Prioritization Index (PPI)”, US Department of Homeland Security (March 2008).
- Cellucci, T.A. “Zyvox, Making the Transition from a Technology-Push to a Market-Driven Enterprise.” chapter in CRC’s book, *Commercialization of Technology* (December 2007).
- Cellucci, T.A. “The Story of Zyvox.” *Nanotechnology Business and Law Journal* (2005).
- Interview with Cellucci, T.A. “Zyvox Revisited: Achieving Success in Nanotechnology.” *Re|Think Marketing* (2005).
- Interview with Cellucci, T.A. “Zyvox – How to turn an ‘invention’ company into an ‘innovation’ company.” *PDMA Visions* (2006).
- Cellucci, T. A., and Randall, J., “Atomically Precise Manufacturing: Questions and Answers, Zyvox Corporation (2006).

## PERSONAL and CONFIDENTIAL

- Cellucci, T.A., et al. "Nanotechnology Aids Microelectronics Industry." *MicroNano News* (2004).
- Cellucci, T.A., et al. "The Safe Use of Lasers in Education Institutions." *ANSI Z136.5 Standard* (2001).
- Cellucci, T.A., et al. "Designing Effective Sales and Marketing Literature." Book of about 250 pages (in press).
- Cellucci, T.A. "Systematically Testing Optical MEMS Speeds Production." *WDM Solutions* (2001).
- Cellucci, T.A. "MEMS Test and Measurement: From R&D through Production." (2001).
- Cellucci, T.A. "MEMS Test and Measurement Equipment: Elements to Consider in a 'Make vs. Buy' Decision." (2001).
- Eichenholz, J.M. and Cellucci, T.A. "A System Engineering Approach to the Testing of Optical MEMS." (2001).
- Cellucci, T.A. *Handbook of Vibration and Vibration Control*, Newport Corporation (1996).
- Cellucci, T.A. "Active Vibration Control Provides Tighter Tolerances, Higher Precision Electronic Vibration Control." *Semiconductor Fab Tech* (1996).
- Cellucci, T.A. "Approximating a Table Top's Ideal Rigid Body Line." *Newport Technical Bulletin* (1995).
- Cellucci, T.A. "Fiber Optic Equipment to Supplement Today's Laser Electro-Optic Laboratories and Global Communication Highway." *Journal of Laser Applications* (1995).
- Cellucci, T.A., and Barty, C. "Ultrafast Laser Systems, Lasers and Optonics" (1995).
- Cellucci, T.A. "Modular Vibration – Isolation Table Simplifies Reconfiguration." *Laser Focus World* (1995).
- Cellucci, T.A. "Vibration Control for Optical and Precision Instrumentation." *SPIE Proceedings* (1994).
- Cellucci, T.A. "Tuned Damping – The Key to Effective Structural Damping." *Newport Technical Bulletin* (1994).
- Cellucci, T.A., Cameron, W.E., and Sesack, S. "New Vibration Technology Enables Critical Improvement in Microscopy Applications." *Neuroscience* (1994).
- Cellucci, T.A., and Houghton, B. "Vibration Control Without Sticker Shock." *Machine Design* (1993).
- Cellucci, T.A. "Honeycomb Table Controls Submicron Vibration and Contamination." *Microcontamination* (1993).
- Cellucci, T.A. "Newport Reinvents Vibration Control." *Newport News* (1993).
- Cellucci, T.A. "Why is a Honeycomb Structure So Useful? The Need for Solid versus Sandwich Comparisons." *Newport Technical Bulletin* (1993).
- Cellucci, T.A. "Where Do Those Peaks Below the Ideal Rigid Body Line Come From Anyway? An Explanation of Antiresonance Valleys." *Newport Technical Bulletin* (1993).
- Cellucci, T.A. "Interferometric Testing of Table Tops: Confirmation of Compliance Curve and Relative Motion Values." *Newport Technical Bulletin* (1993).
- Cellucci, T.A. "About Table Top Performance Specifications." *Newport Technical Bulletin* (1993).
- Cellucci, T.A. "Extra Table Top Weight, Does it Improve Table Top Performance?" *Newport Technical Bulletin* (1993).
- Cellucci, T.A. and P.M. Heiland. "Digital Control of Vibration Isolation Offers Nanometer-Scale Stability." *Solid State Technology* (1993).
- Cellucci, T.A., and Williams, R. "Tuned Damping of Steel Table Offers Submicron Stability." *Laser Focus World* (1992).
- Cellucci, T.A. "Interferometric Testing of Table Tops: Confirmation of Compliance Curve and Relative Motion Values." *Newport Technical Bulletin* (1992).
- Cellucci, T.A. "An Explanation of Anti-resonance Valleys." *Newport Technical Bulletin* (1992).
- Cellucci, T.A. "Time-Correlated Single Photon Counting." *Coherent, Inc., Technical Bulletin* (1989).

## PERSONAL and CONFIDENTIAL

- Wei, T., and Cellucci, T.A. “Turbulent Fluid Dynamics Research.” *Coherent, Inc. Technical Bulletin* (1989).
- Wei, T., and Cellucci, T.A. “Turbulent Fluid Dynamics Research.” *Coherent, Inc. Technical Bulletin* (1989).
- Cellucci, T.A. “Superconductivity.” *Coherent, Inc. Technical Bulletin* (1988).
- Cellucci, T.A. “Ram Spectroscopy.” *Coherent, Inc. Technical Bulletin* (1988).
- Rubinovitz, R.L., Cellucci, T.A., and Nixon, E.R. “Matrix-Isolated Co. Atoms: excitation, emission and the photochemical  $\text{CO}+\text{H}_2\rightarrow\text{COH}_2\rightarrow\text{COH}_2$  reaction.” *Spectrochimica Acta*, 43 (5), 647 (1987).
- Heymann, D. and Cellucci, T.A. “Raman Spectra of Twin Sisters Peak Dunite Shocked to 59.5 Gpa and 69.7 Gpa; Another Case for the Decompositions of Olivine at High Shock Pressures.” *Chemistry and Physics of Minerals* (1988).
- Heymann, d. and Cellucci, T.A., Raman Studies of Enstatite Shocked Up to 59.6 Gpa and of Augite Shocked Up to 70.9 Gpa.” *Chemistry and Physics of Minerals* (1988).
- Cellucci, T.A., and Nixon, E.R., Lifetimes of Several Electronics States of Matrix-Isolated Fe, Co and Ni Atoms, *Journal of Physical Chemistry*, 89, 1991 (1985).
- Cellucci, T.A., and Nixon, E.R., “Study of low lying electronic states of Ni atoms in solid inert gas matrices.” *Journal of Physical Chemistry*, 81(3), 1174 (1984).
- Cellucci, T.A., and Nixon, E.R. “Cobalt and Nickel Atomic Matrices – Excitation Profiles and Retention of Gas Phase Energy Leveling.” Presented at Gordon Research Conference (1983).

### Note: Rigorous Academic Work Not Published in the Open Literature

Conducted a plethora of academic research throughout my career—but much of it, while peer-reviewed and scrutinized internally under Non-Disclosure Agreements, was not published in the open literature due to its confidential nature and the policy of various organizations that did not want it published for business competitive reasons. Below is a brief overview of some of the original research conducted that was published internally—but not in the open literature:

Shell Oil Company:

1. Time Correlated Single Photon Counting (TCSPC): Pioneered spectroscopic techniques to use the time domain as a distinguishing characteristic of polynuclear aromatics found in crude oil. Typically employed frequency domain spectroscopic methods could not adequately “resolve” the types of compounds found in real world samples-but these newly developed techniques worked well by using the time domain as a distinguishing factor by measuring various fluorescence lifetimes. This work was reviewed at the time by Dr. Rick Smalley of Rice University in Houston, Texas who later received the Nobel Prize in Chemistry for his work in nanotechnology.
2. Surfaced Enhanced Raman Spectroscopy (SERS): Brought to Shell this technology which I applied to the microscopic scale. I collaborated with Professor Fred Lytle of Purdue University who had an interest in this new area of research. I successfully used the techniques we developed to enable Shell to win a patent infringement case against Dow Chemical for over \$650M in 1985.

Coherent, Inc.:

1. Conducted research on a variety of laser dyes to be used in conjunction with the astigmatically-compensated single-frequency ring dye lasers that I helped develop to enable Dr. Steve Chu (current Secretary of Energy) to perform his “optical molasses” experiments that won him the Nobel Prize in Physics.

Newport Corporation:

1. Developed novel, state-of-the art closed-loop active vibration control theories, processes and systems that enabled new types of semiconductor devices and processes by firms like Intel Corp., AMD and Texas Instruments.

## PERSONAL and CONFIDENTIAL

2. Developed and proved an analytical theorem for predicting the efficiency and effectiveness of vibration control systems with researchers from the University of Arizona. These theorems are still used today throughout the semiconductor industry and predict the “maximum relative motion” of a scientific breadboard to sophisticated semiconductor equipment processing unit.

Etec, Inc.:

1. Researched and developed the first commercially-available, high speed optical MEMS (Micro Electro Mechanical System) test & measurement system used by JDS Uniphase. Worked closely with scientists from Electroglass, Inc. to develop test models and procedures.

Zyvex Corporation:

1. Recognized Principal Investigator of a \$25M grant from the National Institute of Standards and Technology (NIST) to research and develop methods to fabricate MEMS tools to ultimately enable molecular manufacturing (see the attached invited presentation to Australian government at the request of the White House).
2. Developed and implemented a 12 year detailed technology roadmap for the research and development of both “Top-down” and Bottom-up” nanotechnologies to create the capability of atomically precise manufacturing with collaboration of over 6 universities around the world.
3. Gained recognition in the business community as a pioneer in the commercialization of nanotechnology through the development of a rigorous new product development and marketing model still used today by nanotech firms (asked to take part in an interview for the Harvard Business School to develop a case study about Zyvex).
4. Worked closely with both Dr. Rick Smalley (Nobel Prize in Chemistry) and Dr. Alan MacDiarmid (Nobel Prize in Chemistry) on a detailed technology roadmap to use nanotechnology to rid our dependence on foreign oil. This was presented personally to President George W. Bush and members of the US Senate.
5. Was a co-editor of the seminal work entitled “Micro/Nano Roadmap” which reviewed virtually all research being conducted throughout the world on MEMS and nanotechnology that proposed an international technology roadmap to harness the power of these emerging technologies. This work was done mainly with scientists from Sandia National Laboratories.

United States Government:

1. Responsible for the Research Council of the US Department of Homeland Security as well as the Executive Director at the Executive Office of the President for the National Science & Technology Committee.
2. Considered the “go to” person in matters related to nanotechnology and regularly attended meetings at the White House, Environmental Protection Agency, National Science Foundation, DARPA and Joint Chiefs of Staff related to classified research.
3. Active participant in scientific research that cannot be discussed at all.
4. Author of “A National Strategy for Advanced Manufacturing” for the White House.
5. Possess active TS/SCI/Yankee White clearance with “authority to operate” across ALL of the US Government, including the Department of Defense, Department of Energy and the Intelligence Community