

GAUTAM PILLAY, Ph.D.

CITIZENSHIP: USA

SECURITY CLEARANCE: US Department of Energy (DOE) **Q**, 1985-2004

SUMMARY OF PROFESSIONAL EXPERIENCE

- Over 30 years of experience as a senior leader in both universities and national laboratories; directly managed staff of up to 50 and \$50+ million budgets routinely while focused on creating and fostering collaborative relationships between these partner organizations. Co-managed \$1 billion annual budget and multiple divisions at Los Alamos National Laboratory.
- Served for over 20 years as an academic vice president, vice provost, dean, associate vice president, and tenured faculty member.
- Served for over 20 years as a DOE national laboratory senior administrator, chief of staff, governmental relations officer, program manager, and researcher.
- Appointed as chief research officer of four universities, serving as authorized organizational representative and delivering diversified revenue through increased grant funding from federal, state, and private sector sponsors.
- Led the development and implementation of multiple research strategic plans at universities and DOE national laboratories
- Developed and delivered undergraduate and graduate curricula in multiple fields (general engineering, chemical engineering, industrial/operations engineering, nanosciences/engineering, biomedical engineering, allopathic medicine, environmental sciences, technical writing, public speaking)
- Elected to boards of regional economic development councils and workforce advisory boards in Idaho, South Dakota, New Jersey, and Ohio
- Secured sustained and significant new research and infrastructure funding and partnerships with federal, state, and private-sector sponsors
- Led the research-related outreach work for a \$50M capital campaign and partnered with advancement and development offices at three universities in ongoing corporate and foundation relations
- Appointed to diversity councils at multiple universities and worked with diverse populations, including several Native American communities in western states
- Served on university tenure and promotion committees and reviewed all tenure and recontracting documents for research and scholarly contributions at several universities

EDUCATION

- Ph.D., Chemical Engineering, Texas A&M University (College Station, TX)
 - Dissertation: "Mathematical Modeling of Macromolecular Transport Phenomena in Ion-Exchange Membranes"
- B.S. (High Honors), Chemical Engineering, New Mexico State University (Las Cruces, NM)

RESEARCH INTERESTS

Environmental remediation and restoration; batteries and fuel cell technologies; defense applications of materials science and engineering; pedagogy of technical communications; public policy and the influences of science and engineering.

TEACHING TOPICS

Technology transfer and intellectual property management; electrochemical engineering; statistical analysis and experimental design; science, engineering, and public policy; environmental engineering; mass transport; technical communication for engineers and scientists; research writing for engineers and scientists; engineering and professional ethics; higher education administration and policy

PROFESSIONAL EXPERIENCE

University of Cincinnati, Cincinnati, OH: Associate Dean for Research, College of Engineering and Applied Science (CEAS) and Tenured Full Professor of Engineering Education March 2020 – present

As the chief research officer of the College of Engineering and Applied Science (CEAS), my responsibilities are to:

- Oversee research activities of 7100 undergraduate and graduate students within the College
- Develop faculty-led externally sponsored research programs across a variety of sectors, including but not limited to government agencies, foundations, and industry
- Maintain and strengthen transdisciplinary research collaborations across the campus
- Oversee all CEAS research and teaching facilities (over 800,000 net square feet) across multiple campuses
- Oversee all CEAS facilities and health and safety functions for instruction and research
- Represent the CEAS at the level of the research management activities of the UC Vice President for Research
- Interactive prospectively with the leadership of research programs of:
 - Cincinnati Children's Hospital Medical Center (CCHMC); and
 - Other UC Colleges (particularly the College of Medicine and the College of Arts and Sciences) to create trans-institutional and transdisciplinary research programs
- Track and support research progress of Centers and Institutes
- Set performance goals for the Office of Research annually in accordance with the CEAS strategic plan, including quantitative goals for submitted proposals, received funding

Significant accomplishments include:

1. **Increased CEAS annual sponsored research funding by over 175% (from \$15M in FY19 to over \$41M in FY24)**
2. **Achieved the highest levels of CEAS proposals (both number and funding) in history**
3. *Created Undergraduate Research Cooperative Fellowship (URCF) program, supporting full-time undergraduate research employment for over 90 students in four years*
4. *Established the first CEAS Office of Research, assumed responsibility for college health and safety functions, and recruited a full-time program director, grant writer, and increased full-time health and safety staff*
5. *Secured \$3.5M from Intel Corporation to develop workforce development programs for Intel's upcoming Ohio fabrication facilities' future employees (one of only eight grants in the state of Ohio)*

6. Secured UC's founding membership in the Midwest Semiconductor Network (MSN) and serves as sole institutional representative.
7. Secured partnership with Battelle in management of US Department of Defense (DoD) Microelectronics Commons Hub (total contract \$24.6M) and serves as sole institutional representative.
8. Secured partnership with Battelle in management of Appalachian Regional Clean Hydrogen Hub (ARCH2), sponsored by US Department of Energy (DOE) (total contract \$925M) and serves as sole institutional representative.
9. Secured partnership with Current Innovation in management of National Science Foundation (NSF) Type 2 Regional Innovation Engine - Great Lakes Water Innovation (up to \$160M over 10 years)
10. Developed and secured \$1M Congressionally directed funding from National Institute of Standards and Technology (NIST) for semiconductor and microelectronics research infrastructure and workforce development
11. Secured faculty funding from significant first-time NSF Technology, Innovation and Partnerships (TIP) Directorate programs
 - Major support from CHIPS + Science Act (2022)
 - Competitively awarded programs from:
 - Two awards from the Experiential Learning for Emerging and Novel Technologies (ExLENT) program (\$1M each)
 - Future of Semiconductors (FuSe) (\$1M)
 - Building the Prototype Open Knowledge Network (Proto-OKN) (\$1.5M)
12. Secured first significant awards for CEAS faculty from:
 - NSF Scholarships in Science, Technology, Engineering, and Mathematics Program (S-STEM) (\$3M)
 - DoD Strategic Environmental Research and Development Program (SERDP) (\$3M)
 - DOE Office of Fossil Energy and Carbon Management (FECM) Direct Air Capture Program (\$2M)
 - Numerous NSF CAREER and DOE Young Investigator Awards

Western Washington University, Bellingham, WA: Vice Provost for Research (Chief Research Officer) and Dean of the Graduate School August 2017 – May 2019

Tenured Full Professor in Engineering August 2017 – March 2020

I worked with faculty, staff, and students to increase involvement of all students in research and scholarship, developing synergy between graduate and undergraduate education. I supported, facilitated, and enhanced interdisciplinary collaboration and cultivate public and private research funding and collaborate with the Office of University Advancement to enhance the WWU Foundation's ability to solicit and steward major gifts. I oversaw all compliance issues associated with research, including ethics, human subjects, financial conflicts of interest, animal welfare, and environmental health and safety. I provided leadership for graduate education that advances Western's strategic objectives. I reviewed, developed, and maintained the administrative and budgetary functions of the Graduate School and Office of Research and Sponsored Programs.

Significant accomplishments include:

1. Increased campus engagement with Office of Research and Sponsored Programs (RSP) and the Graduate School

- Met with every university administrator, research committee, academic dean and cognizant college advisory councils, and over 120 individual faculty to discuss research and graduate education priorities and goals
- Restructured Research Advisory Committee (RAC) to include multiple faculty members from each of the seven academic colleges, along with the Library, where in the past there had been only one member per academic unit
- Worked with individual faculty to develop research agendas, identify potential internal and external research sponsors, develop proposals, engage with sponsor personnel, submit proposals, and manage received funding
- Engaged a new Graduate Student Advisory Council (GSAC) to represent academic college's graduate students via a shared governance model
- With the Graduate Council, significantly revised the program review procedures to provide faculty with more information to develop and strengthen graduate program curricula and delivery
- Significantly revised RSP and Graduate School websites and increased content on both

2. Increased externally sponsored research programs

- Increased FY 2018 external funding to \$10.5M from previous year's total of \$9.7M

3. Developed and executed strategic planning processes and graduate student compensation initiatives

- To complement recently completed university strategic plan, developed the university's first research strategic plan with key initiatives to reach the goal of doubling externally sponsored research funding within five years
- Developed and successfully advocated for graduate student attraction/retention initiatives, including increases to student stipends, waiving tuition for research assistants, and increasing the number of institutionally funded teaching assistantships
- Successfully advocated the waiving out-of-state tuition differential for non-resident graduate assistants for the first time in the university's history

4. Revised compliance procedures

- To comply with changing federal regulations and to streamline internal paperwork, completely revised all procedures, guidelines, and required forms for Institutional Review Board (IRB) applicants and created training for faculty and students

West Chester University of Pennsylvania, West Chester, PA: Associate Vice President for Research and Sponsored Programs (Chief Research Officer) July 2013 – August 2017:

As the university's chief research officer, I provided administrative and technical leadership, support, and oversight to faculty and staff in the development and submission of proposals to external organizations, including federal, state, and private-sector sponsors, to support research, scholarly, and creative activities. I managed all pre-award activities, the intellectual property development process (including patent applications and commercialization agreements), and served as the University's chief export control officer. I collaborated with faculty and staff from all academic units and other campus offices to encourage the submission of grant and contract applications. I worked with Finance and Business Services and other offices responsible for post-award management to ensure that grant-funded activities were implemented effectively and that principal investigators were knowledgeable of policies and procedures.

Significant accomplishments include:

1. *Increased campus engagement with Office of Research and Sponsored Programs (ORSP)*
 - Met with every academic department, academic dean, university vice president, and assistant vice president to discuss research program priorities and goals, including increasing undergraduate and graduate student participation
 - Met with over 550 individual faculty to provide guidance on research project development, including reviewing research proposal concepts and identifying potential funding sources
 - Met with student government leaders to discuss importance of student participation in research and to solicit suggestions on augmenting student research and scholarly activities in all disciplines
 - Developed and implemented college-specific actions based on faculty research interests, connecting faculty/staff with proposal opportunities
 - Facilitated formal introductions and corresponding discussions between multiple faculty and federal agency and private-sector program managers
2. *Increased externally sponsored research proposals, awards, and expenditures*
 - FY 14 (my first year in this position) vs FY 13
 - 16% increase in number of proposals for external research funding
 - 35% increase in awarded funding
 - 75% increase in expenditures
 - FY 17 vs FY 13
 - 22% increase in number of proposals for external research funding
 - 56% increase in awarded funding
 - 346% increase in expenditures
3. *Improved communications between ORSP and faculty, staff, and students*
 - Completely redesigned and deployed new ORSP websites twice in two years so that information about finding funding, writing and submitting proposals, and managing awards was easier for faculty and students to access and update
 - Established new linkages with offices responsible for post-award management (particularly Finance and Business Services) to identify ways to improve services, eliminate barriers, avoid problems, and educate faculty about their responsibilities
 - Conducted more than fifteen faculty training workshops, research seminars, roundtable discussions, and proposal development workshops per semester, with several developed in partnership with the WCU Foundation
 - Wrote new annual WCU research reports that were distributed to internal and external constituents
4. *Consolidated support for multiple research-related faculty committees*
 - Established staffing and mentoring support for Institutional Review Board, Research Advisory Council, Student Research and Creative Activities committee, and Council on Undergraduate Research, where support and available resources to these faculty committees were previously limited or non-existent
5. *Created first research strategic plan for university*
 - Wrote a comprehensive, multi-year research strategic plan, supporting recently developed university strategic plan, with a goal to increase revenue from externally sponsored research programs by five times current level

- Evaluated resource needs for ORSP and university-wide programs, including staffing, funding, and other physical resources, to ensure ability to meet faculty and student needs to develop research and scholarly activities
- Increased university base funding for ORSP activities
- Summarized findings from 1.25 years of direct discussions with hundreds of WCU administrators, faculty, staff, students, and external stakeholders,
- Developed and presented 32 pages of recommendations and required actions, in addition to those outlined in the university strategic plan, including appropriate measures to determine successes and continued needs when examining if goals are achieved

6. *Started new research programs*

- With the WCU Foundation, created the Faculty/Student Research (FaStR) program to fund collaborative research between faculty advisors and student mentees
- Established the Council on Undergraduate Research and developed the Summer Undergraduate Research Institute (SURI), in which 50 students and 50 faculty were funded for one month to work on a research project that was mutually proposed

7. *Ensured compliance with federal regulations*

- Completely restructured the Institutional Review Board, bringing policies and procedures into Federal compliance
- Provided training for all members
- Simplified all forms and procedures
- Offered IRB training to faculty and students, which was not provided at WCU previously

8. *Feasibility study of undergraduate engineering programs*

- Appointed by university President to chair steering committee of administrators and faculty to investigate the development and delivery of three undergraduate engineering programs (biomedical, industrial/operations, software)
- Led the recruitment of and interactions with nationally recognized engineering consultants to work with WCU administrators, staff, and faculty to develop a comprehensive set of curricular proposals to the Pennsylvania State System of Higher Education Board of Governors
- Developed all consultant solicitation and recruitment materials, including lists of potential consultants, statement of work, and goals and expectations

Rowan University, Glassboro, NJ: Associate Provost for Research (Chief Research Officer) and Tenured Full Professor of Chemical Engineering August 2008 - July 2011:

Tenured Full Professor of Chemical Engineering July 2011 – July 2013:

Rowan is a comprehensive public university with Colleges of Business, Communication, Education, Engineering, Fine and Performing Arts, Liberal Arts and Sciences, Graduate and Continuing Education, and a new School of Medicine (started Fall 2012). As Associate Provost for Research and the university's chief research officer, I led the campus' efforts in the development of externally sponsored research, scholarly, and creative activities from federal, state, and local governmental and private sector corporate and foundation sources. I oversaw all intellectual property and technology transfer activities. I worked closely with faculty, staff, students, and administrators to accomplish the objectives of increasing the level

of support for these activities and to foster collaborations between faculty in multiple technical disciplines.

Significant accomplishments include:

1. Establishment of Office of Sponsored Programs (OSP)

- Developed and implemented reorganization plan for combining all pre-award functions and post-award management responsibilities from two offices in different line organizations

2. Substantial Increase in Proposal Submissions and Received Funding

- In FY 2011, \$33.M in proposals were submitted, resulting in 77 new funded programs totaling \$14.8M, the largest levels to that date
- Wrote updates to all sections of Rowan's Strategic Plan that relate to research

3. Proposal Co-authorship and Team Development

- Developed, facilitated, and/or co-authored multiple proposals for external funding with faculty from the Colleges of Education, Engineering, Fine and Performing Arts, and Liberal Arts and Sciences
- Examples: i) Department of Education Teacher Quality Partnership program (\$3M award); ii) National Science Foundation (NSF) Innovations in Engineering Education, Curriculum and Infrastructure proposal; iii) Department of Labor Community Based Job Training Grant proposal with Gloucester County College; iv) \$8.2 M of Recovery Act proposals
- Coordinated all communications with the US Department of Energy for a \$750K FY10 congressionally directed project to develop algae-to-ethanol biofuel production technology
- Created research collaborations for our faculty with regional universities and consortia, including:
 - Thomas Jefferson University (technology transfer)
 - Drexel University (nanotechnology, medicine)
 - Temple University (medicine)
 - University of Pennsylvania (biomechanics)
 - Rutgers (civil engineering)
 - Rider University (all science fields)
 - Gloucester County College (workforce development, allied health)
 - NASA New Jersey Space Grant Consortium (multiple universities throughout NJ, coordinated by Rutgers, representing the first time that Rowan was asked to join NJSGC)
 - Chamber Music America (established membership in this national organization for College of Fine and Performing Arts faculty)

4. Development of Academic and Research Policy

- Created new policy for adjusted load administration, after reviewing model policies from multiple institutions inside and outside New Jersey
- Created new policy for internal distribution of Facilities and Administrative (F&A) costs earned from externally sponsored grants and contracts.
- Reviewed all tenure and recontracting (T&R) documents for faculty's research criteria, assessing all candidates and providing detailed written recommendations to academic deans

5. Reorganization of Internal Review Boards

- Reconstituted Rowan's Institutional Review Board (IRB) and Institutional Animal Care and Use Committee (IACUC) by removing "ex officio" administrative members and worked with the University Senate leadership to appoint faculty members and new chairs and vice-chairs, ensuring faculty direction for these important committees
- Created an Institutional Biosafety Committee (IBC), required by the National Institutes of Health, and staffed and created a charter for this committee

6. Creation and Leadership of Cooper Medical School of Rowan University (CMSRU) Research Committee

- Worked with the Acting Dean of CMSRU and the Director of the Cooper Research Institute to create the CMSRU Research Committee
- Recruited all committee members from the Rowan faculty and organized and conducted all meetings
- Wrote Rowan's proposed research policy language in the CMSRU affiliation agreement between Rowan and Cooper University Hospital and the subsequent stand-alone research agreement
- Co-organized and hosted the first joint research meeting between 100 Rowan faculty and Cooper staff on the Rowan campus

7. Teaching of Undergraduate Engineering and Advising of Doctoral Education Students

- Taught a broad spectrum of engineering courses, from freshman to senior-level (see below for specific courses) in multiple disciplines
- Received significantly positive student evaluations, consistently scoring higher than the college-wide and university-wide mean scores
- Led curriculum development with instructors from multiple colleges for the four-credit Sophomore Engineering Clinic (ENGR 01.201 and ENGR 01.202) courses for the past three years
- Served on the dissertation and advisory committees for three doctoral students in the College of Education, Department of Educational Leadership
- Directed research projects for students in mechanical and electrical engineering and computer science. This student team received Rowan's highest award for student research in 2013.
- Received 2013 Best Teacher Award from the Department of Chemical Engineering
- Coordinated all ABET accreditation reporting activities for Sophomore Engineering Clinic courses

South Dakota School of Mines and Technology (SDSM&T), Rapid City, SD: Vice President for Research (Chief Research Officer) and Professor of Chemical and Biological Engineering

September 2004 – July 2008:

SDSM&T is a regional university specializing in undergraduate and graduate education in applied science and engineering. It is one of six institutions governed by the South Dakota Board of Regents, but one of only three offering Bachelor's, Master's, and doctoral programs. As the institution's first Vice President for Research (VPR), I provided administrative oversight, leadership and mentorship in the development and implementation of campus-wide research and graduate studies that are integrally linked to the university's mission. I oversaw all research centers and institutes on campus and was responsible for the budgeting process for all of these activities. I was also responsible for grants and contracts, research policy compliance,

intellectual property, technology transfer, commercialization and licensing policies for the institution. I supervised all economic development activities at SDSM&T, and I was the campus' liaison to the South Dakota congressional delegation.

Significant accomplishments include:

1. *Management of SDSM&T Research Centers and Institutes*

- Supervised all research centers at SDSM&T
 - Advanced Materials Processing and Joining Laboratory and the National Science Foundation (NSF) Center for Friction Stir Processing
 - Additive Manufacturing Laboratory
 - Center for Accelerated Applications at the Nanoscale (CAAN)
 - Composites and Polymer Engineering (CAPE) Laboratory
 - Center for Bioprocessing Research and Development
 - Computational Mechanics Laboratory
 - Engineering and Mining Experiment Station
 - Experimental Program to Stimulate Competitive Research (EPSCoR)
 - Institute of Atmospheric Sciences
 - South Dakota Space Grant Consortium
- With the center directors, wrote the major funding proposals for DoD programs in which multiple centers participated.
- Served as the Recipient Program Manager for projects funded by US Army Research Laboratory, US Army's Armament Research, Development and Engineering Center, and US Air Force Research Laboratories
- Supervised the work of SDSM&T's OSP, which oversaw all grants and contracts activities and regulatory compliance
- In FY 2009, SDSM&T researchers received more than \$21 million in sponsored research funding, representing a 76% increase in externally funded research and scholarly activity since I accepted this position

2. *NSF Selection of South Dakota's Sanford Underground Science and Engineering Laboratory (SUSEL) as Development Site for Deep Underground Science and Engineering Laboratory (DUSEL)*

- NSF announced in July 2007 that the state-supported SUSEL was selected for a potential \$350 million DUSEL, receiving \$15 million for detailed design work starting in federal fiscal year 2008
- Served as SDSM&T administration's point-of-contact for this project
- Supported the Principal Investigators with staff support to prepare proposals and briefing local, state, and federal officials on the support that SDSM&T would provide the proposed facility
- Reviewed and approved the full NSF proposal on behalf of SDSM&T

3. *NSF Research Infrastructure Improvement Grant*

- Developed NSF proposal for a statewide EPSCoR Research Infrastructure Improvement Grant (RII), working with faculty on multiple South Dakota university campuses and my fellow VPRs at South Dakota State University and the University of South Dakota: funded in 2006 for \$9.5 million over three years

4. *SDSM&T Accreditation by the Higher Learning Commission (HLC)*

- Wrote four criteria in the comprehensive self-study document related to research, economic development, technology transfer, and outreach (i.e., Mission and Integrity; Preparing for the Future; Acquisition, Discovery, and Application of Knowledge, and Engagement and Service)
- Collaborated with multiple teams of faculty from all departments

5. *Congressional Liaison*

- Worked with SDSM&T faculty and Members of Congress to secure over \$20 million in congressionally supported projects
- Wrote white papers for Congress on all proposed projects and completed all committee-specific forms and paperwork required by congressional appropriations and authorization committees
- Advocated legislation to support higher education and federal funding of academic research programs as SDSM&T's representative to the Councils on Governmental Affairs (CGA) and Research Policy and Graduate Education (CRPGE) of the National Association of State Universities and Land-Grant Colleges (NASULGC, now APLU)

6. *SDSM&T Office of Technology Transfer (OTT)*

- Created and secured funding for the first university-based technology transfer office in the state and recruited its director

7. *SDSM&T Council on Graduate Education (CGE)*

- Developed the following structure for the university's newest faculty council, which was supported by the Faculty Senate and adopted by the President
- CGE is an advisory body for the Dean of Graduate Education and is the primary channel for communication between the faculty, students, and the Dean and Office of Graduate Education staff
- CGE is chaired by the Dean of Graduate Education and has three elected faculty representatives from each college (Engineering and Science/Letters) and two graduate students appointed by the elected faculty members

8. *Established Local Partnership to Support Research Personnel*

- Obtained \$1 million in multiple-year funding from the City of Rapid City to support critical research management positions at SDSM&T, working with SDSM&T President
- Worked with multiple economic development agencies and councils in the region and the city government to build advocacy for this critical investment

9. *Faculty Engagement*

- Met each faculty member on campus individually in their offices to discuss their plans for research and scholarly activities and to solicit their opinions on how the Office of Research Affairs could assist their endeavors
- Instituted first series of campus-wide research symposia ever offered at SDSM&T, in which faculty and students discussed current and planned research projects
- Provided regular campus-wide briefings to faculty and administrators on my liaison activities with congressional staff and federal agency program managers
- I served on the selection and screening committees for several faculty and administrative positions, including those for the Dean of Engineering and the Dean of Science and Letters.
- Developed new doctoral programs in Nanoscience and Nanoengineering and Biomedical Engineering with the SDSM&T Provost and department chairs

10. Student Interactions

- Served as guest lecturer in courses on technical writing, computers and society, and the general Introduction to Humanities class, in which I discussed and demonstrated the importance of communication skills in technical careers
- Advised undergraduate students on graduate school and post-baccalaureate and post-graduate career opportunities
- Advised students on internship opportunities in industry and government

Inland Northwest Research Alliance, Inc. (INRA), Idaho Falls, ID: Executive Director (Chief Executive Officer) April 2001 - September 2004:

I was jointly appointed as a Research Professor with Idaho State University. INRA was a non-profit scientific and educational organization consisting of eight Western research universities (Boise State, Idaho State, Montana State, Utah State, and Washington State Universities; and the Universities of Alaska Fairbanks, Idaho, and Montana) in five states. I had the overall responsibility for carrying out the goals of the Alliance, including (1) developing new collaborative research and educational opportunities for the member universities, (2) developing and implementing strategic plans, (3) developing business opportunities, (4) monitoring contract and fiscal performance, (5) conducting federal relations activities with delegations from five states, and (6) managing human resources. I served as INRA's on-site point-of-contact in the management of the U.S. Department of Energy's (DOE) Idaho National Laboratory (INL), in which INRA was a partner with Bechtel, Inc., and BWXT, Inc. I reported to the INRA Board of Trustees, consisting of the Presidents of the eight member universities, and worked closely with all levels of management at the INL to develop collaborative research opportunities between INRA faculty and INL researchers.

Significant accomplishments include:

1. Corporate Funded Research and Development (CFRD) Doctoral/Post-Doctoral Research Grants

- Established program to fund faculty and students at member institutions to work with INL researchers on programs of mutual interest in Environmental Management, Energy Sciences, and National Security
- Created peer review process for the grants program, conducted under the auspices of the American Association for the Advancement of Science (AAAS)
- Committed over \$4.5 million in CFRD by this program over the life of the five-year INL operating contract
- Generated over \$13 million in new research grants that were competitively awarded to the INRA universities and the INL, after initially investing \$3.6 million in twenty-eight seed grants
- Projects resulted in 120 jointly authored presentations at technical society symposia, 41 peer-reviewed articles published, and 17 additional articles submitted
- Students from INRA universities spent 1542 days on-site at INL working on these research projects

2. Subsurface Science Symposium (SSS)

- Organized first SSS, held in September 2001, attracting around 130 attendees and speakers

- Organized second symposium in 2002, obtaining a Keynote Speaker (Dr. Stephen Wells, Director of the Desert Research Institute) from outside the INRA community, inviting over 80 authors to present their work, and attracting these speakers and over 200 attendees from INRA campuses, other American and international universities, the INL, other Department of Energy national laboratories, and private industry
- Developed and implemented a student poster competition, during which twenty-four teams competed for four cash prizes totaling \$2000
- Organized 2003 Symposium, attracting a major Keynote Speaker, Dr. Harrison “Jack” Schmitt, the only scientist to set foot on the Moon and former senator from New Mexico; and recruiting major experts in technology transfer and environmental policy for significant panel discussions

3. *Subsurface Science Research Institute (SSRI)*

- Served as the program manager and DOE point-of-contact for this program, receiving \$10 million in FY 2002 – FY 2004 from the DOE under contract DE-FG07-02ID14277
- Wrote the project plan and developed the spending plan
- Assembled Graduate Deans from each INRA institution into a Council that oversaw the day-to-day tasks at each university in this program
- Recruited and supervised committees on Curriculum Development and Instructional Design and Technology to:
 - Remove administrative barriers at all member universities, so that course credit earned at each institution can be granted to students at the other INRA universities
 - Establish common procedures for reporting and monitoring student performance in this program
 - Design, propose, and select a multi-block core course for SSRI students, which started in the fall semester of 2002
 - Design, propose, and selected three elective courses
 - Select common hardware and software so all campuses have common infrastructure to offer all courses in real time at the eight campuses and the University of Idaho branch campus in Idaho Falls
- Allocated \$5 million to more than 50 highly qualified Ph.D. students, including employees of INL, for multiple-year stipends (\$25,000 each year, equivalent to an NSF doctoral fellowship, plus \$10,000 for tuition/fees and laboratory support)
- Supported INL researchers to participate in sabbaticals to the INRA campuses as adjunct or affiliate university faculty to develop research programs with SSRI faculty and students

4. *Oversight of INRA Federal Priorities and Federal Relations Activities*

- Interacted with the Members and staff of five Congressional delegations (Alaska, Idaho, Montana, Utah, and Washington) to advocate all INRA research and educational programs
- Worked with the staff and Members of several Congressional committees (e.g., Senate Appropriations, Energy and Natural Resources, Environment and Public Works, Governmental Affairs; House Science, Appropriations)
- Served as the direct interface between INRA and the Office of the Secretary of Energy, and I communicated directly with the Deputy Secretary and the Assistant Secretaries and Directors of the Office of Science and Nuclear Energy, Science and Technology
- Wrote the INRA Federal Priorities documents for Congressional Members and staff, including sections that summarized parallel INL priorities, for FYs 2002 - 2005

- Organized annual congressional briefing in Washington, DC, attended by the INRA university Presidents, Research Vice-Presidents, Federal Relations Officers, students, and Congressional Members and staff

Los Alamos National Laboratory (LANL), Los Alamos, NM: Senior Administrator (multiple positions) June 1997 - April 2001:

Prior to joining INRA, I was at LANL from June 1997 to March 2001. I was most recently the Special Assistant (Chief of Staff) to the Deputy Laboratory Director for Science, Technology, and Programs (DLDSTP). Prior to this position, I was the Project Leader for Waste Minimization for LANL's Nuclear Materials Technology Division. I also held an assignment in the LANL Director's Office, Government Relations, as the point-of-contact for Federal agency and Congressional interactions for the LANL Threat Reduction (TR) Directorate. I completed a one-year assignment with LANL's Nuclear Materials and Stockpile Management Program Office (NMSM-PO), where I supported the Program Director, Deputy Program Director, Chief of Staff, and specific Program Managers on a variety of technical and administrative assignments.

Significant accomplishments include:

- Assisted in developing and evaluating the scientific and programmatic efforts at the Laboratory, which encompassed the majority of the Laboratory's \$1.5 billion annual budget
- Participated in strategic planning of LANL's scientific missions
- Conducted human resources actions within the DLDSTP organization and for administering key DLDSTP funding across various Laboratory organizations
- Built advocacy for major TR programs by fostering interactions with Federal agencies to develop new TR research programs and informing Congressional staff and Members of TR programmatic requirements and priorities
- Wrote sections of the LANL Institutional Plan
- Assessed impact of ratification of the Comprehensive Test Ban Treaty on Los Alamos weapons programs
- Represented LANL in Operational Readiness Review for a facility at Pantex
- Designed critical systems for the Nuclear Materials Storage Facility renovation project

Pacific Northwest National Laboratory (PNNL), Richland, WA: Senior Research Engineer January 1993 - June 1997:

I joined PNNL in January 1993 as a Research Engineer in the Electrical and Chemical Processing Group and became a Senior Research Engineer in April 1995.

Significant accomplishments include:

- Managed the development of an electrochemical oxidation process to destroy torpedo fuel wastes for the U.S. Navy
- Received the Federal Laboratory Consortium Award for Excellence in Technology Transfer
- Managed the \$2.5 million feasibility study of groundwater remediation technologies at the U.S. Army's Aberdeen Proving Ground - Edgewood Area, Maryland
- Earned an Environmental Management Critical Outcome Outstanding Achievement Award from PNNL

- Developed, deployed, and evaluated technologies for Department of Defense (DoD), including chemical and biological warfare agent detection, protection, and destruction (micro-machined sensors, collective and individual protection using active agent destruction methods, non-thermal methods for agent destruction, air purification in closed environments); and non-thermal methods for destruction of energetic materials (HMX, RDX, TNT)
- Awarded US Patent 5,545,803, "Heating of Solid Earthen Material, Measuring Moisture and Resistivity," which describes a method for in-situ soil treatment and containment

Texas A&M University, Department of Chemical Engineering, College Station, TX: Graduate Research Assistant August 1988 - December 1992

I conducted research in electrodeposition of nickel-sulfur amorphous metal alloys, mathematical modeling of a closed environmental life support system in space, modeling of a hydrogen sulfide low temperature decomposition facility, and modeling of macrohomogeneous transport phenomena in ion-exchange membranes. I also assisted in instruction of graduate electrochemical engineering and undergraduate kinetics and numerical methods courses.

Los Alamos National Laboratory, Los Alamos, NM: Graduate Research Assistant May 1988 - August 1988

I developed and deployed real-time computer-based process control systems for triple-effect evaporators in an actinide separation facility. I contributed to the detailed design of evaporator systems for this facility.

Los Alamos National Laboratory, Los Alamos, NM: Undergraduate Research Assistant

- May 1987 - August 1987: Build microcomputer-based data acquisition and process control systems (hardware and software) for laboratory and plant-scale chemical separation processes
- May 1986 - August 1986: Developed microcomputer-based expert systems for on-line consultation in actinide separation facilities
- May 1985 - August 1985: Developed automated process control software and hardware for an ion-exchange system in an actinide separation facility
- May 1984 - August 1984: Conducted measurements of tracer dispersion through soil caissons for an environmental research group

COURSES TAUGHT / STUDENTS ADVISED

- **University of Cincinnati**
 - ENED 1100 - Foundations of Engineering Design Thinking I (mandatory first semester engineering fundamentals class) – 3 s.h.
- **Western Washington University**
 - ENGR 170 - Introduction to Materials Science and Engineering - 4 s.h.
- **Rowan University**

- CHE06.403 - Unit Operations Experimental Design and Analysis (includes comprehensive statistical analysis) – 2 s.h.
- CHE06.406 – Chemical Plant Design (senior capstone class) – 3 s.h.
- ENGR01.102 – Honors College – Freshman Engineering Clinic II (includes data analysis, engineering ethics, engineering economics) - 2 s.h.
- ENGR01.201 - Sophomore Engineering Clinic I (includes technical writing) - 4 s.h.
- ENGR01.201 - Sophomore Engineering Clinic I Coordinator – all sections
- ENGR01.202 - Sophomore Engineering Clinic II (includes entrepreneurship and public speaking) - 4 s.h.
- ENGR01.202 - Sophomore Engineering Clinic II Coordinator – all sections
- ENGR01.301 – Junior Engineering Clinic I (team-based research projects) – 2 s.h.
- ENGR01.302 – Junior Engineering Clinic II (team-based research projects) – 2 s.h.
- ENGR01.401 – Senior Engineering Clinic I (team-based research projects) – 2 s.h.
- ENGR01.402 – Senior Engineering Clinic II (team-based research projects) – 2 s.h.
- Components of EDAM27.750 - Applied Ethics in Educational Leadership – 3 s.h.
- Components of EDAM27.713 - Forces of Change in American Society – 3 s.h.
- Served on dissertation advisory committees of three students pursuing the doctoral degree in Educational Leadership
- **SDSM&T**
 - Components of HUM 200 - Connections: Humanities and Technology – 3 s.h.
 - Components of ENGL 289 - Technical Communication II – 3 s.h.
 - Components of HUM 375 - Computers in Society – 3 s.h.
- **Texas A&M**
 - Components of CHEN 464 - Chemical Engineering Kinetics – 3 s.h.
 - Components of graduate-level chemical engineering course (now discontinued) – Electrochemical Engineering – 3 s.h.

PROFESSIONAL MEMBERSHIPS

American Society for Engineering Education, 2004-present
 American Association for the Advancement of Science, 1999-present
 New York Academy of Sciences, 1998-2004
 American Nuclear Society, 1992-2004
 American Electroplaters and Surface Finishers Society, 1989-1995
 The Electrochemical Society, 1989-present
 American Chemical Society, 1988-present
 American Institute of Chemical Engineers, 1986-present (Senior Member)

HONORS AND AWARDS

Rowan University, Department of Chemical Engineering Outstanding Teacher Award, 2013
 Rowan University Award for Excellence in Undergraduate Research, "Plug-In Rechargeable Electric Vehicle Systems," 2013
 Award of Service Appreciation, The Electrochemical Society, May 2007
 Los Alamos National Laboratory Teamwork Award, 1999
 Federal Laboratory Consortium Award for Excellence in Technology Transfer, 1997
 PNNL Environmental Management Critical Outcome Outstanding Achievement Award, 1997
 Phi Lambda Upsilon (National Chemistry Honor Society), 1990
 National Science Foundation Graduate Research Fellowship (Full Tuition), 1988-1991
 National Deans' List, 1985-1988

New Mexico State University President's Associates Scholar, 8/84-5/88
New Mexico State University Crimson Scholar, 8/84-5/88
Institute of Nuclear Power Operations Scholar, 8/84-5/88
New Mexico State University Chemical Engineering Design Award, 1988
New Mexico State University Chemical Engineering Student of the Year, 1986
Alpha Chi (Interdisciplinary Honor Society), 1985
Phi Kappa Phi (Interdisciplinary Honor Society), 1985
Omega Chi Epsilon (Chemical Engineering Honor Society), 1985
Tau Beta Pi (National Engineering Honor Society), 1985
New Mexico State University Chemistry Student of the Year, 1985
New Mexico's US Presidential Scholar, 1984

SERVICE FUNCTIONS

National program reviewer, US Department of Energy, ARPA-E Vision OPEN, 2024

Peer reviewer, Frontiers in Education (FIE) Conference, 2024

National program reviewer, Experiential Learning for Emerging and Novel Technologies (ExLENT), National Science Foundation, 2023 – present

National program reviewer, Research Experiences for Undergraduates (REU), National Science Foundation, 2023 – present

National program reviewer, Growing Research Access for Nationally Transformative Equity and Diversity (GRANTED), National Science Foundation, 2023 – present

Member, Steering Committee, Midwest Semiconductor Network, 2022 – present

University Representative, American Society for Engineering Education (ASEE) Engineering Research Council (ERC), 2020 – present

Member, Council of Graduate Schools (CGS)/ProQuest Distinguished Dissertation Award review committee, 2018 - 2020

Member, Council of Deans, Western Washington University, 2017 – 2019

Member (ex officio), Graduate Council, Western Washington University, 2017 – 2019

Member, Laboratory and Chemical Safety Committee, Western Washington University, 2017 – 2019

Paper reviewer, multiple divisions, American Society for Engineering Education (ASEE) Annual Conference & Exposition, 2016 – present

Discipline peer reviewer, Fulbright Postdoctoral Program, 2014 – 2020

Discipline peer reviewer, Fulbright Scholar Program, 2014 – 2020

Member, Council for Diversity, Inclusion and Academic Excellence, West Chester University, 2014 – 2017

Co-Chair, Institutional Review Board, West Chester University, 2014 – 2017

Co-Chair, Council on Undergraduate Research, West Chester University, 2013 – 2017

Chair, Research Advisory Council, West Chester University, 2013 – 2017

Member, President's Council, West Chester University, 2013 – 2017

Member, Student Research and Creative Activities Committee, West Chester University, 2013 - 2017

National program application reviewer, National Science Foundation, 2013 - present

Peer reviewer, Chemical Engineering Division, ASEE, 2012 – present

Member, Tenure and Recontracting Committee, Rowan University, 2012-2013

Member, Academic Policy and Procedures Committee, Rowan University, 2011-2012

Member, Technology Resources Committee, Rowan University, 2011-2012

Member, Sponsorship Committee, The Electrochemical Society, 2011-2012

Member, Workforce and Economic Development Committee of Gloucester County Workforce Investment Board (WIB), 2010-2011

Member, Development Committee, The Electrochemical Society, 2009-2011

Symposium Organizer, "Leadership and Entrepreneurship in Electrochemical Science and Engineering," 215th Meeting of the Electrochemical Society, May 2009

Symposium Organizer, "Industrial Electrolysis and Electrochemical Engineering General Session," 215th Meeting of the Electrochemical Society, May 2009

Member, Board of Directors, South Jersey Technology Park, Inc., 2008-2011

Symposium Organizer, "Industrial Electrolysis and Electrochemical Engineering General Session," 213th Meeting of the Electrochemical Society, May 2008

Member, Ways and Means Committee, The Electrochemical Society, 2008-2010

Member, Education Committee, The Electrochemical Society, 2007-2011

Symposium Organizer, "Leadership and Entrepreneurship in Electrochemical Science and Engineering," 212th Meeting of the Electrochemical Society, October 2007

Candidate for Secretary, The Electrochemical Society, May 2007

Symposium Organizer, "Industrial Electrolysis and Electrochemical Engineering General Session," 211th Meeting of the Electrochemical Society, May 2007

Invited Session Organizer, LAUNCH 07 (South Dakota-statewide entrepreneurship conference), Dakota Wesleyan University, Mitchell, SD, March 2007

Symposium Organizer, "Industrial Electrolysis and Electrochemical Engineering General Session," 209th Meeting of the Electrochemical Society, May 2006

Invited Panelist, LAUNCH 06 (South Dakota-statewide entrepreneurship conference), Dakota Wesleyan University, Mitchell, SD, March 2006

Member, Black Hills Business Development Center Board of Admissions, 2006-2008

Symposium Organizer, "Environmental Electrochemistry," 208th Meeting of the Electrochemical Society, October 2005

University Representative, Council on Governmental Affairs, National Association of State Universities and Land-Grant Colleges (NASULGC), 2005-2008

University Representative, Council on Research Policy and Graduate Education, National Association of State Universities and Land-Grant Colleges (NASULGC), 2005-2008

Member, South Dakota Board of Regents Research Affairs Council, 2004-2008

Symposium Organizer, "Industrial Electrolysis and Electrochemical Engineering General Session," 205th Meeting of the Electrochemical Society, May 2004

Member, Board of Directors, The Electrochemical Society, 2004-2006

Chair, Industrial Electrolysis and Electrochemical Engineering Division, The Electrochemical Society, 2004-2006

Chair, New Technology Subcommittee, The Electrochemical Society, 2003-2007

Member, Development Committee, The Electrochemical Society, 2003-2007

Panel Organizer, "Environmental Policy and Management: Role of Stakeholders in Determining Environmental Policy," Subsurface Science Symposium, Salt Lake City, October 2003

Technical Proposal Reviewer, American Association for the Advancement of Science, State of Maine DOE Experimental Program to Stimulate Competitive Research (EPSCoR) Program, 2003

Session Organizer, "Environmental Policy and Management," Third Annual INRA Subsurface Science Symposium, Salt Lake City, UT, October 2003

Symposium Chair, "Industrial Electrolysis and Electrochemical Engineering General Session," 203rd Meeting of the Electrochemical Society, May 2003

Vice-Chairman, Industrial Electrolysis and Electrochemical Engineering Division, The Electrochemical Society, 2002-2004

Vice-Chairman, New Technology Subcommittee, The Electrochemical Society, 2002-2003

Member, Honors and Awards Committee, The Electrochemical Society, 2002-2006

Member, Long-Range Planning Committee, The Electrochemical Society, 2002-2006

Member, Board of Directors, Eastern Idaho Economic Development Council (EIEDC), 2001-2004

Chair, Education/Research & Development Subcommittee, EIEDC, 2002-2004

Member, Rotary International, 2001-2003

Member, Nuclear Engineering Education for the Disadvantaged (NEED) Committee, American Nuclear Society, 06/01-06/04

Symposium Chair, "Systems and Integration of Electrochemical Technology," 201st Meeting of the Electrochemical Society, May 2002

Symposium Chair, "Industrial Electrolysis and Electrochemical Engineering General Session," 201st Meeting of the Electrochemical Society, May 2002

Student Poster Session Judge, Electrochemical Society Annual Meeting, 2000-2005

Conflict of Interest and Intellectual Property Policy Committees, Los Alamos National Laboratory, 10/00-04/01

Secretary/Treasurer, Industrial Electrolysis and Electrochemical Engineering Division, The Electrochemical Society, 2000-2002

Judge, Environmental Sciences and Energy Devices categories, R&D 100 Awards competitions, 1999-2006

Technical Reviewer/Referee, *Electrochimica Acta: The Journal of the International Society of Electrochemistry*, 11/99-2001

Symposium Chair, "Industrial Membrane Processes," 199th Meeting of the Electrochemical Society, March 2001

Symposium Chair, "Industrial Electrolysis and Electrochemical Engineering Division General Session," 199th Meeting of the Electrochemical Society, March 2001

Session Chair, U.S. Department of Energy Actinide Separations Conference, June 1999

Member, Symposium Subcommittee, The Electrochemical Society, 1999-2006

Member, Los Alamos National Laboratory Salary Policy Committee, 1999

Judge, Environmental Sciences, Energy Devices, and Process Sciences categories, 1999 R&D 100 Awards competition

Technical Reviewer/Referee, *Journal of Applied Electrochemistry*, 10/98-2001

Member, Waste Management and Environmental Compliance Committee, NMT Division, Los Alamos National Laboratory, 1998-1999

Symposium Chair, "Industrial Electrolysis and Electrochemical Engineering Division General Session," 195th Meeting of the Electrochemical Society, May 1999

Symposium Chair, "Industrial Electrolysis and Electrochemical Engineering Division General Session," 193rd Meeting of the Electrochemical Society, May 1998

Technical Proposal Reviewer, National Science Foundation / South Carolina EPSCoR, August 1997

Symposium Chair, "Recovery, Recycling, and Reuse of Process Materials," 191st Meeting of the Electrochemical Society, May 1997

President, Pacific Northwest Section, The Electrochemical Society, 6/96-6/97

Symposium Chair, "Industrial Electrolysis and Electrochemical Engineering Division General Session," 189th Meeting of the Electrochemical Society, May 1996

Session Chair, "Mathematical Modeling of In Situ Treatment and Contaminant Fate/Transport," Superfund XVI Conference and Exhibition, November 1995

Symposium Chair, "Advanced Oxidation and Photochemical Processes for Waste Treatment, Sessions I-IV," American Institute of Chemical Engineers' 1995 Summer National Meeting, August 1995

Member, Industrial Electrolysis and Electrochemical Engineering Division Executive Committee, The Electrochemical Society, 5/94-present

Adjunct Faculty Member, Department of Chemical Engineering, Washington State University, 10/93-6/97

Symposium Organizer, "Reclamation of Battery and Fuel Cell Materials," 186th Meeting of the Electrochemical Society, October 1994

Technical Reviewer/Referee, *Journal of the Electrochemical Society*, 8/93-present

Sun Workstation Network Administrator, Center for Electrochemical Engineering, Texas A&M University, 4/91-12/92

Editor, South Texas Local Section Newsletter, The Electrochemical Society, 9/90-4/91

President, Omega Chi Epsilon, New Mexico State University, 8/86-5/87

Vice-President, Omega Chi Epsilon, New Mexico State University, 8/85-5/86

PUBLICATIONS/PRESENTATIONS

Gautam Pillay, "Sophomore Engineering Entrepreneurship Education: Goals and Methods," Proceedings of the 2013 Conference of the St. Lawrence Section of the ASEE, Buffalo, NY, April 2013.

Ryan Bandura, Joseph Calogero, Adam Wentzel, and Gautam Pillay, "Undergraduate Student-Led Research and Development of an Electric Vehicle Charging System," Proceedings of the 2013 Conference of the St. Lawrence Section of the ASEE, Buffalo, NY, April 2013.

Gautam Pillay, "Experiential Learning for Honors Freshman Engineers: Concepts and Methods," Proceedings of the 2013 Conference of the St. Lawrence Section of the ASEE, Buffalo, NY, April 2013.

Joseph Calogero, Ryan Bandura, Charlotte Cecere, Steve Rieger, Adam Wentzel, and Gautam Pillay, "Student-Directed Experiential Learning to Develop an Electrical Vehicle Charging Station," Proceedings of the Fall 2012 Meeting of the Mid-Atlantic Section of the ASEE, Toms River, NJ, November 2012.

Gautam Pillay, "Effective Communications," Invited Presentation, Developing Leadership Skills Symposium, American Institute of Chemical Engineers 2011 Annual Meeting, Minneapolis, MN, October 2011.

Gautam Pillay, "Research Administration at Rowan University: Policy Implementation and Program Development," Invited Presentation at Council on Undergraduate Research Meeting "Creating a Culture of Research on Campus: A Seminar for Deans, Faculty, IT Specialists, Librarians, and Research Officers," October 2010.

Gautam Pillay and Robert Savinell, editors, "Leadership and Entrepreneurship in Electrochemical Engineering: A Tutorial," *ECS Transactions*, **11** (10), The Electrochemical Society, Inc., Pennington, NJ, 2008.

Gautam Pillay, "University Technology Transfer: Why?" Invited Presentation at the 214th Meeting of the Electrochemical Society, Corporate Membership Committee, October 2008.

Gautam Pillay, "Impact of Higher Education on Economic Development," Rapid City (SD) Rushmore Rotary International, Invited Speaker, May 2006

Gautam Pillay, "Iontophoresis: Application of Electrochemical Materials and Methods for Diagnostics and Therapeutics," Invited Speaker, 205th Meeting of the Electrochemical Society, May 2004

Gautam Pillay, "Universities as Partners in Technology Transfer," presented at the Northwest Venture Championship, Boise, ID, March 2003.

Gautam Pillay, "Inland Northwest Research Alliance: Capabilities and Accomplishments," Plenary Address, presented at the Second Annual INRA/INL Subsurface Science Symposium, Boise, ID, October 2002.

Gautam Pillay, "Subsurface Science Research Institute: A New Approach to Doctoral Education and Research," presented at the Second Annual INRA/INL Subsurface Science Symposium, Boise, ID, October 2002.

Gautam Pillay, "INRA: Building Networks for Enterprise Development," Invited Presentation at the Annual Meeting of the Academy of Management, Denver, CO, August 2002.

Steven R. Billingsley and Gautam Pillay, "How Universities Can Assist Economic Development," Invited Presentation at the Annual Meeting of the Academy of Management, Denver, CO, August 2002.

Fred S. Gunnerson, Richard T. Jacobsen, and Gautam Pillay, "A Strategic Alliance between Regional Universities and Industry at a National Laboratory," in *Proceedings of the 2002 American Society for Engineering Education Annual Conference & Exposition*, June 2002.

Gautam Pillay "Inland Northwest Research Alliance: A New Model for University/Government Collaborations," Invited Presentation at the Annual Meeting of the American Association for the Advancement of Science (AAAS), Boston, MA, February 2002.

Gautam Pillay, "Inland Northwest Research Alliance: Overview," Plenary Address, presented at the First Annual INRA/INL Subsurface Science Symposium, Idaho Falls, ID, September 2001.

Gautam Pillay and Miles H. Baron, "Research and Development Activities at Los Alamos: Measuring and Restoring the Maturity Balance," LA-LP-00-77, April 2000.

Gautam Pillay, Steven R. Billingsley, and James J. Balkey, "Electrochemical Treatment and Minimization of Defense-related Wastes," *Federal Facilities Environmental Journal*, **11** (2), 115 (2000).

Gautam Pillay, Steven R. Billingsley, and James J. Balkey, "Electrochemical Treatment and Minimization of Defense-related Wastes," LA-UR-5494, October 1999.

Gautam Pillay, Steven R. Billingsley, and James J. Balkey, "Electrochemical Treatment and Minimization of Defense-related Wastes," Keynote Address, presented at the Symposium on Environmental Aspects of Electrochemical Technology, 196th Annual Meeting of the Electrochemical Society, Honolulu, HI, October 1999.

Gautam Pillay and James J. Balkey, "Waste Minimization Activities at Los Alamos National Laboratory's Primary Nuclear Facilities," presented at the 23rd Annual Actinide Separations Conference, Kennewick, WA, June 1999.

Gautam Pillay and Derek J. Gordon, "DOE-STD-3013-96 Container Surveillance System Design Description for the Nuclear Materials Storage Facility Renovation," LA-UR-98-4983, November 1998.

Robert M. Marusich, Cetin Unal, William L. Kubic, Jr., Gautam Pillay, Pratap Sadasivan, James R. White, and William R. Bohl, "Parameters to Consider before Mixing Waste from Different Hanford Waste Tanks from a Flammable Gas Perspective," LA-UR-97-4021, September 1997.

William L. Kubic, Jr., and Gautam Pillay, "Data Reconciliation Study of Tank 241-AN-103 at the Hanford Site," LA-UR-97-3955, September 1997.

William L. Kubic, Jr., and Gautam Pillay, "Data Reconciliation Study of Tank 241-AN-104 at the Hanford Site," LA-UR-97-3954, September 1997.

William L. Kubic, Jr., and Gautam Pillay, "Data Reconciliation Study of Tank 241-AN-105 at the Hanford Site," LA-UR-97-3916, September 1997.

Steven R. Billingsley, Gautam Pillay, and Jeffrey E. Surma, "Feasibility Study Utilizing Catalyzed Electrochemical Oxidation Process to Treat Waste Otto Fuel II," PNWD-2385, March 1997.

Joseph G. Birmingham and Gautam Pillay, "Air Purification in Chemical and Biological Warfare Environments using Gas-Phase Corona Reactor Technology," in *Proceedings of the Symposium on Terrorism and Counterterrorism Methods and Technologies*, W. Ishimoto, ed., SPIE - The International Society for Optical Engineering, **2933**, 126 (1996).

Gautam Pillay and Joseph G. Birmingham, "Gas-Phase Corona Reactor for Destruction of Hazardous Organics in Air Streams," presented at the 1996 Fall Annual Meeting of the American Institute of Chemical Engineers, Chicago, IL, November 1996.

Steven R. Billingsley, Gautam Pillay, Bruce D. Lerner, and Therese R.W. Clauss, "Catalyzed Electrochemical Oxidation for Destruction of Torpedo Fuel Wastes," presented at the 1996 Fall Annual Meeting of the American Institute of Chemical Engineers, Chicago, IL, November 1996.

Gautam Pillay and Joseph G. Birmingham, "Catalyzed Electrochemical Oxidation and Gas-Phase Corona Reactor for Treatment of DoD Hazardous Wastes," Invited Presentation at the Emerging Technologies in Waste Management VIII Symposium, Birmingham, AL, September 1996.

Gautam Pillay, Bruce D. Lerner, Steven R. Billingsley, Joseph G. Birmingham, Jeffrey E. Surma, and George W. Naufflett, "Electrochemical Destruction of Torpedo Fuel Wastes," presented at the 189th Meeting of the Electrochemical Society, Los Angeles, CA, May 1996.

Gautam Pillay and Chao-Peng Chen, "Report of the Electrolytic Industries for the Year 1995," *Journal of the Electrochemical Society*, **143** (10), 3410 (1996).

Daniel W. Gibbons and Gautam Pillay, "Report of the Electrolytic Industries for the Year 1994," *Journal of the Electrochemical Society*, **142** (10), 3596 (1995).

Gautam Pillay, Joseph G. Birmingham, Bruce D. Lerner, and Russell G. Tonkyn, "Reduction of Nitrogen Oxides in a Gas-Phase Corona Reactor," presented at the American Institute of Chemical Engineers' 1995 Summer National Meeting, Boston, MA, August 1995.

Gautam Pillay, Wesley E. Lawrence, Johannes P. H. Sukamto, Jeffrey E. Surma, and Mark F. Buehler, "Electrochemical Destruction of High Explosives," presented at the American Institute of Chemical Engineers' 1995 Summer National Meeting, Boston, MA, August 1995.

Gautam Pillay, Mark F. Buehler, Johannes P. H. Sukamto, Wesley E. Lawrence, Jagannatha R. Bontha, and Jeffrey E. Surma, "Electrically Enhanced Separations for DOE Tank Waste

Applications," presented at the 187th Meeting of the Electrochemical Society, Reno, NV, May 1995.

Phillip A. Gauglitz, Loni M. Peurrung, Donaldo P. Mendoza, and Gautam Pillay, "Dual-Gas Tracers for Subsurface Characterization and NAPL Detection," presented at the Second Tracer Workshop, University of Texas, Austin, TX, December 1994.

Stacie M. Caley, William O. Heath, Theresa M. Bergsman, Phillip A. Gauglitz, Gautam Pillay, Ronald W. Moss, Rahul R. Shah, Steven C. Goheen, and Donald M. Camaioni, "ERACE - An Integrated System for Treating Organic-Contaminated Sites," presented at the Thirty-Third Hanford Symposium on Health and the Environment, Pasco, WA, November 1994.

Wesley E. Lawrence, Mark F. Buehler, Jeffrey E. Surma, Gautam Pillay, Kevin L. Gervais, and Andrew J. Schmidt, "Electrochemical Organic Destruction in Support of Hanford Tank Waste Pretreatment," PNL-10131, October 1994.

Gautam Pillay, Steven C. Goheen, and Donald M. Camaioni, "Development of a Corona Discharge Reactor for Treating Aqueous Organic Contaminants," Symposium on Liquid Phase Processes for Destruction of Hazardous Organic Compounds, American Institute of Chemical Engineers Summer National Meeting, Denver, CO, August 1994.

Donald M. Camaioni, Gary M. Mong, Steven C. Goheen, and Gautam Pillay, "Treatment of Organic Contaminants in Water by a Corona Discharge Reactor," presented at the Conference on Advanced Oxidation Technologies for Water and Air Remediation, London, Ontario, Canada, June 1994.

Gautam Pillay, Wesley E. Lawrence, Jeffrey E. Surma, and Mark F. Buehler, "Electrochemical Treatment of Organic Tank Wastes," Symposium on Nuclear Waste Disposal and Recycling, 185th Meeting of the Electrochemical Society, San Francisco CA, May 1994.

Gautam Pillay, Donald L. Caldwell, and Ralph E. White, "Mathematical Model of an Ion-Exchange Chlor-Alkali Membrane," Symposium on Modeling in Electrochemistry and Electrochemical Engineering, International Workshop, Potsdam, Germany, September 1993.

Gautam Pillay, Donald L. Caldwell, and Ralph E. White, "Mathematical Modeling of a Monolayer Chlor-Alkali Membrane," Symposium on Chlor-Alkali and Chlorate Production, 183rd Meeting of the Electrochemical Society, Honolulu, HI, May 1993.

Gautam Pillay and Edward J. Cokal, "A Compact User-Configurable Data Acquisition and Instrument Control System Based on an IBM-Compatible Personal Computer," Los Alamos National Laboratory Internal Publication, September 1987.

Gautam Pillay and Edward J. Cokal, "Configuration and Operation of a PC-Based Waveform Scroller/Data Acquisition System," Los Alamos National Laboratory Internal Publication, September 1987.