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Search Committee for the Associate Dean of Engineering
San Diego State University
College of Engineering, 5500 Campanile Drive
San Diego CA 92182-1326 - coejobs@engineering.sdsu.edu

Subject: Application for the position VPAA#75 Associate Dean of Engineering

Dear Search Committee Members,

It is a pleasure to prepare this letter and application for the position of Professor and Associate Dean of the College of Engineering (COE) at San Diego State University (SDSU). Thank you for your time in advance for considering this application. My current position is as a tenured and endowed chaired Full Professor in the School of Engineering and Applied Sciences and Director of the Power Center for Utility Explorations at the University at Buffalo. I had also previously served as Executive Director of the Office of Research for the College of Engineering at the University of South Florida leading \$25M/year of research for a unit with 110 FTE faculty. I have secured over \$20M as PI in funding during a five year period as the leader of a center while in Florida, and now continue that effort with the center and institute in which I work. I have a strong administrative background having lead a staff of associate directors in my center plus affiliated faculty (equivalent to a Department Chair), a unit research office (equivalent to an Associate Dean), and served as president/chair of several professional organizations. I have also secured over \$12M in educational program development that has produced over 700 students and 150 internships in the last three years forming an educational STEM based pipeline from community colleges to universities and industry. This work involves constituencies from faculty members, staff, state and federal agencies, and industry stakeholders (see the attached leveraged partnerships document on page 45 noted as part 2 of my professional interests). In addition, I have a highly funded track record of collaborative engagement with most of the fields in the COE and thus can assist the faculty with collegiality and balance. **Hence I feel qualified in being able to grow the COE in education, research and service, align with the SDSU strategic plan, and manage day-to-day operations.**

SDSU was founded in the spirit of growing educational opportunities with the COE being the oldest college of engineering in San Diego. This effort has resulted in an outstanding RU/H public institution of higher learning with the COE being the fastest growing of SDSU's seven colleges. This is a tribute to the outstanding faculty, staff and administration. My career has been dedicated to efforts in being highly engaged in scholarship, especially being community engaged, and thinking in a comprehensive manner. My mindset is holistically oriented, and so I feel I would be uniquely positioned to serve the COE faculty and students as a whole, team with SDSU unit and university leadership to move COE forward, and support Dean Mehrabadi strategically and tactically. This fits especially well with SDSU as a growing institution since my background is to nurture and build programs, many from the ground up, which engage with faculty, staff and the community to expand economic opportunities. I am especially experienced with the needs of growing an active research and educational enterprise in a university such as SDSU. Examples will be provided herein demonstrating my capabilities.

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I am experienced in strengthening each of the responsibilities as noted in the COE Associate Dean position description with respect to research and educational leadership, day-to-day operations, advancing partnerships, raising resources, faculty mentoring, and graduate and new program development. I believe my background in forming from the ground up centers, educational efforts and administratively managing millions of dollars in programs over a sustained period would allow me to provide collegial support to the COE Dean, faculty and students. I have consistently for many years embraced being a whole-systems thinker as will be demonstrated in the many program development examples to follow, and thus will have the ability to represent COE school-wide and university-wide and establish collaborations across the university and beyond, both nationally and internationally.

More specifically, I believe I fit the COE Associate Dean position by having demonstrated success in the duties and responsibilities of the position. Efforts demonstrating this are successes in academic administration (center leadership equivalent to a Department Chair, unit research leadership equivalent to an Associate Dean of Research, and being President/Chair of several professional organizations); large scale strategic planning and enhancing resources (capacity building and interacting in an expanding campus system); scholarly research (over 100 publications) with a focus on smart energy systems; leadership in educational program development (major interdisciplinary efforts funded at over \$12M, certifications, accreditation efforts, committee formations, international joint degrees); fund raising (over \$20M in research and giving); fostering collaborations and building partnerships in the business community (developed multiple funded boards); and working with, and committed to diversity, a wide population of students, staff and faculty (sustained for many years producing hundreds of students and engaging faculty and staff).

When one considers the scholarly enterprise as a whole, it makes eminent sense to be able to strengthen departments in partnerships with other COE departments in synergistic approaches, hence making the overall unit and institution stronger. This approach not only works internally to an educational institution, but is essential when working with industry and the legislature. External folks looking in do not necessarily look at disciplinary lines but instead view departments, units or institutions on their ability, to say, solve societal issues, applications, and more. Furthermore, the SDSU "Building on Excellence" strategic plan has three broad institutional goals which if the COE can be better aligned with will potentially allow for justification of resources to be directed towards the COE to grow COE programs. The three goals are: 1. Student success, 2. Research and Creative Endeavors, and 3. Community and Communications. Some successful examples (my key strengths, demonstrated successes, and lessons learned) of this approach are below and are used as straw man items for discussion, after buy-in, as potential areas that may align the COE with the SDSU Building on Excellence strategic plan and support Dean Mehrabadi and COE faculty and staff:

Building bridges institutionally (supports the SDSU Building on Excellence plan in 1 and 3):

I created and had funded 8 faculty lines among four units of the university (engineering, arts and sciences, law, and management) to a deal with a common theme, filling a gap institutionally, in energy. This holistic approach strengthens each unit by facilitating teaming efforts. Similar activities can be done in the COE to stimulate activity in many disciplines to bring faculty together.

Building educational pipelines (supports the SDSU Building on Excellence plan in 1 and 2):

Another example is my work in development of educational pipelines which improve key performance indicators in funding, student success, and more. I have had multiple experiences in this over the years, but a current activity is a +\$12M DOE and industry effort I lead involving 10 institutions which is geared to move

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students from various backgrounds (inclusive of disadvantaged students) through community colleges to universities, from craft to professionals, and more. Over 700 hundred students have been trained along with over 150 internships created, which not only creates jobs, but changes the lives of the participants by having key stakeholders look to our academic institutions positively.

Building capabilities to solve grand challenges (supports the SDSU Building on Excellence plan in 2):

Another example is my long term work in development of infrastructures in energy that reduce environmental impact and are themselves resilient to the impact of the environment, yet allow for economic growth via technical innovations and human engagement. This effort has resulted in the wide scale implementation of smart energy systems impacting millions of citizens. The holistic approach to addressing the grand challenges in the energy sector shows flexibility in my mindset to facilitate/enable similar efforts with faculty to address their own challenges and areas where the COE can grow.

Building institutional capabilities (supports the SDSU Building on Excellence plan in 1 and 2):

I served as executive director of research (equivalent to an Associate Dean) at USF with a research budget supervised of about \$25M/year. I had to create the office from the ground up, hiring staff, establish a pre and post award process, all to help faculty succeed. In addition I established the first research day and proceedings, which has been implemented university wide, to promote faculty and student efforts, and plan strategically.

Building a vision and plans to be community/nationally engaged (supports the SDSU Building on Excellence plan in 2 and 3):

Over the years I have had many opportunities to develop a vision and obtain buy-in from many stakeholders ranging from faculty, students, legislative entities, industry, and more. However, my strength is to be able to "execute on the expectations of visions." It is also noteworthy to say a lesson learned is that like in politics you must take care of your base. For example, I have worked to form plans that engage the community with the institution. This has lead to wider regional and national engagement, such as my efforts with the Gateway to Power national effort to form a pipeline of students, regional learning centers (which have impacted over 1.5M citizens each year), and city-wide efforts that have resulted in engagement with both national and international industry partners. Current efforts involve development of a smart city addressing opportunities in energy efficiency, economic growth, alternative energy and transportation, community learning hubs, and health and energy innovations. Once you engage with the community, which is beneficial as a win-win on many levels, as it establishes departmental and institutional strengths which enable significant ability to pursue efforts that need leverage, such as cost share, and participation in large scale activities.

Building international partnerships (supports the SDSU Building on Excellence plan in 1 and 3):

I have developed dual degree and exchange programs over many years, and have experience in working through the process of gaining academic approval. These international efforts are important. We are not in a local market, but must compete on a world stage. For example, a lesson learned is that when a multinational firm looks to partner it does so with an eye towards its global competitive stance. The more the COE can be working with international academic partners, it establishes not only research and educational linkages that benefit faculty and students, but also results in positioning the unit in territories that enable it to be a world player, thus gaining more substantive credibility with potential partner firms.

Building Entrepreneurship (supports the SDSU Building on Excellence plan in 1, 2, and 3):

I have formed not-for-profit and for profit entities as leader, and participate as a corporate director in other organizations (Iconics, Inc.). These include serving as President of Smart Energy Grid Associates, Inc.(for profit), and the Global Energy Institute (not for profit), and I have served as President or Chair of several

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societies, including the Florida Bioenergy Association (one year), Southeastern Electricity Metering Association (over 15 years), and the International Association of Science and Technology for Development (over 10 years). I believe in leading by example and have the mindset to assist faculty, students and the COE to succeed in entrepreneurial ventures.

To further assist the search committee in their deliberations I provide next a summary statement outlining how I meet the qualifications.

Summary of qualifications for the position of Associate Dean of Engineering

I hold a Ph.D. from an accredited university in electrical engineering. I have had significant and demonstrated administrative experience as center director (equivalent to a department chair), and as executive director of unit research (equivalent to an associate dean of research) leading 110 FTE. I have evidence of successful fiscal resource management having lead over \$25M in unit research as well as several million dollars in annual center research in an RU/VH institution. Further, since my area overlaps many fields, I can assist COE faculty and staff with balance in all areas. I have a proven ability to generate external support from many stakeholders totaling over \$20M as PI and was demonstrating multidisciplinary collaboration. Furthermore I have a leadership history of excellence in teaching, research and service with extensive experience in collaborating and developing innovative multidisciplinary educational and research programs over a sustained period of over 20 years establishing relationships with business, government, engineering communities, academia, and internationally (and I have been tenured at both the University of Florida and the University of South Florida), and currently hold a tenured and endowed professorship at an AAU institution, the University at Buffalo. I have a demonstrated capacity for articulating a vision as I have done so in a collaborative effort with buy-in from stakeholders for many efforts related to wide scale implementations. Further I am skilled in consultative decision-making with multiple constituencies as evidenced by my establishment of many leadership boards, both public and private, and in fostering strategic relationships between key campus entities, and thus would have the ability to create a supportive environment that encourages innovation in the COE. I have a significant record of work with many partners and have provided visionary leadership since my efforts have had wide-scale community involvement and impacted millions of citizens.

I am highly motivated and experienced with the development of donor programs, industry and political relations, forming educational and research initiatives from the ground up, and creating a collaborative and exciting environment with faculty colleagues. I have enjoyed forming scholarly research, education and service activities sustained over many years as demonstrated by the diversity of programs I've developed so that I may get off the ground running as the Associate Dean of the COE at SDSU. Please direct all communications to my home address, private email, and cell: 171 Middlesex Road, Buffalo, NY 14216, Email: alexdomijan@gmail.com, cell: 813-270-0366.

Sincerely,



Alexander Domijan, Jr.
James Clerk Maxwell Professor and Director

Enclosed: CV (page 5), Professional Interests Part 1 (page 34) and Professional Interests Part 2 (page 45), Vision for the College (page 55), and Eight References (page 56)

Dr. Alexander Domijan, Jr.

***James Clerk Maxwell Professor and Director, Power Center for Utility Explorations, School of Engineering and Applied Sciences, University at Buffalo, Commons Suite 114, #9, Buffalo, NY 14260
Tel: 716-645-3064, Cell: 813-270-0366, adomijan@buffalo.edu, alexdomijan@gmail.com***

Education

Degree	Date	Major	Institution (Carnegie Classification)
Ph.D.	Dec., 1986	Electrical Engineering	University of Texas at Arlington (RU/H)
M.Engr	May, 1982	Electric Power Engineering	Rensselaer Polytechnic Institute (RU/VH)
B.S.	May, 1981	Electrical Engineering	University of Miami (RU/VH)

Summary of Areas of Research

Energy Systems: smart grids, sustainability, education, power quality, measurements and instrumentation, competitive issues, biomass and solar power generation, demand response and demand side management, big-data analytics, integrated infrastructures (Energy, Health, Transportation, and Communications), and Flexible-Reliable-Intelligent-Energy-Delivery-Systems.

Summary of Key Responsibilities and Past and Present Activities in:

Administration (at Univ. at Buffalo – an AAU and RU/VH institution with over 25K students, at the Univ. of South Florida - an RU/VH institution tied for #1 in the USA for research growth with over 40K students, and at the University of Florida - an AAU and RU/VH institution with over 50K students). The responsibilities in leading a center are equivalent to a Department Chair, and additionally are equivalent to an Associate Dean of Research for leading the USF Office of Research)

Overview of Key Career Administrative Responsibilities and Effective Implementation of:

- Leadership: Center formation; Institute Formation; Leadership of professional organizations; Educational program formation training thousands of professionals.
- Guiding Strategic Planning and creating an inclusive environment: Establishment of a university wide strategic thrust in energy with four colleges/schools; Leadership of college level strategic planning.
- Engaging industry and the ability to connect with corporate and government sectors and encourage faculty to do the same: Center and Institute efforts with business outreach; Establishment of numerous schools, exhibitions, conferences and promotion of faculty efforts with funding; College wide research events.
- Ability in fundraising and capability to leverage resources: Over \$20M in activities plus \$30M in planned efforts; Major contributions in equipment and education; Exceptional leverage ratio and ability to provide vision to potential donors; Created board of directors and advisory councils.
- Building educational capabilities: Leading a team of +30 faculty from 10 campuses forming new curricula and a national educational pipeline in smart energy producing over 700 students and 150 internships.
- Budget management: Managed +\$25M annual college wide research budget with 110 FTE faculty; Manage center budget; Managed professional societies and budget: Chair of Florida Bioenergy Association, President of the International Association for Science and Technology for Development, Chair of the Southeast Electricity Metering Association.
- Faculty and staff recruitment, tenure and promotion evaluation, diversity, and branding: Direction of programs as director, industry delivery, community engagement efforts to promote diversity, College wide evaluation of tenure and promotion; Branding - Established attributes, goals, values, and core

competencies of centers and institute at UB, USF and UF, research office, and professional organizations.

University at Buffalo (2011 to present)

Leading (Director) the Power Center for Utility Explorations

- Building bridges institutionally: Developer of the University at Buffalo Energy Diversification Initiative with the collaborative involvement of four units (Engineering, Management, Law, Arts and Sciences, and the Office of the VP of Research) in a highly competitive selection process to form a new strategic strength for UB. 8 tenure track lines allocated.
- Building international partnerships: Established international exchange program. President of the International Association of Science and Technology for Development.
- Building capabilities to solve grand challenges: Planning \$30M in five main community engaged activities (as President of the Global Energy Institute, a not-for-profit), including, energy efficiency, fostering economic growth, alternative energy and transportation, learning hub, and health + energy innovations.
- Building a vision and strategic plans to be community/nationally engaged: Formation of a sustainable clean smart energy city in Buffalo New York in the 100+ acre Buffalo Niagara Medical Campus.

Leading (President) Smart Energy Grid Associates

- Building educational pipelines: \$12.5M DOE 10 campus and industry workforce development program – producing +700 students and 150 internships.

University of South Florida (2005 to 2011)

Founder of the Power Center for Utility Explorations

- \$20M funding.
- Leading diversified programs managed by 5 directors: Office of Energy Innovation and Collaboration, Office of Strategic Energy Explorations, Office of Energy Partnerships, Office of Technology Development, and Office of Research and Planning.
- Building international partnerships: Established international dual degree program.

Executive Director of Research for the College of Engineering

- Building institutional capabilities: Unit responsibility for research planning and budget of approx. \$25M/year with 110 FTE faculty.
- Tenure and promotion leadership unit wide in research.
- Developed unit strategic plans, scholarship events and proceedings.
- Faculty recruitment and startup packages.

University of Florida (1987 to 2005)

Founder, Florida Power Affiliates

- University/industry partnership, funded board of directors from major industries.
- Leadership (Chairman) of the Southeastern Electricity Metering Association (over 50 manufacturers participating, including GE, Siemens, Itron, and more).
- Lead of departmental Electromagnetics and Energy Systems section; ABET accreditation lead in section.

Research:

Initiated and created as Principal Investigator cutting edge sustained energy research with funding at over several million dollars in smart energy systems. Highly experienced with forming new and creative research programs and establishing strategic alliances with industry and government, and establishing substantial fund raising and giving activities.

University at Buffalo (2011 to present)

- Building Entrepreneurship: Collaborative and Team Oriented with the Establishment of Entrepreneurial initiatives with business, industry and educational entities: Established numerous alliances and MOUs with industry and faculty – Smart Energy Alliance (at USF); Energy Systems Consortium (at USF); Energy Diversification Initiative with four colleges (at UB)
- Development of a clean smart energy city: targeted campus grid modernization, building commissioning, energy storage, EV infrastructure, power quality and reliability enhancement, model energy home, four neighborhoods – one community: energy efficiency.

University of South Florida (2005 to 2011)

- Establishment of an environment that pushes the cutting edge of research and discovery: Driving cutting edge research in smart energy systems affecting millions of citizens.
- Mentorship: Programs established to engage faculty with funders (unit wide Research Days, proceedings, cost share).
- Establishment of facilities: Large scale regional (Energy Smart Florida – part of \$200M stimulus package, Demand Side Management Pilots) and community installations (Sustainable Electric Energy Delivery Systems).
- Leadership of numerous professional conferences, schools and workshops.

University of Florida (1987 to 2005)

- Labs: Power and Energy Applied Research Lab with over \$2M in equipment. First lab with the capability of producing arbitrary polyphase voltages and currents applied to energy devices under study replicating and obtained from actual grid conditions (sponsored by Progress Energy, TECO, Westinghouse, Siemens, ASHRAE, NASA, FPL, state and federal agencies, and more).
- Power quality, demand response, alternative and distributed energy, and weather and reliability research efforts established.

Education:

Highly experienced in forming curriculums which compliment & support Bachelor, Master and Doctoral Degree programs, certifications, accreditation, and international affiliations. Currently leading a consortium of 10 university and college partners in a \$12.5M DOE and Florida Power and Light smart energy curriculum development effort.

University at Buffalo (2011 to present)

- Strategies established to enhance student success, retention and compliance: Established and obtained funding for 24 courses and presently forming certifications; Over 700 students trained and 150 internships developed; Pipeline established from community college and university, and translated to industry jobs.
- Established international exchange program.
- Establishment of community engagement activities in redevelopment of a city and growing medical campus system.

University of South Florida (2005 to 2011)

- Educational Program Innovation: Establishment of consortium of 10 universities and colleges with cutting edge training in a holistic approach to smart energy; Long term development of curricula as center director; Established educational programs over a decades period training thousands of industry professionals.

- International connections: Established dual Ph.D. degree programs with the Polytechnic University of Valencia; Established international exchanges and programs.
- Leadership of many international conferences with proceedings.
- Established facilities engaging millions of citizens.

University of Florida (1987 to 2005)

- Accreditation: Leadership of committees to respond to ABET accreditation requirements at UF and USF.
- Leadership of many international conferences, schools, exhibitions.

Service:

Highly experienced in community engagement activities.

University at Buffalo (2011 to present)

- Community engagement to revitalize Buffalo to be a clean smart energy city. Input in a strategic energy innovation plan with stakeholders from industry, community, academic and regulatory sectors.

University of South Florida (2005 to 2011)

- Community Engagement: Established learning centers which involved over 1.5 million citizens annually (Public parks, cities, zoo, power production, displays, contests, and more).

University of Florida (1987 to 2005)

- Outreach on behalf of the university: Established numerous programs with state and local governments; Policy and regulatory testimony and reporting; public events.

Employment History

1. James Clerk Maxwell Professor (endowed and tenured) and Director, Power Center for Utility Explorations, University at Buffalo (described in note 1), Dept. of Electrical Engineering, 2011 to present. Web site: <http://www.buffalo.edu/pcue.html>
(also, serve concurrently as President, Global Energy Institute (Not-for-Profit), Buffalo Niagara Medical Campus (described in note 2), 2011 to present. Web site: <http://www.bnmc.org/energizebnmc/global-energy-institute/>)
2. Professor (tenured) and Director (founder), Power Center for Utility Explorations, University of South Florida (described in note 3), Dept. of Electrical Engineering, 2005-2011.
3. Executive Director, Office of Research and Planning, College of Engineering, University of South Florida, Feb. 2007-2008
4. Area Chair, Energy Systems, 1998 to 2004, and Section Head, Electromagnetics and Energy Systems, University of Florida, Department of Electrical and Computer Engineering, 2004 to 2005.
5. Associate Professor (tenured), University of Florida, Dept. of Electrical and Computer Engr., 1992-2005.
6. Director, Florida Power Affiliates and the Power Quality and Power Electronics Laboratory, University of Florida (described in note 4), 1987-2005 (University and Industry Partnership: Florida Power and Light, Progress Energy, Gainesville Regional Utilities, Jacksonville Electric Authority, EPRI, Siemens, S&C Electric, Entergy).
7. Assistant Professor, University of Florida, 1987-1992.
8. Postdoctoral Fellow, Univ. of Texas at Arlington, Energy Systems Research Center, 1986-1987.
9. Research Assistant, University of Texas at Arlington, 1982-1986.
10. Research Fellow (with RPI), General Electric Company, Advanced Development Engineering Group, 1981-1982.

Notes: Institutional Affiliations Summary Descriptions

(1)The University at Buffalo is an AAU (Association of American Universities) institution founded in 1846 with over 28K (19K undergraduates, and 9K graduate) students, and over 7K full time employees (approx. 1.5K full time faculty, and 700 part time). UB is in the top tier of Carnegie Foundation classified universities in the RU/VII category. UB is the largest and most

comprehensive in the 64-campus State University of New York system. UB has over \$350M in annual research expenditures. UB is a comprehensive public research intensive university offering more than 100 undergraduate degrees, 205 master's degrees and 84 doctoral and 10 professional degrees. UB has the widest range of academic programs of any public institution in New York. UB's operating revenue is above \$630M, and its endowment is about \$500M, and economic impact is \$1.7B per year. UB's School of Engineering and Applied Sciences (SEAS), has 150 full time faculty, 2500 undergraduates and 1300 graduate students, is ranked 54th out of the nation's 350 engineering schools by US News & World Report, and has about \$50M in annual research expenditures. SEAS produces about 100 Ph.D.s per year. The mission of the UB SEAS is to provide effective and high-quality engineering education at the undergraduate, graduate, and continuing-education levels. Integral to this mission is an infrastructure of expertise and facilities that can support professional engineering education, advanced degree programs and research in important areas of applied science and technology.

(2) The Buffalo Niagara Medical Campus is a consortium of the region's leading health care, research, and medical education institutions, all co-located on 120 acres in downtown Buffalo, New York. Nine "member institutions" lead the charge to develop an innovative, world-class campus for clinical care, research, education and entrepreneurship in downtown Buffalo. The BNMC is dedicated to the cultivation of a world-class medical campus for clinical care, research, education, and entrepreneurship. There are currently about 11K employees at BNMC. The BNMC Member Institutions are: Buffalo Hearing & Speech Center; Buffalo Medical Group; Center for Hospice & Palliative Care; Hauptman-Woodward Medical Research Institute; Kaleida Health; Olmsted Center for Sight; Roswell Park Cancer Institute; University at Buffalo; Unyts. The newly formed not-for-profit Global Energy Institute is located at BNMC and is responsible for energy implementation at BNMC.

(3) The University of South Florida, a public institution founded in 1956, is tied for #1 in the USA for research growth. USF is among the largest of the state institutions in Florida with 47K students and is one of three RU/VH classified in Florida by the Carnegie Foundation in the top tier of research activities. USF offers over 230 degree programs at the undergraduate, graduate, specialist levels, including 89 bachelor, 97 master, 36 doctoral and 4 professional doctoral programs. USF had over \$400M in annual research awards, and ranked 10th worldwide in patenting. The mission of the College of Engineering at USF is to improve the quality of life in the community by: Providing a high quality education for students and practicing professionals; Creating new knowledge and solving real world problems via innovative research; Engaging in effective community service and outreach. The USF College of Engineering has over \$28M in annual research expenditures (about \$270K per faculty), over 110 full time faculty (with 11 non tenure track), and is ranked by US News and World Report at 109th overall (72th public), and is at the 25 percentile level per degrees conferred per faculty for number of MS students and 75th percentile level for PhD students with average GRE of 724. Engineering has a total enrollment of 3745 students of which 2954 are undergraduates, 393 are MS, and 398 are Ph.D. students. With respect to diversity, USF joined AAU member institutions (University of Florida, Georgia Tech, and Northwestern) as one of four universities ranked as a top 10 producer of both African American and Hispanic/Latino engineering doctorates. A major center in engineering, prior to transfer to the University at Buffalo, was the Power Center for Utility Explorations with an annual budget of \$7M and was the top producer of research and giving funds in engineering.

(4) The University of Florida is one of only 17 public, land grant universities that belong to the AAU. UF is in the top tier of Carnegie Foundation classified universities in the RU/VH category. Established as a university in 1905 UF has more than 50K students and is one of the most comprehensive in the nation with 16 colleges and more than 150 research centers. UF is ranked 19th by US News and World Report among top public universities. UF has over 4200 faculty, an annual economic impact exceeding \$8.7B, and 330,000 alumni. The UF College of Engineering is ranked 35th overall by US News and World Report and electrical engineering being 20th. There are 15 departments with over 4000 students. Annual engineering research expenditures are in excess of \$63M. The mission is to foster and provide world-class programs in engineering education, research and service to enhance the economic and social well-being of the citizens of Florida, the nation and the world. The Florida Power Affiliates electric power engineering program was an industry/university partnership to foster research and educational efforts.

Research Supervision:

Postdoctoral and Professional Supervision

1. Dr. Zhidong Song, Yunnan Polytechnic Institute, P.R. China, Dr. Domijan supervised in the area of Electric Vehicle Impacts on the Electric Power Distribution System,, Term: March, 1997 to 2002.
2. Dr. Gildo Baptista, University of Brasil and various Power Companies, Working in distribution systems and switching. Dr. Domijan supervising. 1998 to 2002.

3. Dr. Tariq Buchh, Former Ph.D. student. Dr. Domijan supervising professor, Term: currently has industry position with GMC.
4. Dr. M. Salih Taci, Yildiz Technical University, Dept. of Electrical Engineering, Istanbul, Turkey. Dr. Domijan supervised in the area of transformer modeling. 2000 to 2002.
5. Dr. R. Slavickas, Welland Holding Company, Canada. Starting 1/05 to 6/05, and 4/10 to present (Director of PCUE Office of Energy Partnerships). Dr. Domijan is supervising in area of Intangibles to Decision Making in Power Systems.
7. Dr. T. Lin, University of Bath and Central China Power Group Company, Started 6/03 to 5/05, Dr. Domijan supervised in wavelet analysis.
8. Dr. Jae-Eon Kim, Assistant Professor, School of Electrical and Computer Engineering, Chungbuk National University, Korea. Starting 1/06 to present. Dr. Domijan supervised in area of Flexible, Reliable, Intelligent Electrical eNergy Delivery Systems.
9. Dr. Z. Miao, Research Associate, Starting 8/09 to 2/11, Dr. Domijan supervised in area of Flexible, Reliable, Intelligent Electrical eNergy Delivery Systems.
10. Dr. Aleksandar Damjanovic, Research Scientist, Starting 8/06 to 2/11, Dr. Domijan supervised in area of Flexible, Reliable, Intelligent Electrical eNergy Delivery Systems.
11. Dr. Arif Islam, Deputy Director, Starting 8/06 to present, Dr. Domijan supervised in area of Flexible, Reliable, Intelligent Electrical eNergy Delivery Systems.
12. Jeremy Susac (JD degree), Director PCUE office of Energy Explorations, Starting 4/10 to 2/11, Dr. Domijan supervised in area of Flexible, Reliable, Intelligent Electrical eNergy Delivery Systems.
13. Javier Rodriguez, Starting 8/08 to 12/10, Dr. Domijan supervised in area of Flexible, Reliable, Intelligent Electrical eNergy Delivery Systems.
14. Guillermo Escriva, Starting 3/10 to 12/10, Dr. Domijan supervised in area of Flexible, Reliable, Intelligent Electrical eNergy Delivery Systems.
15. John Masiello, MBA, PE, 2/10 to 8/10, Dr. Domijan supervised in area of Flexible, Reliable, Intelligent Electrical eNergy Delivery Systems.
16. Hector Algarra, Starting 1/09 to 12/10, Dr. Domijan supervised in area of Flexible, Reliable, Intelligent Electrical eNergy Delivery Systems.
17. Zhang Li, Starting 4/11 to present, Dr. Domijan supervises in the area of smart energy with Demand Response.
18. Manuel Alcazar-Ortega, Starting 3/13 to present, Research Assistant Professor, Dr. Domijan supervises in the area of Demand Response and Smart Energy.

Selected Graduate Advisees

A Abu-Aisheh (M.S.), T. Buchh (Ph.D.), R. Chang (Ph.D.), R. Fehr (Ph.D.), J. Chen (Ph.D.), E. Cheng (M.S.), G. Chung (Ph.D.), D. Czarkowski (Ph.D.), E. Embriz (M.E., and Eng.), R. Gatechompol (M.S.), A. Gilani

(M.E.), J. Goetten (M.S.), B.H. Park (M.S.), C. Hsu (Ph.D.), X. Huang (Ph.D.), K. Komoto (M.E.), R. Lai (Ph.D.), C. Mata (M.S.), A. Montenegro (Ph.D.), L. Montoya (M.S.), J. Oseguda (M.E.), Q. Qun (Ph.D.), S. Ramakrishnan (M.E.), M. Syed (M.S.), M. Tartibi (M.S.), G. Thoman (M.S.), R. Thottappillil (Ph.D.), D. Walker (M.S.), Y. Yin (M.E.), A. Islam (M.S. and Ph.D.), M. Alcazar-Ortega (Ph.D.), A. Miranda (Ph.D.), G. Yount (M.E.).

Total Advised: 16 Ph.D., 31 M.S., 8 M.E., 1 Eng

Grant Support for Past Five Years

1. PI = Domijan, Advanced Peak Load Shaving Technology with Renewable Resources, Funding Value: \$727K, 1/2008 to 12/2010, Sponsor: Tampa Electric Company

Summary: The Power Center for Utility Explorations (PCUE) in partnership with Tampa Electric Company (TECO) and the Lowry Park Zoo, seek to develop methodologies to analyze and optimize the technical, economic and environmental benefits of a renewable grid connected photovoltaic system for electric power production by development of an advance peak load shaving technology. The site selected for this unique demonstration is the Lowry Park Zoo. The PCUE joined with TECO in making this effort one that is in harmony with the natural environment of the zoo. Further, the educational efforts are just as important as the site will be interactive with the public and show case PCUE and TECO efforts in power and energy systems, as well as the Lowry Park Zoo's efforts in encouraging energy sustainability.

2. PI = Domijan, Advanced Commercial Energy (ACE) Technology: For implementation of a Commercial Price Responsive Load Management Pilot, Funding Value: \$450K, 1/2008 to 12/2010, Sponsor: Tampa Electric Company

Summary: This price responsive load management pilot is a research and development demonstration project for small commercial buildings/customers. The partners are the Power Center for Utility Explorations, Tampa Electric Company, and the Florida High Tech Corridor. The project is designed to determine the magnitude of reduction of weather sensitive peak loads. The price information is designed to encourage customers to make behavioral or equipment usage changes to their energy consumption thereby achieving the desired high cost period load reduction to assist in meeting system peak.

3. PI = Domijan, Demand Side Management Pilot: On-line efficiency control in facilities using Smart Grids, Value: \$300K, 2/2008 to 12/10, Sponsor, Progress Energy

Summary: This project is a partnership with the Power Center for Utility Explorations, Progress Energy Florida, and the Florida High Tech Corridor. The main effort is based on the development of a new smart grid and control system in order to manage large infrastructures and facilities in commercial and industrial customers such as universities, offices, industries, hospitals, and hotels.

4. PI = Domijan, Power Center for Utility Explorations, PCUE Board, multiple firms: PEF, FPL, TECO, SECO, Seminole, and TAW – value: \$300K/year (PCUE program support), 8/2005 to 2/11 (Note: This center has been transferred to the University at Buffalo effective 3/11).

5. PI = Domijan, Weather and Reliability, Florida Power and Light – value: \$40K/year for past 10 years (funding ending 2009, but continuing with patent and field applications).

6. PI = Domijan, Power Systems hardware in a loop, Sponsored by DOE and FSU, Total funding = \$85K, 2009 to 2011.
7. PI = Domijan, Sustainable Electric Energy Delivery Systems, Sponsored by PEF, Total Funding = \$500K, 2007 to 2011.
8. PI = Domijan, Smart Grids with Renewable Strategic Load Pockets, Sponsored by Fl. Dept. of Environmental Protection, Energy Office (\$1.4M), Progress Energy (\$13.6M), period 4/09 to 4/12, total funding = \$15M
9. Co-PI = Domijan, Sunshine State Solar Grid Initiative (SUNGRIN), Sponsored by Department of Energy, PI= FSU, period 12/09 to 12/14, funding=\$3.6M (500K to PCUE).
10. Co-PI = Domijan, Creating the Next Generation Power Grid with Massively Distributed Intelligent Sensors, PI = V.K. Jain, Sponsor, National Science Foundation, NSF grant #0901178, period 2009 to 2012, Total Funding = \$329K.
11. PI = Domijan, Study of Buffalo Niagara Medical Campus Renewable Resources and Electric Vehicle Charging Stations – Modern Grid Reliability: A Renewable Distributed Systems Power Supply Availability Study, BNMC and National Grid, period 12/11 to 5/13, funding=\$150K (\$875K overall project).
12. Co-PI = Domijan, Smart Grid, Micro-Grid and Resiliency Assessments on an Urban Business Campus, Subcontract with EPRI \$75K, Sponsor: New York State Research and Development Authority (NYSERDA), period 1/14 to 12/14, \$335K overall project.

Educational Program:

13. Program Lead and Principal Consultant= Domijan, Title: Gateway to Power - Development of Innovative Strategic Electric Power, Renewable Energy and Smart Grid Workforce Training, DOE FOA152 Topic B (awarded to FPL), Smart Grid Workforce Training, 11 member institution gateway to power consortium, period 8/10 to 12/13, Funding = \$5M (total with cost share = \$12.5M).

Internal Program:

14. Program Author and Developer = A. Domijan, Title: Energy Diversification Initiative. Highly competitive internal award competition at the University at Buffalo to establish new university wide strategic strengths. Award: approx.: \$1.5M recurring, and 8 faculty lines, 2012 to 2015.

Summary:

The UB Energy Diversification Initiative will address critical national energy needs through a strategic initiative in faculty and facilities to focus on: i) Energy infrastructure; ii) Energy policy; iii) The business of energy; and iv) Energy education. Buffalo is the birthplace of the modern energy industry and has a diverse array of energy resources. Through the proposed initiative, UB will lead the reinvigoration of the energy economy in Western New York. In addition, this initiative will focus on the marketing of the existing academic excellence at UB that is already focused on energy research and will ensure that the energy theme permeates all aspects of research and education at UB. The energy diversification initiative will be established to facilitate academic and research efforts in the four areas outlined below:

Energy Infrastructure

- Smart Energy Grids
- Renewable energy using advanced materials

- Energy Storage technologies

Energy Policy

- Regulation

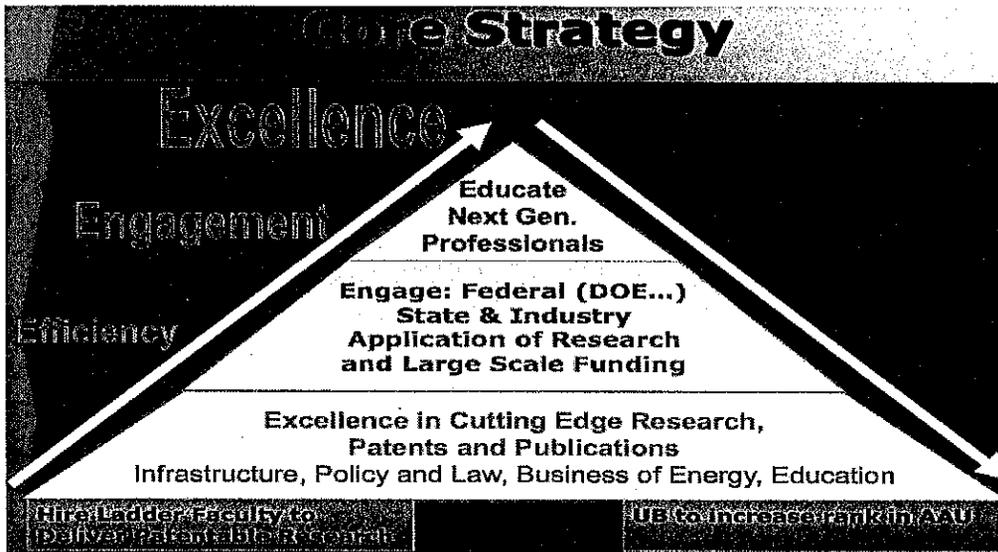
Business of Energy

- Real time pricing
- Demand response and efficiency

Energy Education:

- New energy degree and training programs

The overarching goal is to contribute to our excellence in research and education. The effort will contribute directly to several of the research and education metrics listed in the planning documents. A comprehensive, cross-disciplinary, curriculum for energy education will be created. An inventory of the current capabilities will be collected and disseminated. We propose to hire 8 faculty in the four associated units (School of Engineering and Applied Sciences, School of Management, Arts and Sciences, and School of Law) to fill the existing gaps in expertise. A UB Energy Diversification Initiative will promote UB's engagement with multiple external partners including National Grid, National Fuel, NYPA, and engage federal agencies such as DOE with UB. The core strategy is shown in the figure below and is meant to increase the standing of the university as a whole in the AAU.



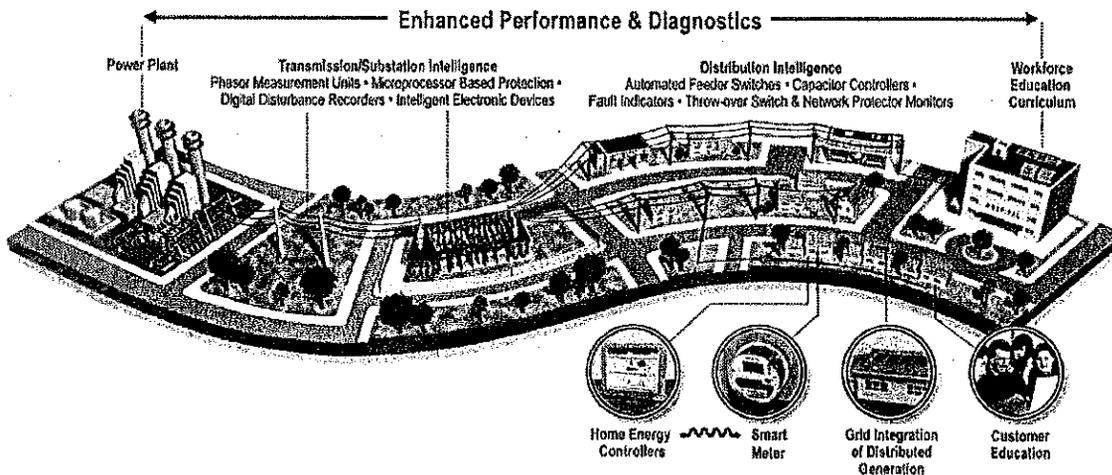
Additional Completed Research:

1. PI: Domijan, Title: Wavelet Analysis and Time Frequency Atoms Based Approach to Power Quality Monitoring, National Science Foundation, Funding = \$225K, Project Ending: 5/05.
2. PI: Domijan, Title: Demand Response Opportunity Pilot, Sponsor: Progress Energy, Approx. funding = \$200K, Project Ending, 2006.
3. PI: Domijan, Title, Biomass Evaluations for West Central Florida, Sponsors, Florida Energy Office and Progress Energy, Approx. funding = \$100K, Project Ending, 6/07.
4. PI: Domijan, Title: Electrical Infrastructure: Normalization of Weather Conditions for Reliability Evaluations, Sponsors, FSU and DOE, Approx. funding = \$120K, Project Ending, 12/07.

Current Grants Submitted or under Development:

1. PI= A. Domijan, "Electric Vehicle Enabling Technology Demonstration," Submitted to New York State Research and Development Authority (NYSERDA), \$100K.

2. Domijan as President at the not-for-profit Global Energy Institute (Programs under development at Buffalo Niagara Medical Campus): Funding approx. \$30M: Sample includes – battery storage, targeted campus grid modernization, existing building commissioning, EV infrastructure, power quality and reliability enhancement, model energy home, academic partnership, four neighborhoods – one community: energy efficiency. This effort is illustrated in the figure below which draws upon the smart grid experience for Energy Smart Florida (Largest smart grid development in the world).



3. PI = Domijan, Smart Grid Reliability under Variable Weather Conditions with Dynamic System Reconfiguration, NSF, in prep.

4. PI = Domijan, Smart Grid Management Risk Assessment Operator, In Prep., New York State Research and Development Authority (NYSERDA), \$4M.

5. PI = Domijan, Energy Efficient Market Acceleration Programs, Submitted to the New York Power Authority (NYPA), \$10M.

6. PI = Domijan, Advanced Building Control and Demand Response Potential in Commercial Buildings, In Prep., New York State Research and Development Authority (NYSERDA), \$1M.

Old: Prior to 2005 - Summary of Sponsored Projects and Programs

1. PI: Domijan, Title: IBM Industrial Automation, Energy Management and Power Electronics, Sponsor: IBM, Project Ending: 10/91

2. PI: Domijan, Title: Power and Controls Lab, Sponsor: NSF, Project Ending: 10/91

3. Co-Inv: Domijan, Title: Dev. of Pacemaker for Analysis of Intracard Electrograms for Prediction of Heart Transplant Rejection, Sponsor: FL High Tech, Project Ending: 3/91
4. PI: Domijan, Title: Measurement of Electrical Power Inputs in Variable Speed Motors and their Solid State Power Converters, Sponsor: ASHRAE, Project Ending: 11/91
5. Co-Inv: Domijan, Title: Dev. of Pacemaker for Analysis of Intracardiac Electrograms for Prediction of Heart Transplant Rejection, Sponsor: FL High Tech, Project Ending: 12/91
6. PI: Domijan, Title: Modeling, Measurement, and Evaluation of Power Quality Performance of High Efficiency Solid State Ballast Fluorescent Lighting on Distribution Transformers at Typical 12 kV, 4000 Customer Utility Feeder Levels, Sponsor: Florida Power Corp., Project End: 12/92
7. PI: Domijan, Title: Measurement of Watt-hour Meters Under Controlled Non-Sinusoidal Voltages and Currents, Sponsor: Florida Power Corp., Project Ending: 12/92
8. PI: Domijan, Title: Electric Power Engineering Program Enhancement at UF, Sponsor: Westinghouse Foundation, Project Ending: 6/94
9. PI: Domijan, Title: Seed Funding for the EPRI/FPC Custom Power and Power Quality Research Program, Sponsor: EPRI, Project Ending: 9/94
10. PI: Domijan, Title: Measurement of Electrical Power Inputs in Variable Speed Motors and their Solid State Power Converters - Phase II, Sponsor: ASHRAE, Project Ending: 11/95
11. PI: Domijan, Title: Aerospace Solar Photovoltaic Heat Pump Development for a Lunar Base Habitat, Sponsor: NASA Johnson Space Center, Project Ending: 12/95
12. PI: Domijan, Title: Application of Wavelet Analysis to Precise Measurements of Electrical Power Inputs to Variable Speed Air Conditioners and Heat Pumps, Sponsor: ASHRAE, Project Ending: 12/96
13. PI: Domijan, Title: Development of Performance Criteria for System Compatibility for Adjustable Speed Drives: SC-610, Sponsor: EPRI/PEAC, Project Ending: 9/96
14. PI: Domijan, Title: Power Quality Testing Network, Sponsor: EPRI/PEAC, Project End: 9/96
15. PI: Domijan, Title: Impact of Electric Vehicles on FPL's Distribution System, Sponsor, FPL, Project Ending: 10/97
16. PI: Domijan, Title: NSF Conference on Unbundled Power Quality Services, Sponsor: NSF, Project Ending: 6/98
17. PI: Domijan, Title: Hierarchical Control in Power Systems with FACTS Devices, Sponsor: Westinghouse, Project Ending: 12/98
18. PI: Domijan, Title: Custom Power and Power Quality Program, Sponsor: Florida Power Corp., Project Ending: 1/01
19. PI: Domijan, Title: Florida Power Affiliates, Sponsor: Various Electric Utility Companies and firms (Florida Power and Light, Tampa Electric Company, Progress Energy Florida, Jacksonville Electric Authority, Entergy, Gainesville Regional Utilities, EPRI, Siemens, Project Ending: 2005

20. PI: Domijan, Title: Electric Meters Course, Sponsor: Various Electric Utility Companies, Project Ending: 2005
21. PI: Domijan, Title: Flexible, Reliable and Intelligent Electrical eNergy Delivery Systems with Custom Power Elements, Sponsor: Siemens, Project Ending: 2002
22. PI: Domijan, Title: FRIENDS, Sponsor: Welland Hydro Commission, Project Ending: 12/02.
23. PI: Domijan, Title: Analysis for Reducing Energy Consumption and Improving Power Quality at Dairy Farms, Sponsor: Inst. of Food and Ag. Science, Project Ending:, 12/02
24. PI: Domijan, Title: All Electric Navy Ship Power Quality Feasibility Study: Phase 1 - High Frequency Harmonics, Sponsor: Florida State University and Office of Naval Research, Project Ending: 12/02.
25. PI: Domijan, Title: Power Quality and Power Electronics Lab, Sponsors: Dranetz, HP, ABB, Westinghouse, IBM, BMI, Fluke, Tektronix, Yokogawa, Cooper Power Systems, Reliance Electric, Siemens, S&C, Doble, Project Ending, 2004.
26. PI: Domijan, Title: Flexible-Reliable-Intelligent-Electrical-eNergy-Delivery Systems, Sponsor: Progress Energy, Project Ending: 2004

Publications

Refereed Journals

Note: Students or professional staff of Dr. Domijan are indicated in bold type.

1. R.R. Shoultz, M.S. Chen, and A. Domijan, "The Energy Systems Research Center Electric Power System Simulation Laboratory and Energy Management System Control Center," IEEE Transactions on Power Apparatus and Systems, Vol. PWRS-2, No. 1, pp. 239-246.1, February 1987.
2. A. Domijan, and R.R. Shoultz, "Electric Power Engineering Laboratory Resources in the United States of America and Canada," IEEE Transactions on Power Systems, Vol.3, No. 3, pp. 1354-1360, August 1988.
3. A. Domijan, and **M. Emami**, "State Space Relay Modeling and Simulation using the Electromagnetic Transients Program and its Transient Analysis of Control Systems Capability," IEEE Transactions on Energy Conversion, Vol. 5, No. 4, pp. 697-702, Dec.1990.
4. A. Domijan, "Power Engineering Initiatives at the University of Florida," IEEE Transactions on Power Systems, Vol. 6, No. 3, pp. 1293-1298, August 1991,
5. A. Domijan, and **D.E. Thompson, III**, "Development of a PC-Based Data Acquisition System for Performance Monitoring on an 81-Megawatt Steam Cycle Electric Power Generating Unit," IEEE Transactions on Energy Conversion, Vol. 6, No. 3, pp. 426-431, Sept.1991.
6. A. Domijan, and **S.H. Yu**, "Harmonic Analysis Method for Determining Distribution System Sensitivity," Association of Energy Engineers (AEE) Journal of Energy Engineering, Vol. 88, No. 5, pp. 14-34, August/September 1991.

7. A.B.Curtis, F.Vance, S.M. Quist, A. Domijan, S.G. Keim, A. Duran, and K. Miller, "A New Algorithm for Minimizing Pacemaker Polarization Artifact that is Universally Applicable in Permanent Pacing Systems," Pacing and Clinical Electrophysiology - PACE, Vol. 14, No. 11, Part II, pp. 1803-1808, November 1991.
 8. A.B. Curtis, S.M. Maas, A. Domijan, S.G. Keim, and A. Duran, "A Method for Analysis of the Local Atrial Evoked Response for Determination of Atrial Capture in Permanent Pacing Systems," Pacing and Clinical Electrophysiology - PACE, Vol. 14, No. 11, Part I, pp. 1576-1581, November 1991.
 9. A. Domijan, "Formation of a Strategy for Energy Development and Utilization with Power Electronic Conversion Technologies: A Southeast Regional U.S.A. Approach," IEEE Transactions on Energy Conversion, Vol. 7, No. 1, pp. 49-56, March 1992.
 10. A. Domijan, and **E. Embriz-Santander**, "A Summary and Evaluation of Recent Developments on Harmonic Mitigation Techniques Useful to Adjustable Speed Drives," IEEE Transactions on Energy Conversion, Vol. 7, No. 1, pp. 64-71, March 1992.
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 13. A. Domijan, O. Hancock, and C. Maytrott, "A Study and Evaluation of Power Electronic Based Adjustable Speed Motor Drives for Air Conditioners and Heat Pumps with an Example Utility Case Study of the Florida Power and Light Company," IEEE Transactions on Energy Conversion, Vol. 7, No. 3, pp. 396-404, September 1992.
 14. A. Domijan, G.T. Heydt, A.P.S. Meliopoulos, S.S. Venkata, and S. West, "Directions of Research on Electric Power Quality," IEEE Transactions on Power Delivery, Vol.8, No. 1, pp. 429-436, January 1993.
 15. A. Domijan, and **E. Embriz-Santander**, "Measurements of Electrical Power Inputs to Variable Speed Motors and Their Solid State Power Converters," American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) Transactions, Vol. 99, Part 1, pp. 241-258, April 1993.
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21. A. Domijan, and **D. Czarkowski**, "Challenges in Electrical Power Measurements of Adjustable Speed Drives and Motors used in HVAC Equipment," ASHRAE Journal, pp. 32-41, February 1997.
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27. **D. Czarkowski**, and A. Domijan, "Wavelet Analysis of Electric Adjustable Speed Drive Waveforms," ASHRAE Transactions, Vol. 104, Part 1a, pp. 559-569, 1998.
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31. **T. A. Buchh**, A. Domijan, **Z. Song**, "Load Pattern Monitoring in a Power Distribution System Feeding Electric Vehicle Loads," Int. J. of PES, Vol. 19, No. 2., pp. 146-150, 1999.
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61. **Z. Miao**, A. Domijan, and L. Fan, "Analysis of Negative Sequence Compensation Based Unbalance Control in Distributed Energy Resources Interfacing Inverters," In Press, International J. of Power and Energy Systems, #203-4905.
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Papers Submitted

- (Submitted) **M. Islam**, **A. Omole**, **A. Damnjanovic**, **A. Islam**, A. Domijan, "Microgrid Reliability Enhancement by Programmable Control of Power Flow between Grid and the Energy Storage Systems," Submitted to the IEEE Transactions on Smart Grids.
- (Submitted) **M. Islam**, **A. Omole**, **A. Islam**, A. Domijan, "Economic Design of Gate-commutated Inverters for Grid Tied Distributed Generators," Submitted to the Journal of Renewable and Sustainable Energy, Manuscript# 100124.
- (Submitted) **A. Islam**, **A. Damnjanovic**, and A. Domijan, "Electric Power Distribution System Reliability Modeling and Risk Assessment," Submitted to the IEEE Transaction on Power Delivery.
- (Submitted) **A. Islam**, A. Domijan, **W.S. Wilcox**, "Statistical Normalization of Reliability Indices for Common Weather Condition," Submitted to the IEEE Transactions on Power Systems.
- (Submitted) **M. Alcazar-Ortega**, G. Escriva-Escriva, C. Alvarez-Bel, and A. Domijan, "A Case of Improvement of Efficiency in the Meat Industry: Speed Variation of Fans in Drying Chambers," submitted to Elsevier Energy Conversion and Management.
- (Submitted) **Z. Miao**, A. Domijan, and L. Fan, "Investigation of Microgrids with Both Inverter Interfaced and Direct AC Connected Distributed Energy Resources," Submitted to the IEEE Trans. on Power Delivery.
- (Submitted) **Z. Miao**, A. Domijan, and L. Fan, "Modeling and Small Signal Analysis of a PMSG-Based Wind Generator With Sensorless Maximum Power Extraction," Submitted to Electric Power Systems Research (Elsevier Journal).

(Submitted) **M. Islam, A. Islam**, and A. Domijan, "Inter-region Unscheduled Power Flow effect due to High Penetration of Photovoltaic Sources in a Mesh Network Topology," Manuscript ID: gSOL-2012-009, International Journal of Sustainable Energy, Taylor & Francis.

(Submitted) **M. Islam, M. Alcazar-Ortega**, and A. Domijan, "Tracing Power Flow Path Vulnerable to Unscheduled Load Flow Effect due to Large Variable Power Sources at Distribution Ends," Manuscript ID.: SCH - TSTE-00432-2013, IEEE Transactions on Sustainable Energy.

(Submitted) **M. Jawarneh, W. Luo**, A. Domijan, **M. Alcazar-Ortega**, "The Performance of Maximum Power Point Tracking (MPPT) Algorithms for Photovoltaic Systems," Submitted to Energy Conversion and Management (Elsevier).

(Submitted) **L. Montuori, M. Alcazar-Ortega**, C. Alvarez-Bel, and A. Domijan, "Integration of renewable energy in microgrids coordinated with demand response resources: economic evaluation of a biomass gasification plant by Homer Simulator," Submitted to Applied Energy.

Refereed Conference Proceedings

1. A. Domijan, and **E. Embriz-Santander**, "Harmonic Mitigation Techniques for the Improvement of Power Quality of Adjustable Speed Drives," Proceedings of the Fifth Annual IEEE Applied Power Electronics Conference and Exposition, Los Angeles, CA, Session 2.6 on Industrial Drive Systems, Paper 47, IEEE Catalogue No. 90CH2853-0, Library of Congress No. 90-80400, March 1990, pp. 96-105.
2. A. Domijan, **D. Cheney**, and P. Garcia, "Power Quality Characterization of an Electric Vehicle Charger," Proceedings of the IEEE 7th International Conference on Harmonics and Quality of Power, October 16-18, 1996, Las Vegas, Nevada, pp. 721-726.
3. **D. Czarkowski**, and A. Domijan, "Harmonic Content of PWM Adjustable Speed Drive Waveforms - Analysis and Metering Implications," Proceedings of the IEEE 7th International Conference on Harmonics and Quality of Power, October 16-18, 1996, Las Vegas, Nevada, pp. 48-53.
4. D. Zaninelli, and A. Domijan, "IEC and IEEE Standards on Harmonics and Comparisons," Proceedings of the National Science Foundation Conference on Unbundled Power Quality Services in the Power Industry, November 17-19, 1996, pp.46-52.
5. A. Domijan, "The Implications of Measurement Errors in High End Instruments to Unbundled Power Quality Services," Proceedings of the National Science Foundation Conference on Unbundled Power Quality Services in the Power Industry, November 17-19, 1996, pp.77-81.
6. **T. A. Buchh, C.T. Mata**, A. Domijan, and P. Garcia, "Discussion of the Impact of Electric Vehicles on the Utility: Power Quality and Real Time Pricing," Proceedings of the National Science Foundation Conference on Unbundled Power Quality Services in the Power Industry, November 17-19, 1996, pp.103-108.
7. A. Domijan, **D. Czarkowski**, and J.H. Johnson, "Power Measurements of Adjustable Speed Drives," Proceedings of the Industry Application Society Conference, New Orleans, Louisiana, October, 1997, Paper No. ias97314, pp. 1-7.

8. A. Domijan, "FRIENDS and Power Quality in the 21st Century," Proceedings of the First International Meeting on Systems Technologies for Unbundled Power Quality Services, September, 1998, Mito, Japan, pp. 5-8.
9. A. Domijan, **Z. Song**, and K. Komoto, R. R. Shoultz, W.J. Lee, and M. S. Chen, "Research on Custom Power, Hierarchical Control and Power System Security," Proceedings of the First International Meeting on Systems Technologies for Unbundled Power Quality Services, September, 1998, Mito, Japan, pp. 33-39.
10. A. Domijan, K. Nara, and J. Hasegawa, "FRIENDS: A Strategic Roadmap for Electric Utility Infrastructure and Services in a Competitive Environment," Proceedings of the Second International Meeting on Systems Technologies for Unbundled Power Quality Services, Gainesville, Florida, February, 1999, pp. 5-14.
11. **Z. Song**, and A. Domijan, "Novel Hierarchical Control Application with FACTS Technologies in Large Power Systems," Proceedings of the Second International Meeting on Systems Technologies for Unbundled Power Quality Services, Gainesville, Florida, February, 1999, pp. 73-80.
12. **T. A. Buchh**, and A. Domijan, "Power Quality and Harmonic Distortion on Distribution Systems," Proceedings of the Second International Meeting on Systems Technologies for Unbundled Power Quality Services, Gainesville, Florida, February, 1999, pp. 95-99.
13. **K. Komoto**, **Q. Qiu**, and A. Domijan, "Custom Power Elements with FRIENDS," Proceedings of the Second International Meeting on Systems Technologies for Unbundled Power Quality Services, Gainesville, Florida, February, 1999, pp. 69-72.
14. A. Domijan, **Z. Song**, **K. Komoto**, and **Q. Qiu**, "Simulation Investigation on Power Systems with Versatile Models by Hierarchical Control and Custom Power Elements," Proceedings of the Third International Meeting on Systems Technologies for Unbundled Power Quality Services, Espoo, Finland, July, 1999, pp. 13-18.
15. **Z. Song**, and A. Domijan, "Investigation on Power Systems with Detailed Models by Hierarchical Control," Proceedings of the International Conference on Power and Energy Systems, Las Vegas, NV, ISBN #: 0889862788, Nov. 8-10, 1999, pp. 295-299.
16. A. Domijan, and **Z. Song**, "Further Consideration of FRIENDS Applications under Competition in the Power Utility Industry," Proceedings of the Fourth International Meeting on Systems Technologies for Unbundled Power Quality Services, National University of Singapore, Singapore, Jan. 28, 2000, pp. 18-23.
17. A. Domijan, **Z. Song**, **G. N. Baptista**, **A. Montenegro**, X. Wang, G.T. Gurlaski, and K.E. Mattern, "Power Quality Monitoring and Analysis in a Customized Power Industrial Area Using the FRIENDS Concept," IEEE International Conference on Harmonics and Quality of Power, Vol. 2, Oct. 1-4, 2000, pp. 379-384.
18. A. Domijan, and **Z. Song**, "Unbundled Power Quality Services," Systems Technologies for Unbundled Power Quality Services Conference, December, 2000, (special extract printed March 2001) Hitachi, Japan, pp. 8-15.
19. C. Alvarez, J. Alamar, A. Domijan, and **A. Montenegro**, "An Investigation Toward New Technologies and Issues in Power Quality," IEEE International Conference on Harmonics and Quality of Power, Vol. 2, Oct. 1-4, 2000, pp. 444-449.
20. A. Domijan, and **A. Montenegro**, "Premium Power Park: the next step in Power Quality," Proceedings of the Caribbean Colloquium on Power Quality (CCPQ), June, 2003, pp. 1-9.

21. A. Domijan, **R. Kishore**, et.al., "Analysis of Rain, Wind and Temperature Effects on Power Distribution Outages," Proceedings of the IASTED International Conference - PowerCon2003: Blackout, ISBN: 0-88986-400-4, New York, New York, Dec. 10-12, 2003, pp. 44-48.
22. A. Domijan, A. Hari, and **T. Lin**, "On the Selection of Appropriate Wavelet Filter Bank for Power Quality Monitoring," Proceedings of the IASTED International Conference - PowerCon2003: Blackout, ISBN: 0-88986-400-4, New York, New York, Dec. 10-12, 2003, pp. 17-21.
23. **T. Lin**, and A. Domijan, "Novel Indices for Power Quality Measurement," Proceedings of the IEEE International Conference on Harmonics and Quality of Power, Paper No. hqp021, NY, NY, Sept. 12-15, 2004.
24. A. Domijan, and **M.S. Taci**, "The Effects of Linear and Non-Linear Operation Modes in Transformers," Proceedings of the IEEE International Conference on Harmonics and Quality of Power, Paper No. hqp057, NY, NY, Sept. 12-15, 2004, pp. 244-249.
25. **A. Montenegro**, A. Domijan, K. Mattern, and C. Edwards, "Energy Storage Systems for Wind Farm Applications: Methodology," Proceedings of the IASTED International Conference on Power and Energy Systems: Distributed Generation and Demand Response, ISBN: 0-88986-449-7, Paper No. 448-806, Tampa, FL, Nov. 28-Dec. 1, 2004, pp. 114-120.
26. J. Carcel, C. Alvarez, A. Domijan, and A. Rodriguez, "Benefits of Demand Response Resources," Proceedings of the IASTED International Conference on Power and Energy Systems: Distributed Generation and Demand Response, ISBN: 0-88986-449-7, Paper No. 448-113, Tampa, FL, Nov. 28-Dec. 1, 2004, pp. 81-86.
27. **T. Lin**, and A. Domijan, "Real Time Measurement of Power Disturbances – Part 1: Comparative Study and a Novel Complex Filter," Proceedings of the IASTED International Conference on Power and Energy Systems: Distributed Generation and Demand Response, ISBN: 0-88986-449-7, Paper No. 448-111, Tampa, FL, Nov. 28-Dec. 1, 2004, pp. 1-6.
28. **T. Lin**, and A. Domijan, "Real Time Measurement of Power Disturbances – Part 2: Implementation and Evaluation," Proceedings of the IASTED International Conference on Power and Energy Systems: Distributed Generation and Demand Response, ISBN: 0-88986-449-7, Paper No. 448-112, Tampa, FL, Nov. 28-Dec. 1, 2004, pp. 7-12.
29. **S. Shetye**, A. Domijan, and **S. Garg**, "Demand Response Opportunity Pilot: Assessment of Feasibility of Load Reduction at a University Facility," Proceedings of the IASTED International Conference on Power and Energy Systems: Distributed Generation and Demand Response, ISBN: 0-88986-449-7, Paper No. 448-131, Tampa, FL, Nov. 28-Dec. 1, 2004, pp. 81-86.
30. A. Domijan, **A. Islam**, **W. Wilcox**, **R. Matavalam**, J.R. Diaz, L. Davis, and J. D'Agostini, "Modeling the Effects of Weather Parameters on Power Distribution Interruptions," Proceedings of the IASTED International Conference on Power and Energy Systems: Distributed Generation and Demand Response, ISBN: 0-88986-449-7, Paper No. 448-130, Tampa, FL, Nov. 28-Dec. 1, 2004, pp. 213-217.
31. **N. E. Redondo**, A. Domijan, C. Alvarez, J. Rodriguez, and J. Masiello, "Settlement computation in demand response programs: Comparing baseline methods," Proceedings of the IASTED International Conference on Power and Energy Systems: Distributed Generation and Demand Response, ISBN: 0-88986-449-7, Paper No. 448-807, Tampa, FL, Nov. 28-Dec. 1, 2004, pp. 61-66.

32. **B. Lim**, A. Domijan, L. Davis, and J.R. Diaz, "Modeling Power Distribution System Reliability as a Function of Common Weather Conditions," Proceedings of the International Conference on Power and Energy Systems, ISBN: 978-0-88986-621-8, Paper No. 539-111, January 3-5, 2007, Clearwater, FL, pp. 75-80.
33. **A. T. Adediran** and A. Domijan, "The Development of an Online Expert System Based Optimized Switching Scheme for a Flexible Reliable and Intelligent Electrical Energy Delivery Systems Network," Proceedings of the International Conference on Power and Energy Systems, ISBN: 978-0-88986-621-8, Paper No. 539-815, January 3-5, 2007, Clearwater, FL, pp. 91-95.
34. A. Domijan, Xueyan Li, F.J. Torres, and **D. Payne**, "Energy Production from Biomass in West Central Florida," Proceedings of the International Conference on Power and Energy Systems, ISBN: 978-0-88986-621-8, Paper No. 539-811, January 3-5, 2007, Clearwater, FL, pp. 127-130.
35. C. Chen, C. Liu, and A. Domijan, "Introduction of Taipower Distribution System and Reliability Improvement Strategies," Proceedings of the International Conference on Power and Energy Systems, ISBN: 978-0-88986-621-8, Paper No. 539-819, January 3-5, 2007, Clearwater, FL, pp. 300-304.
36. A. Domijan, F.J. Torres, and C. Alvarez Bel, "Microgrids: A Look into the Power Delivery System of the Future," Proceedings of the International Conference on Power and Energy Systems, ISBN: 978-0-88986-621-8, Paper No. 539-816, January 3-5, 2007, Clearwater, FL, pp. 311-313.
37. L. Fan, **Z. Miao**, and A. Domijan, "Impact of Unbalanced Grid Conditions on PV Systems," Proceedings of the IEEE Power and Energy Society General Meeting, Paper No. 2010GM1613, Minneapolis, Minnesota, pp. 1-6, July 25-29, 2010.
38. **A. Islam**, **A. Damnjanovic**, and A. Domijan, "Smart Grid Reliability Assessment," Series on Energy and Power Systems, Proceedings of the Third IASTED Africa Conference on Power and Energy Systems (AfricaPES), #684-010, Gaborone, Botswana, ISBN: 978-0-88986-847-2; ISSN: 1922-8074 684AfricaPES, Sept. 6-8, 2010, pg.143-148.
39. **A. Damnjanovic**, **A. Islam**, A. Domijan, "Harmonic Domain Modeling of Transformer Nonlinear Characteristic with Piece-Wise Approximation in Harmonic Domain," ICHQP- 14, International Conference on Harmonics and Quality of Power, Paper 448-026 Bergamo Italy, September 26-28, 2010.
40. **M. Islam**, **A. Omole**, **N. Damnjanovic**, **A. Islam**, A. Domijan, "Dynamic Capacity Estimation for a Typical Grid-Tied Event Programmable Li-FePO4 Battery," Accepted to the IEEE International Energy Conference 2010, # 1569320631, Saudi Arabia, Bahrain, Dec. 18-22, 2010.
41. **M. Alcazar-Ortega**, G. Escriva-Escriva, C. Alvarez-Bel, and A. Domijan, "Active Demand Response strategies to improve energy efficiency in the meat industry," WORLD RENEWABLE ENERGY CONGRESS 2011, ISBN 978-91-7393-070-3, Linköping (Sweden), May 8-13 2011.
42. **A. Damnjanovic**, **A. Islam**, A. Domijan, "Reliability of Dynamic Power Systems with Renewable Energy Sources and Storage Systems," EEM11- 8, International Conference on the European Market, Zagreb, Croatia, May 26-28, 2011.

43. **M. Islam, A. Islam** and A. Domijan, "Inter-region Unscheduled Power Flow effect due to High Penetration of Photovoltaic Sources in a Mesh Network Topology," #1020, 2012 IEEE Energy Conversion Congress and Exposition, Raleigh, North Carolina, September 16-20, 2012.

44. **W. Luo, L. Zhang, M. Alcazar-Ortega**, Alexander Domijan, "Quantum Evolutionary Membrane Algorithm and its Application for Economic Dispatch in Power Systems with Wind Farms," Proceedings of the Second Asian Conference on Membrane Computing, ACMC 2013, Chengdu, China, November 4-7, 2013, pp. 134-146.

(submitted) **W. Luo, M. Jawarneh**, A. Domijan, and **M Alcazar-Ortega**, "Boolean Logic Driven Markov Processes: A New Formalism for Studying Power System Reliability," International Conference on Power and Energy Systems Engineering, Shanghai, China, CPESE, Sep 2014.

Contributions to Books and Proceedings Professional Society Conference Proceedings (Editor)

1. A. Domijan (editor), "Proceedings of the IASTED/IEEE International Conference on High Technology in the Power Industry," International Association for Science and Technology for Development, Orlando, FL, October 27-30, 1997, pp. 1-542.

2. Y. Baghzouz, and A. Domijan (editors)," Proceedings of the Third International Conference on Power and Energy Systems," International Association for Science and Technology for Development, ISBN: 0889862788, Nov. 8-10, 1999, Las Vegas, NV, pp. 1-524.

3. A. Domijan (editor), "Proceedings of the 9th IEEE International Conference on Harmonics and Quality of Power," ISBN: 0-7803-6499-6, IEEE Catalog No. 00EX411, Oct. 1-4, 2000, Orlando, FL, pp. 1-1078 (3-volumes)

4. A. Domijan (editor), "Proceedings of PowerCon 2003: Blackout," International Association for Science and Technology for Development, ISBN: 0-88986-400-4, ISSN: 1482-7891, ACTA Press, December 10-12, 2003, New York, New York, pp. 1-285.

5. A. Domijan (editor), "Proceedings of PowerCon 2004: Distributed Energy and Demand Response," International Association for Science and Technology for Development, ISBN: 0-88986-4449-7, ISSN: 1482-7981, ACTA Press, November 28-December 1, 2004, Clearwater, FL, pp. 1-463.

6. A. Domijan (editor), Proceedings of the Ninth IASTED International Conference on Power and Energy Systems, ISBN: 978-0-88986-621-8, January 3-5, 2007, Clearwater, FL, pp. 1-413.

Conference Proceedings (Editor)

1. A. Domijan, and G.T. Heydt (editors), "Proceedings of the NSF Conference on Unbundled Power Quality Services in the Power Industry," National Science Foundation, November 17-19, 1996, pp. 1-190.

2. A. Domijan (editor), " Proceedings of the Second International Meeting on Systems Technologies for Unbundled Power Quality Services, Gainesville, Florida, February, 1999, pp. 1-101.

Book Chapter Contributions

1. A. Domijan, Comprehensive Dictionary of Electrical Engineering, "Power Systems section, Electricity Metering terms, IEEE Press and CRC Press, Inc., P. Laplante (ed), ISBN # 0-8493-3128-5, 1999.
2. A. Domijan, "Watt-hour Meters," Encyclopedia of Electrical and Electronics Engineering, J. G. Webster (ed), John Wiley and Sons, Inc., Vol. 23, ISBN 0471139467, 1999, pp. 475-483.
3. A. Domijan, and **Z. Song**, "Flexible, Reliable and Intelligent Electrical eEnergy Delivery Systems," CRC Press LLC, Handbook of Power Electronics, ISBN 0-8493-7336-0, pp.19-1 to 19-14, 2002.
4. **M. Islam, M. Alcazar-Ortega, A. Domijan**, "Power System: Advance Technology Application", Encyclopedia of Energy Engineering and Technology, Second Edition. DOI:10.1081/E-EEE2-1200051433. Taylor & Francis, UK, 2013.

Professional Standards and Guides

1. D. Ward , A. Domijan, et. al., IEEE PES Working Group, "IEEE Guide for Service to Equipment Sensitive to Momentary Voltage Disturbances," IEEE Standard 1250-1995, Sponsored by the IEEE Power Engineering Society, Transmission and Distribution Committee, ISBN 1-55937-528-0, June 28, 1995, pp. 1-40*.

***Received the 1996 IEEE Working Group Award**

2. A.Domijan, and **E.Embriz-Santander***, Adjustable Speed Drives Used in Low Voltage AC Power Systems," System Compatibility #610, Electric Power Research Institute (EPRI) - Power Electronics Applications Center, Palo-Alto, California, 1994, pp. 1-100.

3. A.Domijan, **D. Czarkowski, and E.Embriz-Santander**, "Adjustable Speed Air Conditioners and Heat Pumps," System Compatibility #310, Electric Power Research Institute (EPRI) - Power Electronics Applications Center, Palo-Alto, California, 1994, pp. 1-82.

4. A. E. Emanuel, A. Domijan, et. al., IEEE PES Working Group on Nonsinusoidal Situations, "Standard Definitions for the Measurement of Electric Power Quantities Under Sinusoidal, Nonsinusoidal, Balanced or Unbalanced Conditions," IEEE P1459/D/B, Feb. 9, 1998, pp. 1-31.*

***Received the 1998 IEEE Outstanding Working Group Award**

Professional Standards and Guides (submitted)

5. V. Wagner, A. Domijan, et. al., IEEE PES Working Group, "Electric Power System Compatibility with Electronic Process Equipment," IEEE Standards Department, Power Engineering Society, P1346, IEEE Draft D4.1, DS5599, pp. 1-48.

Patent

Domijan and A. Islam, "Electric Power Distribution Interruption Risk Assessment Calculator" US patent #: 7920997, April 5, 2011. Field of Invention: This invention helps to reduce lost revenue from electrical service downtime, and guides in predicting failures during normal weather conditions.

Patent Abstract

Based on common weather conditions, novel methods are disclosed for the prediction of electrical power distribution interruptions and for interruption risk assessment based on immediate weather conditions. Daily, hourly, and bi-hourly weather data are used to predict the number of interruptions and to normalize reliability

indices for weather. Common weather conditions include, but are not limited to, rain, wind, temperature, lightning, humidity, barometric pressure, snow, and ice. These conditions do not occur simultaneously at any one place, and the range of combinations is great, therefore the invention allows broad application of the disclosed methods.

Awards:

International Cooperation Award, Peak Load Management Alliance, 2003.

IEEE Power Engineering Society Outstanding Working Group Award for IEEE Working Group on Nonsinusoidal Situations (awarded at the IEEE PES Summer meeting in San Diego, California in July, 1998).

IEEE Outstanding Working Group Award, Power Engineering Society. Awarded for the Development of IEEE standard 1250-1995 Guide for Service to Equipment Sensitive to Momentary Voltage Disturbances, 1996.

IEEE Outstanding Subcommittee Award, Power Engineering Society, Power Engineering Education Committee. Awarded for the Development of the "Electric Power: A New Generation," video, 1995

ASHRAE Homer Addams Award for work on "Measurements of Electrical Power Inputs to Variable Speed Motors and Their Solid State Power Converters," 1993

Honors:

AEA Fellow, 1984 to 1987; GE Fellow (with RPI), 1981 to 1982; Eta Kappa Nu; Chairman, IEEE Gainesville Section, 1998 to 2001; Chairman, Southeastern Electricity Metering Association, 1988 to 2005; Chairman, Florida Bioenergy Association, 2010 to 2012.

Professional Memberships and Leadership Activities:

Selected Main Activities in Conferences & Short Courses:

1. Electricity Metering, Power Solutions, Customer Relations, Management School (Annual conference serving as Chair for 17 years), Sponsored by the Southeastern Electricity Metering Association (SEMA)
2. Lightning Protection of Power Systems with Emphasis on the Effects of Multiple Impulses on Electrical and Electronic Equipment, Gainesville, FL 1998
3. NSF Conference on Unbundled Power Quality Services in the Power Industry (Co-Chair with G.T. Heydt), 1999.
4. International Conference on Flexible, Reliable and Intelligent Electric eNergy Delivery Systems, University of Florida, February, 1999 (Chair)
5. IASTED/IEEE International Conference on High Technology in the Power Industry, Orlando, Oct., 1997 (Chair)
6. IEEE International Conference on Harmonics and Quality of Power, Orlando, FL, Oct., 2000 (Chair)
7. IASTED International Conference on Power and Energy Systems, Las Vegas, NV, Nov, 1999 (Co-Chair)
8. IASTED International Conference on Power and Energy Systems, Tampa, FL, Nov., 2000 (Chair)
9. IASTED International Conference on Power and Energy Systems, Tampa, FL, Nov., 2001 (Chair)
10. IASTED International Conference on Power and Energy Systems, California, 2002 (Chair).
11. Caribbean Colloquium on Power Quality (CCPQ), Puerto Rico, June, 2003, (Executive Committee).
12. IASTED International Power Con 2003: Blackout, NYC, Dec. 10-12, 2003 (Chair).
13. IEEE International Conference on Harmonics and Quality of Power, Lake Placid, NY, Sept. 2004 (Executive Com.)
14. International Power Con 2004: Distributed Generation and Demand Response, Tampa, FL, Nov. 2004 (Chair)
15. IASTED International Conference on Power and Energy Systems, Tampa, FL, Nov., 2006 (Chair)

16. International Conference on Power and Energy Systems, Clearwater, FL, January 2007 (Chair).
17. Smart Grid Workshop, Tampa, FL, September 2009 (Co-Chair with FSU)
18. IEEE International Conference on Harmonics and Quality of Power, Bergamo, Italy, September 26-29, 2010 (Executive Committee).

Memberships: IEEE, AEE, IASTED, SEMA, ASHRAE, FBA

IEEE P1459, Standard Definition for the Measurement of Electric Power Quantities Under Sinusoidal, Nonsinusoidal, Balanced or Unbalanced Conditions

IEEE Working Group on Distribution Voltage Quality

IEEE Power Engineering Education Committee

IEEE Working Group on Monitoring Electric Power Quality

IEEE Working Group of the Electricity Metering Subcommittee on Nonsinusoidal situations

IEEE Power System Instrumentation and Measurement Committee

ASHRAE Technical Committee 8.11: Electric Motors

ASHRAE Research Subcommittee of TC8.11

ASHRAE Technical Committee 9.1: Electrical Systems

ASHRAE Research Subcommittee and Honors and Awards of TC 9.1

Reviewer, NSF SBIR, IEEE Transactions on Power Delivery, IEEE Transactions on Power Systems, IEEE Transaction on Energy Conversion

University Service

1. Member of University Administrative Council, three year term (1988-1990), Univ. of Florida
2. Member of Campus Community Council (1989), Univ. of Florida
3. Member of University Library Committee (1988-90), Univ. of Florida

College Service

1. Executive Director, Office of Research, College of Engineering, University of South Florida, 2008-09.
2. Member, Dean of Engineering Search Committee, Spring and Summer 2007, Univ. of South Florida

Departmental Service

1. Director, PQ & PE Lab and the Florida Power Affiliates electric power engineering program, Univ. of Florida, 1987 to 2005.
2. Member of Electrical Engineering Advisory Committee (1991), Univ. of Florida
3. Member of Electrical Engineering Curriculum Committee (various times from 1987 to 1996), Univ. of Florida
4. Member of Electrical Engineering Graduate Committee (various times from 1987 to 2005), Univ. of Florida
5. Member of the Electrical Engineering Long Term Planning Committee (1998 to 2000), Univ. of Florida

Selected Presentations (Invited):

- Reducing Barriers to New Market Entry, Presented at the 2010 Farm to Fuel Summit, Workshop: Business Case for Biofuels, Orlando, FL, August 12-15, 2010.
- Extending Innovation into the Home, Smart Energy Regulation Summit, Washington, DC, May 19, 2010.
- Smart Energy, Advanced Energy Conference and Exposition, Buffalo, NY, October, 2011.
- Gateway to Power, 2012 Florida Green, Energy & Climate Conference/Expo, Palm Beach, Florida, May 16/17, 2012
- Opportunities in Energy, 2013 ICONICS World Summit, Newport, RI, September 23-26, 2013.

Selected Leadership Activities

Chairman, Florida Biofuels and Bioenergy Association (one year)

<http://floridabiofuelsassociation.com/>

Mission:

To advance clean energy from locally grown, refined biomass to reliable transportation fuels and energy power through facilitating dialogue and strategies between the private and public sector. We are comprised of private and public sector professionals dedicated to increasing the demand, distribution infrastructure, and capacity for locally produced and distributed ethanol, biodiesel, electrical power from biomass to serve as an educational resource for the development of a sustainable bioenergy sector in Florida and the Southeastern United States. The FBBA also serves as a clearinghouse and repository for businesses and government agencies looking for information relating to clean energy with specific emphasis on biofuels and bioenergy.

President, Global Energy Institute (2 years to present)

<http://www.bnmc.org/energizebnmc/global-energy-institute/>

The independent, not-for-profit Global Energy Institute located at the BNMC, and the UB Power Center for Utility Explorations located at the University at Buffalo (which has research efforts and forthcoming facilities at BNMC), both comprehensively explore power and energy issues to develop innovative solutions to the complex challenges found in energy infrastructures such as electric, gas, and related transportation, water, and renewable power systems. The PCUE and GEI teams will train the next generation of energy professionals including students in elementary schools, high schools, colleges, universities, and existing professionals through educational programs relevant to the growing needs of the evolving energy industry. While the GEI is focused upon applied efforts, the PCUE will focus upon academic research, teaching, and service. Hence both organizations together will be able to address energy issues holistically and powerfully implement a range of energy efforts end-to-end from initial conception, theoretical studies, simulations, to pilot programs and working sites in the field, and business development and job creation to benefit the public. A current major effort is the development of a 120 acre smart grid enabled 9 major institutions and 50+ tech/supporting firms on the BNMC and surrounding urban neighborhoods – a smart city.

President, Smart Energy Grid Associates, Inc. (5 years to present)

<http://www.seganext.com/>

SEGA is a leader in energy systems with turn key abilities to manage multimillion dollar projects, develop proposals, produce deliverables on time, innovate in research, and engage positively with regulators, industry and customers. Special SEGA focus areas include but are not limited to smart grids, renewable energy, energy storage, nuclear energy, bioenergy, training and educational program development, and most aspects of power transmission, distribution and generation systems. The leadership team includes some of the original concept developers of smart energy systems and has trained thousands of energy engineers.

Capabilities:

1. Complete end-end smart grid, energy and power solutions from design, installations, implementations, analysis and final results
2. Comprehensive project management.
3. Results oriented to produce deliverables on time.
4. World-wide respected leaders in energy and innovators with capabilities ranging from driving cutting edge research to practical applied installations.
5. Leadership in energy education and training.
6. Complete proposal development with high probability of securing funds.
7. Comprehensive long and short training programs for certifications in information technology, smart grid, cyber security, communications, renewable energy, and workforce development.

President, International Association of Science and Technology for Development (+10 years to present)

<https://www.iasted.org/>

The **International Association of Science and Technology for Development (IASTED)** is a non-profit organization devoted to promoting social, economic, and technical advancements around the world. Established in 1977, IASTED organizes multidisciplinary conferences for academics and professionals in the fields of science, engineering, medicine, management, and education.

Chairman, Southeastern Electricity Metering Association (19 years)

<http://reg.conferences.dce.ufl.edu/SEMA/Pages?pid=54>

SEMA was established in 1925 educating utility professionals about electric metering, and its interaction with the rest of the power industry. Over 40 major manufacturers participate each year including, GE, Siemens, Itron, Radian Research, ABB, Landis & Gyr, and others. The 1920's saw a boom in electric consumption as people became more comfortable using electricity. Consequently, the appliances that could be driven by electricity multiplied. This coupled with the recently mandated metered rate, which replaced the per-lamp or flat rate, created a need for utility personnel to understand more about metering. Except for two years during World War II, the association has met annually ever since its founding, making it the oldest continually meeting association dedicated to the electricity metering industry.

General Chair, IASTED International Con. on Power and Energy Systems, Tampa, Nov, 2001.

Chairman, IEEE 9th International Conference on Harmonics and Quality of Power, Orlando, FL, October 1-4, 2000.

Chairman, IEEE Standard 120 on Electricity Measurement

General Chair, IASTED International Con. on Power and Energy Systems, California, 2002

Chairman, PowerCon 2003 – Blackout, Sponsored by IASTED, NY, December 10-12, 2003.

Chairman, 7th IASTED International Conference on Power and Energy Systems: Distributed Energy and Demand Response, Clearwater, FL November 28 – December 1, 2004.

Executive Committee, 11th IEEE International Conference on Harmonics and Quality of Power, Lake Placid, NY, October 2004.

Administer (founder) Faculty and Student Exchange Programs with Spain (Polytechnic University of Valencia), 1998 to 2005, University of Florida. (currently being developed at UB).

Administer (founder) Dual Ph.D. Degree Program, College of Engineering, EE Dept., 2007 to 2011, Univ. of South Florida. (currently being developed at the University at Buffalo).

Corporate Boards:

Board of Directors, ICONICS, Inc., 2013 to present

<http://www.iconics.com/Home.aspx>

ICONICS cultivates an international culture of innovation, creativity and excellence in product development, technical support, sales and service. Over its 27 year history, ICONICS has grown rapidly and has successfully deployed more than 300,000 software applications to manufacturing, industrial, building automation and sustainability markets worldwide. Corporate headquarters are located in Foxborough, Massachusetts, USA, with a joint software development and sales office in Plzen, Czech Republic. The company has offices throughout the United States, and in the Netherlands, United Kingdom, Australia, China, France, India, Italy and Germany.

Smart Energy Grid Associates, Inc., President and Director, 2009 to present (described in the previous section)

<http://www.seganext.com/>

Statement of Professional Interests Part 1: Administrative Philosophy, Experience and Implementation Strategies

(Prepared in support of the application VPAA#75 for Associate Dean of Engineering at San Diego State University)

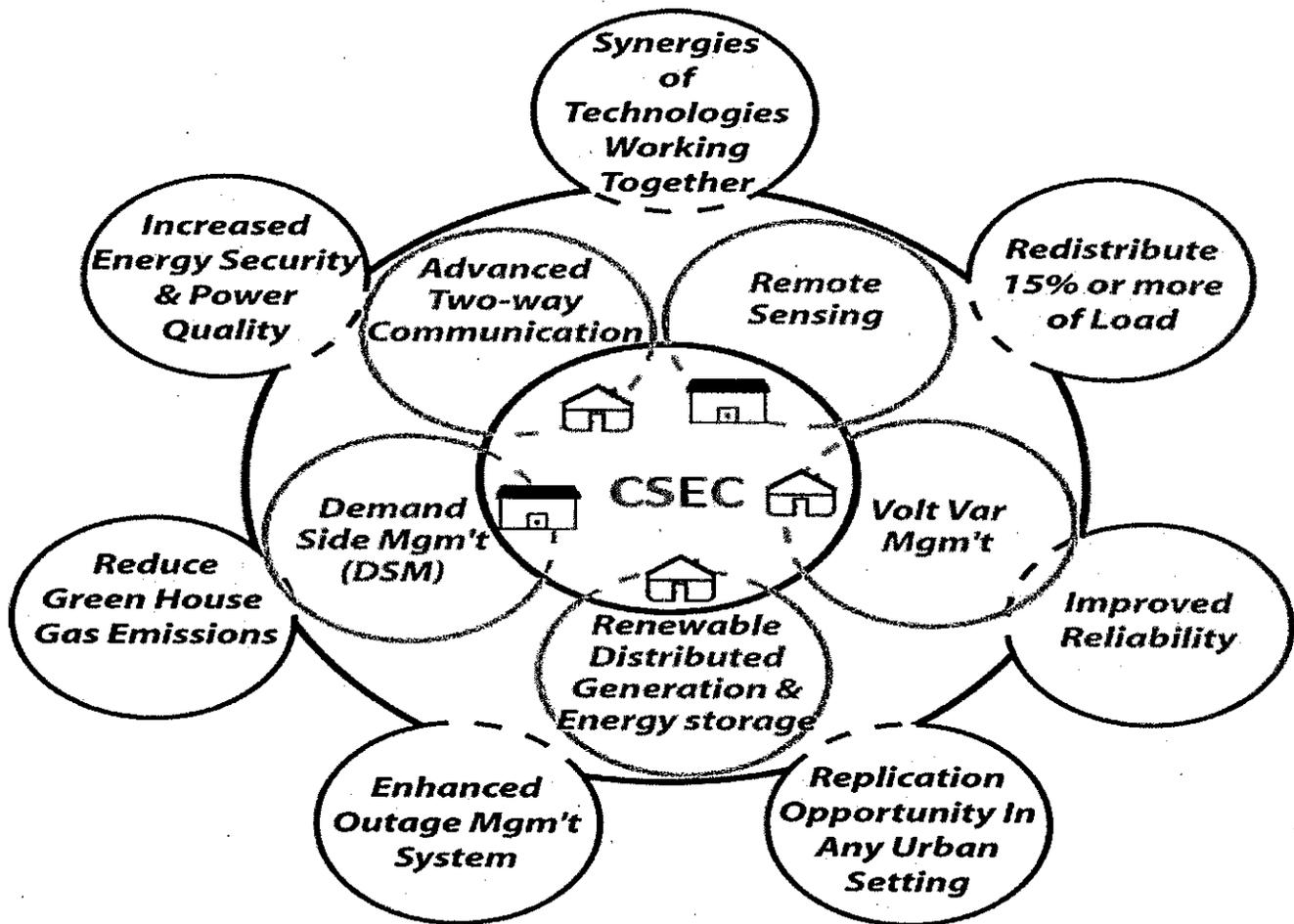
by Alexander Domijan, Jr.

The following material represents my administrative philosophy building from my academic scholarship. This scholarship has taken me on a path to be holistic in my approach, and I use illustrative examples to show this growth in my mindset to the present day. This is done to highlight that I believe in treating all scholarship activities with balance and respect, and to show how I would approach building value in the College of Engineering (COE) at San Diego State University (SDSU), supporting Dean Mehrabadi and COE faculty and staff, building teams, and assisting a complicated academic enterprise with collegiality.

The main areas of my work are comprehensively addressing energy and power infrastructures. When I was at the University of South Florida I founded and developed the Power Center for Utility Explorations and built it to several million dollars in annual support, and am now pulling together larger activities in energy in smart energy systems/grids at the University at Buffalo where my center was moved. Further, I have had successful interactions with creating programs with university development, government relations, international affairs, and economic development, and am especially focused on bringing faculty and students together in a collaborative environment. My responsibilities in leading a center are equivalent to a Department Chair, and additionally are equivalent to an Associate Dean of Research for my time leading the USF Office of Research. Furthermore, I created and have had funded at the University at Buffalo with recurring funds (approx. \$1.5M plus 8 faculty lines allocated), in a highly competitive internal peer reviewed competition, an opportunity to establish a new university wide strategic thrust in energy involving four units of the university (Engineering, Law, Management and Arts and Sciences). Additional statements detailing experience and qualifications, leadership philosophy, and vision follow below.

Experience and Qualifications

The nation is experiencing critical energy and power infrastructure issues that will be around for decades. These issues range from expanding to a diversified portfolio of generation sources, to dealing with an increasingly fragile power delivery system threatening our national security and economy, to critical workforce shortages expected to reach 35% within the next five years. My experience has been centered about dealing with the energy system comprehensively and providing solutions and paths that enable our interconnected infrastructures to operate robustly. I am one of the team that originally formed the path of creating flexible, reliable, intelligent energy delivery systems 20 years ago, which has spawned into smart grids being planned today by utility firms nationwide. A higher level view of the systems I deal with is provided in the next figure which illustrates the clean smart energy city (CSEC) concept I originated and received a project valued at over \$15M while in Florida, assisted FPL in obtaining their \$200M Energy Smart Florida DOE grant (valued at \$1B with matching – and illustrated in the second figure), and currently leading a \$12.5M effort for DOE and FPL on education based on this concept, and presently am implementing this concept in Buffalo to revitalize the urban city center and with an effort we are forming.



I have produced over 100 refereed publications using a +\$2M facility for which I secured funding and developed the Power and Energy Applied Research Laboratory. The PEARL facility is both practically and theoretically oriented to cover power systems research ranging from laboratory experiments, to field testing, and to computer simulations in a holistic approach to study overall power grid performance. The PEARL facility was the first in the world with the capability of producing computer-controlled real world electrical waveforms via arbitrary high-power synchronized three-phase voltages and currents to study and test such power system devices as protective relays, meters, transformers, lighting, motors, motor drives, micro-grids, and renewable generation systems. The PEARL facility team of researchers has conducted over 30 sponsored projects. The efforts center functionally about dealing with energy systems holistically as flexible, reliable, intelligent energy delivery systems (FRIENDS).

When I joined the University of South Florida in 2006, I formed the Power Center for Utility Explorations from funds of approximately \$200K in the first year. That support increased in the second year to \$600K and there were proposed efforts valued at over \$50M involving Progress Energy, FPL, Siemens, Emery Electric, Department of Homeland Security, DOE, and many others – all resulting in support of several million dollars at the time I left to join the University at Buffalo, and includes the following efforts:

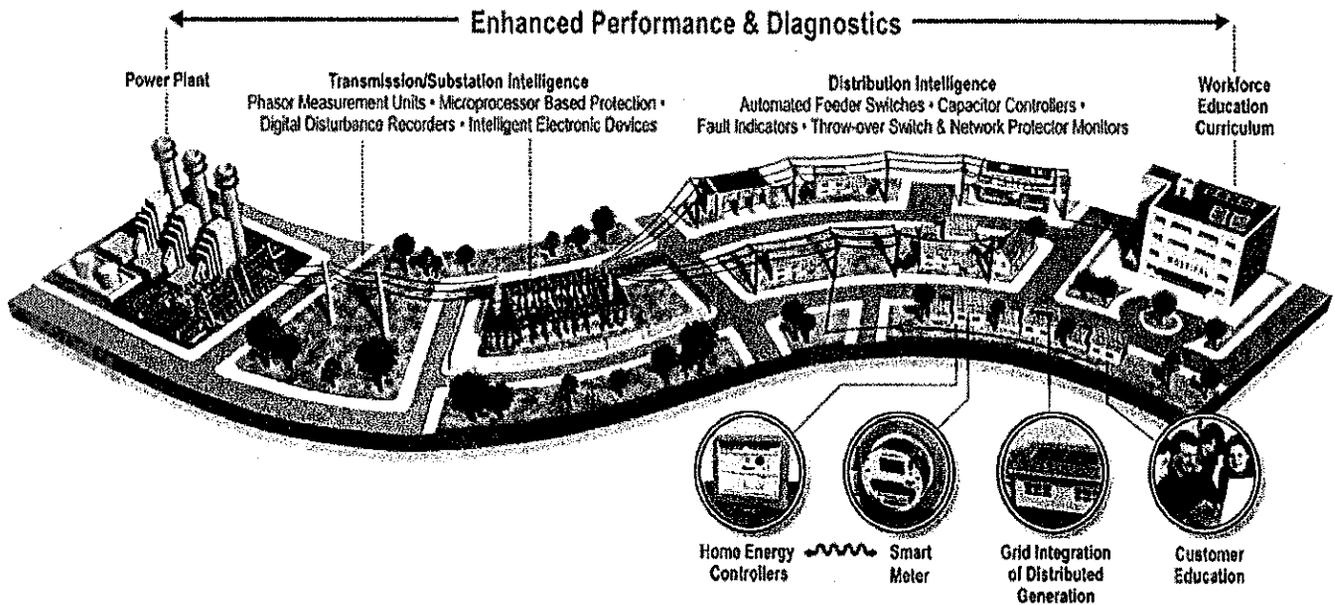
Summary of research projects and programs totaling over \$20M performed at the Power Center for Utility Explorations with PI: A. Domijan

- Peak Load Shaving Technology with Renewable Resources; Tampa Electric Company, Value: \$727K
- Advanced Commercial Energy Technology: For implementation of a Commercial Price Responsive Load Management Pilot. Tampa Electric Company, Value: \$450K

- Smart Grids, Progress Energy, Value: \$300K
- PCUE Board, multiple firms: PEF, FPL, TECO, SECO, Seminole, and TAW – value: \$300K/year
- Weather and Reliability, Florida Power and Light – value: \$40K/year for past 10 years
- Power Systems hardware in a loop, DOE and FSU – \$85K/year
- Sustainable Electric Energy Delivery Systems, PEF - \$500K (the nation's first SEEDS power plants developed by me are currently producing on-line grid connected power in Florida)
- Smart Grid with Strategic Load Pocket, Florida Energy Office and Progress Energy, \$15M.
- (Note – Co-PI), Sunshine State Solar Grid Initiative (SUNGRIN), DOE and FSU, \$3.6M (\$500K subcontract)

Currently at the University at Buffalo I have been engaged in the formation of a clean smart energy city (CSEC) to revitalize downtown Buffalo as shown in the previous figure. This is being carried out at the Buffalo Niagara Medical Campus.....a campus with over 8 hospitals, 8500 employees and the surrounding areas representing a variety of communities, including economically disadvantaged areas. This is a great challenge to make a difference and serve as a role model to see if the efforts may be replicated in other areas of the state and nation. The funding level being sought and organized is significant. A summary of the projects tentatively identified is:

- Domijan participating and/or coordinating: Planned funding approx. \$30M: Sample includes – battery storage, targeted campus grid modernization, existing building commissioning, EV infrastructure, power quality and reliability enhancement, model energy home, academic partnership, four neighborhoods – one community: energy efficiency. This effort is illustrated in the following figure which draws upon the smart grid experience developed for Energy Smart Florida.



In my numerous research efforts, which have in large part been oriented towards wide scale use, I have engaged many students. Hundreds of which are employed in the energy industry. I tend to form teams of students to work with sponsors so not only are projects helpful to the students learning new ideas, but have resulted in numerous direct job offers. This approach has also resulted in many faculty members being supported in research efforts which may not have received the attention they well deserve. As Associate Dean of the COE I would make sure to promote effectively faculty and staff efforts.

Philosophy in Academic Administration

The USF College of Engineering went through some severe disruptions during 2007. One of these disruptions was the elimination of the Office of Research. For a College of Engineering not to have an Office of Research and aspire to take a research enterprise to a higher level is difficult to say the least. I was called upon to serve as Executive Director for a one-year period to rebuild an office without any infrastructure leading the research part of a unit with 110 FTE faculty. Our portfolio of research was about \$25M in annual expenditures. From 2007 to 2008 I reorganized the Office of Research to be able to handle pre and post awards, developed a new research recording system, started a new assessment of research production and risks, and conducted a search and brought on research administrators to help our faculty succeed. All this was done while continuing to build the Power Center for Utility Explorations. Furthermore, I have worked hard to build relationships to help the college internally by bringing faculty together and promoting their work. I organized the first Research Day ever held by the College of Engineering, published the proceedings, and recommended a university-wide research event which has since come to pass. I also worked to improve proposal processing, and built external collaborations with our sister campuses and industry. Personally, I found the tasks of building the research office up from ground zero and working to help faculty most rewarding.

At the University at Buffalo I developed the Energy Diversification Initiative. This is a highly competitive internal award competition at the University at Buffalo aimed at beginning to establish university wide strategic strengths (Award: approx.: \$1.5M recurring, 8 faculty lines, 2013 to 2016). A summary of my ongoing efforts is as follows:

The UB Energy Diversification Initiative will address critical national energy needs through a strategic initiative in faculty and facilities to focus on: i) Energy infrastructure; ii) Energy policy; iii) The business of energy; and iv) Energy education. Buffalo is the birthplace of the modern energy industry and has a diverse array of energy resources. Through the proposed initiative, UB will lead the reinvigoration of the energy economy in Western New York. In addition, this initiative will focus on the marketing of the existing academic excellence at UB that is already focused on energy research and will ensure that the energy theme permeates all aspects of research and education at UB. An Energy Diversification Institute will be established to facilitate academic and research efforts in the four areas outlined below:

Energy Infrastructure

- Smart Energy Grids
- Renewable energy using advanced materials
- Energy Storage technologies

Energy Policy

- Regulation

Business of Energy

- Real time pricing
- Demand response and efficiency

Energy Education:

- New energy degree and training programs

The overarching goal is to contribute to our excellence in research and education. The effort will contribute directly to several of the research and education metrics listed in the planning documents. A comprehensive, cross-disciplinary, curriculum for energy education will be created. An inventory of the current capabilities will be collected and disseminated. We propose to hire 8 faculties in the four associated units (School of

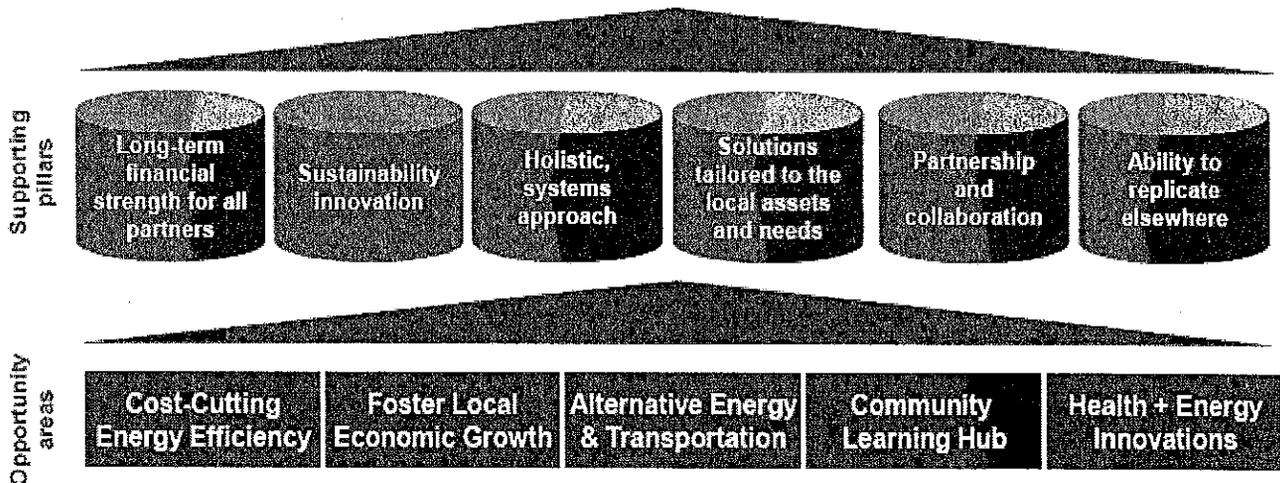
Engineering and Applied Sciences, School of Management, Arts and Sciences, and the School of Law) to fill the existing gaps in expertise.

A UB Energy Diversification Initiative will promote UB's engagement with multiple external partners including National Grid, National Fuel, NYPA, and engage federal agencies such as DOE with UB. The core strategy is shown in the figure below and is meant to increase the standing of the university as a whole. This has now been expanded to include water and the environment.

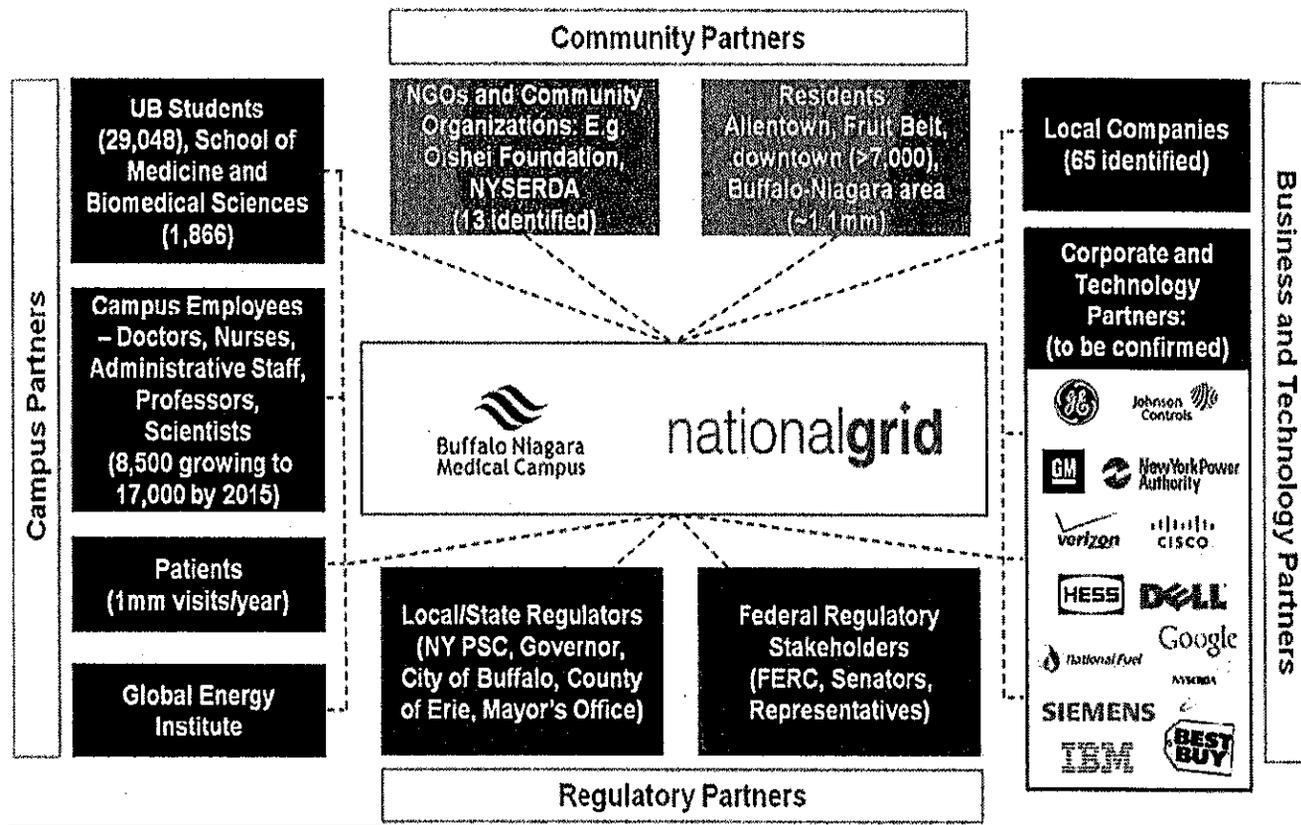


Implementation Experience in Wide Scale Community Based Strategic Planning

Significant buy-in with community partners not only allows for diverse groups, with special interests, to be more aligned, but permits plans to become actionable with key stakeholders. My methods have been to facilitate the university to be an agent of change and vision, and this change to be part of making sure community good is sought, and then with this base to engage for wider support. For example, the pillars of long term financial strength, sustainability, etc., are shown below, and these in turn are linked to opportunities currently being established.



These opportunity areas, formulated into a recent energy innovation plan for the Buffalo Niagara Medical Campus, engage community partners, business and technology partners, regulatory partners, with the campus partners, and are resulting in numerous leverage opportunities.



Implementation Strategy and Philosophy in research, education and service

The “linking of vision to actionable strategy” is a particular strength of mine. The following discussion has key elements which have been applied successfully in efforts I have established.

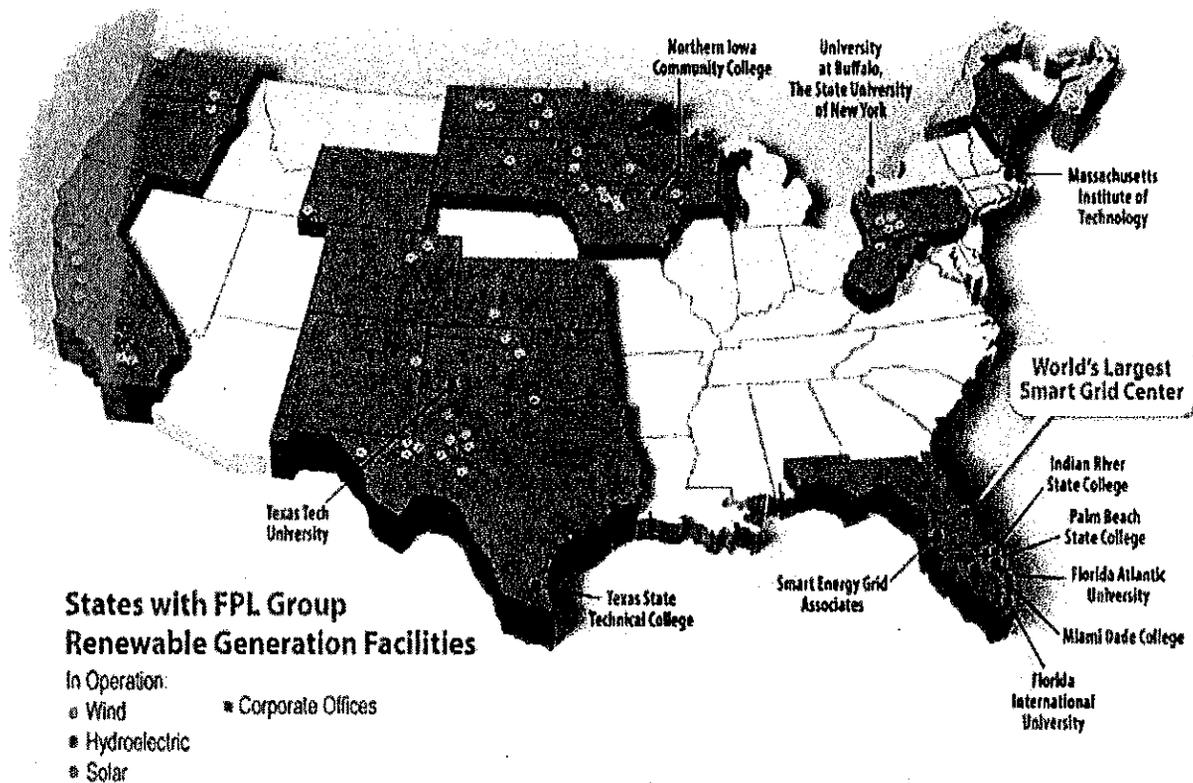
A key to success is to encourage a holistic approach and to recognize that research, education and outreach are a spectrum of activities. That is the individual parts of the COE when working together may attract and be able to produce a collaborative and productive/harmonious environment among faculty, staff and students as well as propose substantial funds to drive growth in support and capacity in each. The vision for research is one that must engage the community and state and be in synch with national agendas. This may be multifaceted by drawing upon existing strengths in the institution and forming new ones. The vision in education is to be "part of a pipeline" from early stages to specialized educational programs, which if research is linked with, produce outstanding graduates. The end result is job offers to students producing excitement due to the relevance of our educational programs by both students and industry. The vision in service is also multifaceted in that many efforts must be considered to produce valued products out of the COE that include new sources of revenue, giving, and community engagement. Some themes attractive to obtain funds in education, research and outreach efforts are for job creation which dovetail nicely to education, and for research efforts affecting populations on a wider scale, such as with health, biotech, and infrastructure to name a few. I am especially well connected with funding sources and can link effectively with state agencies as well as industry to partner for large federal

efforts to benefit the COE. The establishment of the COE vision is a "collaborative process" in which we describe the COE at some point in the future and is a key function to promote as well as support the overall institutional strategic plan. The vision should bring about a commitment to action that is inspirational yet is something realizable. My approach to assist Dean Mehrabadi and COE faculty and staff to develop a vision for the COE at SDSU would be one of involvement of faculty and staff, key stakeholders, institutional leadership, information gathering and assessment both internal and external.

Example: Whole-Systems Thinker development of an Educational STEM Pipeline

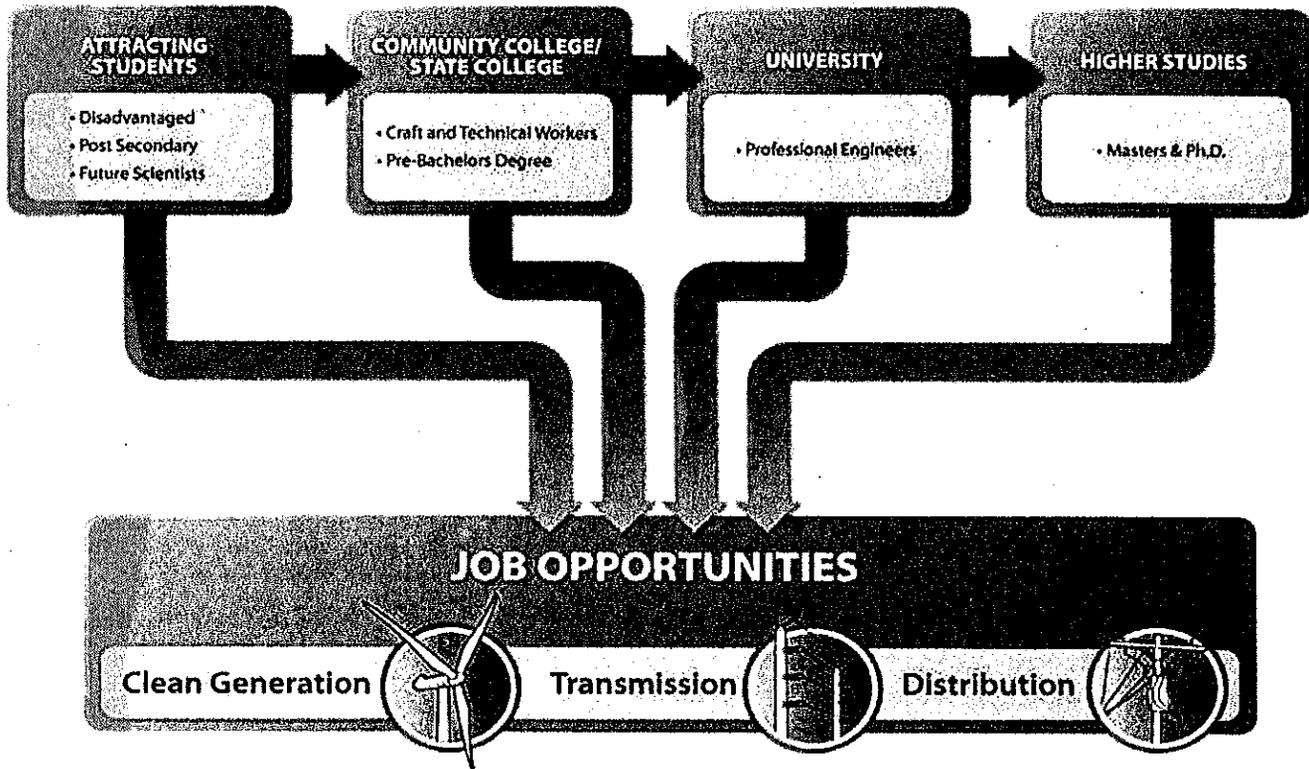
An illustrative example of my philosophy in bridging research and education is towards development of STEM based pipelines and collaborations, with the methods being applicable to many fields institution-wide. Currently, the educational pipeline I formed, termed the Gateway to Power (G2P), is funded by the DOE and industry at \$12M. It involves managing 10 academic partners and linking with industry in facilities covering +20 states for wider impact as shown below.

Gateway To Power Consortium supplies training and job placement to a national workforce of clean smart energy facilities



I have lead the G2P partners to develop an innovative strategic educational program filling a gap in a US area of national importance and establishing the pipeline from postsecondary, community colleges to higher education, while being inclusive of diversity and disadvantaged students.

Development of an Educational Pipeline



Thus far, over 700 students and over 150 internship trainees have successfully undergone training in smart grid technologies and modern grid operations. The training is delivered across multiple platforms including offline and online instruction, hands-on activities, and internship experience for participants. With the strength of the partnership, the target audience extends beyond the pool of 360,000 students to also include current energy industry professionals and other stakeholders.

The development of the G2P curriculum and training programs is based on an Eight-Tier Competency Model that ensures that the workforce is equipped with the skills, knowledge, and training necessary to implement a modern power system. The workforce education and training component is embedded within the five principle stages of the effective implementation of the Smart Grid Technology Initiative. The five stages are – Stage 1 calls for a focus on renewable and distributed energy integration; Stage 2 calls for grid control and asset optimization; Stage 3 calls for workforce effectiveness in the context of an ineffective aging workforce and an Eight-Tier Competency Model for new workers; Stage 4 calls for smart metering; and Stage 5 calls for energy smart customer education and solutions. Stage 3 is the most critical as an ineffective workforce is identified as the weakest link in the effective implementation of the Smart Grid Technology Initiative. The Eight-Tier Competency Model is as follows:

Tier One- Personal effectiveness including interpersonal skills, integrity, professionalism, motivation, dependability and reliability, self-development, flexibility and adaptability and finally the ability to learn.

Tier Two- Academic requirements such as mathematics, reading, writing, listening, speaking, engineering and technology, and critical thinking.

Tier Three- Workplace requirements, business fundamentals, team work, following directions, planning, organization and scheduling, problem-solving and decision making, work with tools and technology.

Tier Four- Industry wide technical principles and concepts, safety awareness, environment laws and regulations, quality control and continuous improvement, troubleshooting.

Tier Five- Industry specific technical- nuclear generation, non-nuclear generation (coal, natural gas, oil, hydro, solar, wind, bio-fuel, geothermal) electric transmission and distribution, gas transmission and distribution.

Tiers Six through Eight- Occupation Specific technical principles and concepts.

Based on the five principle stages of implementation, and particularly Stage 3 comprising the Eight-Tier Competency Model, new curricula and training programs are developed in four strategic sectors of smart grid infrastructure, clean energy, regulatory and standards, and human factors to train, educate, and prepare current and future students/professionals to build, design, operate, and maintain a modern interconnected energy infrastructure. Each of the four strategic sectors is thoroughly covered in order to deliver a well-rounded workforce pipeline that can manage the evolution to the smart grid and continue the innovation that will ensure U.S. leadership in this area. As a result, a total of over 20 courses have been developed under the four strategic sectors. The successful completion of a combination of courses under each of the four areas will ensure that the energy sector workforce is equipped with the knowledge, skills, and competencies needed. Finally, the educational programs developed under the human factors area cover topics such as leadership, home energy systems, customer education, and green business development. The G2P list of topic areas is shown in Table 1.

TABLE 1

System Integration	Engineering Leadership
Phasor Management Unit	Synergy of Smart Energy Systems
Power Markets	Home Area Network
Cyber Security	Sustainability
Advanced Metering Infrastructure	Enhanced Power System Quality
Two Way Power System Communication	Enhanced Power System Reliability
Two Way Power Control System	Replication Opportunities
Customer Interaction with Smart Grid	Enhanced Power System Courses
Digitalization	Carbon & Greenhouse
Smart Grid Diagnostics	Demand Response
Renewable Distributed Generation & Energy Storage	

Example Implementation Strategies in the COE that align with the SDSU Building on Excellence strategic plan

We can even go further, and ask how a vision may be carried out by the identification of some elements in a strategic plan for the COE at SDSU that would support SDSU Building on Excellence strategic plan. Also, it is important to lay the ground work for further refinement so that the COE may both benefit and contribute. Such a plan may involve the following elements (suggested as straw man ideas) to potentially be developed into actionable programs after consensus building (this is a partial listing of programs I have started, and thoughts for future ones):

1. Bring funding sources on-campus: Academic events and targeted partnerships established.
2. Establish a development/mentoring team to help faculty succeed.

3. Establish outreach efforts (experimental capabilities, training, learning labs and more) at locations near or within funding sources.
4. Recruitment of top faculty, both junior and senior.
5. Establish multiple boards with funding sources in areas targeted by faculty.
6. Establish donor programs assisting the advancement office targeted towards COE programs.
7. Engage national labs.
8. Establish a research and educational corridor (may be international).
9. Establishment of more synergies with community partners.
10. Expand collaborations with other institutions both nationally and internationally.
11. Expand national and international identity through development of a branding campaign.
12. Encourage and reward faculty effort.
13. Expand diversity efforts with the community.
14. Enhance and expand the talent pool of top students.
15. Establishment of more centers and institutes. Establish joint college initiatives, university wide among, several units.
16. Strengthen the pre and post award process.
17. Establish a pipeline of students with stakeholder support to form Gateway to COE programs from industry, other SDSU units, high schools, community colleges, other universities, and more.

The 17 suggested points (and many more are possible) will lead to increases in key performance indicators of success at SDSU to help the COE succeed.

Diversity Philosophy

A commitment to diversity is a central part of my thinking and is a spectrum of activities, including hiring as well as continued professional development which must be sustained to be successful. Diversity should be linked to the educational mission, research mission and service mission.

While techniques to implement diversity are important, I have found in my past work that to obtain success in diversity it is important to establish role models and mentors. For example, I have had many applied research and educational efforts that have involved placing learning labs, pilot sites, and working production facilities in the field. This allows for direct community engagement by faculty and research staff with the community, which if diverse, will serve as a role model for members of the community, as well as the students, to see the possibilities of a career in the area. Thus forming a pipeline from k-12 to entry level to professionals which are diverse is feasible and ensures a sustained push to diversity in the programs developed. This promotes a culture of diversity. It is not enough to just say in job announcements, for example, items such as AA/EEO/ADA or women and minorities are welcome to apply.

The policies in action must promote a change in thinking that has meaning, such as: mentoring, promotion, pay, sustained training, and more. Further, I believe it is important to be holistic in the approach to diversity. That is, to think in broad terms to identify what is most lacking that may provide a varied experience for all involved in the institution, such as gender, sexual orientation, race, religion, physical capability, economic background, and more. I believe in being dedicated to diversity in the long term and will actively seek ways to fund diversity efforts, and not only aim at recruitment but to retain a broad base of people by sustained efforts.

Guiding Principles

My management style is one of being open, delegate when appropriate, and to provide collegial leadership. This leadership must both look to the big picture and attend to the details. My guiding principles are: 1. Be respectful & thoughtful - leadership should be inclusive by building consensus and in partnership with the academic units,

faculty, students, staff and university administration. 2. Be a builder. 3. Be creative. 4. Have a positive mindset and welcome opportunities and challenges.

Conclusion

In summary, my approach is thoughtful and action-oriented, as demonstrated by the diversity of programs I have developed increasing operational efficiencies, financial stability, agility and responsiveness, impact and visibility. I will actively seek to advocate, expand and promote COE research and educational efforts in a collaborative manner with SDSU administration, faculty, staff, students and the community.

Statement of Professional Interests Part 2: Producing Leveraged Partnerships for Translational Research and Education with University, Corporate, and Public Participation

Alexander Domijan, Jr.

Prepared in support of Application VPAA#75 Associate Dean of Engineering at San Diego State University

Introduction The following material contains selected examples which have large scale community engaged activities and research/learning centers that have been developed and deployed by Dr. Domijan of the Power Center for Utility Explorations. This is used to illustrate a sustained track record of establishment of economic development and translational research initiatives that are not only highly funded, but engage both students and the community positively with scholarship that is united with education.

Design of Smart Energy Systems with Environmentally Holistic Learning Centers

An example of an environmentally harmonious design approach (which involved several hundred students) is shown below and illustrates how a university activity may not just impact the "ivory tower" but have an on-going impact on the community. This example is seen by over 1.1M citizens each year (press release follows) on a smart energy and solar learning center.

Smart Grid Application

Advanced bi-directional electric meters are an integral part of a renewable energy grid-connected system. On sunny days, solar panels installed on a home's roof will produce electricity for the home and send excess energy out to the grid. At night and on cloudy days, electricity will flow from the power plant out to the grid and into the home.

Solar Power in the Community

When renewable energy resources such as photovoltaics (PV), or solar panel systems, are connected to the electricity distribution system, they can generate reliable electric power with environmental responsibility. These systems can also help mitigate peak power demand.

Tampa Electric, the University of South Florida's Power Center for Utility Explorations and Tampa's Lowry Park Zoo are partnering to develop a new project that includes the installation of a 15-kilowatt solar panel system to produce renewable energy at the zoo.

The project's goal is to analyze and optimize the technical economic and environmental benefits of a renewable, grid-connected PV system for electric power production. With their participation, project partners are cooperating to enhance the potential of the Smart Grid, a system of two-way communications and intelligent devices for improved electric system reliability. In addition, the project will explore reverse power protection for the electric grid in anticipation of greater renewable energy generation from consumers throughout the community in the future.

Solar-Powered Treetop Skyfari Sky Ride

A 15-kilowatt solar panel system will produce enough renewable energy to power the Treetop Skyfari sky ride at Tampa's Lowry Park Zoo. Panels will be installed atop the elephant shade structure (2.3 kilowatts) and near the elephant shelters at the rear of the elephant exhibit (13 kilowatts).

A Partnership to Advance Renewable Energy Applications







Power Center for Utility Explorations
<http://www.eng.usf.edu>

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Press Release:**Lowry Park Zoo Exhibit to Shine Light On USF, TECO Solar Energy Technology**

No day at Lowry Park Zoo is complete without a visit to the elephants and a jaunt on the sky ride, but in coming months zoo visitors also will come away with some new found knowledge of Smart Grid technology and solar power from a cutting-edge project created by the University of South Florida and Tampa Electric Co.

Solar energy panels are being incorporated into a new shade structure for the elephants and installed near the elephants' shelters with the aim of producing 15-kilowatts of power to run the zoo's Treetop Skyfari Sky ride.

Zoo visitors also will be able to learn more about alternative energy at a new Renewable Energy Learning Center being built with design input from USF architecture students in the central Safari Africa plaza at the zoo.

"It is one thing to have a great idea, it's another thing to make it work and it's another to have it viewed by 1.1 million who are having a fun day at the zoo," said Craig Pugh, acting director of Tampa's Lowry Park Zoo.

For many, the photovoltaic (PV) array will be the first introduction to Smart Grid technology – a new way of creating, distributing and managing energy in the community's power grid which is just now becoming a part of the American lexicon. But for the researchers at USF's Power Center for Utility Explorations, this project is a culmination of decades of research in alternative energy that is now being implemented into real-world use.

"We have explored the creation of an (energy) grid that is reliable, flexible and sustainable," said Alexander Domijan, director of the PCUE who has spent more than 20 years working on the elements that make up the new wave of Smart Grid energy programs. "Our vision is to be a change agent and to bring about a transformation of our urban power systems."

The \$800,000 project - funded by Tampa Electric and with a grant from the Florida High Tech Corridor will enable USF to analyze anticipated technical, economic and environmental impacts of using Smart Grid technologies to connect consumer solar array systems to the community's electric grid. It will also serve as a Tampa Electric and USF training tool for a new, high-tech work force in power engineering, the only profession dealing comprehensively with energy issues.

The project is the power company's fifth solar array and symbolizes the company's commitment to clean energy and consumers, said TECO President Chuck Black.

"Tampa electric will learn more about tying small, distributed generation into the electric grid; USF through the power center for utility explorations, will work with Tampa Electric and lead the research on tying renewable energy sources into the electric grid; and the community will get an up-close, hands-on look at exactly how solar power really works," Black said.

Most importantly, project leaders agreed, is that it will highlight the capabilities of solar energy in a setting that speaks to the need for conservation of the planet's limited resources. Key to the project, researchers said, is the education center that will be for many their first introduction into what makes a Smart Grid the future of America's energy landscape.

The center itself will be a showpiece, its design being drawn from elements of student-built models from a grueling, 60-hour competition at USF's School of Architecture and Design. The winning design by the team of Sean Verdecia, Monika Blazernovik, Juan Felipe Sanchez and Joshua Sperduti-Figueroa – was inspired by South African baskets. The students' ideas for the kiosk include using interactive exhibits that would teach students about clean energy and environmental stewardship.

"To build a sustainable energy future we will need new technology, but we also will need education and community engagement," said USF President Judy Genshaft. "This project represents the nexus of those key elements."

The project is slated to be completed in December. Tampa Mayor Pam Iorio heralded it as a significant step forward for the community's understanding of the potential benefits for clean energy.

"We are in the first decade of a century of change," the mayor said. "Much of that change will center on renewable energy for our nation and our world."

Design of a Sustainable Electric Energy Delivery System with a Learning Center

Sustainable Electric Energy Delivery Systems and energy storage technologies may be the next approach to producing and delivering energy near end users. This is illustrated below and is an actual working power production facility in that involved dozens of students, faculty and staff and impacted the community. Several thousand citizens see this site every day, and students use it to monitor system conditions and device performance.





Powerful partnership

Renewable SEEDS is a joint project of the University of South Florida, Progress Energy Florida, the City of St. Petersburg and the Florida High Tech Corridor.

You can be a part of a brighter energy future. Learn about a career as a power engineer at the University of South Florida Power Center for Utility Explorations: <http://pcue.eng.usf.edu>.

Learn more about innovative renewable energy programs from Progress Energy including:

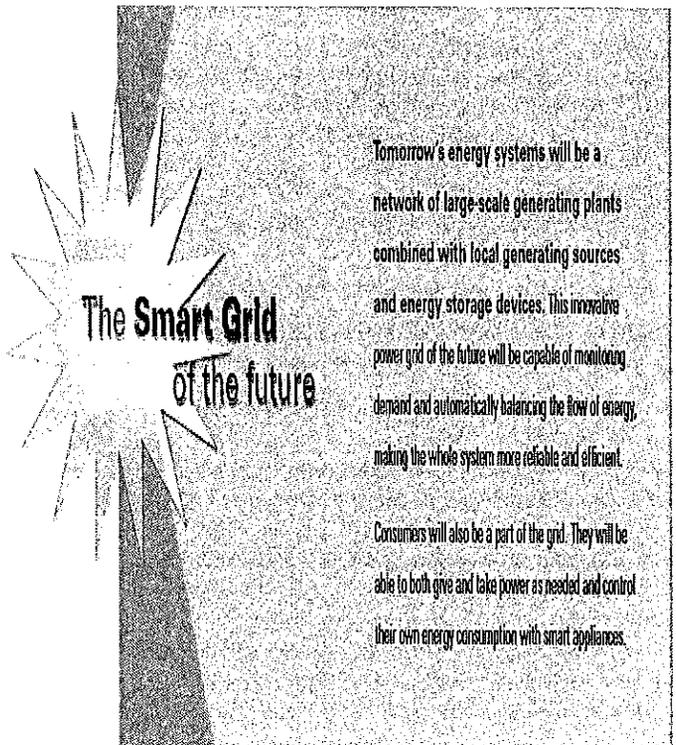
Solar Water Heating with EnergyWise™
Provides incentives for customers to use renewable energy.

SolarWise for Schools™ Allows customers to support renewable energy education programs and the use of solar energy in schools.

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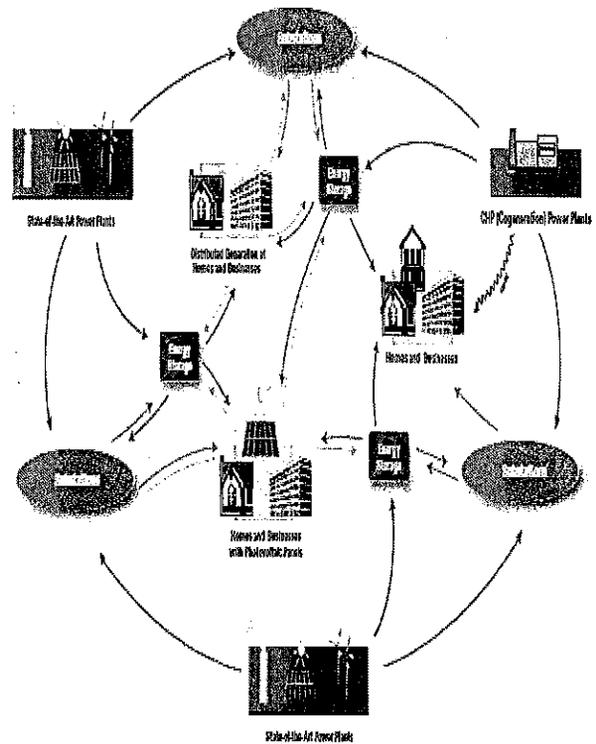


Innovative technology
for tomorrow's
Smart Grid



Tomorrow's energy systems will be a network of large-scale generating plants combined with local generating sources and energy storage devices. This innovative power grid of the future will be capable of monitoring demand and automatically balancing the flow of energy, making the whole system more reliable and efficient.

Consumers will also be a part of the grid. They will be able to both give and take power as needed and control their own energy consumption with smart appliances.





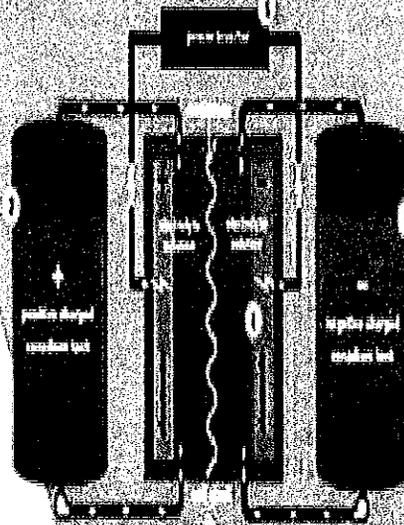
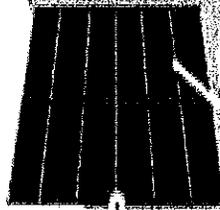
SEEDS

To provide the necessary energy storage for tomorrow's Smart Grid, an exciting advance in energy storage has been developed through a research project called SEEDS - Sustainable Electric Energy Delivery System.

At present, there is no efficient way to store electricity that is compatible with the needs of the Smart Grid. But with this technology, power collected from renewable sources, such as solar or wind, or generated by power plants during periods of low demand could be stored and coded using the naturally occurring element vanadium.

Unlike traditional lead-acid batteries, this technology is scalable to large storage capacity, has a long lifetime and is capable of fast charge and discharge - all of which make it much more suitable to the energy needs of tomorrow's Smart Grid.

How the technology works



1. In high irradiation, photovoltaic panels collect sunlight and convert it into electricity, which then charges the energy storage system.
2. The electricity is stored in an electrolyte solution containing the vanadium ions and tanks, one with a positive charge, the other negative. The charge is determined by the amount of electricity charged particles or "ions" in the solution.
3. Electricity flows the vanadium ions through a red mesh, that is where the majority of energy goes and out of the storage system takes place. Both red and blue vanadium ions and negative half cell separated by a porous membrane.
4. Electricity at the end of the cell stack collect the energy to be stored or delivered.
5. The system is connected to the power grid so that stored energy can be used when needed. It can store more energy produced by power plants during periods of low demand for use during periods of high demand. This process can be repeated as needed to support the Smart Grid.

USF, Progress Energy To Create 'Smart' Way To Use Electricity

URL: <http://tbo.com/northeast-tampa/usf-progress-energy-to-create-smart-way-to-use-electricity-107467>

By TBO.com

Imagine being able to track your electric bill during the month with the touch of a button, adjusting your usage if the bill is getting too high. It would give you more control over your energy costs and take the surprise out of your monthly electric bill. That's one of several energy-saving technologies that will be placed in up to 5,000 homes and businesses in west St. Petersburg and St. Pete Beach in a grand experiment with what has been dubbed "smart grid" technology. Using two-way communications and other new technologies, a smart grid can harness the excess power generated by rooftop solar panels, detect and avoid potential power outages and cycle off power to home appliances during periods of peak demand. A home wired to a smart grid could use power from a neighbor's solar panels instead of a conventional coal-fired power plant. What's more, the home could be programmed to run the water heater and other appliances when electricity is cheapest. Over the next three years, Progress Energy and the University of South Florida will equip homes and businesses with special meters, sensors and switches to create one of the largest smart grids in the nation. A smart grid uses a collection of high-tech gadgets, helping utilities and consumers manage their energy use more efficiently, improve reliability, reduce costs and promote the use of renewable energy. "This will benefit consumers greatly because it enables a whole bunch of strategies to come into play to lower the cost of electricity," said Alex Domijan, director of USF's Power Center for Utility Explorations. While consumers may already use elements of a smart grid, such as a programmable thermostat or planned outages, a true smart grid is a "synthesis of new technologies that make the system flexible," Domijan said. Smart grid technology is a new industry and a major element of President Barack Obama's plan to create jobs and rebuild the nation's economy. At least \$4.5 billion has been dedicated to smart grid projects in the federal stimulus package, and billions more could be steered to smart grid initiatives. The \$15 million project between USF and Progress Energy includes a \$1.4 million grant from the Florida Energy and Climate Commission, charged with developing a strategic energy plan for the state. Progress Energy, Publix and HD Supply, a distributor of smart grid technologies, are financing the rest of the project. The project will include the use of biodiesel generators at one Publix supermarket. In addition to generating renewable power, those stores could remain open if power was knocked out by a hurricane. The project will also enable homeowners to track their energy costs in real time, using smart meters that allow the utility to monitor a home's energy usage. "They won't have to wait for that monthly bill," said Kent Hedrick, manager of Progress Energy's smart grid initiative. "They will be able to see any time they want just how much electricity they have used and how much it will cost them at that point and time. "Eventually, the utility could begin offering its customers a series of rates that fluctuate during the day, giving them the option of using power when it is cheapest. "At night, we may be able to offer a lower rate than what we would in the afternoon when we have higher demand," Hedrick said. The same collection of technologies will enable the utility to distribute power more evenly across the grid, pinpoint overloaded power lines and avoid power outages. "It will be able to see load picking up," Hedrick said. "With that intelligence and two-way communications, we will be able to take quick action to balance that load and maintain that grid in its most optimal configuration every hour of every day. "If a storm does knock out power, a smart grid can tell the utility almost immediately where the outage is. "We would be able to restore power quicker," Hedrick said. Right now, the grid carries electricity in one direction, from the power plant to your home or business. A smart grid is capable of reversing the flow of power, enabling every home and business that generates electricity to take the power they are not using and place it on the grid for someone else to use. Or, they can store the power in batteries for future use. "If they're not using energy, they're potentially a virtual power plant," Domijan said. So far, smart grid projects have been confined to small areas with a few thousand customers. But Progress Energy is confident the technology can be duplicated on a large scale to serve millions. In fact, the project marks the beginning of a much larger expansion by Progress Energy. Hedrick said the utility plans to incorporate smart grid technology in its most populated service areas, including Orlando and Pinellas County, over the next 10 years. "It will provide opportunities to the customer that they would not be able to do today," he said. "It also provides us another tool to optimize the grid. "A national upgrade, however, would take many years and cost billions of dollars. Domijan said the cost

would be offset by the long-term savings created by smart grid efficiency. Power outages, he said, cost businesses billions of dollars each year and smart grid technologies would eliminate most, if not all, of those disruptions. "It's not just pie-in-the-sky thinking," he said. "These are things we can do in a relatively short time to benefit a wide range of people on many economic levels."

The Buffalo News, April 19, 2014

The following article is an overview published in the Buffalo News of the community engaged activities the Power Center for Utility Explorations and Global Energy Institute are involved with to redevelop the downtown area of the city of Buffalo, New York with a holistic approach to energy, transportation, health and economic issues.

Smart energy plan will chart our future

By Jay Burney

<http://www.buffalonews.com/opinion/viewpoints/smart-energy-plan-will-chart-our-future-20140419>

In January, Gov. Andrew Cuomo's Energy Planning Board released the Draft New York State Energy Plan. The stated purpose of the plan is "to set forth a vision for New York's energy future that connects a vibrant public sector market with communities and individual customers to create a dynamic clean energy economy."

The plan's website – <http://energyplan.ny.gov/> – says, "New York envisions a flexible and clean energy system that empowers communities and customers to receive the reliability and affordability that they value." Public comments close on April 30.

This plan is important because it creates a blueprint for investment by the private and public sector that will shape our energy sources, use, infrastructure and institutional framework for generations to come.

This affects each of us in ways that we may only be beginning to realize. It will impact energy prices for consumers. It will help to define the profitability of various energy strategies. It will establish how we create, distribute and use energy. It will effect growth, development and, most importantly in this time of rapid climate change, how economic and energy policies will impact our environment and natural resources.

The plan addresses issues based on 13 outlined initiatives:

- Realigning energy-efficiency strategies with markets.
- Enabling new energy business models.
- Establishing and implementing building codes and standards.
- Establishing a \$1 billion Green Bank to "unlock and mobilize private sector capital."
- Coordinating renewable energy policies and strategies.
- Updating and modernizing delivery systems and infrastructure.
- Supporting community-based energy planning.
- Accelerating security on critical infrastructure.
- Reducing reliance on petroleum-based heating products.
- Encouraging more customer choices and control of energy usage.
- Providing improved information and access to energy data.
- Increasing transportation alternatives.
- Bringing innovative information technology to transportation system users.

The state held six public hearings, including one in Buffalo, at which speakers identified several important issues. There has been emphatic concern from citizen groups that are opposed to high-volume hydraulic

fracturing. While the plan does not directly focus on fracking, many speakers have said they think the plan is a blueprint for the creation of more natural gas use and infrastructure.

An analysis released by AGREE New York (Alliance for a Green Economy), titled “More Gas than Teeth: Problems with the NYS Energy Plan,” says the “document is not a plan, but rather relies on forecasts made in the absence of planning. These forecasts accept a dismal baseline of anemic growth in renewable energy while predicting major growth in natural gas. Instead of relying on passive forecasts, Governor Cuomo’s energy plan should proactively chart a course for the future, bucking trends as necessary with aggressive targets for renewable energy that will free New York of its addiction to fossil fuels.”

According to AGREE, one portion of the draft plan forecasts that natural gas produced in New York will “conservatively” triple by 2030 with the lifting of the state’s current moratorium on fracking. AGREE also says the draft plan only commits to measuring the reduction on one greenhouse gas, carbon dioxide. “This ignores the significant impact of methane, the primary component of fracked gas.” According to the Intergovernmental Panel on Climate Change, which recently released a devastating analysis of coming climate changes, methane is 34 times more potent a greenhouse gas than carbon dioxide over 100 years.

Supporters of non-fossil-fuel-based renewables, such as wind and solar development, point out that the plan may not be aggressive enough, in the context of both climate change and opportunities to move away from fossil-fuel dependency.

Lynda Schneekloth, chairwoman of Sierra Club Niagara Group, cites a report by Stanford University scientist Mark Jacobson published in the journal Energy Policy last year.

“There can be a clear path to making New York 100 percent renewable within a short time frame such as outlined in the Jacobson plan,” Schneekloth said. “A New York State Energy Plan based on renewables would produce jobs, stabilize electricity prices, reduce energy demand, greatly improve the health of New York State citizens and stop contributing to global climate destabilization. We would like New York State to address the goals and strategies of the Jacobson plan, which are conspicuously absent from the New York State Energy Draft.”

But Don Duggan-Haas, director of Teacher Programming at the Paleontological Research Institution based in Ithaca, said the state’s energy plan has a lot of good things in it. He notes that it promotes reduced consumption and conservation.

“All large-scale energy production and use is bad for the environment. The single most important thing that can be done to reduce environmental harm is to use less energy. Many of the things that reduce consumption also reduce cost, so it is a win-win.”

A model for promoting many of the strategies outlined in the draft plan is the Buffalo Niagara Medical Campus. President and CEO Matthew Enstice and his team are leading the way toward creating economic and community-building strategies that work. The campus is at the center of an energy-intensive, high-tech development project. The project works with downtown neighborhoods, high-profile partners and helps to coordinate high-stakes infrastructure development. This all represents thousands of current and future jobs, transportation initiatives, energy use and distribution, and the quality of life of the surrounding Fruit Belt and Allentown neighborhoods.

How this is all coordinated, achieved and progresses matters. The Medical Campus and its innovative leaders are at the core of how the Buffalo of tomorrow will be characterized.

“We are building a model for similar urban energy hubs throughout New York,” Enstice said. “We are right now focused on energy-efficiency strategies and building relationships that benefit our partners, including the community, the city, the region.”

The Medical Campus has 11 partners, including Kaleida Health, Roswell Park Cancer Institute and the University at Buffalo.

“Industry partners are key to making our vision a reality. It was the leadership of National Grid at the highest level that committed to make our campus and community the energy and utility model of the future,” Enstice said. “Because of our strong relationship with National Grid, we have been able to attract industry partners like General Electric, Toshiba, U&S Services and others to help work on integrating efficiency, modernizing the grid, transportation management and renewable energy opportunities.”

One of the most important parts of the energy strategy is the “energize BNMC” collaboration with National Grid, Terrapin Bright Green, the Global Energy Institute and the UB Power Center for Utility Explorations, which are providing opportunities for research and innovation in green infrastructure development. This includes electric vehicle power stations, significant attention to alternative transportation, including bike-friendly amenities, and a smart-home energy retrofit that will demonstrate how a turn-of-the-century home can be brought to modern standards. The campus is also working with Goodwill Industries and has created a “Green Team” to promote workforce development.

A recent award formed through a public/private partnership to evaluate the electric grid of the Medical Campus and the surrounding neighborhoods is one focus.

“We need to make sure that the grid meets the needs of our high-tech urban business campus and neighborhoods, is modern, high-quality, reliable and resilient. Our industry partnerships are making a huge difference,” Enstice said.

In addition, the campus has onsite advanced power system elements, including photovoltaic arrays, wind generation and energy storage systems.

“We think that these boost local economic development by creating a more attractive and inviting place, lowering costs for potential tenants and creating a place where companies will want to locate,” he said.

Efficient and cost-effective transportation strategies, including bike and car sharing, and working with employees and partners of the campus on public transportation issues, are fundamental to the success of the Medical Campus.

“We have a potential of 17,000 people working and going to school on the BNMC campus in the next few years. We have to find a way to efficiently get them to and from downtown,” Enstice said. “Working with local and state agencies, the NFTA and Go Bike Buffalo are critical to our being able to ensure that we have a workable campus that people can travel to and from and move around on.”

The Buffalo Niagara Medical Campus is a modern, energy-efficient, business- and community-based model for economic development that should inform both the pragmatics of the state’s energy plan and become a positive flag waver for investment, development, innovation and a common-sense approach to building critical infrastructure.

The future of New York begins with a good energy plan for the state. Attention to the informed comments and critiques of the plan can only make it better.

European Union – Distributed Electric Energy Partnership (EU-DEEP) and Joint Programs with the Polytechnic University of Valencia (UPV)

UPV has a long established partnership with the Power Center for Utility Explorations in which facilities are shared with their Energy Institute as well as courses and a dual degree program. Many students and faculty researchers have been part of this joint venture, and one effort was conducted under the EU-DEEP study. EU-DEEP was a 45 M€ research project involving 42 partners from 16 countries, whose objective was to detail the conditions under which all participants will be able to cope with the growing demand for Distributed Energy Resource (DER) units in Europe. Firstly, the project has identified the current “hosting capacity” of the electrical power system and the conditions that will enable this to be increased at an acceptable cost. Following this, an in-depth economic analysis of DER reveals that they can provide significant added value for the electrical system when they comply with network design constraints and contribute, in a reliable way, to better management of peak consumption. Using three aggregation business models extensively tested in the field, the project highlights the most promising directions to take from now on, to ensure efficient and sustainable integration of DER in the current electrical power system. The main involvement of UPV was in Work Package 1, Demand description and modeling where over a sample of 80 million customers in Europe, the customer demand was analyzed and segmented according to its suitability to support Distributed Energy Resources and Demand Response to facilitate the sustainable development of the electricity sector. Modeling tool examples are shown below developed in part by researchers residing at the PCUE.

Further, over 30 credits of on-line courses have been developed.

**INTERACTIVE MODELLING TOOL
DYNAMIC MODELLING SCENARIOS**

Photovoltaic system
CHP System
Autonomous Generation

The image displays several overlapping screenshots of an industrial modeling software interface. The main window is titled "INDUSTRIAL MODELLING: MANUFACTURE OF PAPER AND PULP". It features a "Main Menu" and a "Data Base" section. A prominent table shows "ELECTRICALLY GENERATED ENERGY" with columns for "ELECTRIC POWER (kW)", "ELECTRICITY", "PULP PRODUCTION", "PAPER MAKING", and "CUTTING AND FINISHING". The table includes data for "Covered with CHP (%)", "Demand from customer (kWh)", and "Covered with CHP (kW)".

Other visible windows include "CHP system parameters" with fields for "Thermal needs (kW)", "CHP technology selection", and "CHP system operational schedule". A "Photovoltaic system" window shows a graph of "Power generation (kW)" over time, with a peak around 1000 kW. A "Data Base" window lists various parameters and their values.

Vision for the SDSU College of Engineering with Candidate Accomplishments

Prepared in support of Application VPAA#75 for Associate Dean of Engineering by Alexander Domijan, Jr.

A. Current status of the COE - Starting the conversation on forming a strategic plan and action items

SDSU is a comprehensive Carnegie classified RU/H with a high impact college of engineering (COE) that has outstanding faculty that care about producing diverse students to become innovators. If a SWOT analysis of the COE were conducted, it may show, in summary, 1. strengths as noted above plus the commitment by stakeholders to move COE forward as a team, 2. weakness in number of faculty and critical mass to grow in key areas, 3. opportunities to expand and be aligned with the overall SDSU Building on Excellence strategic plan, and to engage strategically with industry, community partners, state and federal agencies, and 4. threats are in reductions in state and federal funding, student enrollment, retention and completion, and being mid-sized the strategies to leverage capabilities become more important to do right the first time.

B. Potential Straw-man Vision for the COE

A draft vision, which would require consensus building with faculty, staff, students and stakeholders, may be: Our vision for the COE is to have our programs make a meaningful difference for our students and citizens in all walks of life, establish a nurturing environment for the blossoming of creative activity, and see to it that our activities are a catalyst for economic prosperity and engagement with the community, state, and nation. COE will become "among the best mid-sized colleges" focused on engineering, with substantial STEM, and integrated educational and translational research programs established.

C. Accomplishments of the Candidate in support of Potential Roadmap Strategies to achieve the Draft Vision

The establishment of the vision is a "collaborative process" in which we describe our direction at some point in the future and is a key function to promote as well as support the overall institutional strategic plan as appropriate to the institution's mission. This candidate would approach the development of a vision for the COE with the involvement of faculty and staff, key stakeholders, students, institutional leadership, and information gathering both internal and external so that the COE aligns with the SDSU Building on Excellence strategic plan to foster student learning, quality, access and maximize resources. Below are potential strategic directions for the COE, along with items accomplished by the candidate in bulleted format in support of these strategic efforts, which are intended to be straw-man roadmap initiative ideas for discussion (the three SDSU Building on Excellence strategic plan goals are capitalized in parenthesis followed by potential COE directions aligned with the SDSU directions):

Strategic Direction 1 - (STUDENT SUCCESS) We provide learning innovations with a personal touch: Our academic efforts in the COE are directed by caring faculty personally involved inspiring students to be lifelong learners. We work hand-in-hand with students so they are ready from day-one upon graduation to contribute their expertise to employers, become entrepreneurs and leaders in society. The COE is the place where knowledge gets both taught and made. The following accomplishments of the candidate may be used as examples to realize strategic direction 1.

- Building STEM based educational pipelines (formed educational pipeline programs funded at \$12M producing 750 students and 150 internships in three years)
- Building international partnerships (established dual degree programs and international exchanges)

Strategic Direction 2 – (RESEARCH AND CREATIVE ENDEAVORS) We provide nimble academic programs united with translational research: Leveraging our strengths, yet being nimble to address new challenges, our "academic programs united with applied research" are producing transformative results having a local community, regional and national impact. The following accomplishments of the candidate may be used as examples to realize strategic direction 2.

- Building capabilities to solve grand challenges (developed over \$20M in programs impacting millions of citizens)
- Building bridges institutionally (developed a holistic approach with several units to bring faculty together in strategic strengths)
- Building institutional capabilities (leading over \$25M in research for 110FTE faculty, research events, seed funds, promotion & tenure evaluations, strategic planning, giving, mentoring, hiring staff to help faculty succeed)

Strategic Direction 3 – (COMMUNITY AND COMMUNICATIONS) We provide real-world solutions for our region: We partner with the community, government and industry to be civically engaged and committed to providing real world solutions. The following accomplishments of the candidate may be used as examples to realize strategic direction 3.

- Building a vision and strategic plans to be community/nationally engaged (established learning center impacting 1.5M citizens, planning for smart cities, formed gateway for workforce development)
- Building Entrepreneurship (leadership of multiple organizations, tech transfer and patent, lead by example)

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