

August 31, 2014

Associate Dean Search Committee Chair,

Please accept the attached materials as my expressed interest in the position of Associate Dean of Engineering at San Diego State University. I believe that my diverse experiences have given me the right balance of multidisciplinary skills that would allow me to provide the necessary vision and leadership to orchestrate the College's attainment of the ideals outlined in the University's Strategic Plan, Building on Excellence. I would contribute to its realization through assuring student success, advancing research and creative endeavors, and focusing on community engagement and effective communication.

Attainment of the goals outlined in the Strategic Plan on such an aggressive timeframe requires laser-like focus and enactment of the resource and revenue plans. As Associate Dean, much of my initial effort would be targeted towards establishment of the research endowment, engaging undergraduates in sponsored research, and a focus on attracting and retaining high-performing faculty. This requires a strategy for acknowledging and rewarding high achievement and cross-disciplinary activity leading to continued funding and high-impact scholarly publications. I would accomplish this by building upon the strengths of the current faculty and research centers while working with the Dean and VPR to encourage expansion of research in critical arenas. This would include providing continued professional and scholarly development opportunities to current faculty, and subsequently by working with the Dean and Department Chairs to attract and retain dynamic and productive new faculty in strategic disciplines.

Speaking to the diversity of my engineering background, I am in my 20th year as a Professor of Civil Engineering, am licensed as an Environmental Engineer, have degrees in Chemical and Biochemical Engineering, hold graduate faculty status in Mechanical Engineering as well as Chemical and Biomolecular Engineering, and serve as the National Secretary of the Institute for Biological Engineering. My extensive inter-disciplinary experiences and industrial relations will serve me well as I support the faculty in SDSU's College of Engineering in the new paradigm of externally supported research that often requires collaboration from engineering, the natural and life sciences, business, the social sciences and industrial partners leading to discovery, technology transfer and commercialization.

Summarizing my career to date, I received my Ph.D. from the Department of Chemical and Biochemical Engineering at Rutgers University in 1995. I have been employed as a faculty member in Civil Engineering at Ohio University (OU) since; holding a joint appointment with Chemical Engineering for the first six years. I have served as Executive Director of the Institute for Sustainable Energy and the Environment, and as Director of the Biofuels Research Laboratory in the Russ College of Engineering and Technology for the past six and eight years, respectively. Our research in algal biofuels has led to three patents, as well as my participation as CTO in ECO₂Capture, a start-up company focusing on developing and integrating enabling technologies in the algae cultivation and air pollution control markets.

Regarding my research accomplishments, I have been a PI/co-PI/co-I or Principal Scientist on nearly \$21M worth of externally funded research projects (almost \$15M since 2008). I have collaborated with over 30 faculty members from ten departments in four colleges on sponsored research, and have served on 64 dissertation/thesis committees for students from seven departments. I am currently serving as PI on a 4-year, \$1.9M NSF award, and as co-I on a 2-year, \$1.93M RPSEA award. The above efforts also include serving as Principal Scientist for Algaeventure Systems' \$6M project funded through ARPA-E; part of which was accomplished through a 14-month faculty fellowship leave (sabbatical) to oversee the on-site prototype and process-scale equipment research, development and commercialization efforts.

External sponsors of my research have included federal agencies (NSF, USDOE, USEPA), state agencies (Ohio Third Frontier – Ohio's Office of Technology Investments, ODNR, OCDO, OAQDA) and industrial partners (Algaeventure Systems, MAR Systems, AEP Service Corporation, R&F Coal Company, Air Products & Chemicals Inc.). Additional collaborators I have worked with through consulting activity over

the past ten years include NASA, Faraday Technology Inc., URS Corporation, United Environment and Energy LLC, and the Center for Applied Energy Research (CAER) at the University of Kentucky.

I currently serve the OU Faculty Senate as Chair of the Finance and Facilities committee which includes responsibilities on the Resources Subcommittee of the OU Board of Trustees, as Faculty Representative on the University Budget Council, and as co-chair the University Benefits Advisory Committee. I also currently serve as a member of the University Council for Research, Scholarship and Creative Activity, as a member of the University Facilities Planning Advisory Committee, and am currently serving on two master planning efforts, including the selection of a consultant for the University Comprehensive Master Plan. I previously served as co-Chair of the Presidential Advisory Council for Sustainability Planning; directing the creation of a campus-wide Sustainability Plan and facilitating the completion of our Climate Action Plan. I also previously served as Faculty Advisor for the Society of Women Engineers for ten years and was an Instructor for our Women and Minority Men in Engineering and Technology summer programs for high school students. I also served as Civil Engineering ABET program assessment coordinator for five years (including one year as the CE Department Assistant Chair) prompting me to serve ABET and ASCE as a Program Evaluator Volunteer (PEV) for the past six years.

Thank you for your careful review of my materials. Enclosed you will find a statement addressing my academic administration philosophy, a list of seven references, and my curriculum vitae. I would be happy to provide more detailed information regarding any of my qualifications and/or experiences at your request. Please feel free to contact me with any questions or concerns you may have.

Sincerely,

A handwritten signature in black ink that reads "Ben J. Stuart". The signature is written in a cursive style with a large, stylized "S" and "T".

Ben J. Stuart, Ph.D., P.E.

Executive Director, Institute for Sustainable Energy and the Environment
Director, Biofuels Research Laboratory
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Academic Administrative Philosophy

My core belief regarding the academe is that the administration, faculty and staff have the primary responsibility to develop evolving learning and research environments that foster the highest probability for academic and professional success in the students we serve. The continuous push for excellence in our students requires an even higher level of passion and dedication from the administration, faculty and staff as we embody those expectations and serve as tangible examples of accomplishment, significance, and integrity through unquestioned character and a fervent work ethic.

It is the primary responsibility of the administration to create an academic and business model that facilitates this mission, and it is obvious that the members of the College of Engineering community at SDSU espouse a similar ethos and are committed to the hard work necessary to establish a national reputation of academic and research excellence. Realization of these goals requires the delineation of consensus metrics that inform the national assessment and are consistent with the university strategic plan, and the development and execution of defined actions that attract the basis support necessary to ensure their timely attainment. As the College has committed to an ambitious strategic plan that includes expansion of high quality research, it becomes incumbent upon all members in the Office of the Dean to demonstrate the leadership to inspire and facilitate attainment of the goals.

The Associate Dean is a position representative of, and responsive to, the faculty as a whole; serving both the faculty and the Dean to advance the research missions of each department and research center, ultimately to enhance the national reputation of the college and university. In that light, the principal role of the Associate Dean is to inform, encourage and facilitate the research and commercialization efforts of each department and center, allowing the faculty to focus on advancing their scholarly activity through investment in those they teach, advise and mentor.

This requires the Associate Dean to know the strengths of each research center, lab and faculty member to facilitate individual and group accomplishments that satisfy college metrics, while providing opportunities for faculty to develop the new skills required to realize successful (i.e. long and productive) academic careers. Applied to the college as a whole, this is best accomplished by harnessing the strengths of each faculty member in an orchestrated effort to efficiently address the various avenues by which the research mission is fulfilled. Valuing and encouraging the unique contributions of each research unit, while providing opportunities for continued cross-disciplinary professional and scholarly development, requires getting to know the character and attitudes of each research-active faculty member and research center/lab, and would be a critical early priority for me as Associate Dean.

This is especially true for probationary faculty as their development necessitates multifaceted success that must be balanced in a way to assure longevity and prominence in their academic careers, while forging new frontiers in research accomplishment. This must be directed in a way that contributes to the advancement of the national reputation of the College and ultimately, the University community as a whole. As Associate Dean, one strategy I would employ is to work with the Chairs and Center Directors to establish an active mentoring program utilizing successful senior faculty members and industrial collaborators (via summer research fellowships) as a means of accelerating the development of the skills of new faculty to attract and execute external research contracts. I would also work with College and University administration to establish support vehicles for junior faculty to assist in securing targeted funding opportunities (e.g. NSF CAREER awards) through specific activities such as participation in NSF grant review service, proposal and budget preparation workshops, and the development of competitive proposals utilizing appropriately trained college and/or university support staff.

The Associate Dean needs to be an excellent communicator, responsive to requests and concerns, and fully understand the resources at their disposal to prioritize and accomplish their duties professionally

and expeditiously. The Associate Dean must also be viewed across all constituents as possessing and demonstrating impeccable character with regard to both personal and professional ethics. Professional service/activities that speak to other's perception of my integrity include the fact that I was asked to serve as a charter member of the Russ College Faculty Academic Honor Council, was charged with developing our department's ethics course which I taught seven times in six years, served a three-year term on the advisory board of the Russ College's Robe Leadership Institute, and have covered the ethics topic in the college's FE review course on numerous occasions. Even among individuals with whom I may often espouse a contrary opinion, I am proud to say that my integrity and motives have never been questioned. It is often during times of disagreement that true leadership becomes most evident in the form of conflict avoidance and, only when necessary, conflict resolution.

I recently participated in an Academic Engineering Leadership Workshop sponsored by the American Society for Engineering Education. A prerequisite for the workshop was the completion of the Clifton StrengthsFinder assessment; an evaluation tool that considers a series of decision making tendencies to identify an individual's top five leadership themes. The 34 possible themes naturally cluster into four domains; Executing, Influencing, Relationship Building, and Strategic Thinking. While some leaders possess themes from each domain, many of the most respected leaders demonstrate multiple themes from a single domain, effectively engaging team members with strengths in complementing domains to fully execute the overall mission of the group. The top five themes (and their respective domains) identified in my assessment were:

- **Learner (Strategic Thinking)** – have a great desire to learn and want to continuously improve; in particular, the process of learning, rather than the outcome, excites them;
- **Arranger (Executing)** – can organize, but also have a flexibility that complements this ability; they like to figure out how all of the pieces and resources can be arranged for maximum productivity;
- **Connectedness (Relationship Building)** – have faith in the links between all things; believe there are few coincidences and that almost every event has a reason;
- **Harmony (Relationship Building)** – look for consensus; don't enjoy conflict; rather, they seek areas of agreement;
- **Relator (Relationship Building)** – enjoy close relationships with others; find deep satisfaction in working hard with friends to achieve a goal.

This assessment would indicate my strongest skills lie in establishing and building healthy relationships, uncovering continuous improvement pathways, and organizing an optimal process to realize that vision. As Associate Dean, I would apply these skills in building relationships with all constituents (administration, faculty, staff, students, industrial advisory board members, employers, federal/state/local/industrial/private funding agencies, etc.), work with them to implement the strategic plan over the next several years, and set about on the path to engage those in my sphere of influence to bring the vision to fruition. I would also use this (or similar) assessment tool(s) to identify leadership strengths, personality traits and learning/teaching/management styles in those constituents engaged in the execution of the strategic plan to construct the most efficient and effective teams for advancing the academic and research reputations of the College of Engineering, and in as much the entirety of the SDSU community.

List of References

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WED 5/11 - FR 2/13/15

BEN J. STUART

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EDUCATION:

Rutgers, The State University of New Jersey, Piscataway, N.J. 08855-0909

Ph.D., Chemical and Biochemical Engineering, October 1995

Dissertation: *Transport of Microorganisms in Soil and Groundwater Systems*

M.S., Chemical and Biochemical Engineering, May 1993

Thesis: *Characterization of MWC APC Residues as a Function of Particle Size*

B.S., Chemical and Biochemical Engineering, May 1990

REGISTRATION:

Registered Professional Engineer, State of Ohio Registration Number E-63367

ACADEMIC/ADMINISTRATIVE POSITIONS (Ohio University, Athens, OH)

Executive Director:	Institute for Sustainable Energy and the Environment (ISEE)	6/08 to Present
	<ul style="list-style-type: none">• Provide administrative oversight for member Centers and Laboratories<ul style="list-style-type: none">- Ohio Coal Research Center- Center for Air Quality- Sustainable Energy and Advanced Materials Laboratory- Biofuels Research Laboratory• \$16.9M in externally funded research expenditures in the past five years• 15 Affiliated Faculty from eight departments in three colleges• Professional staff include Assistant Director, Lab Coordinator, Research Engineer, Analytical Chemist, Budget Manager, Postdoctoral Research Associates• 34 graduate students have received degrees and 98 undergraduate students have worked in the ISEE/OCRC/CAQ laboratories in the past five years	
Director:	Biofuels Research Laboratory	6/06 to Present
Assistant Chair:	Department of Civil Engineering	7/05 to 6/06
Professor:	Department of Civil Engineering (joint appointment with Chemical Engineering 9/95-9/01)	9/95 to Present (includes Asst./Assoc./Full)

ADMINISTRATIVE SERVICE:

- Senator, Ohio University Faculty Senate, 2012-2015
 - Chair, Finance and Facilities Committee, 2013-2015
 - Chair, Responsibility Centered Management (RCM) Liaisons
 - Co-Chair, University Benefits Advisory Committee
 - Faculty Representative, Ohio University Board of Trustees' Resource Committee
 - Member, University Budget Planning Council
 - Member, Executive Committee, 2012-2013
- Member, Council for Research, Scholarship and Creative Activity, 2012-2014
- Member, Comprehensive Master Plan Consultant Selection Committee, 2014
- Member, Ridges Master Plan Committee, 2013-2014
 - Chair, Existing Buildings Strategy Subcommittee
 - The Ridges is a 700 acre site owned by Ohio University which formerly housed the Athens Lunatic Asylum in 700,000 GSF of buildings in the Kirkbride design dating from the 1860's
- Member, Facilities Planning Advisory Committee, 2012-2014
- Co-Chair, Presidential Advisory Council for Sustainability Planning, 2009-2012
 - Guided the development of the University's Sustainability and Climate Action Plans

EXTERNAL RESEARCH GRANTS:

- Planning Grant: I/UCRC for the Sustainable Use of Greenhouse Gases, NSF, March 2014, \$11,500.
- Cost-Effective Treatment of Flowback and Produced Waters via an Integrative Precipitative Supercritical (IPSC) Process, with J. Tremblay (PI), N. Kruse and D. Bayless, U.S. DOE's Research Partnership to Secure Energy for America (RPSEA) program, July 2013, \$1,921,324.
- LGIF PerCo Biogas Feasibility Study, with S. Miller and J. Glazer, Ohio Development Services Agency, March 2013, \$43,857.
- Sustainable Housing through Holistic Waste Stream Management and Algal Cultivation, with G. Riefler and A. Chimeli, NSF Sustainable Energy Pathways Program, September 2012, \$1,900,000.
- Demonstration of Advanced Polymer Membranes for Algal Growth Enhancement, with D. Bayless and R. Johnson, awarded to ECO₂Capture of Ohio, Inc., State of Ohio Third Frontier Technology Validation Start-up Fund, April 2012, \$100,000.
- Ohio Biorefining Project, with D. Bayless (co-PI), U.S. DOE, July 2010, \$951,500.
- Center for Algal Engineering Research and Commercialization, with D. Bayless (PI), G. Riefler and M. Vis, State of Ohio Third Frontier Wright Projects Program, May 2010, \$2,970,063.
- Low Energy Harvesting and Dewatering of Microalgae, with R. Youngs (Sr. Project Mgr.), J. Cook, D. Coho and T. O'Brien, U.S. DOE (ARPA-E), awarded to Algaeventure Systems, January 2010, \$5,992,697.
- Subaward to Ohio U.:** Low Energy Harvesting and Dewatering of Microalgae, with D. Bayless and G. Riefler, U.S. DOE (ARPA-E) via sub-contract from AVS, January 2010, \$545,444.
- Towards Sustainable Farming in Southeastern Ohio: The Sunflower Project, with D. Mitchell, Sugar Bush Foundation, September 2008, \$76,890.
- Development of Sustainable Biorefining, with D. Bayless (co-PI), U.S. DOE, August 2008, \$984,000.
- Evaluating Sorbent Potential for Arsenic Removal from Water, MAR Systems, June 2006, \$31,687.
- Microbiological Assessment of the Linden AMD Bioremediation System, with G. Riefler (PI) and P. Coschigano, Ohio Department of Natural Resources (ODNR), January 2006, \$46,000.
- Distributed Hydrogen Production, with D. Bayless (PI), G. Botte, G. Kremer, M. Prudich and S. Rackey, U.S. DOE, September 2005, \$1,091,000.
- Little Leading Creek Sediment Study – Flooding Mitigation Portion, with G. Riefler (PI) and T. Chang, ODNR, July 2005, \$61,662.
- Little Leading Creek Sediment Study – Habitat Portion, with G. Riefler (PI) and T. Chang, Meigs County Soil and Water Conservation District, April 2005, \$54,367.
- A Watershed Classification System and Geomorphic Tool to Predict Habitat Variables in the Western Allegheny Plateau Ecoregion: Toward Refined Biocriteria and Stressor ID of Impaired Streams, with E. Rankin (PI), J. Dyer, K. Johnson, D. López, G. Springer, M. Stoertz, M. Vis and C. Yoder, US EPA STAR Grant, Aug. 2004, \$869,440.
- Assessment of the Simmons Run AMD Treatment Wetland, with G. Riefler (PI), ODNR, April 2004, \$63,804.
- Adaptation of Fuel Cells for Use with Gasified Coal and Biomass, with D. Bayless (PI), G. Botte and G. Kremer, U.S. DOE, September 2003, \$1,926,744.
- Plasma-Enhanced Membrane Electrostatic Precipitation for Capture of Air Toxics, with Dave Bayless (PI), Ohio Air Quality Development Authority, \$50,000.
- Capture of Air Toxics by Wet Membrane-Based Precipitation, with D. Bayless (PI) and L. Shi, Ohio Coal Development Office, September 2002, \$60,000.
- Adaptive Full Spectrum Solar Energy Systems (University of Nevada Reno is the lead institution on a \$3,085,000 project), with D. Bayless (PI) et al, U.S. DOE, June 2001, \$199,000.
- Enhanced Practical Photosynthetic CO₂ Mitigation, with D. Bayless (PI), G. Kremer and M. Vis, U.S. DOE, September 2000, \$1,075,100.
- Surface Water Contaminant Modeling and Continued Water Quality Monitoring at Broken Aro Mine, ODNR, July 1999, \$72,364.

Influence of Acid Mine Drainage on the Robinson Run Subwatershed, ODNR, July 1999, \$51,620.

Influence of Underground Mines and the Misco Gob Piles on the Black Fork/Ogg Creek Subwatershed, with M. Stoertz, K. Edwards and D. Lopez, Perry Co. Soil and Water Conservation District, January 1999, \$195,744.

Groundwater Flow Characterization and Water Quality Assessments at Broken Aro Mine, with K. Edwards and M. Stoertz, American Electric Power Service Corp., Division of Civil and Mining Engr., July 1998, \$40,225.

Impact of Flue Gas Desulfurization Sludge Mine Seal at Broken Aro Mine, with K. Edwards, R&F Coal Company, Inc., September 1997, \$53,900.

Preliminary Water Quality Assessment at Broken Aro Mine, with K. Edwards, R&F Coal Co., April 1997, \$7,081.

Data Collection, Monitoring, and Watershed Characterization for the Unnamed Tributary to Moxahala Creek, with K. Edwards (PI), M. Stoertz and M. Ahmad, ODNR, November 1996, \$121,032.

Leaching Behavior of Facing Bricks Containing Treated Waste, with D. Kosson (PI), Air Products & Chemicals, Inc., March 1991, \$19,893.

EDUCATIONAL, INTERNAL RESEARCH, AND EQUIPMENT GRANTS:

Anaerobic Digestion System for Multiple Services: Energy, Greenhouse Gas Reduction, Waste Remediation, Fertilizer, and Economic Returns, with Sarah Davis (PI), 1804 Fund, Ohio University, August 2014, \$75,000.

Increasing Algal Commercial Viability via Enhancing Growth Productivity, with D. Bayless, Ohio University Technology Gap Fund, June 2011, \$48,219.

Producing Omega-3 Fatty Acids from Phototrophic and Mixotrophic Algae, with D. Bayless, Ohio University Technology Seed Fund, June 2011, \$24,644.

ABET Accreditation Support Services for University of Anbar Engineering Curriculum Development Project, with S. Sargand (PI), G. Mitchell, E. Steinberg, A. Russ, G. Kremer, C. Vassiliadis, ResoluteCM LLC, April 2010, \$515,619.

Biodiesel Production from Algal Biomass Feedstocks, the Ohio University Foundation, the Vice President for Research, and the Institute for Sustainable Energy and the Environment, Ohio University, June 2006, \$80,000.

Construction of a Biodiesel Production and Analysis Laboratory, the Vice President for Research, Ohio University, February 2006, \$50,000.

Sediment Transport in Little Leading Creek, Voinovich Ctr. Undergrad. Rsrch. Scholars Program, May 2005, \$3,000.

Pilot-Scale Waste Grease Processing Facility for the Production of Biodiesel Fuel, Institute for Sustainable Energy and the Environment, and the Russ College of Engineering and Technology, Ohio University, May 2004, \$20,000.

Support for Ohio University's Participation in the 2004 WERC National Design Contest, with N. Kruse, Provost Undergraduate Research Fund, Ohio University, October 2003, \$500.

Support for Ohio University's Participation in the 2003 WERC National Design Contest, with J. Morrison, Provost Undergraduate Research Fund, Ohio University, March 2003, \$1,270.

Greenhouse Gas and Nitrogen Emissions Bioremediation Using Applications of Translating Slug Flow, with D. Bayless, G. Kremer, M. Prudich, and M. Vis, 1804 Fund, Ohio University, July 2001, \$32,000.

Ion Chromatograph for Environmental Program, with G. Riefler (PI), Stocker Endowment, Ohio University, June 2001, \$30,375.

Support for Ohio University's Participation in the 2001 WERC National Design Contest, with C. Cunningham, Oatey, March 2001, \$1,000.

Total Carbon Analyzer For DOE Greenhouse Gas Mitigation Projects, with D. Bayless (PI), Stocker Endowment, Ohio University, July 2000, \$10,000.

Support for Ohio University's Participation in the 2000 WERC National Design Contest, with H. Carlson, DaimlerChrysler, February 2000, \$5,000.

Support for Ohio University's Participation in the 2000 WERC National Design Contest, with C. Cunningham, Oatey, January 2000, \$1,000.

Support for Ohio University's Participation in the 2000 WERC National Design Contest, with P. Liedtke, Nestles, January 2000, \$600.

Support for Ohio University's Participation in the 2000 WERC National Design Contest, with T. Ottery, Procter & Gamble Company, November 1999, \$4,000.

Support for Ohio University's Participation in the 1999 WERC National Design Contest, American Electric Power Service Corp., Division of Engineering Education, February 1999, \$3,000.

Multidisciplinary Research Using a Large Bioreactor, with Tingyue Gu (PI), M. Moo-Young, D. Ridgway and M. Kieliszewski, 1804 Fund, Ohio University, July 1998, \$20,000.

A Custom Designed 80-Liter Bioreactor, with Tingyue Gu (PI), M. Moo-Young and D. Ridgway, Stocker Endowment, Ohio University, May 1998, \$20,000.

Pollution Prevention Technologies at Ohio University, Mitchell Scientific, Inc., software granted - "Emission Master®", April 1997, market value \$30,000.

Testing and Analysis Equipment for Environmental Research, with K. Edwards (PI), Stocker Endowment, Ohio University, May 1996, \$15,900.

PATENTS:

"Hybrid system for enhancing algal growth using vertical membranes", 12/599,722, (with D. Bayless, M. Vis and G. Kremer), March 10, 2010.

"Flow Controlling Header for Delivering Fluid," 60/938,517 (with D. Bayless, S. Switzer, M. Vis and G. Kremer), May 17, 2007.

"Apparatus and Method for Growing Biological Organisms for Fuel and Other Uses", 60/799,440 (with D. Bayless, M. Vis and G. Kremer), May 10, 2006.

BOOKS:

Stuart, B.J., "Environmental Engineering: FE Exam Preparation", 2013 update due to extensive revision of NCEES testing protocols, Kaplan AEC Education, 764 pages.

Stuart, B.J., Chapter 16 (on Biology) in "Fundamentals of Engineering: FE/EIT Exam Preparation", 18th Ed., Kaplan AEC Education, 22 pages, plus contributions to sample exams, January 2008.

Parker, P.J. and B.J. Stuart, "Environmental Engineering: License Review", Kaplan AEC Edu., 567 pages, July 2007.

Banks, J.H., B.M. Das, B.E. Larock, P.J. Parker, B.J. Stuart, A. Williams and K.J. Williamson, "Civil Engineering: Sample Exam", Kaplan AEC Education, 160 pages, July 2006.

Stuart, B.J., "Environmental Engineering: FE Exam Preparation", Kaplan AEC Education, 208 pages, July 2005.

JOURNAL PUBLICATIONS:

Hansel, Philip A., R. Guy Riefler and Ben J. Stuart, "Efficient Flocculation of Microalgae for Biomass Production Using Cationic Starch", Algal Research, Vol. 5, pp. 133-139, 2014, DOI: 10.1016/j.algal.2014.07.002.

Stuart, B.J., "Addressing the Grand Challenge of atmospheric carbon dioxide: geologic sequestration vs. biological recycling", Journal of Biological Engineering, 5(14), 2011.

Csavina, J.L., B.J. Stuart, R.G. Riefler and M.L. Vis, "Growth optimization of algae for biodiesel production", Journal of Applied Microbiology, 111(2):312-318, 2011.

Morrone, M., B.J. Stuart, I. McHenry and G.L. Buckley, "The Challenges of Biofuels from the Perspective of Small-Scale Producers in Ohio", Energy Policy, 37, pp. 522-530, 2009.

Riefler, G., J. Krohn, B. Stuart and C. Socotch, "Role of Sulfur-Reducing Bacteria in a Wetland System Treating Acid Mine Drainage", Science of the Total Environment, 394, pp. 222-229, 2008.

Shi, L., D.J. Bayless, G. Kremer and B. Stuart, "Numerical investigation of the flow profiles in the electrically enhanced cyclone", Journal of the Air and Waste Management Association, 57(4):489-96, 2007.

- Bayless, D.J., G. Kremer, M. Vis, B. Stuart, L. Shi, E. Ono and J.L. Cuello, "Photosynthetic CO₂ Mitigation Using a Novel Membrane-Based Photobioreactor", J. of Environ. Engr. and Mgmt., Vol. 16, No. 4, pp. 209-215, 2006.
- Shi, L., D.J. Bayless, G. Kremer and B. Stuart, "CFD Simulation of the Influence of Temperature and Pressure on the Flow Pattern in Cyclones", Industrial & Engineering Chemistry Research, 45(22), pp. 7667-7672, 2006.
- Verb, Robert G., Morgan L. Vis, and Ben J. Stuart, "Analysis of Diatom Communities in an Acid-Mine-Drainage-Impacted Subwatershed in Southeastern Ohio", KIRTLANDIA, 55; pp. 43-50, 2006.
- Bayless, D., L. Shi, G. Kremer, B. Stuart, J. Reynolds and J. Caine, "Membrane-Based Wet Electrostatic Precipitation", Journal of the Air & Waste Management Association, 55(6), pp. 784-791, 2005.
- Rudisell, M.T., B.J. Stuart, G. Novak, H. Payne and C.S. Togni, "Use of Flue Gas Desulfurization By-Product for Mine Sealing and Abatement of Acid Mine Drainage", FUEL, 80(6), pp. 837-843, 2001.
- Young, V.L. and B.J. Stuart, "The Theme Course - Connecting the Plant Trip to the Text Book", Journal of Engineering Education, 89(4), pp. 475-479, 2000.
- Lotrario, J.B., B.J. Stuart, T. Lam, R.R. Arands, O.A. O'Connor and D.S. Kosson, "Effects of Sterilization Methods on the Physical Characteristics of Soil: Implications for Sorption Isotherm Analyses", Bulletin of Environmental Contamination and Toxicology, 54(5), pp. 668-675, 1995.
- Stuart, B.J. and D.S. Kosson, "Characterization of Municipal Waste Combustion Air Pollution Control Residues as a Function of Particle Size", Combustion Science and Technology, 101(1-6), pp. 527-548, 1994.
- Kosson, D.S., T.T. Kosson, B. Stuart and H. van der Sloot, "Treatment of Air Pollution Control Residuals from Municipal Waste Combustors", Rückstände aus der Müllverbrennung, ed. Martin Faulstich, EF-Verlag für Energie und Umwelttechnik, GmbH, Berlin, 1992.
- Stuart, B.J., G.F. Bowlen and D.S. Kosson, "Competitive Sorption of Benzene, Toluene and the Xylenes onto Soil," Environmental Progress, 10(2), pp. 104-109, May 1991.

REFEREED PROCEEDINGS:

- Yang, P. P., S. J. Quan, D. Castro-Lacouture, C. Rudolph and B. Stuart, "GIS-based Planning Support System for Waste Stream and Algal Cultivation in Residential Construction", Proceedings of the 2014 ASCE Construction Research Congress, pp. 2385-2394, 2014.
- Doe, C.F., D. Lopez and B.J. Stuart, "Water Flow, Soil Temperature, and Carbon Dioxide Concentrations in a Burning Coal Refuse Pile", Proceedings of the 2008 U.S. EPA/NGWA Remediation of Abandoned Mine Lands Conference, Denver, CO, October 2008.
- Stuart, B.J., "Rewarding Excellence: Taking Away the Guaranteed 'A' ", Proceedings of the 2005 ASEE Annual Conference, Portland, OR, June 12-15, 2005.
- Stuart, B.J., "Professor and Student Response to the Daily Quiz", Proceedings of the 2005 ASEE Annual Conference, Portland, OR, June 12-15, 2005.
- Stuart, B.J. and E.P. Steinberg, "Supplementing FE Exam Results for Continuous Assessment", Proceedings of the 2005 ASEE Annual Conference, Portland, OR, June 12-15, 2005.
- Kocsis, J.A. and B.J. Stuart, "Identification and Analysis of Acid Mine Drainage Sources in the Black Fork Sub-Watershed", Proceedings of the 17th National Meeting of the American Society for Surface Mining and Reclamation, pp. 91-97, 2000.
- Kocsis, J.A. and B.J. Stuart, "Evaluation of a Constructed Wetland for Treatment of Acid Mine Drainage in Southeastern Ohio", Proceedings of the 17th National Meeting of the American Society for Surface Mining and Reclamation, pp. 446-450, 2000.
- Stuart, B.J., "Remining with CCBs at the Broken Aro Demonstration Site", Proceedings of the Technical Interactive Forum on the Use and Disposal of Coal Combustion By-Products at Coal Mines (USDOE-FETC), Morgantown, WV, April 12, 2000.
- Eberhart, R.J., K.B. Edwards and B.J. Stuart, "Water Quality Analysis of a Highly Acidic Watershed in Southeast Ohio", Proceedings of the 15th Annual Meeting of the American Society for Surface Mining and Reclamation, pp. 22-31, 1998.
- Edwards, K.B. and B.J. Stuart, "Groundwater and Surface Water Monitoring Plan at a Coal Re-Mining Site Near Coshocton, Ohio", Proceedings of the 1997 Ground Water Protection Council Annual Forum, pp. 83-90, 1997.

PRESENTATIONS AND POSTERS:

- Yang, P. P., S. J. Quan, D. Castro-Lacouture, C. Rudolph and B. Stuart, "GIS-based Planning Support System for Waste Stream and Algal Cultivation in Residential Construction", 2014 ASCE Construction Research Congress, Atlanta, GA, May 19-21, 2014.
- Yang, P. P., S. J. Quan, D. Castro-Lacouture, C. Rudolph and B. Stuart, "Performance Metrics for Designing an Algae-Powered Eco Urban District: A Geodesign Perspective", 6th International Conference on Applied Energy (ICAE2014), Taipei, Taiwan, June 2014.
- Stuart, B.J., "Sustainability as the Framework for Waste and Resource Management from Residences", Institute for Biological Engineers Annual Meeting, Lexington, KY, March 6-8, 2014.
- Fairbanks, D., H.A. Abu Hajar, R.G. Riefler and B.J. Stuart, "Anaerobic Digestion Optimization through Elemental Feedstock Characterization", Institute for Biological Engineers Annual Meeting, Lexington, KY, March 6-8, 2014.
- Abu Hajar, H.A., D. Fairbanks, R.G. Riefler and B.J. Stuart, "Algae Based Sustainable House", Institute for Biological Engineers Annual Meeting, Lexington, KY, March 6-8, 2014.
- Stuart, B.J., "Holistic Waste Stream Management from Residences with Energy Production", Annual Meeting of the Korean Society for Biotechnology and Bioengineering, Busan, Korea, October 17-19, 2013.
- Stuart, B.J., "What Does Sustainability Look Like and Who is Sitting at the Table?", Waste Conversion Technology Conference and Trade Show, San Diego, CA, September 15-17, 2013.
- Stuart, B.J., C. Dasaard and D. Bayless, "Enhanced Carbon Flux for Algal Cultivation Systems via Thin-Film Mass Transfer", Institute for Biological Engineers Annual Meeting, Raleigh, NC, March 7-9, 2013.
- Dasaard, C., D.J. Bayless, B.J. Stuart and R.G. Riefler, "Empirical Prediction of CO₂ Solubility in Water and Cyanobacterial Growth Media", UCEAO 2012 Annual Meeting, Columbus, OH, April 2-3, 2012.
- Stuart, B.J., A. Mielnicki, C. Dasaard and D. Bayless, "Enhanced Carbon Flux via Thin-Film Mass Transfer", Institute for Biological Engineers Annual Meeting, Indianapolis, IN, March 1-3, 2012.
- Mielnicki, A., C. Dasaard, B.J. Stuart and D. Bayless, "Enhanced Carbon Flux via Thin-Film Mass Transfer", Algae Biomass Organization Summit, Minneapolis, MN, October 24-27, 2011.
- Rogers, S., J. Cook, J. Juratovac, J. Goodwillie, T. Burke and B.J. Stuart, "Performance Validation and Scaling of a Capillary Membrane Solid-Liquid Separation System", ABO Summit, Minneapolis, MN, October 24-27, 2011.
- Stuart, B., "Early-Stage Energy Start-up Companies: ECO₂Capture", OU Energy Roundtable, Athens, OH, Oct. 18, 2010.
- Stuart, B., "Biodiesel: Past, Present and Future", Ohio Green Fleets Conference, Miamisburg, OH, Sept. 16, 2010.
- Stuart, B., "Algae as an Alternative Fuel Source", Canton Ohio Section of the Society of Tribologists and Lubrication Engineers", Canton, OH, March 24, 2010.
- Stuart, B., "Biomass Feedstocks: Biological Recycling of CO₂", Institute for Biological Engineering Annual Conference, Plenary Session, Boston, MA, March 4-6, 2010.
- Stuart, B., "Algae Futures in a Biomass Energy Economy", OU Beyond Coal Forum, Athens, OH, February 3, 2010.
- Stuart, B., "Biofuels from Algal Feedstocks", OH Plant Biotech. Consort. Annual Mtg, Columbus, OH, Nov. 14, 2009.
- Stuart, B. and D. Bayless, "Engineering Challenges in Integrating Algal Production with CO₂ Point Sources", Pacific Rim Summit on Industrial Biotechnology and Bioenergy, Honolulu, HI, November 8-11, 2009.
- Stuart, B., "Algal Research at Ohio University", Hocking College's Algae Initiative, Logan, OH, April 17, 2009.
- Stuart, B. and D. Bayless, "Carbon Recycling via Membrane-Based Photobioreactor", Institute for Biological Engineering Annual Conference, Santa Clara, CA, March 19-22, 2009.
- Stuart, B., "Biodiesel Fuel from Algal Feedstocks", Northwest Ohio Algae Initiative Business Forum, sponsored by The Andersons, Inc. (et al), Toledo, OH, November 13, 2008.
- Stuart, B., "Promoting Algal Feedstocks: The Greenbelt Coalition", Central Ohio Summit on Sustainability & the Environment the Mid-Ohio Regional Planning Commission (MORPC), Columbus, OH, Sept. 11-12, 2008.
- Stuart, B., "Biodiesel Fuel from Algal Feedstocks", Dayton Region Algae Production: A Business Forum, sponsored by the National Composite Center, August 27, 2008.
- Stuart, B., D. Bayless, G. Kremer, M. Vis, G. Riefler and M. Prudich, "BioDiesel Fuel at Ohio University: Waste Grease to Algae", Central OH Summit on Sustainability & the Environ. (MORPC), Columbus, OH, Nov. 13-14, 2007.

- Rankin, E., C. Yoder, J. Dyer, K. Johnson, D. Lopez, G. Springer, M. Stoertz, B. Stuart and M. Vis-Chiasson, "The Ohio University EPA STAR Grant: Refined Biological Classification and Stressor Identification in the Western Allegheny Plateau Ecoregion", 2006 ODNR ARC, Athens, OH, December 6-7, 2006.
- Bayless, D., G. Kremer, M. Vis and B. Stuart, "Photosynthetic Mitigation of Carbon Dioxide Emissions from Coal-Fired Power Plants", 2006 ODNR ARC, Athens, OH, December 6-7, 2006.
- Stuart, B., G. Riefler and M. Prudich, "Production of Biofuels using Algal Feedstocks", 2006 ODNR ARC, Athens, OH, December 6-7, 2006.
- Chapman, J., G. Riefler, B. Stuart, T. Chang, Y. Fang and B. Arthur, "Sediment Transport in Little Leading Creek", 2006 ODNR ARC, Athens, OH, December 6-7, 2006.
- Riefler, G., B. Stuart, J. Krohn, M. Stoertz and C. Socotch, "Assessment and Restoration of Biofouling at the Simmon's Run Wetland", 2005 ODNR ARC, Athens, OH, December 7-8, 2005.
- Bayless, D., G. Kremer, M. Vis, B. Stuart, M. Prudich, K. Cooksey and D. Earl, "Enhanced Practical Photosynthetic CO₂ Mitigation", 2005 ODNR ARC, Athens, OH, December 7-8, 2005.
- Riefler, G., B. Stuart, T. Chang, Y. Fang, B. Flowers and J. Chapman-Kleski, "Sediment Transport in Little Leading Creek", 2005 ODNR ARC, Athens, OH, December 7-8, 2005.
- Brown, K., B.J. Stuart and G. Weckman, "The Ohio University Biodiesel Project: Student-Faculty Partnerships, Service Learning, and Campus Sustainability", Greening of the Campus Conf., Muncie, IN, Sept. 15-17, 2005.
- Stuart, B.J. and V.L. Young (presenter), "Rewarding Excellence: Taking Away the Guaranteed 'A'", 2005 ASEE Annual Conference, Portland, OR, June 12-15, 2005.
- Stuart, B.J., E.P. Steinberg and V.L. Young (presenter), "Supplementing FE Exam Results for Continuous Assessment", 2005 ASEE Annual Conference, Portland, OR, June 12-15, 2005.
- Stuart, B.J. and G. Weckman, "Applied Sustainability at Ohio University: BioDiesel Fuel from Waste Grease", 2004 ASEE Annual Conference, Salt Lake City, UT, June 21-23, 2004.
- Marquez, A., B.J. Stuart (presenter), G. Botte, G. Kremer and D.J. Bayless, "Adapting Planar Solid Oxide Fuel Cells for Use with Solid Fuel Sources in the Production of Distributed Power", 29th International Technical Conference on Coal Utilization & Fuel Systems, Clearwater, FL, April 18-22, 2004.
- Stuart, B.J., G. Kremer, L. Shi, D.J. Bayless, J. Caine, P. Kish, J. Reynolds, I. Ray and P. Doonan, "Pilot Testing Results of Membrane-Based Wet Electrostatic Precipitation For Multipollutant Control", 29th International Technical Conf. on Coal Utilization & Fuel Systems, Clearwater, FL, April 18-22, 2004.
- Stuart, B.J. and D. Bayless, "An Update on the Activities in the Ohio Coal Research Center at Ohio University", Ohio Air Pollution Research Symposium, Toledo, Ohio, October 29, 2003.
- Bayless, D.J., L. Shi and B.J. Stuart (presenter), "Membrane-Based Wet Electrostatic Precipitation", 28th Intl. Technical Conf. on Coal Utilization & Fuel Systems, Clearwater, FL, March 10-13, 2003.
- Stuart, B.J. and D. Bayless, "Ohio Coal Research Center at Ohio University", Ohio Air Pollution Research Symposium, Toledo, Ohio, October 25, 2002.
- Stuart, B.J., "Using GIS for Data Management of AMD Projects", invited presentation for the SOARS Program at the NASA Glenn Research Center, Cleveland, Ohio, August 1, 2002.
- Stuart, B.J., M.W. Stoertz (Presenter) and G. Novak, "Utilization of CCPs for AMD Abatement During Re-Mining of an Abandoned Underground Mine", 18th Annual Internat. Pittsburgh Coal Conf., New Castle, Australia, Dec. 4-7, 2001.
- Young, V., D. Ridgway, M. Prudich, D. Goetz and B.J. Stuart (presenter), "Criterion-Based Grading for Learning and Assessment in Unit Operations Laboratory", 2001 Annual Conf. of ASEE, Albuquerque, NM, June 24-27, 2001.
- Stuart, B.J. and A. Ghassemi, "Participation in a National Environmental Design Contest: Observations and Student Motivations", 2001 Annual Conference of the ASEE, Albuquerque, NM, June 24-27, 2001.
- Stuart, B.J. and G. Novak, "Mine Sealing with CCPs for AMD Abatement", 14th International Symp. on Mgmt. & Use of Coal Combustion Products (CCPs), American Coal Ash Association, San Antonio, TX, January 22-26, 2001.
- Stuart, B.J. and G. Novak, "The Broken Aro Mine Seal: Impacts on Water Quality", 45th Annual Ground Water Conference, Columbus, OH, October 17-19, 2000.
- Stuart, B.J. and G. Novak, "Utilization of CCBs for Mine Sealing and AMD Abatement", 2000 Fall Conference of the Ohio Mineland Partnership, Coshocton, OH, October 2-3, 2000.

- Stuart, B.J., "Use of GIS for Managing Data in AML Assessments", 22nd Annual Conference of the National Assoc. of Abandoned Mine Land Programs, Steamboat Springs, CO, September 24-27, 2000.
- Stuart, B.J. and W.P. Jepson, "Scrubbing SO₂ Using a Translating Slug Flow Reactor", Conference on Air Quality II (Energy & Environmental Research Center, USEPA, USDOE-FETC), McLean, VA, September 19-21, 2000.
- Stuart, B.J. and C.F. Doe, "Characterization of AMD Sources in the Black Fork Sub-Watershed", Research in Support of Reclamation Conference (ODNR-DMRM), Athens, OH, August 24, 2000.
- Thomas, J., M.T. Rudisell and B.J. Stuart, "The Broken Aro Flue Gas Desulfurization Sludge Mine Seal Project", Research in Support of Reclamation Conf. (ODNR-DMRM), Athens, OH, August 24, 2000.
- Kocsis, J.A. and B.J. Stuart, "Identification and Analysis of Acid Mine Drainage Sources in the Black Fork Sub-Watershed", Research in Support of Reclamation Conference (ODNR-DMRM), Athens, OH, August 24, 2000.
- Kocsis, J.A. and B.J. Stuart (co-presenters), "Identification and Analysis of Acid Mine Drainage Sources in the Black Fork Sub-Watershed", 17th National Meeting of the ASSMR, Tampa, FL, June 11-15, 2000.
- Kocsis, J.A. and B.J. Stuart (co-presenters), "Evaluation of a Constructed Wetland for Treatment of Acid Mine Drainage in Southeastern Ohio", 17th National Meeting of the ASSMR, Tampa, FL, June 11-15, 2000.
- Stuart, B.J. and G. Novak, "Remining with CCBs at the Broken Aro Demonstration Site", Technical Interactive Forum on the Use and Disposal of CCBs at Coal Mines (USDOE-FETC), Morgantown, WV, April 12, 2000.
- Stuart, B.J., "Update on the Black Fork and Tropic Wetland Acid Mine Drainage Projects", Moxahala Watershed Restoration Commission, Crooksville, OH, October 28, 1999.
- Stuart, B.J., G.A. Novak, H. Payne and C.S. Togni, "Use of Flue Gas Desulfurization By-Product for Mine Sealing and Abatement of Acid Mine Drainage", 1999 Intern. Ash Utilization Symp., Lexington, KY, October 18-20, 1999.
- Stuart, B.J., K.B. Edwards, M.T. Rudisell, G.A. Novak, S. Mafi, J.R. Faulconer, M.W. Stoertz and B.D. Olujic, "Remining and FGD Seal Placement for AMD Abatement at Broken Aro Mine", 20th Annual West Virginia Surface Mine Drainage Task Force Symposium (SMDTFS), Morgantown, WV, April 13-14, 1999.
- Stuart, B.J., R. Ramachandran and J. Grow "Impact of Acid Mine Drainage on Streams in Southeastern Ohio: Importance of Biological Assessments", 20th Annual WV SMDTFS, Morgantown, WV, April 13-14, 1999.
- Ramachandran, R., B.J. Stuart and J. Grow, "Impact of Acid Mine Drainage on Streams: Importance of Biological Assessments", 14th Annual Scientific Symposium of the ORBCRE, Portsmouth, OH, October 14-16, 1998.
- Mafi, S., G.A. Novak (co-presenter), J. Faulconer, B.J. Stuart (co-presenter) and K.B. Edwards, "Broken Aro Remining/Reclamation Project", 20th Annual Conference of the NAAML, Albuquerque, NM, Sept. 26 – Oct. 1, 1998.
- Stuart, B.J., "Overview of Water Quality Characterization Data in the Moxahala Creek Watershed", Moxahala Watershed Restoration Commission, Crooksville, OH, July 8, 1998.
- Mafi, S., G. Novak and B.J. Stuart, "Broken Aro Coal Remining/Reclamation Project", Annual Meeting of the Ohio Mining and Reclamation Association, Columbus, OH, June 25, 1998.
- Eberhart, R.J., K.B. Edwards and B.J. Stuart, "Water Quality Analysis of a Highly Acidic Watershed in Southeast Ohio", 1998 National Meeting of the ASSMR, St. Louis, MO, May 16-21, 1998.
- Stuart, B.J., K.B. Edwards, R.J. Eberhart, B. Olujic and M.D. Rudisell, "Field Evaluation of Surface Water Flowrate Measurement Devices", 1998 ASCE Wetlands Engr. & River Restoration Conf., Denver, CO, March 23-27, 1998.
- Stuart, B.J. and K.B. Edwards, "Preliminary Assessment of the Moxahala Creek Watershed", ODNR Division of Mines and Reclamation (DMR), Division-wide Meeting, Reynoldsburg, OH, March 12, 1998.
- Stuart, B.J. and K.B. Edwards, "Evaluation of the Effectiveness of the Tropic Wetland", ODNR DMR Division-wide Meeting, Reynoldsburg, OH, March 12, 1998.
- Stuart, B.J. and K.B. Edwards, "Impact of Flue Gas Desulfurization Sludge Mine Seal at Broken Aro Mine", ODNR DMR Division-wide Meeting, Reynoldsburg, OH, March 12, 1998.
- Edwards, K. and B. Stuart, "Groundwater and Surface Water Monitoring Plan at a Coal Re-Mining Site Near Coshocton, Ohio", Ground Water Protection Council Annual Forum, Cleveland, OH, September 1997.
- Stuart, B.J. and D.S. Kosson, "Effects of Adhesion Potential and Median Pore Size on Bacteria Transport Through Soil", 1995 Annual Meeting of the AIChE, Miami, FL, November 1995.
- Tolchinsky, M., I. Massry, B. Stuart and D. Kosson, "Manipulation of Factors Affecting Bacterial Surface Properties for Enhanced Transport Through Soil", 1993 Annual Meeting of the AIChE, St. Louis, MO, November 1993.

- Stuart, B.J. and D.S. Kosson, "Characterization of Municipal Waste Combustion Air Pollution Control Residues as a Function of Particle Size", Third International Congress on Toxic Combustion By-Products (EPA, DOE, et al), Cambridge, MA, June 1993.
- Kosson, T.T., D.S. Kosson, B.J. Stuart, D. Wexell and J. Stempin, "Vitrification of Municipal Solid Waste Combustion Air Pollution Control Residues Using Corning, Inc. Process", Municipal Waste Combustion Conference (EPA, A&WMA, ASME, et al), Williamsburg, VA, April 1993.
- Kosson, T.T., D.S. Kosson, B.J. Stuart and H. van der Sloot, "Assessment of Contaminant Release Rates and Potentials from Solidified/Stabilized Municipal Waste Combustion Residues", Municipal Waste Combustion Conference (EPA, A&WMA, ASME, et al), Williamsburg, VA, April 1993.
- Bowlen, G.F., B.J. Stuart, P.D. Taylor and D.S. Kosson, "Benzene, Toluene and Xylene Biodegradation Under Denitrifying Conditions in Soil Columns", Environmental Biotechnology, Knoxville, Tennessee, October 1990.

STUDENT THESES/DISSERTATIONS DIRECTED:

- "Transitional CO₂ Concentration for Photosynthetic CO₂ Conversion of Cyanobacteria Growth in a Membrane-based Photobioreactor", Chalerm Sak Dasa-ard, PhD ME, co-Advisor with D. Bayless, August 2013.
- "Modification and Validation of a Novel Solid-Liquid Separation Technique Using a Microscreen and Capillary Belt System" Thomas Burke, ME, December 2011.
- "Heat, Light, and Gas Composition Subsystems of a Photo-Bioreactor" Yuri Pocztar, ME, November 2010.
- "Solvent Extraction Lipids from Microalgae" Renil J. Anthony, ME, August 2010.
- "Design, Construction and Validation of an Internally-Lit Airlift Photobioreactor" Esteban Hincapie, ME, August 2010.
- "Sustainable Design and Operation of the Cement Industry", Hakob Avetisyan, CE, October 2008.
- "The Optimization of Growth Rate and Lipid Content from Select Algae Strains", Janae Csavina, CE, August 2008.
- "Design, Construction and Testing of Pilot Scale Photobioreactor Subsystems", Ben Mears, ME, June 2008.
- "Feasibility, Design, and Benefits of a Constructed Wetland at the Oxbow Stream Site, Athens, Ohio", Emily Lux, MSES, August 2004.
- "Analysis of Non-point Sources and Natural Attenuation Effect in the Acid Mine Drainage Affected Black Fork Subwatershed, Perry County, Ohio", Xuan Qi Bradley, CE, August 2002.
- "The Identification and Analysis of Acid Mine Drainage Sources to the Surface Waters of the Robinson Run Subwatershed", Christopher A. Brothers, CE, August 2001.
- "Groundwater Assessments of Ibrahim Valley in Makkah City, Saudi Arabia", Faisal A. Osra, CE, Aug. 2001.
- "Evaluation of the Flue Gas Desulfurization Mine Seal and Sedimentation Pond at Broken Aro Mine Reclamation Site Located in Coshocton County, Ohio", Jed H. Thomas, ChE, June 2001.
- "Use of Biological Assessments and GIS for Streams Impacted by Acid Mine Drainage in Southeastern Ohio", Rajesh Ramachandran, MSES, November 2000.
- "Analysis of Acid Mine Drainage in the Black Fork Subwatershed", Julie A. Kocsis, CE, June 2000.
- "Evaluation of the Broken Aro Flue-Gas Desulfurization Sludge Mine Seal Project to Abate Acid Mine Drainage Located in Coshocton County, Ohio", Michael T Rudisell, CE, August 1999.

STUDENT THESIS COMMITTEES:

- "Mathematical Modeling of Novel Fluidized Bed Gasification System", Fen Xin, PhD CBE, December 2012.
- "Watershed erosion and sediment estimation of Tappan Lake, Ohio", Joshua Minnich, CE, June 2012.
- "Effects of Flashing Light-Emitting Diodes in a Membrane-Based Photobioreactor", Alex Lunka, ME, January 2012.
- "An Investigation of Secondary Formations of High Temperature Solid Oxide Fuel Cells", Brian Kaseman, ME, January 2012.
- "Design and Construction of a Lighting System to Illuminate a Photobioreactor", Kyle Sink, ME, Nov. 2011.

"Equilibrium Modeling, Design, Construction, and Validation Testing of a Pilot-Scale, USS Gasification Reactor", Josh Hlebak, ME, August 2011.

"Methodology for Membrane Fabric Selection for Pilot Bioreactor", Shailendra Singh, ME, August 2011.

"Efficient Flocculation of Microalgae for Biomass Production Using Cationic Starch", Philip Hansel, CBE, Aug. 2011.

"Investigation of Capstan Friction and its Potential Use as a Mechanical Amplifier", Michael Starkey, ME, June 2010.

"Supercritical Carbon Dioxide Pretreatment of Various Cellulosic Biomass", Naveen Swamy, CBE, November 2009.

"Analysis of Temporal Variance of Mercury Wet Deposition at a Rural Ohio River Valley Site", Ritesh Bhuriwale, CBE, November 2009.

"Proof-of-Concept Test for Separation Efficiency of an Electro-Cyclone", Naveen Kunapareddy, ME, June 2009.

"Computational Fluid Dynamics Simulation of Steam Reforming and Autothermal Reforming for Fuel Cell Applications", Liming Shi, CBE, March 2009.

"NOx Emission Testing for Diesel Engine, Fueled with Algae Based Bio-Diesel", Dhruv Kohli, CBE, March 2009.

"Computer Simulation of an Electrostatic Cyclonic Emissions Separator", Vinay Uddandam, ME, November 2008.

"Applications of Spatial Analysis for Bedrock Structures and Groundwater Wells", Erik McPeck, CE, March 2008.

"The Challenges of Biofuels in OH from the Perspective of Small-Scale Producers", Izaak McHenry, MSES, March 2008.

"A Quantitative Study of the Chlorine Atom Concentration in Plasma", Sreerupa Basu, ME, March 2008.

"Simulation of a Humanoid Robot", Chandana Venkatayogi, ME, November 2007.

"Parametric Study of Light Intensity on the Growth Rate of *Chroogloeocystis siderophila* in a Photo-Bioreactor", Venkata Gidugu, ME, November 2007.

"Microbial Assessment of a Bioremediation System Treating Acid Mine Drainage", John Krinks, CE, June 2007.

"Performance Analysis of a Successive Alkalinity Producing System Treating Acid Mine Drainage at Simmons Run in Coshocton County, Ohio", Jeremy Krohn, CE, March 2007.

"Aerosol Calculation and Pressure Drop Simulation for Sieving Electrostatic Precipitator", Marijo Telenta, ME, March 2007.

"Storm Water Runoff First Flush Modeling and Treatment with a Hydrodynamic Device", Yming Su, Ph.D. in CE, March 2007.

"Measurement of Algal Productivity in an Artificially Lit Photobioreactor", Viral Doshi, ME, Nov. 2006.

"Effects of Acid Mine Drainage and Acid Wetlands on Water Quality at Pierce Run of the Raccoon Creek Watershed, Ohio", Amy Hovart, MSES, November 2006.

"Recovery of Iron from Acid Mine Drainage by Stepwise Alkaline Addition", Mayuresh Sant, GEOL, August 2006.

"A Procedure to Evaluate the Costs and Benefits of Managing Staffing Levels in an Order Picking Operation", Arathi Boddu, ISE, August 2006.

"Uptake and Transformation of the Propellants 2,4-DNT, Perchlorate and Nitroglycerin by Grasses", Sushma Guruswamy, CE, June 2006.

"Incorporating Green-Building Design Principles into Campus Facilities Planning: An Evaluation of Obstacles and Opportunities", Kyle A. Brown, MSES, June 2006.

"Assessment and Comparison of Two Phytoremediation Systems Treating Slow-Moving Groundwater Plumes of TCE", Amy Lewis, MSES, June 2006.

"Capture of Elemental Mercury in a Wet Membrane Plasma Enhanced Electrostatic Precipitator Using Hydrochloric Acid as the Reagent Gas", Varalakshmi Jayaram, ME, October 2005.

"Performance Evaluation of Wet Metal Plate Electrostatic Precipitator", Huzefa Bharmal, ME, Sept. 2005.

"Performance Evaluation of Wet Plate ESP for Sub-micron Particles", Hardikkumar Shah, ME, Sept. 2005.

"Capture of Soluble Mercury Using Membrane-Based Wet Electrostatic Precipitation", Yatavelli Reddy, ME, May 2005.

"The Effect of Pressurized Fuel Gas Containing Hydrogen Sulfide on a Planar Oxide Fuel Cell's Average Sum Resistance", Jason Trembly, ChE, March 2005.

- "Experimental and Theoretical Study of Sub-Micron Aerosol Collection Efficiency by Laminar Wet-Membrane Electrostatic Precipitator", Ke Li, ME, February 2005.
- "The Dry Sieving Electrostatic Precipitator", Pranitha Gottipati, ME, August 2004.
- "The Sieving Electrostatic Precipitator", Nick Haynes, ME, August 2004.
- "Aircraft Position Integrity for Differential Satellite-based Navigation in the Presence of both Bias and Noise Errors", Rajesh Suddapalli, EECS, August 2004.
- "Uniaxial Tensile and Creep Behavior of Omnisl in Membrane Based Wet Electrostatic Precipitator", Pavan Valavala, ME, August 2004.
- "Modifications to the Systematic Layout Planning Procedure to Allow Departmental Division and Irregularly Shaped Subdepartments", Stephen Martin, IMSE, July 2004.
- "Kinetics of 2, 4, 6-Trinitrotoluene Reduction by Pseudomonas Putida", Kharisha Sheikh, CE, June 2004.
- "Understanding Landscape Dynamics in Belize: A Digital Change Detection Approach", Edgar Ek, MSES, June 2004.
- "Hydrologic Controls on Acidity and Metals Loading from an Abandoned Underground Coal Mine Complex in Southeast Ohio, Perry County", Ben McCament, MSES, May 2004.
- "Plasma Enhanced Mercury Capture in Wet Electrostatic Precipitators", Vijayagopal Veluthen, ME, Aug. 2003.
- "Analytical and Experimental Analysis of Alternative Systems for Harvesting Organisms in a Biologically Based CO₂ Mitigation System", Jia Ma, ME, August 2003.
- "Investigation of Water and Sediment Contamination at Lake Ilopango, El Salvador, Central America", David Kudel, MSES, March 2003.
- "Monitoring Network Quality of Service in a Dynamic Real-Time System", Hong Chen, EECS, Aug 2002.
- "Storm Water Runoff Treatment with Multi-Chamber Pipes", Yuming Su, CE, August 2002.
- "Traffic Characteristics on the Jeddah-Makkah Freeway, Saudi Arabia", Khalid Osra, CE, June 2002.
- "Application of LANSAT Data in Urban Change Detection: The Selective Use Approach", Uttam Bera, GEOG, May 2002.
- "Multiphase Corrosion in Wet Gas Pipelines", Dinesh Dhanabalan, ChE, November 2001.
- "Hydrologic and Thermal Mechanisms in a Burning Coal Refuse Pile: The Misco Gob Pile, Perry County, Ohio", Carol Farkas Doe, GEOL, August 2001.
- "Global Positioning System Based Runway Instrumentation System", Predrag Mitrovic, ME, June 2001.
- "Low Temperature Conversion of SO₂ to SO₃", Srinivas Tanneer, ME, November 2000.
- "Hydrogeochemical Characterization of the Carbondale Wetland, Athens County, Ohio: Evaluation of Acid Mine Drainage Remediation Alternatives", Jennifer Shimala, GEOL, June 2000.
- "The Characterization of Groundwater Flow and Trichloroethylene Transport in the West Lafayette, Ohio Wellfield (Using 3-Dimensional Modeling Techniques)", Kristy Hunt, GEOL, August 1999.
- "Experimental Studies of the Homogeneous Conversion of SO₂ to SO₃ via Natural Gas Reburning", Ashikur Khan, ME, August 1999.
- "Effects of Pavement Type on Traffic Noise Levels", Matt Ambroziak, CE, June 1999.
- "Characterization of a Highly Acid Watershed Located Mainly in Perry County, Ohio", Ryan Eberhart, CE, Aug. 1998.
- "Treatment of Highway Storm Water Runoff by Constructed Wetlands: Analytical Analysis and Design Model", Christopher Hunt, CE, November 1997.
- "Effect of Gas Density on Corrosion in Horizontal Multiphase Slug Flow at High Temperatures and Pressures", Vijay Krishnamoorthy, ChE, November 1997.
- "Wetland Pollutant Removal Effectiveness and Mitigation Related to Ohio Highways", Daniel Hall, CE, August 1996.
- "Analysis of Anisotropic Material", Tatsuya Yamashita, ME, August 1996.

CONSULTING:

- 7/13 - Present **Expert Witness**, combined sewer failure and subsidence issues due to neglected maintenance, James and Carol Pierce vs. the City of Gallipolis, OH, D. Joseph Griffith, Attorney at Law, Lancaster, OH
- 1/12 - 12/13 **Algae Separations Consultant**, design and evaluation of an electrofloatation system for algae pre-concentration, Faraday Technology Inc., Clayton, OH
- 2/12 - 11/12 **Expert Witness**, sewer hydraulics and capacity issues (backup/flooding) during high rainfall events, property owners vs. the City of Portsmouth, OH, D. Joseph Griffith, Attorney at Law, Lancaster, OH
- 1/10 - 12/11 **Principal Scientist**, \$6M ARPA-E project for the commercialization of an algae harvesting and dewatering system, Algaeventure Systems, Marysville, OH
- 10/10 - 8/11 **Algae Bioreactor Design Consultant**, NASA OMEGA project funded through an engineering contract with URS Corporation, San Francisco, CA
- 4/10 - 6/10 **Expert Panel**, US EPA document review "A Field-based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams", Center for Applied Energy Research, Univ. of KY, Lexington, KY
- 7/08 - 12/08 **Algal Oil Expert**, United Environment & Energy, LLC, Horseheads, NY
- 9/07 - 3/08 **Expert Witness**, flyash composition and integrity for landfill covers, Fern Valley v Orion Power, Ronald L. Kuis, Esquire, Pittsburgh, PA
- 6/06 - 5/08 **Sorption Systems Expert**, Design of Arsenic Removal systems Using Novel Recycled Sorbents, MAR Systems, Cleveland, OH
- 12/02 - 1/03 **Independent Technical Peer Review Panel**, Corrective Measures Study of the Sandia National Laboratory Mixed Waste Landfill, US DOE (via Waste-management Education and Research Consortium), Albuquerque, NM
- 7/02 - 1/03 **Expert Witness**, property dispute over groundwater seepage in disturbed soils at a construction site, Joe Hazelbaker, Attorney at Law, Athens, OH
- 2/02 - 5/04 **Subsurface Remediation Expert**, Evaluation of the Remediation Efforts Following the Removal of a Compromised UST and Recommendations for Future Work, City of Grandview Heights, OH

COURSES TAUGHT:

9/95 - Pres.	CHE 305	ChE Thermodynamics	CE 452	Water and Wastewater Analysis
	CHE 306	ChE Phase Equilibrium	CE 453/553	Solid & Hazardous Waste Mgmt.
	CHE 416	Unit Operations Lab	CE 454/554	Green Engineering
	CHE 601	Advanced ChE Thermo	CE 490/590	Sustainability: BioDiesel Fuel
	CE 340	Fluid Mechanics	CE 556	Advanced Wastewater Treatment
	CE 341	Fluid Mechanics Lab	CE 853	Environmental Geotechnology II
	CE 342	Applied Hydraulics	ET 106	Engineering Orientation
	CE 353	Basics of Environ. Engr.	ET 385J	Engr. and Technology Public Policy
	CE 400	Societal Concerns in CE	ET 400	Fundamentals of Engineering Review
	CE 450	Water Treatment	T342 450B	Technology and Culture
	CE 451	Wastewater Treatment		

ADDITIONAL TEACHING EXPERIENCE:

Teaching Assistant: Dept. of Chemical and Biochemical Engr., Rutgers University, Piscataway, N.J.

9/91 - 5/95	155:303/304	Transport Phenomena in Chemical Engineering I & II
	155:415/416	Process Engineering I & II
	155:453	Chemical Environmental Engineering
	155:491/492	Special Problems in Chemical Engineering I & II

GRADUATE RESEARCH EXPERIENCE:

- Graduate Assistant:** Dept. of Chemical and Biochemical Engr., Rutgers University, Piscataway, N.J.
- 9/92 - 9/95 Transport of Microorganisms in Soil and Groundwater Systems
1/92 - 1/94 Solidification and Stabilization of MSW Incineration Residuals
7/91 - 12/91 Environmental Release of Contaminants from Facing Brick
7/90 - 6/91 Characterization of Municipal Waste Combustion Air Pollution Control Residues as a Function of Particle Size
1/89 - 6/90 Anaerobic Biodegradation of Benzene, Toluene, and the Xylene Isomers
- AWU Fellowship:** U.S. Department of Energy fellowship, awarded through the Association of Western Universities (AWU), to work with EG&G at the Princeton Plasma Physics Laboratory, Princeton University, P.O. Box 451, Princeton, N.J., 08543
- 7/93 - 10/94 Monitoring the Environmental Impact of Elemental Tritium Release or Tritium Conversion Products for Model Verification

PROFESSIONAL SERVICE, ACTIVITIES and SOCIETIES:

- Member, Ad Hoc Mineral Rights Committee, 2012
Member, Engineers Without Borders, 2010-2014
Program Evaluator Volunteer (PEV), ABET, 2008-2014
Institute for Biological Engineering, 2009-2014
National Secretary, 2013-2014
American Society of Civil Engineers, 2003-2014
Faculty Advisor, Chi Epsilon - Civil Engineering Honor Society, Ohio University, 2003-2008
Planning Committee, Annual Research Conference, with ODNR-DMRM, 2002-2009
Proceedings Editor, 2002-2004
Technical Session Dir., 23rd Annual Conference of the National Association of Abandoned Mine Land Programs, 2001
External Review Panel Member, WERC Research Program, 2001, 2003-2006
Session Moderator, 45th Annual Midwest Ground Water Conference, 2000
Faculty Advisor, Waste-Management Education and Research Consortium Student Environ. Design Contest, 1998-2006
Faculty Advisor, Society of Women Engineers, 1998-2007
American Society for Engineering Education, 1997-2014
American Chemical Society, 1992-2002
American Institute of Chemical Engineers, 1991-2014
Secretary, AIChE Central Ohio Section, 1996
Reviewer: Environmental Science & Technology, ASME Journal of Energy Resources Technology, Journal of Hazardous Materials, Journal of the Air & Waste Management Association, Journal of Colloid and Interface Science, Soil and Sediment Contamination: An International Journal, Environmental Engineering Science, Bioresource Technology, Building and Environment, Chemical Engineering Communications, McGraw-Hill Publishers, *National Academy Press* for *The Ohio Journal of Science*, the Ohio Water Resources Center and the National Institutes for Water Resources (NIWR) State Water Resources Research Institute 104(b) Grant Program, Natural Resources and Applied Sciences Endowment (British Columbia), Environmental Science & Engineering Scholarship Program (*The Ohio Academy of Science*), The Ohio State University CCP Program Review

WORKSHOPS, PROFESSIONAL ADVANCEMENT, AND COMMUNITY RELATIONS:

- Participant, Energy, Sustainability, and Life Cycle Assessment, MIT, Cambridge, MA, 2013
Participant, SuperPro Designer Process Modeling Workshop, Intelligen, Inc., Tufts University, Medford MA, 2013
Participant, ExCEED II Teaching Workshop, ASCE, Florida Gulf Coast University, 2012
Participant, Engineering Academic Leadership Workshop, ASEE, University of Delaware, 2012
Participant, Geothermal Energy Webinar, 2010
Member, Technical Advisory Committee, Tri-County Career Center Drafting Program, 2007-2014
Member, Technical Advisory Committee, Partners of Monday Creek Watershed, 2004-2009
Member, Technical Advisory Committee, Sunday Creek Watershed Group, 2004-2009
Speaker, ASCE Career Day for High School Students, Columbus, Ohio, 2004, 2006-2007
Participant, Service-Learning in Engineering and Computer Science Workshop, Minnesota, 2003
Participant, OEPA Environmental Education Grant Proposal Review Workshop, Logan, Ohio, 2003
Facilitator/Instructor, New Faculty Orientations, Russ College of Engineering, Ohio University, 2003

Participant, ExCEED Teaching Workshop, ASCE, Northern Arizona University, 2003
Participant, Water Distribution Design and Modeling Workshop, Haestad Methods, 2003
Judge, District Science Day/Southeastern Ohio Regional Science and Engineering Fair, 2003, 2005-2009
Participant, Combustion Technologies University Alliance Workshop, USDOE-NETL, 2002
Evaluator, Stocker Scholars Competition Day, 2002-2004
Participant, Green Engineering Educator's Workshop, USEPA, Roanoke, VA, 2001
Instructor, Minority Men in Engineering and Technology, Ohio University, 2001-2002
Participant, Sooner City Workshop - Integrating Design in the Undergraduate Civil Engineering Curriculum, NSF, University of Oklahoma, 2000
Participant, Multidisciplinary Aspects of Novel Process Science and Engineering, NSF Undergraduate Faculty Enhancement Workshop, Rowan University, 1998
Participant, Focus on Engineering and Technology - Ohio Univ. Open House, 1998-2001, 2003-2004
Participant, ENT College Tours for Athens Middle School Honor Roll Students, 1998-1999
Instructor, Field Studies in Hydrogeology and Watershed Characterization, workshop with the Department of Geological Sciences, Ohio University, 1997-2000
Participant, Morrison Elementary Visiting Scientist Program, 1997-2003, 2006, 2011
Guest Lecturer, Environmental Engineering, ET 280 - Introduction to Engineering, 1997-2001, 2005-2006
Participant, Pollution Prevention Workshop, American Institute of Chemical Engineers, 1997
Instructor, Women in Engineering and Technology, Ohio University, 1997
Instructor, Be An Engineer, Project Challenge, Ohio University, 1997
Supervisor, MATHCOUNTS competition, Ohio University, 1996-2014
Guest Lecturer, ET 400 - Professional Engineering Fundamentals Review, 1996-1997, 2007-2011, 2014
Participant, ENT Student Council Casino Night, 1996-1997, 1999
Participant, Pathfinders Conference, Ohio Aerospace Institute, 1996
Participant, National Effective Teaching Institute, American Society for Engineering Education, 1996

HONORS and AWARDS:

OHIO Faculty Sustainability Research & Advocacy Award, 2014
Energy Research Poster Session Explanation/Discussion Award, University Clean Energy Alliance of Ohio, 2012
Robe Leadership Institute Leadership and Service Award, Russ College Board of Visitors, Ohio University, 2003
Fritz J. and Dolores H. Russ Outstanding Undergraduate Teaching Award, Russ College of Engineering and Technology, Ohio University, 2003
Marvin E. and Ann D. White Teaching Award, Department of Civil Engineering, Ohio University, 2003
Faculty Fellow, the Voinovich Center for Leadership and Public Affairs, Ohio University, 2001-2013
Joseph J. Martin Award, outstanding paper in the Chemical Engineering Division, 2001 ASEE Annual Meeting
Mike Berger Memorial Award, Outstanding Faculty Advisor, 2000 WERC Environmental Design Contest Teaching Award, Department of Civil Engineering, Ohio University, 2000
Professor Leadership Recognition, Russ College of Engineering and Technology, Ohio University, 1999
Outstanding Undergraduate Instructor, Department of Civil Engineering, Ohio University, 1997
Co-Outstanding Undergraduate Instructor, Department of Chemical Engineering, Ohio University, 1997
recipient, National Research Council Research Associateship, 1994
recipient, Association of Western Universities Research Fellowship, 1993
1st Place, AIChE National Student Paper Competition, Environmental Division, 1990
1st Place, Fifth Annual Environmental Management Competition, 1990
Daniel E. Bigler Award, N.J. Water Pollution Control Association, 1990
Garden State Distinguished Scholar
Tau Beta Pi
Chi Epsilon