DAVID M. BLERSCH
Curriculum Vitae

Associate Professor of Ecological Engineering
Biosystems Engineering Department
Auburn University
Auburn, Alabama 36849

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EDUCATION

- **University of Maryland**, College Park, Maryland, USA
  Ph.D., Biological Resources Engineering (2010)
  Dissertation: "Towards an autonomous algal turf scrubber: Development of an ecologically-engineered technoecosystem".
  Advisor: Dr. Patrick Kangas, Associate Professor
- **University of Maryland**, College Park, Maryland, USA
  M.Sc., Biological Resources Engineering (2004)
  Thesis: "Investigation into system dynamics of a wetland soil technoecosystem using redox potential as a metabolic indicator and feedback control parameter"
  Advisor: Dr. Patrick Kangas, Associate Professor
- **University of Notre Dame,** Notre Dame, Indiana, USA
  B.Sc., Civil Engineering (1993)

RESEARCH INTERESTS

- Ecological engineering approaches to nutrient resource recovery in biosystems;
- Remediation of water and wastewater with algae cultivation;
- Algae biomass production for carbon sequestration and biofuels feedstock;
- Additive manufacturing for bio-environmental applications;
- Aquaponics food production and resource optimization;
- Phyto- and phyco-remediation of impacted waters;
- Ecological systems modeling;
- Aquatic ecosystem restoration;
- Emergy synthesis, life cycle analysis, and sustainability engineering.

RESEARCH EXPERIENCE

Auburn University (Auburn, Alabama, USA)
Biosystems Engineering Department
Associate Professor of Ecological Engineering — *10/19 – Present*
Assistant Professor of Ecological Engineering — *8/13 – 9/19*
Research focused on ecological and aquatic ecosystem restoration engineering. Current research initiatives include the following:

- Ecological engineering of aquatic systems;
- Algae cultivation for aquatic pollution control, nutrient recovery and biomass production from wastewater;
- Aquaculture and aquaponics engineering for sustainable food production;
- Additive manufacturing for biosystems and environmental remediation applications;
- Fermentation production of lactic acid from aquaculture organic wastes;
- Anaerobic digestion for biogas production from aquaculture organic wastes;
- Fate and transport of emerging PFOS and PBDE contaminants in aquatic systems;
- Sustainability and life-cycle analysis of ecological engineered systems.

State University of New York at Buffalo (Buffalo, New York, USA)
Department of Civil, Structural and Environmental Engineering
Research Assistant Professor *8/11 – 8/13*
Research focused on biological and ecological aspects of environmental engineering systems and ecosystem restoration engineering. Activities included the following:

- Optimization of phycoremediation for aquatic pollution control in fresh waters;
- Sustainability analysis of ecologically-engineered pollution control in the Great Lakes;
- Restoration of ecosystem metabolic function in mining-impacted streams;
- Remediation of organic chlorinated solvents from groundwater using hybrid poplar phytoremediation;
- Developing physical and computation models of coupled human-natural systems.

State University of New York at Buffalo (Buffalo, New York, USA)
Department of Civil, Structural and Environmental Engineering
Postdoctoral Research Scientist *8/11 – 8/13*
Coordinator, Ecosystem Restoration through Interdisciplinary Exchange (ERIE) Program
Responsible for administration and program-building for the ERIE Program, a National Science Foundation IGERT and REU program focused on ecosystem restoration. Activities included the following:

- Developed interdisciplinary curriculum in ecosystem restoration practice;
- Coordinated interdisciplinary research and educational initiatives across multiple departments;
- Developed research partnerships in ecosystem restoration with external partner organizations;
- Developed program recruitment, outreach, and research strategies.

University of Maryland (College Park, Maryland, USA)
Biological Resources Engineering Department
U.S. Department of Agriculture National Needs Fellow ($84,000) *9/04 – 5/08*
Dissertation research focused on self-organization in ecologically-engineered unit processes.

- Investigated limiting factors to benthic production in algae cultivation;
- Developed method for monitoring ecosystem metabolism for benthic algal community;
- Designed feedback control system to optimize production benthic algal production;
- Analyzed the sustainability of algal cultivation for mitigation of dairy manure waste.

Research Assistant, Ecological Engineering Laboratory *9/00 – 12/03*
Master's thesis research focused on feedback control for wastewater treatment wetlands.

- Designed a feedback control system using wetland soil redox potential;
- Developed computer simulation models of wetland soil biogeochemistry

Research assistant responsibilities encompassed design and analysis of ecologically-engineered systems for the University of Maryland Ecological Engineering Laboratory.

- Developed research program and built paired research facilities in Maryland and Utah for testing of ecological gray water wetland treatment systems for long-term human life support;
- Developed projects in tropical sustainable development in Belize, such as the use of low-cost household gray water wetland treatment systems.

TEACHING EXPERIENCE

Instructor of record

BSEN 5510/6510: Introduction to Ecological Engineering — *Fall 2014-Present*
Biosystems Engineering Department, Auburn University

BSEN 5230/6230: Waste Management and Utilization for Biosystems — *Spring 2014, 2015, 2020-Present*
Biosystems Engineering Department, Auburn University

ENGR 1110: Introduction to Biosystems Engineering — *Fall 2015, 2016*
Biosystems Engineering Department, Auburn University — *Spring 2016*

BSEN 4970/7970: Engineering for Algae Systems — *Spring 2016, 2018, 2020*
Biosystems Engineering Department, Auburn University

BSEN 7900: Introduction to Aquaponics — *Fall 2018*
Spring 2019

CSES 3270: Methods in Stream Restoration — *Fall 2016*
Co-taught with Crop, Soil & Environmental Science, Auburn Univ.

Biological Principles of Environmental Engineering
Department of Civil, Structural and Environmental Engineering, SUNY Buffalo — *Fall 2011, 2012*

Ecological Systems Modeling — *Spring 2009, 2011- 2013*
Department of Civil, Structural and Environmental Engineering, SUNY Buffalo

Practicum in Ecological Restoration — *Fall 2009, 2010, 2012*
Ecosystem Restoration Graduate Program, SUNY Buffalo

Course Teaching Assistant

Biological Resources Engineering Capstone — *2003 – 2004*
Biological Resources Engineering Department, University of Maryland

2000-2002
Natural Resources Management Capstone
Natural Resources Management Program, University of Maryland

Tropical Ecology and Sustainable Development — *2001-2003*
Natural Resources Management Program, University of Maryland

AutoCAD Design for Engineering — *2001*
Biological Resources Engineering Dept., University of Maryland

Graduate Student Advisement

Student	Degree	Institution	Thesis/Project	Status
Itokazu Canzian de Silva, Ana Gabriela	Ph.D. Biosystems Eng.	Auburn University	*Species selection and community optimization in algal turf scrubber phytoremediation of aquaculture waste*	Expected 2023
McGehee, Marisa Rodriguez	M.S. Thesis Biosystems Eng.	Auburn University	*New wastewater treatment technologies based on a novel algae-bacteria consortium (tentative)*	Expected 2023
Ko, Helen	M.S. Thesis Biosystems Eng.	Auburn University	*Microbial interactions in colonizing filamentous algal communities (tentative)*	Expected 2023
Karimi, Zahra	Ph.D. Chemical Eng (co-advise)	Auburn University	*Investigating the effect of substrate characteristics on growth and cultivation of attached algae*	Completed 2022
Liu, Meizhu	M.S. Thesis Biosystems Eng	Auburn University	*Bioaccumulation and toxicity of Perfluoroalkyl substances (PFAS) on Senedesmus obliquus*	Completed 2020
Burgess, Nicholas	M.S. Thesis Biosystems Eng	Auburn University	*Lactic acid conversion of algal biomass grown on tilapia wastewater*	Completed 2020
Viticoski, Roger	M.S. Thesis Civil Eng. (co-advised)	Auburn University	*Evaluation of an Algal Turf Scrubber approach for the remediation of Perfluoroalkyl Substances (PFAS)*	Completed 2019
Schott, M.H.	Ph.D. Industrial & Systems Eng. (co-advised)	Auburn University	*Additive manufacturing for space life support applications*	Completed 2019
Proano, G.	Ph.D. Industrial & Systems Eng. (co-advised)	Auburn University	*Fuzzy logic control of benthic algal cultivation on engineered surfaces*	Completed 2018
Khooshkhoo, A.	Ph.D. Industrial & Systems Eng. (co-advised)	Auburn University	*Surface Topography Issues Induced in 3-D Printed Surfaces*	Completed 2018
Ekong, J.	Ph.D. Industrial & Systems Eng. (co-advised)	Auburn University	*Effect of Three Dimensional Substratum Features on Benthic Algal Biomass Productivity*	Completed 2017
Kardel, K.	Ph.D. Industrial & Systems Eng. (co-advised)	Auburn University	*An analytical and experimental study on 3D-printed custom surfaces for benthic algal biofilms*	Completed 2016
Rains, J.	M.S. Thesis	Auburn University	*Pathogen removal in algal turf reactors for wastewater treatment*	Completed 2016
Kaur, M.	M.S. Thesis	Auburn University	*Application of surface roughness engineering principles to optimize benthic algae biofilm colonization and biomass characteristics*	Completed 2016
Alzate, A.	M.S. Thesis	SUNY Buffalo	*Development of a method for determining tensile strength of algal filaments using motion capture*	Completed 2013
Menon, R.	M.S. Project	SUNY Buffalo	*Ecosystem modeling of the Conewango Creek wetland system*	Completed 2012

Undergraduate Student Advisement

Student	Degree	Institution	Project	Status
Scott, A.	B.S. Biosystems Eng. (2023 anticipated)	Auburn University	*Effect of linear hydraulic flow rate on algal productivity in a filamentous algae cultivation raceway*	Ongoing
Rud, W.*	B.S. Biosystems Engineering (2021)	Auburn University	*Establishing mixed cultures of benthic filamentous algae for use in Algae Turf Scrubbers (ATS)*	Completed 2021
Arnold, P.*	B.S. Biosystems Engineering (2021)	Auburn University	*Use of algal turf scrubber biomass for bioproducts feedstock*	Completed 2021
Land, H.*	B.S. Biosystems Engineering (2020)	Auburn University	*Engineering applications in aquaponics production*	Completed 2019
Howell, R.*	B.S. Biosystems Eng. (2019)	Auburn University	*Development of a lab-scale hydrodynamic flume for attached algal growth investigation*	Completed 2019
Johnson, M.^	B.S. Physics Education (2020)	Moorehouse College	*Utilization of aquaponics fish waste for lactic acid fermentation*	Completed 2018
Szoka, M.	B.S. Biosystems Eng. (2017)	Auburn University	*Air flow patterns in crayfish burrows subjected to wind loading*	Completed 2017
Bankston, E.*	B.S. Biosystems Engineering (2017)	Auburn University	*Following the mass flow of nitrogen throughout an aquaponics system*	Completed 5/2017
Granger, C.*	B.S. Biosystems Engineering (2017)	Auburn University	*Impact of restoration activities on stream metabolism measures*	Completed 12/2016
Jones, K.	B.S. Biosystems Engineering (2017)	Auburn University	*Understanding biomass quality of naturally-derived filamentous algae*	Completed 8/2016
Elliott, O.*	B.S. Biosystems Engineering (2015)	Auburn University	*Effects of Intersecting Limiting Factors on the Colonization and Growth of Algal Biofilms in Cultivation Systems*	Completed 8/2015
Blanton, J.*	B.S. Biosystems Engineering (2015)	Auburn University	*Self-optimization of mixed algal communities via automated feedback control of light input*	Completed 8/2015
Rodriguez, H.	B.S. Computer Science (2015)	SUNY Buffalo	*Development of a computational tool for design of algal cultivation raceways*	Completed 8/2013
Beckinghausen, A.**	B.S. Chemical Engineering (2013)	SUNY Buffalo	*Association of E. coli with benthic filamentous algae on a Great Lakes Beach*	Completed 8/2013
Byrley, P.**	B.S. Civil Engineering (2013)	SUNY Buffalo	*Development of a floating cultivator for production of algal biomass*	Completed 6/2013
Hennessey, E.**	B.S. Civil Engineering (2013)	SUNY Buffalo	*Life-cycle analysis of algal cultivation for nutrient control and biomass production in the Great Lakes*	Completed 5/2013
Spinelli, D.	B.S. Civil Engineering (2013)	SUNY Buffalo	*Development of a low-cost algal cultivator for sustainable nutrient recovery from natural waters*	Completed 4/2013
Yung, W.^	B.S. Biol. Eng, SUNY Binghamton (2012)	SUNY Binghamton	*Primary production and community respiration in a high-erosive stream*	Completed 8/2011
Saio, K.^	B.S. Forestry Eng., SUNY ESF (2011)	SUNY Binghamton	*Assessing the viability of regional algae cultivation for nutrient scrubbing*	Completed 8/2010

Notes: * Auburn University Undergraduate Research Fellow
** SUNY Buffalo Undergraduate Research Fellow
^ National Science Foundation REU Fellow

PROFESSIONAL AND ACADEMIC SERVICE.

- Journal peer reviewer (100+ total) for
  - *Ecological Engineering*, 2009-Present
  - *Journal of Hazardous Materials*, 2011-Present
  - *Landscape and Urban Planning,* 2010-Present
  - *World Review of Science, Technology and Sustainable Development,* 2010-Present.
  - *Ecological Modelling,* 2012-Present
  - *Water Resources Research,* 2012-Present
  - *Water Environment Research,* 2013-Present
  - *Algal Research,* 2013-Present
  - *Water Science and Technology,* 2017 – Present
  - *Water,* 2019 - Present

- Professional Society Service
    - ASABE Committee Representative, NRES-28 Ecological Engineering (member 2014 – present)
        - NRES-28 Committee Chair, 2016-2017
        - NRES-28 Committee vice-Chair, 2015-2016
        - NRES-28 Committee Secretary, 2014-2015
    - ASABE Alabama Section (member 2014 – present)
        - Section Executive Committee Chair, 2020 – present
        - Section Executive Committee Programs chair, 2019-2020
    - American Ecological Engineering Society
        - President-elect, Executive Committee, 2022-Present
        - Chair, Professional Certification Committee, 2021 - Present
        - Secretary, Executive Committee, 2019-2021
        - Body of Knowledge Committee co-Chair, 2009-2020
        - Advisory committee, AEES 2012 Conference
        - Student Design Competition committee co-chair, AEES 2012 conference
        - Planning committee member, AEES 2014 conference
- University Service
    - Rules committee member, Auburn Faculty Senate, 2022 - present
    - Senator, departmental representative, Faculty Senate, 2020 - present
    - Auburn University, Stormwater Design and Advisory Committee, 2016-Present
    - SUNY Buffalo Representative, Transborder Research University Network (TRUN), 2010
    - SUNY Buffalo Representative, West Seneca Oxbow Wetland Technical Advisory Group, 2009-Present
- College Service
    - Member, Train-the-Trainer Diversity Equity Inclusion committee, College of Engineering, 2022-present.
    - Member, Instructional Committee, College of Agriculture, 2019 - present
    - York International Scholars Review Committee, Auburn University, 2017-Present
    - Budget Advisory Committee, College of Agriculture, Auburn University, 2015-Present
    - Undergraduate Research Committee, College of Engineering, Auburn University, 2015-Present
- Departmental Service
    - Curriculum and Assessment Committee, 2017-Present
    - Graduate Admissions Committee, 2016-Present
    - Faculty Search Committee, Bioprocess Engineering, 2014-2015
    - Faculty Search Committee, Precision Agriculture, 2015-2016
    - Faculty Search Committee, Ecological Engineering, 2015-2016

PROFESSIONAL AFFILIATIONS

- American Ecological Engineering Society (2001 – Present)
- American Society of Agricultural and Biological Engineers (2005 – Present)
- American Society of Civil Engineers (2003 – 2012)
- North American Benthological Society (2008 – 2013)
- Great Lakes Research Consortium (2010 – 2013)
- International Association of Great Lakes Research (2012-2013)

PROFESSIONAL EXPERIENCE

N-O-M-A-D LLC. (Baltimore, Maryland, USA)
Ecological Engineering Consultant *1/03 – 8/08*
Consultant for design consultancy group for sustainable design projects in the U.S. and Europe.

PCCI Marine and Environmental Engineering (Alexandria and Williamsburg, Virginia, USA)
Environmental Engineering Consultant *1/94 – 1/99*
Provided project engineering and regulatory consulting for oil spill response programs in the U.S. Navy and U.S. Coast Guard.

Professional Licensure

Fundamentals of Engineering license certification (State of Indiana, USA), May 1993

AWARDS AND HONORS

- 2018 Faculty Research Award, Junior Faculty, Auburn University Samuel Ginn College of Engineering Alumni Engineering Council, $3000
- 2017 President's Outstanding Collaborative Units Award, Office of the Provost, Auburn University, $5000
- 2017 Dean's Research Award, Junior Faculty, College of Agriculture, Auburn University
- 2017 Dean's Grantsmanship Award, College of Agriculture, Auburn University
- 2016 Faculty Project Team Award, College of Agriculture, Auburn University
- Auburn University New Faculty Scholar, Biggio Center for the Enhancement of Teaching and Learning, Auburn University, 2013-2014.
- Civic Engagement Research Fellow, Civic Engagement and Public Policy Strategic Initiative, State University of New York at Buffalo, 2013-2014 ($3.5K).
- U.S. Department of Agriculture National Needs Fellowship, 2003-2007 ($84K).
- University of Maryland Jacob K. Goldhaber Travel Grant, May 2007 ($250).
- Student Travel Grant, American Ecological Engineering Society, May 2006 ($300).
- Penn. Space Grant Consortium, Closed Environmental Systems for Extreme Environments, 2003 ($1K).
- Mars Society Technical Task Force Equipment Development Grant, October 2002 ($1K).

SPONSORED RESEARCH

- Hayworth, J. Schwartz, D., Stoeckel, J., Panizzi, J., Biancardi, V., Blersch, D. $150,000. PAIR Tier 1: "Emerging contaminants research team," Office of the Vice President of Research, Auburn University, 08/01/2018 – 07/31/2021.
- Hanson, T., Higgins, B., Blersch, D., Wells, D. $145,676. "Life cycle analysis and economics of commercial aquaponics systems," Auburn AAES Hatch Interdisciplinary Research Program. 09/02/2018 – 08/31/2020.
- Blersch, D., MacDonald, T., Stoeckel, J. "Data Acquisition for Aquatic Ecosystems," 6/17-5/18, $6,400. Undergraduate Research Office, Auburn University.
- Hanson, T., Wells, D., Huang, T., Blersch, D. (20%), Chappell, J. "Aquaponics - A Sustainable Way Forward," 6/17-6/22, $243,500. USDA 2017-38420-26765.
- Blersch, D., Wells, D., Hanson, T., Chappell, J., McQuilling, A. "Systems modeling of nitrogen recycling in multi-trophic aquaculture production," 5/17-4/20, $499,952. NIFA USDA-2017-67020-26398
- Hanson, T., Wells, D., Huang, T., Blersch, D., Chappell, J. "Improving aquaculture's value through enhanced nutrient management," 9/16-9/18, $300,000 ($60,000). USDA-2016-70007-25758.
- Blersch, D. "Sediment Recovery by Benthic Algal Cultivation," 4/2016-3/2017, $9,000. Office of the Vice President of Research Internal Grants, Auburn University.
- Davis, V., Blersch, D., Carrano, A. "Novel biodegradable materials for additive manufacturing of complex scaffolds for algal bioremediation systems," 4/2016-3/2017, $49,999 ($12,500). National Science Foundation MME #1563160
- Knappenberger, T., Shepherd, S., Blersch, D., Helms, B., Howe, J., Brantley, E., Stoeckel, J. "Stream Restoration: Development of an undergraduate course on methods of inquiry in stream restoration," 5/2016 – 5/2017, $10,000 ($1500). Office of Undergraduate Research, Auburn University.
- Blersch, D., Carrano, A. "Removing Nitrogen from Fisheries Effluent," 2/17-1/19, $74,310 ($37,155). USEPA-83695101.
- Hanson, T., Chappel, J., Blersch, D., Wells, D. "Aquaculture Critical Control Points," 1/16-12/16, $100,000 ($25,000). United Soy Board #1630-512-5211.

- Carrano, A., Blersch, D. "Development of 3D-printed surfaces for ultra-high surface area trickling biofilters for water pollution remediation," 9/15-8/16, $14,903 ($7,450). USEPA #G2015-P3-Q4-Water.
- Blersch, D., Carrano, A. "Design of 3D printed benthic substrata for gnotobiotic periphytic communities," 5/2014-5/2015, $50,000 ($25,000), Office of the Vice President of Research, Auburn University.
- Blersch, D. "Co-cultivation of benthic algal biofilms for nutrient repurposing in sustainable multi-trophic aquaculture production systems," 10/2014-10/2016, $40,000, Alabama Agricultural Experiment Station Hatch Funding Program.
- Blersch, D., Srivastava, P. "Life in the Balance: Enhancement of ecological engineering curriculum with the balanced aquarium concept," 5/2014-4/2015, $3980 ($3980), Daniel F. Breeden Endowed Grant Program, Biggio Center for the Enhancement of Teaching and Learning, Auburn University.
- Blersch, D. "Development of algae cultivation for nutrient recovery from the near shore Great Lakes in Buffalo, New York," 1/15/2013 – 6/21/2013, $29,815, New York State Pollution Prevention Institute, Rochester, NY.
- Blersch, D., Rabideau, A. "Phytoremediation at the Machias Gravel Pit Site," sponsor: Motorola, 8/15/2009 – 8/14/2015, $180,000.
- Blersch, D. "Research capacity development for algal-based remediation of surface water pollution," 7/1/2011-6/30/2012, $30,000, PI, funded by private donor.
- Beckinghouse, A., Blersch, D. "Evaluation of beach monitoring and notification systems for recreational bathing," 5/31/12-8/31/12, $385, Center for Undergraduate Research and Creative Activities, University at Buffalo.
- Byrley, P., Blersch, D."Assessment of a floating algae cultivator for water pollution control and biomass production," 3/31/12-12/31/12, $1000, Center for Undergraduate Research and Creative Activities, University at Buffalo.

PUBLICATIONS

Peer-Reviewed Journal Manuscripts (* = Student Advisee)

1. Karimi, Z.*, **Blersch, D.M.** and Davis, V.A., 2022. Design and analysis of a flow way photobioreactor for substrate assessment in attached cultivation of filamentous green algae. *Algal Research*, *66*, p.102801. DOI: 10.1016/j.algal.2022.102801.

2. Johnson, M.*, Burgess, N., Shi, S., Li, J. and **Blersch, D.M.**, 2022. Formulation of Fish Waste as a Low-Cost Fermentative Nutrient for Lactic Acid Production by Lactobacillus pentosus. *Waste and Biomass Valorization*, *13*(6), pp.2917-2925. DOI: 10.1007/s12649-022-01705-0.

3. Viticoski, R.L.*, Wang, D., Feltman, M.A., Mulabagal, V., Rogers, S.R., Blersch, D.M. and Hayworth, J.S., 2022. Spatial distribution and mass transport of Perfluoroalkyl Substances (PFAS) in surface water: A statewide evaluation of PFAS occurrence and fate in Alabama. *Science of The Total Environment*, *836*, p.155524. DOI: 10.1016/j.scitotenv.2022.155524.
4. Stoeckel, J.A., Szoka, M.*, Abdelrahman, H.A., Davis, J.D., **Blersch, D.M.**, Helms, B.S. 2021. Crayfish chimneys function as burrow-ventilation structures. Journal of Crustacean Biology 41(3): 1-9. DOI: 10.1093/jcbiol/ruab045.

5. Karimi, Z.*, Laughinghouse, H.D., Davis, V.A., **Blersch, D.M.** 2021. Substrate properties as controlling parameters in attached algal cultivation. Applied Microbiology and Biotechnology 105: 1823-1835. DOI: 10.1007/s00253-021-11127-y.

6. Shi, S., Guan, W., **Blersch, D.**, Li, J. 2021. Improving the enzymatic digestibility of alkaline-pretreated lignocellulosic biomass using polyDADMAC. Industrial Crops and Products 162: 113244. DOI: 10.1016/j.indcrop.2021.113244.

7. Pablo Jiménez-Bonilla, P.*, Feng, J., Wang, S., Zhang, J., Wang, J., **Blersch, D.**, Luz Estela de-Bashan, L., Gaillard, P., Guo, L., Wang, Y. 2021. Identification and investigation of autolysin genes in *Clostridium saccharoperbutylacetonicum* N1-4 for enhanced biobutanol production. Applied Environmental Microbiology 02442-20. DOI: 10.1128/AEM.02442-20.

8. Proano-Pena, G.*, Carrano, A.L., **Blersch, D.M.** 2020. Analysis of very-high surface area 3D-printed media in a moving bed biofilm reactor for wastewater treatment. PLoS ONE 15(8): e0238386. DOI: 10.1371/journal.pone.0238386.
9. Jiménez-Bonilla, P.*, Zhang, J., Wang, Y., **Blersch, D**., de-Bashan, L., Guo, L., Wang, Y. 2020. Enhancing the tolerance of *Clostridium saccharoperbutylacetonicum* to lignocellulosic-biomass-derived inhibitors for efficient biobutanol production by overexpressing efflux pumps genes from *Pseudomonas putida*. Bioresource Technology, 312: 123532. DOI: 10.1016/j.biortech.2020.123532.
10. Blanchard, C.*, Wells, D.E., Pickens, J.M., **Blersch, D.M.** 2020. Effect of pH on cucumber growth and nutrient availability in a decoupled aquaponic system with minimal solids removal. *Horticulturae* 6(10). DOI: 10.3390/horticulturae6010010.
11. Blersch, S.S., **Blersch, D.M.**, Atkinson, J.F. 2019. Metabolic variance: A metric to detect shifts in stream ecosystem function as a result of stream restoration. *Journal of the American Water Resources Association* 55(3): 608-621. DOI: 10.1111/1752-1688.12753.
12. Ekong, J.*, **Blersch, D.M.**, Kardel, K., Carrano, A.L. 2019. Influence of three-dimensional features of a woven-fabric substrate on benthic algal biomass production. *Algal Research* 44: no. 101661. DOI: 10.1016/j.algal.2019.101661.
13. Khoshkhoo, A.*, Carrano, A.L., **Blersch, D.M.**, Kardel, K. 2019. Engineering of bio-mimetic substratum topographies for enhanced early colonization of filamentous algae. *PLoS ONE* 14(7): e0219150. DOI: 10.1371/journal.pone.0219150.
14. Shi, S.*, Li, J., Guan, W., **Blersch, D.M.** 2018. Nutrient value of fish manure waste on lactic acid fermentation by *Lactobacillus pentosus*. *RSC Advances* 8: 31267-31274. DOI: 10.1039/c8ra06142d.
15. Khoshkhoo, A.*, Carrano, A.L., **Blersch, D.M.** 2018. Effect of build orientation and part thickness on dimensional distortion in material jetting processes. *Rapid Prototyping Journal* 24(9): 1563-1571. DOI: 10.1108/RPJ-10-2017-0210.
16. Xu, G., Guan, W., Shi, S.*, **Blersch, D.M.** 2018. Adsorption model development for mass transport characteristics of MFEP structure by physiosorption method. *Chemical Engineering Journal* 354: 922-931. DOI: 10.1016/j.cej.2018.08.080.
17. Shi, S.*, Li, J., **Blersch, D.M.** 2018. Utilization of solid catfish manure waste as carbon and nutrient source for lactic acid production. *Applied Microbiology and Biotechnology* 102(11): 4765-72. DOI: 10.1007/s00253-018-8985-6.
18. Kardel, K.*, **Blersch, D.M.**, Carrano, A.L. 2018. Custom design of substratum topography increases biomass yield in algal turf scrubbers. *Environmental Engineering Science* 35(8): 856-863. DOI: 10.1089/ees.2017.0354.
19. Guan, W., Shi, S.*, **Blersch, D.M.** 2018. Effects of Tween 80 on fermentative butanol production from alkali-pretreated switchgrass. *Biochemical Engineering Journal* 135: 61-70. DOI: 10.1016/j.bej.2018.03.015.
20. **Blersch, D.M.**, Kardel, K.*, Carrano, A.L., Kaur, M*. 2017. Customized 3D-printed surface topography governs species attachment preferences in a fresh water periphyton community. *Algal Research* 21: 52-57. DOI: 10.1016/j.algal.2016.10.027
21. Elliott, O.*, Gray, S.*, McClay, M.*, Nassief, B.*, Nunnelly, A.*, Vogt, E.*, Ekong, J.*, Kardel, K.*, Khoshkhoo, A.*, Proano, G.*, **Blersch, D.M**., Carrano, A.L. 2017. Design and manufacturing of high surface area 3D-printed media for moving bed bioreactors for wastewater treatment. *Journal of Contemporary Water Research & Education* 160: 144-156
22. **Blersch, D.M**., Kangas, P., Adey, W. 2016. Freshwater marsh community structure in a Florida Everglades mesocosm. *Transactions of the ASABE* 59(5): 1305-1312. DOI 10.13031/trans.59.11599.
23. Calahan, D., **Blersch, D.M.**, and Adey, W. 2015. Weeds in the algae garden–A source of biomass for the algae-to-biofuels program. *Ecological Engineering* 85: 275-282.
24. Wallace, J.S.*, **Blersch, D.M.** 2015. Dynamic modeling predicts continued bioaccumulation of polybrominated diphenyl ethers (PBDEs) in smallmouth bass (*Micropterus dolomiu*) post phase-out due to invasive prey and shifts in predation. Environmental Pollution 206, 289-297. doi: 10.1016/j.envpol.2015.07.023

25. Kardel, K.*, Carrano, A.L., **Blersch, D.M.**, and Kaur, M. 2015. Preliminary development of 3D printed custom substrata for benthic algal biofilms. 3D and Printing and Additive Manufacturing Journal 2(1): 12-19. doi: 10.1089/3dp.2014.0024.
26. **Blersch, D.M.**, Kangas, P. 2014. Signatures of self-assembly in size distributions of wood members in dam structures of *Castor canadensis*. Global Ecology and Conservation 2: 204-213. doi: 10.1016/j.gecco.2014.08.011.
27. Beckinghausen, A.*, Martinez, A.*, **Blersch, D.M.**, Haznedaroglu, B. 2014. Association of nuisance filamentous algae *Cladophora* spp. with *E. coli* and *Salmonella* in public beach waters: impact of UV protection on bacterial survival. Environmental Science: Processes & Impacts 16: 1267-1274. doi: 10.1039/c3em00659j.
28. Bohlen, M., Clark, B., Dalton, J.*, **Blersch, D.M.**, Atkinson, J., Yang, L. 2013.Another day at the beach: Combining sensor data with human perception and intuition for the monitoring and care of public recreational water resources. 9th International Conference on Intelligent Environments: IEEE Computer Society; 2013:37-44. doi: 10.1109/IE.2013.21.
29. **Blersch, D.M.,** Kangas, P.C., Mulbry, W.W. 2013. Turbulence and nutrient interactions that control benthic algal production in an engineered cultivation raceway. *Algal Research*. 2(2): 107-112. doi: 10.1016/j.algal.2013.01.001.
30. **Blersch, D.M**., Kangas, P., Mulbry, W. 2013. Autonomous benthic algal cultivator under feedback control of ecosystem metabolism. *Environmental Engineering Science.* 30(2): 53-60. doi: 10.1089/ees.2012.0045.
31. **Blersch, D.M.**, Kangas, P. 2013. A modeling analysis of the sustainability of ecotourism in Belize. *Environment, Development and Sustainability*. 15(1): 67-80. doi: 10.1007/s10668-012-9374-4.
32. Pizarro, C.X., Mulbry, W.W., **Blersch, D.M.**, Kangas, P. 2006. An economic assessment of algal turf scrubber technology for treatment of dairy wastewater. *Ecological Engineering* 26:321-327. doi: 10.1016/j.ecoleng.2005.12.009.
33. **Blersch, D.M.**, Kangas, P. 2006. Autonomous behavior of a wetland soil technoecosystem. *Environmental Engineering Science.* 23(2):285-295. doi:10.1089/ees.2006.23.285.
34. Schreuders, P.D., **Blersch, D.M.**, Lomander, A., Koh, F., Reddy, P. Danzy, D. 2002. An ecological engineering project for combined undergraduate and graduate classes. *International Journal of Engineering Education* 18(5): 607-615.

Non-Refereed Research Publications (12 total)(* = student advisee)

1. Proano-Pena, G.*, Carrano, A.L., **Blersch, D.M.** 2020. Dataset for Analysis of very-high surface area 3D-printed media in a moving bed biofilm reactor for wastewater treatment. Faculty Datasets. 3. https://digitalcommons.georgiasouthern.edu/data/3. DOI: 10.20429/data.2020.1.
2. Rodriguez, M.*, Herring, D.W.*, Karimi, Z.*, **Blersch, D.M.,** Davis, V.A. 2020. Understanding the Growth and Attachment of Algae on Nanocomposites. Auburn University Journal of Undergraduate Scholarship. Auburn University.
3. Khoshkhoo, A.*, **Blersch, D.M.**, Carrano, A.L. 2018. Effect of surface slope and build orientation on surface finish and dimensional accuracy in material jetting processes. *Procedia Manufacturing* 26: 720-730. DOI: 10.1016/j.promfg.2018.07.082.
4. Wells, D.E., **Blersch, D.M.**, Chappell, J., Hanson, T., Huang, T., Smith, M.* 2018. The Auburn University aquaponics initiative: leveraging university resources to enhance teaching and research. *HortScience* 53(9): S480. Abstract.
5. Carrano, A.L., **Blersch, D.M.**, Kardel, K.*, Khoshkhoo, A.* 2016. Understanding attachment preferences of benthic algae through controlled surface topographies on 3D-printed substrata. Paper presented at the *5th International Conference on Surface Metrology*, April 4-7, 2016, Poznan University of Technology, Poznan, Poland.

6. Rains, J.D.* and **Blersch, D.M.** 2015. A re-circulating flow-lane photo-incubator for benthic algae experiments. Paper presented at *2015 Annual International Meeting of American Society of Agricultural and Biological Engineers (ASABE),* July 26-29, 2016, New Orleans, LA.
7. Bohlen, M., Clark, B., Dalton, J.*, **Blersch, D.M.**, Atkinson, J., Yang, L. 2013.Another day at the beach: Combining sensor data with human perception and intuition for the monitoring and care of public recreational water resources. 9th International Conference on Intelligent Environments: IEEE Computer Society; 2013:37-44. doi: 10.1109/IE.2013.21.
8. **Blersch, D.M**., Mulbry, W., and Kangas, P. 2005. Emergy of algal systems revisited. In: M.T. Brown (ed.). *Emergy Synthesis 3: Theory and Applications of the Emergy Methodology.* Center for Environmental Policy. University of Florida, Gainesville, Florida, pp. 561-568.
9. **Blersch, D.M.**, Kangas, P. 2005. Project Greenhab at the University of Maryland: Development of a research-scale life support greenhouse. In: R.M. Zubrin and F. Crossman (eds.). *On to Mars 2: Exploring and Settling a New World.* Collector's Guide Publishing, Inc., Wheaton, IL.
10. **Blersch, D.M.**, Biermann, E., Calahan, D., Ives-Halperin, J., Jacobson, M., Kangas, P. 2002. A proposed design for wastewater treatment and recycling at the Flashline Mars Arctic Research Station utilizing living machine technology. In: R.M. Zubrin and F. Crossman (eds.). *On to Mars: Colonizing a New World.* Apogee Books, Wheaton, IL.
11. **Blersch, D.M**., Biermann, E., Kangas, P. 2002. Preliminary design considerations for the MARS wastewater treatment system: Physico-chemical or living machine? In: R.M. Zubrin and F. Crossman (eds.). *On to Mars: Colonizing a New World.* Apogee Books, Wheaton, IL.
12. **Blersch, D.M**., Biermann, E., Kangas, P. 2000. Preliminary design considerations on biological treatment alternatives for a simulated Mars base wastewater treatment system. *Proceedings of the 35th Annual International Conference on Environmental Systems in Toulousse, France, July 2000.* Society of Automotive Engineers, Mechanicsville, PA.

Major Research Reports

Reports from Biosystems Engineering Department, Auburn University, Auburn AL

1. **Blersch, D.M.** 2013. Development of algae cultivation for nutrient recovery from the nearshore Great Lakes in Buffalo, New York: Final Report. Prepared for New York State Pollution Prevention Institute, Rochester Institute of Technology, Rochester, NY, 41 pp.

Reports from non-Auburn institutions

2. Habberfield, M.W., **Blersch, D.M**., and Rabideau, A.J. 2011. Machias gravel pit site: phytoremediation barrier design. Prepared for KPRG and Associates, Inc., Brookfield, WI, on behalf of Motorola, Inc., 34 pp.
3. Nordvik, A.B., Simmons, J.L., Burkes, J., Buist, I., **Blersch, D.M**., and Reed, M. 1995. *Mesoscale in Situ Burn Aeration Tests*. Marine Spill Response Corporation, Washington, DC. Report Series 95-017, 116 pp.

Published Abstracts, Presentations and Posters (* =student advisee, underline=presenter)(146 total)

1. Karimi, Z.*, Davis, V.A., **Blersch, D.M**. 2021. Investigating the effect of thermodynamic surface characteristics on attached growth of filamentous algae Stigeoclonium. Oral presentation at the 2021 American Chemical Society National Meeting, August 22-26, Atlanta, GA.
2. Viticoski, R.*, Wang, D.*, Feltman, M.*, Mulabagal, V., **Blersch, D.**, Hayworth, J. 2021. A State-Wide Survey of the Spatial Distribution of Perfluoroalkyl Substances (PFAS) in Alabama. Oral presentation at the 2021 Alabama Water Resources Conference and Symposium, September 8-10, Perdido Beach, AL.
3. Viticoski, R.*, Wang, D.*, Feltman, M.*, Mulabagal, V., **Blersch, D**., Hayworth, J. 2021. Spatial distribution of perfluoroalkyl substances (PFAS) in the state of Alabama. Oral presentation at the 2021 World Environmental &Water Resources Congress, June 7-11, 2021 (Virtual).

4. Rud, W.*, **Blersch, D**., Itokazu Canzian da Silva, A.G.* 2021. Identifying laboratory light conditions that are viable for use in an algae turf scrubber raceway with filamentous algae. Poster presentation at the Auburn Research: Student Symposium 2021. March 29 - April 2, 2021, Auburn, AL.
5. Liu, M.*, Itokazu, A.*, **Blersch, D.M.** 2020. Effects of Toxicity and structural alterations caused by Perfluorinated sulfate (PFSAs) on the Microalgae *Scenedesmus obliquus* UTEX 393. Poster Presentation at the American Ecological Engineering Society Annual Conference, May 2020. (Virtual).
6. Karimi, Z.*, **Blersch, D.**, Davis, V.A. 2020. Understanding the Effect of Surface Characteristics on Attached Growth of Turf-Forming Filamentous Algae. Presentation at the International Congress on Sustainability Science and Engineering, August 3-5, 2020 (Virtual).
7. Jimenez-Bonilla, P.*, Gonzalez-de-Bashan, L., **Blersch, D.**, Wang, Y., Wang, Y. 2019. Autolysin Gene Deletion on *Clostridium Saccharoperbutylacetonicum* N1-4 Increase Strain Stability and Production for Biobutanol Fermentation. Oral presentation at the 2019 AIChE Annual Meeting, Nov 10-15, Orlando, FL.
8. Hayworth, J., **Blersch, D**., Mulabagal, V., Stoeckel, J., Panizzi, J., Biancardi, V., Akingbemi, B., Schwartz, D. 2019. PAIR Team Research Update, Emerging Contaminants. Oral presentation at the Auburn Research Faculty Symposium, Oct 4, Auburn, AL.
9. Burgess, N.*, Shi, S., **Blersch, D.M**. 2019. Nutrient recovery from aquaponics wastewater using algal turf scrubber and the utilization of filamentous algae for lactic acid fermentation. Poster presentation at the 31st Annual Alabama Water Resources Conference. Sept 4-6, Orange Beach, AL.
10. Proano-Pena, G.*, **Blersch, D.M.**, Carrano, A., Kardel, K.* 2019. Improving nitrification biofilter performance with 3D printed media. Oral presentation at the ASABE Annual International Meeting. July 7-10, Boston, MA.
11. **Blersch, D.M.**, Carrano, A., Khoshkhoo, A.*, Kardel, K.*, Ekong, J.*, Proano-Pena, G.* 2019. Performance enhancement of algal turf scrubbers with substrate surface engineering. Oral presentation at the OMW to Algae Symposium, Center for Biotechnology, Sfax, Tunisia.
12. **Blersch, D.M.**, Ekong, J.*, Carrano, A., Kardel, K.* 2019. Improving Algal Turf Scrubber Performance in Recovery of Aquaculture Wastewater Nutrients with Design of 3D Growth Substrata. Oral presentation at the IWAlgae2019: IWA Conference on Algal Technologies and Stabilization Ponds for Wastewater Treatment and Resource Recovery. July 1-2, Valladolid, Spain.
13. Karimi, Z.*, Rodriguez, M., **Blersch, D.M.**, Davis, V.A. 2019. Investigating the effect of surface energy on algal attachment and growth. Poster presentation at the 2019 Phycological Society of America Annual Meeting. June 23-27, Fort Lauderdale, FL.
14. Ekong, J.*, **Blersch, D.M.**, Carrano, A., Kardel, K. 2019. Three-dimensional substratum features increase biomass productivity in algal turf scrubber cultivation. Oral presentation at the 9th International Conference on Algal Biomass, Biofuels and Bioproducts. June 17-19, Boulder, CO.
15. Karimi, Z.*, Rodriguez, M.*, **Blersch, D.M.**, Davis, V. 2019. Investigating the effect of surface energy of the substrate on algal attachment. Poster presentation at the 93rd American Chemical Society Colloid & Surface Science Symposium. June 16-19, Atlanta, Georgia.
16. Viticoski, R.*, **Blersch, D.M.**, Kang, Z., Itokazu, A.*, Mulabagal, V., Hayworth, J. 2019. Uptake and adsorption of perfluoroalkyl substances by a mixed periphytic algal community from an algal turf scrubber system. Poster presentation at the 19th Annual Meeting of the American Ecological Engineering Society, June 3-6, Asheville, NC.
17. Liu, M.*, Itokazu, A.*, **Blersch, D.M.** 2019. Effects of Toxicity and structural alterations caused by Perfluorinated Alkyl Acids (PFAAs) on the microalgae *Scenedesmus obliquus* UTEX 393. Poster presentation at the 19th Annual Meeting of the American Ecological Engineering Society, June 3-6, Asheville, NC.
18. **Blersch, D.M.**, Khoshkhoo,K.*, Carrano, A., Kardel, K.*, Ekong, J.*, Proano, G.*, Karimi, Z.*, Davis, V. 2019. Performance of 3D Manufactured substrata in the algal turf scrubber approach. Oral presentation at the 19th Annual Meeting of the American Ecological Engineering Society, June 3-6, Asheville, NC.

19. Viticoski, R.*, **Blersch, D.M.**, Mulabagal, V., Hayworth, J. 2019. Remediation of perfluoroalkyl substances (PFAS) by a mixed periphytic algal community. Poster presentation at the EWRI World Environmental and Water Resources Congress, May 19-23, Pittsburgh, PA.
20. Viticoski, R.*, **Blersch, D.M.**, Mulabagal, V., Hayworth, J. 2019. Evaluation of an algal turf scrubber approach for the remediation of perfluoroalkyl substances (PFAS). Oral presentation at the American Society of Agricultural and Biological Engineers Alabama Section Spring Symposium, April 12, Auburn, Alabama.
21. Liu, M.*, **Blersch, D.M.** 2019. Effects of toxicity and structural alterations caused by Perfluorinated Alkyl Acids (PFAAs) on the microalgae *Scenedesmus obliquus* UTEX 393. Poster presentation at the Auburn Research: Student Symposium 2019. April 9, Auburn, AL.
22. Howell, R.*, **Blersch, D.M.** 2019. Development of a small-scale flume reactor for benthic filamentous algae colonization studies. Poster presentation at the Auburn Research: Student Symposium 2019. April 9, Auburn, AL.
23. Land, H.*, **Blersch, D.M.** 2019. Protein yield from filamentous algae culture from aquaculture wastewater as a function of nutrient condition. Poster presentation at the Auburn Research: Student Symposium 2019. April 9, Auburn, AL.
24. Karimi, Z.*, Rodriguez, M., **Blersch, D.M.**, Davis, V.A.2019. Investigating the effect of surface energy of the substrate on attached algal growth. Oral presentation at the Auburn Research: Student Symposium 2019. April 9, Auburn, AL.
25. Viticoski, R.*, **Blersch, D.M.**, Mulabagal, V., Hayworth, J. 2019. A bioremediation approach for perfluoroalkyl substances (PFAS). Oral presentation at the Auburn Research: Student Symposium 2019. April 9, Auburn, AL.
26. Blersch, S.S., **Blersch, D.M**., Atkinson, J. 2018. Stream periphyton metabolism correlates with hydraulic signature. Poster presentation, American Geophysical Union Fall Meeting 2018, 10-14 December, Washington D.C.
27. Itokazu, A.G.*, **Blersch, D.M.**, Rorig, L.R. 2018. Applications of algal turf scrubber for water remediation in Brazil. Poster presentation, College of Agriculture Graduate Student Poster Showcase, 25 October, Auburn University.
28. Viticoski, R.*, **Blersch, D.M.**, Mulagabal, V., Ayers, M.*, Hayworth, J. 2018. Culture parameters of a mixed periphytic algal community to be used in the remediation of perfluoroalkyl substances (PFAS). Poster presentation, Fall 2018 Graduate Engineering Research Showcase, 24 October, Auburn University.
29. Itokazu, A.G.*, **Blersch, D.M.**, Rorig, L.R. 2018. Applications of algal turf scrubber for water remediation in Brazil. Poster presentation, Fall 2018 Graduate Engineering Research Showcase, 24 October, Auburn University.
30. Itokazu, A.G.*, **Blersch, D.M.**, Rorig, L.R. 2018. Applications of algal turf scrubber for water remediation in Brazil. Poster presentation, Alabama Water Resources Conference, 5-7 September, Orange Beach, AL.
31. **Blersch, D.M.** 2018. Performance studies on Algal Turf Scrubber technologies. Oral presentation (invited), BioSC International Workshop "N/P/C storage pools in algae and cyanobacteria and nutrient uptake from waste streams." 6-7 September, Bioeconomy Science Center, Forschungzentrum Juelich, Germany.
32. **Blersch, D.M.**, Shi, S. 2018. Lactic acid production from aquaculture fish manure. Oral presentation, 2018 Annual Meeting of the American Society of Agricultural and Biological Engineers (ASABE). July 29 – August 1. Detroit, MI.
33. Blersch, D.M. 2018. Linked problems in watershed and lake management. Presented at the 2018 Annual Meeting of the American Society of Agricultural and Biological Engineers (ASABE). July 29 – August 1. Detroit, MI.
34. Blersch, D.M. 2018. Microcosm Redux: Developments on the balanced crayfish closed ecosystem project. Presented at the 2018 Annual Meeting of the American Society of Agricultural and Biological Engineers (ASABE). July 29 – August 1. Detroit, MI.

35. Johnson, M.*, Shi, S., Burgess, N.*, **Blersch, D.M.** 2018. Formulation of fish waste as nutrient for lactic acid fermentation with supplement of yeast extract. Poster presentation, Interdisciplinary STEM REU Symposium at Auburn University. July 20. Auburn, AL. (poster)
36. Stoeckel, J., Abdelrahman, H., Helms, B., **Blersch, D.M.**, Davis, J., Szoka, M.* 2018. Crayfish chimney function and purpose: Airflow, oxygen, and pheromones. Oral presentation, IAA 22: the 22nd International Symposium on Freshwater Crayfish. July 9-13. Pittsburgh, PA.
37. Proano Pena, G.*, Carrano, A.L., Blersch, D.M. 2018. Design and manufacture of 3D-printed substratum for wastewater treatment processes. Oral presentation (invited), 2018 Universities Council on Water Resources & National Institutes of Water Resources Annual Water Resources Conference. June 26-28. Pittsburgh, PA.
38. Kardel, K.*, Carrano, A., **Blersch, D.M.** 2018. Understanding material distortion in flat specimens in material jetting processes. Presented at Institute of Industrial and Systems Engineers Annual Conference. May 19-22. Orlando, FL.
39. Karimi, Z.*, Passatino, J.M.*, Herring, D.W.*, Rodriguez, M.G.*, **Blersch, D.M.**, Davis, V.A. 2018. Development of selective algal cultivation substrates by tuning the surface energy. Oral presentation, This is Research Student Symposium. April 3. Auburn University, Auburn, AL.
40. Rodriguez, M.G.*, Karimi, Z.*, Herring, D.W.*, **Blersch, D.M.**, Davis, V.A. 2018. Understanding and controlling the growth of algae species on nanocomposites. Poster presented at the This is Research Student Symposium. April 3. Auburn University, Auburn, AL.
41. Herring, D.W.*, Passatino, J.M.*, Karimi, Z.*, Rodriguez, M.*, **Blersch, D.M.**, Davis, V.A. 2018. Investigating algae-substrate interactions using polylactic acid and cellulose nanocrystal composites. Presented at the This is Research Student Symposium. April 3. Auburn University, Auburn, AL. (poster)
42. McQuilling, A., **Blersch, D.M.**, Wells, D. 2018. Modeling nitrogen use efficiency in multitrophic aquaculture production. Presented at American Chemical Society National Meeting & Expo. Mar 18-22. New Orleans, LA.
43. Karimi, Z.*, Passatino, J.M.*, Herring, D.W.*, Proano Pena, G.*, **Blersch, D.M.**, Davis, V.A. 2018. Thermodynamics of algal growth substrates made from renewable macromolecules. Presented at American Chemical Society National Meeting & Expo. Mar 18-22, New Orleans, LA.
44. Shi, S., Blersch, D.M. 2018. Lactic acid production from aquaculture fish manure. World Aquaculture Association, Aquaculture America Annual Conference. 19-22 Feb, Las Vegas, NV.
45. Smith, M.R., Wells, D., Hanson, T., Chappell, J., Blersch, D. 2018. Waer and nutrient management and savings in closed-loop aquaponic tilapia/vegetable production. World Aquaculture Association, Aquaculture America, Annual Conference. 19-22 Feb, Las Vegas, NV.
46. Hanson, T. R., Blersch, D., Chappell, J., Wells, D., Huang, T., Smith, M. 2018. Improving aquaculture's value through enhanced nutrient management. World Aquaculture Association, Aquaculture America, Annual Conference. 19-22 Feb, Las Vegas, NV.
47. Blersch, D.M., Wells, D., Hanson, T., Chappell, J. 2018. Systems modeling of nitrogen recycling in multi-trophic aquaculture production. Presented at the 2018 AFRI/NIWQP/WSC Annual Project Directors Meeting. January 29-31. Washington, DC. (poster).
48. Blersch, D. 2018. Rethinking the algal bloom: Ecological Engineering of large-scale algal cultivation for water quality restoration. Biomedical Seminar Series, Auburn College of Veterinary Medicine, 28 Sept 2018.
49. Rubisch, M.C.*, **Blersch, D.M.** 2017. Tidal flow wetlands with feedback control for management of nitrogen in aquaculture wastewater. Poster presentation at the 2017 College of Agriculture Graduate Poster Showcase. October 26, Auburn University, Auburn, Alabama.
50. Orangi, J., **Blersch, D.**, Davis, E., Chen, P., Beidaghi, M. 2017. Development and optimization of capacitive deionization for treatment of high-strength agricultural waters. Poster presentation at the 232 Electrochemical Society Meeting. October 1-5, National Harbor, Baltimore, Maryland.
51. **Blersch, D.M**., Beidaghi, M., Davis, E. 2017. Clay coating systems for removal of heavy metals for waste water. Poster presentation at the 232 Electrochemical Society Meeting. October 1-5, National Harbor, Baltimore, Maryland.

52. Blersch, D.M., Carrano, A., Kaur, M.*, Kardel, K.*, Khoshkhoo, A.*, Parano Pena, G.*, Ekong, J.* 2017. Studies in surface engineering for controlling community structure in benthic algae cultivation. Poster presentation at the This is Research Faculty Symposium. September 22, Auburn University, Auburn, Alabama.
53. Schott, M.H.*, Harris, G., **Blersch, D.M**., Wells, D., Carrano, A. 2017. Application of high-temperature thermoplastic to 3D printed hydroponics growth systems, improving sustainable food production capabilities to human spaceflight and manned Mars missions. Poster presentation at the IMAPS Advanced Technology Workshop, NASA. September 13-14, Jackson Center, Huntsville, Alabama.
54. Rubisch, M.C.*, **Blersch, D.M.** 2017. Tidal flow wetlands with feedback control for management of nitrogen in aquaculture wastewater. Poster presentation at the 2017 Alabama Water Resources Conference & Symposium. September 6-8, Orange Beach, Alabama.
55. Khoshkhoo, A.*, Carrano, A., **Blersch, D.M.**, Ghaednia, H., Kardel, K.* 2017. Understanding and engineering of natural surfaces with additive manufacturing. Oral presentation at the 2017 Annual International Solid Freefrom Symposium. August 7-9, Austin, Texas.
56. Rubisch, M.C.*, **Blersch, D.M**. 2017. Effect of guar on treatment and removal of catfish waste. Poster presentation at the American Ecological Engineering Society Annual Conference, May 23-25, Athens, Georgia.
57. **Blersch, D.M**., Litton, J.*, Chappell, J., Hanson, T., Smith, M., Wells, D. 2017. Building a research-scale aquaponics system—Recovering nutrients for food production. Oral presentation at the American Ecological Engineering Society Annual Conference, May 23-25, Athens, Georgia.
58. Proano Pena, G.*, Ekong, J.*, Carano, A., **Blersch, D.M**. 2017. Design and Manufacture of Complex 3D-Printed Media for wastewater biofiltration. Poster presentation at the 2017 EPA P3 National Sustainable Design Expo. May 15-16, Gaylord National Resort & Convention Center.
59. Litton, J.* **Blersch, D.M**. 2017. Benthic Algae Cultivation for the Recovery of Nutrients and Wastewater Treatment from Aquaculture Effluent. Poster presentation at the This is Research Student Symposium, April 13, 2017. Auburn University, Auburn, Alabama.
60. Rubisch, M.C.*, **Blersch, D.M**. 2017. Effect of guar on removal and treatment of catfish waste. Poster presentation at the This is Research Student Symposium, April 13, 2017. Auburn University, Auburn, Alabama.
61. Bankston, E.*, **Blersch, D.M.** 2017. Following the mass flow of Nitrogen throughout an aquaponics system. Poster presentation at the This is Research Student Symposium, April 13, 2017. Auburn University, Auburn, Alabama.
62. **Blersch, D.M.**, Litton, J.*, Chappell, J., Hanson, T., Smith, M., Wells, D. 2016. Benthic algae cultivation for recovery of nutrients from aquaponics wastewater. Oral presentation at the 2016 Yangling International Agri-Science Forum. November 5-7, 2016. Northwest A&F University, Yangling, China.
63. **Blersch, D.M**., Kardel, K.*, Kuar, M.*, Carrano, A. 2016. All the world's a stage: Engineering topography with 3D Printing for Designer Periphytic Biofilms. Poster presentation at the This is Research Faculty Symposium. September 16, 2016. Auburn University, Auburn, Alabama.
64. Hanson, T., **Blersch, D.M.**, Chappel, J., Wells, D., Huang, T., Smith, M. 2016. Improving Aquaculture's Value through Enhanced Nutrient Management. Poster presentation at the This is Research Faculty Symposium. September 16, 2016. Auburn University, Auburn, Alabama
65. Rains, J.*, **Blersch, D.M.** 2016. Removal of pathogenic bacteria in algal turf scrubbers. Oral presentation at the 2016 Alabama Water Resources Conference and Symposium. September 7-9. Orange Beach, Alabama.
66. Litton, J.*, **Blersch, D.M.** 2016. Benthic algae cultivation for recovery of nutrients from aquaponics wastewater. Oral presentation at the 2016 Alabama Water Resources Conference and Symposium. September 7-9. Orange Beach, Alabama.
67. Kardel, K.*, Carrano, A., **Blersch, D.M.** 2016. Using 3D-printed surface topographies to determine species attachment preferences in freshwater periphyton communities. Oral presentation at the 2016 Alabama Water Resources Conference and Symposium. September 7-9. Orange Beach, Alabama.

68. Kaur, M.*, **Blersch, D.M.** 2016. Effect of substratum topography on algal turf colonization and productivity under different nutrient concentrations. Oral presentation at the 2016 Alabama Water Resources Conference and Symposium. September 7-9. Orange Beach, Alabama.

69. Kaur, M.*, **Blersch, D.M.**, Carrano, A. 2016. Additive manufacturing for investigating effect of substratum topography on algal turf colonization and productivity under different nutrient concentrations. Poster presentation at the 2016 Annual Meeting of the American Society of Agricultural and Biological Engineers (ASABE). July 17-20. Orlando, FL.

70. Litton, J.*, **Blersch, D.M.** 2016. Benthic algal cultivation for recovery of nutrients from aquaponics wastewater. Oral presentation at the 2016 Annual Meeting of the American Society of Agricultural and Biological Engineers (ASABE). July 17-20. Orlando, FL.

71. Rains, J.*, **Blersch, D.M.** 2016. Pathogen die-off in algal turf scrubbers. Poster presentation at the 2016 Annual Meeting of the American Society of Agricultural and Biological Engineers (ASABE). July 17-20. Orlando, FL.

72. Kaur, M.*, **Blersch, D.M.**, Carrano, A. 2016. Effect of substratum topography on algal turf colonization and productivity under different nutrient concentrations. Poster presentation at the 2016 Alabama Stormwater Symposium. May 10-12, 2016. Auburn University, Auburn, AL.

73. Litton, J.*, **Blersch, D.M.** 2016. Benthic algae cultivation for recovery of nutrients from aquaponics wastewater. Poster presentation at the 2016 Alabama Stormwater Symposium. May 10-12, 2016. Auburn University, Auburn, AL.

74. Rains, J.*, **Blersch, D.M.** 2016. Pathogen removal in algal turf scrubbers. Poster presentation at the 2016 Alabama Stormwater Symposium. May 10-12, 2016. Auburn University, Auburn, AL.

75. Elliott, O.*, Nunnelley, A.*, Vogt, E.*, **Blersch, D.M.**, Gray, S.*, McClay, M.*, Nassief, B.*, Trott, Z.*, Carrano, A. 2016. 3D-printed bioreactor media design. Poster presentation at the 2016 EPA P3 Student Design Competition and 2016 USA Science and Engineering Festival. April 16-17, 2016. Washington, DC.

76. Rains, J.*, **Blersch, D.M.** 2016. Pathogen removal in algal turf scrubbers. Poster presentation at This is Research Student Symposium 2016. April 13, 2016. Auburn University, Auburn, AL.

77. Carrano, A.L., **Blersch, D.M.**, Kardel, K.*, Khoshkhoo, A.* 2016. Understanding attachment preferences of benthic algae through controlled surface topographies on 3D-printed substrata. Oral presentation at the 5th International Conference on Surface Metrology, April 4-7, 2016, Poznan University of Technology, Poland

78. Litton, J.*, **Blersch, D.M.** 2016. Benthic algae cultivation for the recovery of nutrients and wastewater treatment from aquaculture effluent. Oral presentation at the 2016 Alabama ASABE Section Meeting. April 1-2, 2016. Auburn University, Auburn, AL.

79. Elliott, O.*, Nunnelley, A.*, Vogt, E.*, **Blersch, D.M.**, Gray, S.*, McClay, M.*, Nassief, B.*, Trott, Z.*, Carrano, A. 2016. 3D-printed bioreactor media design. Poster presentation at the 2016 Alabama ASABE Section Meeting. April 1-2, 2016. Auburn University, Auburn, AL.

80. **Blersch, D.M.**, Carrano, A., Kardel, K., Kaur, M. 2015. Design of 3D printed substrata to enhance periphytic community colonization and productivity. Oral presentation at the 2015 Alabama Water Resources Conference and Symposium. September 9-11, 2015. Orange Beach, AL.

81. **Blersch, D.**+ 2015. Life in the Balance: Enhancement of ecological engineering curriculum with the balanced aquarium concept. 2015 Annual Meeting of the American Society of Agricultural and Biological Engineers (ASABE). July 26-29, 2015. New Orleans, Louisiana.

82. Kaur, M.*+, **Blersch, D**., Kardel, K.*, Carrano, A. 2015. Application of surface roughness engineering principles to optimize benthic algae biofilm colonization and biomass characteristics (poster session). 2015 Annual Meeting of the American Society of Agricultural and Biological Engineers (ASABE). July 26-29, 2015. New Orleans, Louisiana.

83. **Blersch, D.**+, Carrano, A., Kardel, K.* Kaur, M*. 2015. Design of 3D printed substrata to enhance periphytic community colonization and productivity. 2015 Annual Meeting of the American Society of Agricultural and Biological Engineers (ASABE). July 26-29, 2015. New Orleans, Louisiana.

84. Rains, J.[*+], **Blersch, D.** 2015. A re-circulating flow lane photo incubator for benthic algae experiments (poster session). 2015 Annual Meeting of the American Society of Agricultural and Biological Engineers (ASABE). July 26-29, 2015. New Orleans, Louisiana.
85. Kardel, K.[*+], Carrano, A., **Blersch, D.** 2015. Preliminary development of 3D printed custom substrata for benthic algal biofilms. Industrial and Systems Engineering Research Conference (ISERC 2015). May 30- June 2, 2015. Nashville, Tennessee.
86. Blanton, J.[*], **Blersch, D.**[+] 2015. Self-optimization of mixed algal communities via automated feedback control of light input. (Poster Session). 2015 Annual Meeting of the American Ecological Engineering Society (AEES), June 6-9, 2015, Stillwater, Oklahoma.
87. **Blersch, D.**[+], Carrano, A. Kardel, K.[*], Kaur, M.[*], Khoshkhoo, A.[*], Proano, G.[*]. 2015. The shape of things to come: Reverse-engineering periphyton colonization processes using 3D printing. 2015 Annual Meeting of the American Ecological Engineering Society (AEES), June 6-9, 2015, Stillwater, Oklahoma.
88. **Blersch, D.**, Winfrey, B., Kangas, P. 2015. A history of the AEES student design competition. (Poster Session). 2015 Annual Meeting of the American Ecological Engineering Society (AEES), June 6-9, 2015, Stillwater, OK.
89. **Blersch, D.** 2014. Performance evaluation of large-scale algal cultivation for pollution recovery and water quality restoration in urban watersheds of the lower Great Lakes. (Poster presentation). Conference on Ecological and Ecosystem Restoration (CEER), July 28-August 1, New Orleans, Louisiana.
90. Srivastava, P.[+], **Blersch, D.**, Fasina, O., Chaudhury, S.R., Raju, P.K. 2014. Transforming ecological engineering education using a hybrid pedagogical approach. 2014 Annual Meeting of the American Ecological Engineering Society (AEES), June 6-9, Charleston, South Carolina.
91. **Blersch, D.**[+] 2014. Performance of large-scale algal cultivation for urban water quality restoration in the Great Lakes. 2014 Annual Meeting of the American Ecological Engineering Society (AEES), June 6-9, Charleston, South Carolina.
92. McGehee, R.[*+], **Blersch, D**., Srivastava, P. 2014. A case study for ecological engineering education: Agricultural Heritage Park stormwater wetland design. (Poster Presentation). 2014 Annual Meeting of the American Ecological Engineering Society (AEES), June 6-9, Charleston, South Carolina.
93. Blanton, J.,[*+] **Blersch, D.** 2014. Self-optimization of mixed algal communities via automated feedback control of light input. (Poster presentation). 2014 Annual Meeting of the American Ecological Engineering Society (AEES), June 6-9, Charleston, South Carolina.
94. Elliott, O.[*+], **Blersch, D**. 2014. Correlation of productivity and environmental factors in pilot-scale algal turf scrubbing in the Great Lakes. (Poster presentation). 2014 Annual Meeting of the American Ecological Engineering Society (AEES), June 6-9, Charleston, South Carolina.
95. Blersch, D. 2014. Review of biomass productivity and quality from algal turf scrubbing installations. Department of Energy Algal Biofuels Strategy Workshop, March 25-26, Charleston, South Carolina.
96. Alzate*, A., **Blersch**[+]**, D.M.** 2013. Cultivation of benthic filamentous algae for pollution recovery from urban waterways: performance and economic evaluation. Poster presentation at the Alabama Water Resources Conference, 4-6 September, Perdido Beach Resort, Orange Beach, Alabama.
97. Fanou*[+], C., Alzate*, A., **Blersch, D.M.** 2013. Model development of a dump bucket mechanism for wave induced systems of filamentous algae. Poster presentation at the 2013 University at Buffalo McNair Research Conference, 11-13 July 2013, The Conference Center of Niagara Falls, Niagara Falls, NY.
98. Levy*[+], D., LaPorte*, W., Alzate*, A., **Blersch, D.M.** 2013. Structural properties of filamentous algae. Poster presentation at the 2013 University at Buffalo McNair Research Conference, 11-13 July 2013, The Conference Center of Niagara Falls, Niagara Falls, NY.
99. LaPorte*[+], W., Levy*, D., Alzate*, A., **Blersch, D.M.** 2013. The measurement of structural properties of filamentous algae in a simply supported element model. Poster presentation at the LSAMP Research Symposium, 10 July, State University of New York at Buffalo, Buffalo, NY

100. Böhlen[+], M., Clark, B., Dalton, J., Atkinson, J., **Blersch, D.M.**, Yang., L. 2013. Another day at the beach: A new approach to monitoring public recreational beach waters. Oral presentation at the 9th International Conference on Intelligent Environments, 18-19 July, Divani Palace Acropolis Hotel, Athens, Greece.

101. Alzate*[+], A.F., **Blersch, D.M**. 2013. Pilot-scale testing of benthic filamentous algae cultivation for pollution recovery from fresh surface waters in the Great Lakes. Poster presentation at the 3rd International Conference on Algal Biomass, Biofuels and Bioproducts, 16 - 19 June, Sheraton Centre Toronto Hotel, Toronto, Canada.

102. Byrley*[+], P., **Blersch, D.M**. 2013. Evaluation of a floating algae cultivator for water pollution control and biomass production. Poster presentation at the 3rd International Conference on Algal Biomass, Biofuels and Bioproducts, 16 - 19 June, The Sheraton Centre Toronto Hotel, Toronto, Canada.

103. Byrley*, P., **Blersch[+], D.M**. 2013. A floating algae cultivator for water pollution control and biomass production. Poster presentation at the 13th Annual Meeting of the American Ecological Engineering Society, 10-12 June, Kellogg Hotel and Conference Center, East Lansing, Michigan.

104. **Blersch, D.M.** 2013. Phytoremediation of contaminated groundwater through natural methods. **Invited** oral presentation at the 32nd Annual Greater Buffalo Environmental Conference (GBEC), New York Water Environment Association Western Chapter, 26 March, Hearthstone Manor, Depew, New York.

105. Blersch[+], S.S., **Blersch, D.M.**, Atkinson, J.F. 2012. Hydraulic signatures of ecosystem integrity: A modeling framework for evaluating stream restoration techniques. Oral presentation at the 4th International Ecosummit on Ecological Sustainability, September 30-October 5, Columbus, Ohio.

106. **Blersch, D.M.**, Alzate*[+], A.F. 2012. Investigating the relationship between fluid mechanics and growth of benthic filamentous algae. Oral presentation at the 2nd International Conference on Algal Biomass, Biofuels & Bioproducts, June 10-13, 2012, San Diego, California.

107. **Blersch[+], D.M.,** Yung*, W., Blersch, S.S. 2012. Net community metabolism measurement in streams as a predictor of groundwater influx and its implications for restoration. Presentation at the 12th Annual American Ecological Engineering Society Meeting, June 7-9, State University of New York College of Environmental Science and Forestry, Syracuse, New York.

108. **Blersch, D.M.**, Blersch[+], S.S., Habberfield, M., Hannes, I., Malzone, J., Whiteway, S. 2012. The disconnect between ecosystem services concept and ecosystem function in stream restoration: Where do we go from here? Presentation at the 12th Annual American Ecological Engineering Society Meeting, June 7-9, State University of New York College of Environmental Science and Forestry, Syracuse, New York.

109. **Blersch[+], D.M.**, Hennessy*, E.A., Byrley*, P. 2012. Assessment of benthic algal cultivation for phosphorus recapture in the lower Great Lakes. Presentation at the 55th Annual Conference of the International Association for Great Lakes Research, May 13-17, NavCentre, Cornwall, Ontario.

110. Byrley*[+], P., Hennessy*, E.A., **Blersch, D.M.** 2012. Assessment of a floating algae cultivator for water pollution control and biomass production. Poster presentation at the Celebration of Academic Excellence, April 5, State University of New York at Buffalo, Center for the Performing Arts, Buffalo, New York.

111. Hennessy*[+], E.A., Byrley*, P., **Blersch, D.M.** 2012. Determining biofuels potential for cultivated filamentous algae for water quality management. Poster presentation at the Celebration of Academic Excellence, April 5, State University of New York at Buffalo, Center for the Performing Arts, Buffalo, New York.

112. Alzate*[+], A.F., **Blersch, D.M.** 2012. Investigating the relationship between fluid mechanics and benthic algal growth. Oral presentation given at the 22nd Annual Great Lakes Research Consortium Conference, March 30-31, State University of New York at Oswego, New York.

113. Byrley*[+], P., Hennessy*, E.A., **Blersch, D.M.** 2012. Assessment of a floating algae cultivator for water pollution control and biomass production. Poster presentation at the 22nd Annual Great Lakes Research Consortium Conference, March 30-31, State University of New York at Oswego, New York.

114. Hennessy*, E.A., Byrley*[+], P., **Blersch, D.M.** 2012. Determining biofuels potential for cultivated filamentous algae for water quality management. Poster presentation at the 22nd Annual Great Lakes Research Consortium Conference, March 30-31, State University of New York at Oswego, New York.

115. **Blersch, D.M.** 2012. Algae cultivation in wastewater engineering: Current developments and opportunities for solar aquatic nutrient recovery. **Invited** presentation at the 30th Annual Greater Buffalo Environmental Conference (GBEC), New York Water Environment Association Western Chapter, 27 March, Hearthstone Manor, Depew, New York.

116. **Blersch+, D.M.**, Copeland, L., Rabideau, A. 2011. A case study in interdisciplinary collaborative education in ecosystem restoration: The ERIE Practicum at the University at Buffalo. Poster presentation at the 4th National Conference on Ecosystem Restoration, August 1-5, Baltimore Marriott Waterfront, Baltimore, Maryland.

117. Yung*+, W., **Blersch, D.M.** 2011. Primary production and community respiration in different cross-sections of Elton Creek. Poster presentation at the Ecosystem Restoration through Interdisciplinary Exchange REU Symposium, July 20, State University of New York at Buffalo, Center for the Performing Arts, Buffalo, NY.

118. Stewart*+, D.T.R., **Blersch, D.M.**, Donhauser*, J.C., Habberfield*, M.W., Mackintosh*, S.A., and Rabideau, A.J. 2011. Design and implementation of a phytoremediation system for groundwater impacted by chlorinated solvents: a field application. Laurentian Chapter of the Society of Environmental Toxicology and Chemistry 16th Annual General Meeting, June, Elgin, Ontario, Canada.

119. Hennessy*+, E., **Blersch, D.M.** 2011. Ash and phosphorus content of mass harvested from an algal turf scrubber on the Black Rock canal. Poster presentation at the Ecosystem Restoration through Interdisciplinary Exchange REU Symposium, July 20, State University of New York at Buffalo, Center for the Performing Arts, Buffalo, New York.

120. Hennessy*+, E., **Blersch, D.M.** 2011. Optimizing engineered algae cultivation for pollution control in western New York watersheds. Poster presentation at the Celebration of Academic Excellence, April 6, State University of New York at Buffalo, Center for the Performing Arts, Buffalo, New York.

121. Blersch+, S.S., Atkinson, J.F., **Blersch, D.M.**, Bennett, S.J. 2010. A modeling framework for evaluating stream restoration techniques and ecosystem response. Poster presentation at the American Geophysical Union 2010 Fall Meeting, 13-17 December, Moscone Convention Center, San Francisco, California. Abstract #H43D-1279.

122. Wolfe+, G., Bowen+, P., **Blersch+, D.M.,** Rabideau, A.J. 2010. Streams of Thought: Teaching art through science and science through art. Panel presentation at the North American Association for Environmental Educators 7th Annual Research Symposium, Sept 28-29, Hyatt Regency, Buffalo, New York.

123. **Blersch+, D.M.,** Rabideau, A.J. 2010. A case study in university-level interdisciplinary education in ecosystem restoration. Poster presentation at the North American Association for Environmental Education 39th Annual Conference, Sept. 29-Oct. 2, Buffalo-Niagara Convention Center, Buffalo, New York.

124. **Blersch+, D.M.,** Rabideau, A.J. 2010. Ecosystem Restoration through Interdisciplinary Exchange (ERIE): An interdisciplinary doctoral program at the University at Buffalo. Poster presentation at the North American Association for Environmental Education 7th Annual Research Symposium, Sept. 28-29, Hyatt Regency, Buffalo, New York.

125. Siao*+, K., **Blersch, D.M.** 2010. Assessing the viability of regional algae for an engineered algae cultivator for nutrient scrubbing. Poster presentation at the Ecosystem Restoration through Interdisciplinary Exchange REU Symposium, August 4, State University of New York at Buffalo, Center for the Performing Arts, Buffalo, NY.

126. **Blersch+, D.M.,** Kangas, P.C. 2010. Engineering autonomy in an algal turf scrubber technoecosystem. Oral presentation given at the 10th Annual Meeting American Ecological Engineering Society, 17th World Congress International Commission of Agricultural and Biosystems Engineering, June 13-17, Convention Centre, Quebec City, Canada.

127. **Blersch+, D.M.,** Rabideau, A.J. 2010. The Earsing Sills Oxbow Wetland restoration effort: A case study in interdisciplinary collaborative education in ecosystem restoration. Oral presentation given at the 10th Annual Meeting of the American Ecological Engineering Society, 17th World Congress of the International Commission of Agricultural and Biosystems Engineering, June 13-17, Convention Centre, Quebec City, Canada.

128. **Blersch, D.M.** 2010. Technoecosystem microcosms as analog representations of human-nature interactions. Oral presentation given at the University at Buffalo GI Science IGERT Symposium, Representing Reality: Imagery in the Cognitive, Social and Natural Sciences. May 12-15, Adams Mark Hotel, Buffalo, New York.

129. Blersch, S.S., Clabeaux*, B., Drag*, N., Earle*, R., Habberfield*, M., Seneca*, S., **Blersch[+], D.M.**, and Rabideau, A.J. 2010. Interdisciplinary education for restoration planning: A Practicum exercise in to develop restoration options for remnant oxbow wetlands in Buffalo, New York. Poster presentation at the Society of Ecological Restoration Mid-Atlantic Chapter Meeting, February 19, Rutgers University, New Brunswick, NJ.

130. **Blersch, D.M.** 2009. Engineering autonomy in an algal turf scrubber technoecosystem. Oral presentation given at the ASABE Annual Conference, Applications of Ecological Engineering subgroup, June 2009, Reno, NV.

131. **Blersch[+], D.M.**, and Rabideau, A. 2009. A new interdisciplinary doctoral program in ecosystem restoration at the University at Buffalo. Poster presentation at the Society for Ecological Restoration Midwest-Great Lakes Chapter Annual Meeting, April 2009, Indianapolis, Indiana.

132. **Blersch, D.M.** 2009. Aquatic ecosystem development for wastewater treatment. **Invited** presentation at the 27th Annual Greater Buffalo Environmental Conference (GBEC), 29 March, Hearthstone Manor, Depew, NY.

133. **Blersch, D.M.**, Mulbry, W.W., and Kangas[+], P.C. 2008. Whence the hybrid? Engineering autonomy in an algal turf scrubber technoecosystem. Poster presentation given at the 8th Annual American Ecological Engineering Society Conference, June 11-14, Virginia Tech, Blacksburg, Virginia.

134. **Blersch, D.M.** 2007. Towards an autonomous algal turf scrubber technoecosystem. Oral presentation at the 7th American Ecological Engineering Society Conference, May 23-25. Kansas State University, Manhattan, KS.

135. Lo[+], Y.M., Vargas, A., and **Blersch, D.M.** 2007. Portable biodetector integrating bioluminescent sensing cells with real-time signal acquisition and processing. CIGR Section VI – 3rd International Symposium: Food and Agricultural Products: Processing and Innovations, Sep. 24-26, Naples, Italy.

136. **Blersch[+], D.M**., Kangas, P., Mulbry, W.W. 2006. How much is enough? Effect of turbulence on algal productivity. Poster presentation at the 6th Annual American Ecological Engineering Society Conference, April 13-14. University of California Berkeley, Berkeley, California.

137. Kangas, P., Sharpe[+], P., **Blersch, D.M**. 2006. Design for an iron cycle microcosm. Poster presentation at the 6th Annual American Ecological Engineering Society Conference, April 13-14. University of California Berkeley, Berkeley, California.

138. Pizarro, C., Mulbry, W., **Blersch[+], D.M.**, Kangas, P. 2005. An economic assessment of algal turf scrubber technology for treatment of dairy wastewater. Poster presentation at the 5th Annual American Ecological Engineering Society Conference, May 18-20, 2005. The Ohio State University, Columbus, Ohio.

139. **Blersch, D.M**. 2004. Conceptual basis for ecological prosthetics as a subclass of technoecosystem engineering. Poster presentation at the 4th Annual American Ecological Engineering Society Conference, June 9-12, 2004. University of Arkansas, Fayetteville, Arkansas.

140. Ganeshan[+], P., Greene, S., Walsh, W., **Blersch, D.M**., Kangas, P. 2004. Sewage treatment simulation in a greenhouse-based ecomachine. Poster presentation at the 4th Annual American Ecological Engineering Society Conference, June 9-12, 2004. University of Arkansas, Fayetteville, Arkansas.

141. **Blersch[+], D.M**., Mulbry, W., Kangas, P. 2004. Emergy of algae revisited: Comparisons of algal-based wastewater treatment systems. Poster presentation at the 3rd Biennial Emergy Research Conference, January 29-31, 2004. Center for Environmental Policy, University of Florida, Gainesville, Florida.

142. Kangas, P., **Blersch, D.M**., Calahan[+], D. 2003. Living machines out of control; Experiments in autonomous ecological engineering. Oral presentation at the 50th AVS International Symposium and Exhibition, November 2-7, 2003, Baltimore, Maryland.

143. **Blersch[+], D.M**., Calahan, D., Fisher, G., Kangas, P. 2003. Mars Society's Project Greenhab: A living machine platform for gray water recycling and bioregenerative life support research in the Utah desert. Poster presentation at the Green Design Conference 2003, Penn State University, April 11-13, University Park, PA.

144. **Blersch[+], D.M.** 2002. Semi-autonomous microcosms: Constructing technoecosystems as a window to principles of ecological engineering. Poster presentation at the American Ecological Engineering Society's 2002 Annual Meeting, April 28-30, Burlington, Vermont.

145. **Blersch[+], D.M**., Calahan, D., Kangas, P. 2002. Development of a unique greenhouse-based wastewater treatment system. Poster presentation at the American Ecological Engineering Society's 2002 Annual Meeting, April 28-30, Burlington, Vermont.

146. **Blersch, D.M**. 2001. What would happen if an ecosystem were given control over its own energy source? Investigations into technoecosystem behavior. Poster presentation at the University of Maryland's Marine Estuarine and Environmental Science Program Colloquium, November 2-3, College Park, Maryland.

147. Calahan[+], D., **Blersch, D.M.**, Kangas, P. 2001. Algal turf scrubber technology for base building and terrraformation of Mars. Oral presentation given at the Fourth Annual Convention of the Mars Society, August 23-26, Stanford University, Stanford, California.

148. **Blersch, D.M**. 2001. Devising a technoecosystem: Development of an automatic monitoring and control system for wastewater treatment wetlands. **Invited** presentation at the Biological Resources Engineering Department Seminar, May 7, University of Maryland, College Park, Maryland.

149. Stack, R., **Blersch[+], D**., Peterson, J., Lynch, S., Adornato, J., Kangas, P. 2001. Reverse engineering of a beaver dam as an ecologically-engineered structure. Poster presentation at the American Ecological Engineering Society's Inaugural Meeting, April 30-May 2, University of Georgia, Athens, Georgia.

150. **Blersch, D.M**. 2001. Applications of ecological engineering as a platform for multifunctional resource recovery. **Oral** presentation at NASA Johnson Space Center's Office of Advanced Life Support, March 9, Houston, Texas.

151. **Blersch, D.M.** 2000. A proposed design for wastewater treatment and recycling at the Flashline Mars Arctic Research Station utilizing living machine technology. Oral presentation given at the Third Annual Convention of the Mars Society, August 10-13, Ryerson Polytechnic University, Toronto, Ontario, Canada.

152. **Blersch, D.M**. 1999. Preliminary design considerations for the MARS wastewater treatment system. Presentation given at the Second Annual Convention of the Mars Society, August 12-15, University of Colorado, Boulder, Colorado.