Application: Keshav Das

Posting number: P04630UF
Posting: Department Head (Unclassified Faculty)
Form: Faculty Profile
Submitted: September 30, 2021 at 04:19 PM (PDT) (confirmation number: CN000436520)

Personal Information

Application Date

Initial Application Date	09/30/2021 11:19 PM

Contact Information

First Name	Keshav
Middle Name	
Last Name	Das
Other Names Used	K.C. Das
Address Line 1	1431 Lakewood Manor Drive
Address Line 2	
City	Athens
State or Province	GA
Zip Code	30606
Nation	
Personal Phone	7062471325
Alternate Phone	7065428842
International Phone	
Email	kdas@uga.edu

General Information

Are you a current Oregon State University Employee?	No
If yes, indicate job titles and start date	
If yes, what is your employment type?	
Have you worked at Oregon State University before?	No
If yes, indicate job titles and dates of employment	
What is your OSU University identification number if you have one?	

Are you currently enrolled as an undergraduate student at Oregon State University or in the Degree Partnership Program?	No
Are you currently enrolled in a graduate studies program at Oregon State University?	No
Where did you learn about this vacancy?	Oregon Employment Department
Other Source (indicate N/A if not applicable)	N/A
Was the source in print or electronic media (online)?	Electronic Media (online)

Additional Information

I authorize University officers and authorized agents to verify the information submitted on my employment application or attached materials prior to making a final determination regarding my application of employment.	Yes
I authorize the University to conduct the required background and/or motor vehicle check prior to making a final determination regarding my application for employment.	Yes

Documents Needed To Apply

Required Documents

Kind	Name	Conversion Status
Cover Letter	Cover Letter 09-30-21 16:13:49 (PDT)	PDF complete
Curriculum Vitae	Curriculum Vitae 09-30-21 16:14:17 (PDT)	PDF complete
Diversity Statement	Diversity Statement 09-30-21 16:14:29 (PDT)	PDF complete

Optional Documents

No optional documents added.

Professional References

References

Name	Brahm P. Verma
Email	bverma@uga.edu

Phone Number	706-207-5126
How do you know this reference?	Former professor and Research Leader of my academic unit for 20-years.

Name	Sudhagar Mani
Email	smani@uga.edu
Phone Number	706-424-8318
How do you know this reference?	Dr. Mani is a colleague and close research collaborator.

Name	Nathan D. Melear
Email	nmelear@uga.edu
Phone Number	706-207-3607
How do you know this reference?	Dr. Melear has worked closely with me in my research program for over 15 years in the role of Research Coordinator

Name	Kaushlendra Singh Tingi
Email	ksingh1974@gmail.com
Phone Number	304-376-7135
How do you know this reference?	Dr. Tingi is a former Ph.D student advisee who worked in pyrolysis research.

Name	Ann M. Steensland
Email	anns@vt.edu
Phone Number	703-622-5011
How do you know this reference?	Ms. Steensland was previously with a DC-based NGO named Global Harvest Initiative, when we began collaborating. Presently doing similar outreach at VA Tech.

Supplemental Questions

Required fields are indicated with an asterisk (*).

Voluntary Self Identification of Protected Veteran Status

Qualifying Veteran Status Under Federal Law

Qualifying Veteran status under federal law:	I am not a protected veteran.

Qualifying veteran status under OSU's Veterans Policy

Oregon State University's hiring process extends an affirmative preference to applicants who self-identify as qualifying veterans. For the purpose of applying this preference and following the provisions of ORS Section 408.205, OSU defines ‘qualifying veteran’ more inclusively than the federal regulations as any veteran or disabled veteran who was honorably discharged from U.S. military service. NOTE: If you do not self-disclose on this page as a qualifying veteran, you will not receive the veteran's preference under OSU's policy.

Qualifying veteran status under OSU's Veterans Policy	

Certification

I authorize University officers and authorized agents to verify the information submitted on my employment application or attached materials prior to making a final determination regarding my application of employment. I authorize the University to conduct the required background and/or motor vehicle check prior to making a final determination regarding my application for employment. Any false, fraudulent, or misleading oral or written statement contained in this application profile and attached materials or made in the course of any related employment process, whether made by you or by others at your request, will result in rejection of your application, denial of employment, dismissal from state service if discovered after employment, and/or prosecution for a crime. In electronically certifying this application, you certify and affirm that you have read and understood the above notice. You further certify that you personally completed this application profile and attached materials or requested its completion and that all statements contained herein are true and complete to the best of your knowledge. By electronically submitting your application, you agree to the conditions stated in the certification above, which are enforceable as if you had signed.

[X] I certify that I have read and agree with these statements.

KD Please enter your initials to verify your identity.

Submitted on September 30, 2021 at 11:19 PM (UTC) by Keshav Das

College of Engineering

30 September 2021

Dr. Lisbeth Goddik
Chair of the Search Committee for"Department Head :
Biological and Ecological Engineering"
Oregon State University, Corvallis, Oregon 97330

Dear Dr. Goddik and members of the Search Committee,

It is with great pleasure that I express my interest in the position of Department Head and Professor in the Biological and Ecological Engineering Department at Oregon State University. I am particularly excited about the position as it strongly fits the direction of professional growth that I desire at this point in time. I believe that global population growth and our unsustainable use of resources are leading us towards critical challenges in the near future (including global food security, climate instability, water shortages, environmental decline, and quality of life threats, particularly in select populations in the U.S., and in developing countries worldwide). These are essential issues of national and global prominence, and I believe that agriculture will be the central arena in which solutions to these challenges will have to be developed. I also know that Ecological Engineering will play a significant role as developing countries worldwide implement sustainable development. The BEE Department has considerable strengths in several core areas leading to sustainable development and food security. These strengths can be leveraged to contribute further to sustainability in food systems, developing circular food systems, and addressing some of these grand challenges mentioned above.

I would like to briefly highlight certain aspects of my professional experience that are relevant to this application. In my 25 years at the University of Georgia (UGA), I have established robust research, teaching, and outreach programs in agricultural and environmental engineering. This programmatic effort has brought approximately $15 million in extramural research funding to UGA, resulted in direct training of 100+ students and staff, resulted in over 110 peer-reviewed journal articles and the issuance of 6 U.S. patents, formation of three start-up companies, and numerous outreach impacts (as documented in the attached CV). I actively seek opportunities to work closely with a variety of disciplines and have collaborated with scientists representing the biological, physical, and chemical sciences, forestry, agricultural sciences, business, and veterinary medicine, to name a few. I have also actively developed connections with and engaged international partners, as evidenced by past and current collaborations with universities and national laboratories in Puerto Rico, Mexico, Colombia, Brazil, Egypt, India, China, Thailand, Australia, Germany, Belgium, and France. I presently have extensive engagement with universities and national labs and the private sector in India that is leading to grant applications on aspects of food security, climate change impacts, and water management.

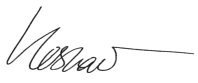
Since 2004, I have led two large multi-disciplinary projects at UGA. The first was a multi-year project funded by the U.S. Department of Energy that was supplemented with State of Georgia funding (approx. $7 million total) for research on component technologies relating to

biorefining and carbon cycling. For the last 12 years, I have served as Director of this Biorefining and Carbon Cycling Program, which is an *ad hoc* effort of scientists from a variety of technical disciplines from UGA, Georgia Institute of Technology, Clarke Atlanta University, the National Renewable Energy Lab, Eprida Inc., etc. My role has been to provide strategic leadership to the program and engage partners as needed while sustaining the program by leading individual grant applications to further program objectives. The impacts of these efforts in additional grants, publications, patents, and technology transfer are listed in the attached CV. The second major effort was the establishment of a U.S. Department of Defense-funded STEM center collaboration between the University of Puerto Rico and UGA (total center funding of $4 million). I served as the co-Director of this research center of excellence in renewable energy along with Dr. Kai Griebnow (Professor of Chemistry at the University of Puerto Rico). These two engagements have given me substantial experience and allowed me the opportunity to develop the necessary skills to work in large multi-disciplinary teams, manage budgets effectively, recruit the right collaborators, facilitate conversations across disciplinary boundaries, and bring out the best in individuals working towards a common goal.

My 25+ years of working with undergraduate engineering students in the U.S. and other parts of the world has taught me that youth are at the changing edge of society. Many are concerned about their own professional futures, and the health of our socieites and our planet, and wanting to make a contribution. I am personally committed to creating opportunities for such interest to flourish. Having conducted a study-abroad in India with 10 Georgia undergradautes, I saw first hand the positive impact on the individual. World-views expanded, and students came back wiser after just 2-3 weeks on the road.

At present, I believe that areas of national and global strategic prominence surround the nexus of Food, Energy, and Water. These include technologies and systems/skills that lead us towards food security, entrepreneurship in agriculture and rural development, sustainable bioenergy, effective management of nutrient and water use in agriculture, used-water treatment, and reuse, and low-energy technologies for environmental protection. These pathways are the core of ecological engineering and with the strengths in water related research, the opportunities for contribtion are endless. I believe that the faculty, staff, and students in Biological and Ecological Engineering at Oregon State University are doing so already and can make further contributions towards these goals. I appreciate the opportunity to submit this application for your consideration and request that it remain confidential. Please let me know if I can provide any further information.

Sincerely,



K.C. Das, Ph.D., P.E.
Georgia Athletic Association Professor in
Agricultural and Environmental Engineering

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Georgia Athletic Association Professor in
Agricultural and Environmental Engineering
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AREAS OF EXPERTISE & WORK

Research and development, technology-transfer, training and outreach in environmental engineering, organic waste management (solid waste, wastewater and air pollution control), biofuels (waste to energy) and bioproducts, and technologies relating to sustainable development. Systems analysis and modeling applied to food systems for increasing resilience. Specific technical areas include engineering process design and development of:

- Modeling food & agricultural systems to enhance resilience and sustainability.
- Composting and anaerobic systems for agricultural, municipal and industrial organic waste treatment, including nutrient recovery, biogas upgrading and use, etc.
- Pyrolysis systems for sustainable biofuels and bioproducts – Biochar use as sorbent and soil amendment for enhancing water and nutrient use efficiency in agriculture.
- Wastewater treatment systems that use bacteria and algae for remediation.

EDUCATION/QUALIFICATIONS

Ph.D., Food, Agricultural, and Biological Engineering	The Ohio State University, Columbus, Ohio, USA.	1995
M.S., Biological and Agricultural Engineering	The University of Georgia, Athens, Georgia, USA.	1991
B.S., Mechanical Engineering	Anna University, Chennai, India	1989
Licensed Professional Engineer	State of Georgia (USA), PE-028678	2003-Present

ESCOP/ACOP Leadership Development Program - Phases I, II & III, Indianapolis IN, Athens GA and Washington DC. Class of 2003.

EMPLOYMENT

Position	Supervisor/Contact	Dates
Georgia Athletic Association Professor in Agricultural and Environmental Engineering		1/2017-Present
Professor	Prof. Donald J. Leo, Dean (since Jul/2013) Prof. E. Dale Threadgill, Dean (Jul/10-6/12)	7/10- 12/16

College of Engineering, The University of Georgia, Athens GA 30602-4435, USA
Professor and Director of the University of Georgia's Biorefining and Carbon Cycling Program, focusing on developing sustainable systems for biomass conversion for value addition and new product creation.

Associate Professor Prof. E. Dale Threadgill 7/05- 6/10
Assistant Professor Department Head 9/98- 6/05
Biological & Agricultural Engineering, The University of Georgia, Athens GA 30602 USA
Research and development of environmentally sustainable technologies for organic waste treatment and conversion of waste to value added products including energy.

Postdoctoral Assoc. and Prof. E. Dale Threadgill 10/95 – 8/98
Asst. Research Scientist Department Head
Biological & Agricultural Engineering, The University of Georgia, Athens GA 30602 USA
Established a research program in biological treatment of organic wastes, converting wastes to value added products. Identified several priority solid waste issues in industry; Established cooperative interdisciplinary research and demonstration projects.

Research Associate Dr. Harold M. Keener, Professor 9/91-9/95
Food, Ag., and Biol. Engineering, The Ohio State University, Columbus, OH 44691 USA
Research on factors affecting airflow in packed beds of high moisture organic materials (composts). Work included laboratory experiments, theoretical models, and simulation of process kinetics to determine optimal reactor configuration and process control strategies.

Process Engineer Ms. Annett Berger, Plant Manager 8-11/94; 7-9/93
Kurtz Brothers Compost Services Inc., City of Akron Composting Facility, Akron, Ohio.
Developed a continuous moisture monitoring protocol for the 80 dry t/d commercial biosolids composting facility in Akron, Ohio. Performed process data analysis and computer implementation of the protocol.

TEACHING

FYOS 1000 – Global Food Security in the 21st Century: Freshman seminar on challenges in our food system and ways to enhance global food and nutrition security. [Fall 2018 - Present]

AENG 2100 – Introduction to Systems Thinking, Practice and Systems Engineering Sophomore level course (2nd year) in systems thinking, and analysis of complex systems through practice [Fall 2018 - Present]

AENG 3540 Physical Unit Operations: Senior level (4th year) course in fundamental engineering process design. Course covers various aspects of bioprocessing for the manufacture of products. Students are taught the design and selection of unit operation components in engineering processes. [Annually 1999-2007; 2010-Present]

AENG 4140/6140 – Systems Modeling: Senior level course (4th year) in systems thinking, and implementation of discrete and continuous models for understanding and optimization of desirable system features. Modeling tools include ARENA and STELLA. [Fall 2018 - Present]

ENVE 4440 Environmental Engineering I: Senior level (4th year) course in fundamentals of environmental engineering, treatment technologies, regulations and related matters. Course covers water and wastewater treatment, air pollution control technologies, and solid waste management. [Annually 2004-Fall 2018]

GSRC 8100 Entrepreneurship and Technology Commercialization: Graduate course (M.S. and Ph.D.) co-developed with Mr. Stefan Schulze, Associate Director of the University of Georgia BioBusiness Center. Course covers topics relevant to technology startups in the cutting-edge technology sector, project management, business plan development and entrepreneurship. Includes presentations from experts in the field, and helps students develop a technology transfer business plan using the lean startup model. Students work on a tech-transfer project and develop an elevator pitch, investor pitch, business model, economic assessment, and a full plan of implementation. [Annually 2013-Present]

ENGR 4900 – Study Abroad in India -- on the topic of Environmental and Energy Challenges and Opportunities in India [Spring 2015][10 students and 4 faculty members, 16 days] https://vimeo.com/146454062

ENGR 4920 Senior Design – Mentor and supervisor of 4th year engineering student team designing a process to reduce industrial waste and utilize wastes to produce value added products. [Spring 2016]

ENGR 4920 Senior Design – Mentor and supervisor of 2 teams of seniors designing a process to reduce water evaporation in algal cultivation. [Spring 2015, Spring 2016]

ENGR 4960 H – CURO (Center for Undergraduate Research Opportunity) under graduate student research mentoring. Ms. Grace Power – Experiential learning through a research project on control of contamination of algal cultures in outdoor systems. Fall 2014.

ENGR 4970H, 4990H and 5900H – Undergraduate Research: CURO undergraduate research experiential learning supervision and mentoring of a student working on an individual research project – four semesters (2012-13); leading to an Honors Program Thesis titled *"Development of flocculent-based algal harvesting"*. Mr. Nicholas Richwagen.

AESC 3126 – Fertility and pest management in organic agriculture: Interdisciplinary course on organic farming and sustainability. Taught content relating to organic waste management and compost product use in agriculture. [Annually 2007-Present; Co-taught with three other instructors in Horticulture]

ENGR 8980/FORS 8020 – Opportunities in the biomass-based economy: Graduate seminar on topics of biomass production, conversion to products, product use, economics etc. [Annually 2007-12; Co-taught with three instructors in Forestry and Microbiology]

FRES 1010 – Overcoming our addiction to oil - The transition to a renewable economy: Freshman Seminar on topics relating to biobased energy and sustainable and renewable energy economy. [Fall 2008; Co-taught with one other instructor].

ENGR 8580 – Compost Engineering: Graduate course on design and analyses of the composting process and related engineered systems. [Fall 2008; Co-taught with one other instructor]

ENGR 8980 – Syngas production and hydrogen from biomass: Graduate course on thermal conversion of biomass to bioenergy [Independent study – Fall 2006].

ENGR 4980 – Special Topics in Engineering: Alternate energy system analysis and design: Senior level (4th year) course in design of a solar-based refrigeration system for the milk industry in Uganda. Student was guided through design of unit operations and development of a processing system [Summer 2002].

AAEC 4990 – Special Topics in Agricultural and Applied Economics: Senior level course on design and economic analysis of a bio-stabilization process for wood wastes [Fall 2002].

Compost Operator Training Workshop (Industry Outreach): A 2-day workshop training on the physical, chemical and biological principles and operational aspects of composting as an organic waste management process. Course focuses on design, operation/management and economics of large-scale commercial composting facilities. [Annually 1996-2008]

PUBLICATIONS

Peer-reviewed Journal Articles **(**Total **119;** h-index **54,** Citations **= 14,006** – Google Scholar**)**

1. Sica, P., R. Carvalho, **K.C. Das** and A.S. Baptista. 2020. Biogas and biofertilizer from vinasse: making sugarcane ethanol even more sustainable. Journal of Material Cycles and Waste Management, 22(5):1427-1433. [Student advisee's paper]
2. Geller, D.P., **K.C. Das**, G.L. Hawkins, B.H. Kiepper, and M. Singh. 2019. Sustainable water and nutrient management in algal biomass production systems. In: Handbook of algal technologies and phytochemicals. CRC Press, Boca Raton FL. [Student advisee's peer chapter]
3. Wang, S., U. Jena and **K.C. Das**. 2018. Biomethane production potential of slaughterhouse waste in the United States. Energy Conversion and Management, 173, 143-157. [Doctoral student advisee's paper]
4. Steiner, C., K. Harris, J. Gaskin, and **K.C. Das**. 2018. The nitrogen contained in carbonized poultry litter is not plant available. Open Agriculture 3(1):284-290.
5. Geller, D.P., **K.C. Das**, T. Bagby-Moon, M. Singh, G. Hawkins and B. Kiepper. 2018. Biomass productivity of snow algae and model production algae under low temperature and low light conditions. Algal Research 33, 133-141. [Doctoral student advisee's paper]
6. Wang, S., G. Hawkins, B. Kiepper and **K.C. Das**. 2018. Treatment of slaughterhouse blood waste using pilot scale two-stage anaerobic digesters for biogas production. Renewable Energy 126, 552-562. [Doctoral student advisee's paper]
7. Abou-Shanab, R.A.I., M. Singh, A. Rivera-Cruz, G. Power, T. Bagby-Moon and **K.C. Das**. 2016. Effect of predatory rotifer *Brachionus rubens* on the growth characteristics of various species of microalgae. Electronic Journal of Biotechnology, 22, 68-74.
8. Wang, S., G.L. Hawkins, B.H. Kiepper and **K.C. Das**. 2016. Struvite precipitation as a means of recovering nutrients and mitigating ammonia toxicity in a two-stage anaerobic digester treating protein-rich feedstocks. Molecules 21(8):1011-17. [Doctoral student advisee's paper]
9. Mani, S., J. Sundaram and **K.C. Das**. 2016. Process simulation and modeling: Anaerobic digestion of complex organic matter. Biomass and Bioenergy, 93, 158-167.
10. Banerjee, A., M. Singh, **K. Das** and S. Sharma. 2016. Study of biodegradable polyesters from algal sources for use in future textile fiber applications. AATC Journal of Research, 3(1):1-6.
11. Purkayashta, T., **K.C. Das**, J. Gaskin, K. Harris, J.L. Smith and S. Kumari. 2016. Effect of pyrolysis temperatures on stability and priming effects of C3 and C4 biochars applied to two different soils. Soil & Tillage Research, 155, 107-115.
12. Costanzo, W., R. Hilten, U. Jena, **K.C. Das**, and J.R. Kastner. 2016. Effect of Low temperature hydrothermal liquefaction on catalytic hydrodenitrogenation of algae biocrude and model macromolecules. Algal Research, 13, 53-68.

13. Costanzo, W., U. Jena, R. Hilten, **K.C. Das**, and J.R. Kastner. 2015. Low temperature hydrothermal liquefaction of algae to reduce nitrogen heteroatoms and generate nutrient recycle streams. Algal Research, 12, 377-387
14. Parimi, N.S., M. Singh, J.R. Kastner, and **K.C. Das**. 2015. Biomethane and biocrude oil production from protein extracted residual *Spirulina platensis*. Energy 93, 697-704 [Doctoral student advisee's paper]
15. Rojas-Perez, A., D. Diaz-Diestra, C.B. Frias-Flores, J. Beltran-Huarac, **K.C. Das**, B.R. Weiner, G. Morell, and L.M. Diaz-Vazquez. 2015. Catalytic effect of ultrananocrystalline Fe_3O_4 on algal bio-crude production via HTL process. Nanoscale, 7(42):17664-17671.
16. Mattos, E.R., M. Singh, M.L. Cabrera, and **K.C. Das**. 2015. Enhancement of biomass production in *Scenedesmus bijuga* high-density culture using weakly absorbed green light. Biomass and Bioenergy, 81, 473-478 [Doctoral student advisee's paper]
17. Parimi, N.S., M. Singh, J.R. Kastner, **K.C. Das**, L.S. Forsberg and P. Azadi. 2015. Optimization of protein extraction from *Spirulina platensis* to generate a potential co-product and a biofuel feedstock with reduced nitrogen content. Frontiers in Energy Research, 3, 30. [Doctoral student advisee's paper]
18. Ameloot, N., S. Sleutel, **K.C. Das**, J. Kanagaratnam, and S. De Neve. 2015. Biochar amendment to soils with contrasting organic matter level – effects on N mineralization and biological soil properties. Global Change Biology – Bioenergy 7(1):135-144.
19. Diaz-Vazquez, L.M., A. Rojas-Perez, M. Fuentes-Caraballo, I.V. Robles, U. Jena, and **K.C. Das**. 2015. Demineralization of *sargassum* spp. marcoalgae biomass – selective thermochemical liquefaction process for bio-oil production. Frontiers in Energy Rsch, 3, 6.
20. Hilten, R.N, J.P. Vandenbrink, A.H. Paterson, F.A. Feltus and **K.C. Das**. 2014. Linking isoconversional pyrolysis kinetics to compositional characteristics for multiple Sorghum bicolor genotypes. Thermochemica Acta 577:46-52. [Post-doctoral advisee's paper]
21. Vandenbrink, J.P., R.N. Hilten, **K.C. Das**, A.H. Paterson, and F.A. Feltus. 2013. Tissue specific analysis of bioconversion traits in the bioenergy grass Sorghum bicolor. Industrial Crops and Products, 50:118-230.
22. Vandenbrink, J.P., R.N. Hilten, **K.C. Das**, A.H. Paterson, and F.A. Feltus. 2013. Quantitative models of hydrolysis conversion efficiency and biomass crystallinity index for plant breeding. Plant Breeding, 132(3):252-258.
23. Harris, K., J. Gaskin, M. Cabrera, W. Miller and **K.C. Das.** 2013. Characterization and mineralization rates of low temperature peanut hull and pine chip biochars. Agronomy, 3, 294-312.
24. Hilten, R., R. Speir, J.R. Kastner, S. Mani and **K.C. Das**. 2013. Effect of torrefaction on bio-oil upgrading over HZSM-5. Part 1. Product yield, product quality, and catalyst effectiveness for BTEX production. Energy & Fuels 27(2):830-843. [Post-doctoral advisee's paper]
25. Hilten, R., Speir, R., Kastner, J., Mani, S., **Das, K.C.** 2013. Effect of torrefaction on bio-oil upgrading over HZSM-5. Part 2: Byproduct formation and catalyst properties and function. Energy and Fuels, 27(2): 844-856. [Post-doctoral advisee's paper]
26. Chammoun, N., D.P. Geller, and **K.C. Das**. 2013. Fuel properties, performance testing and economic feasibility of *Raphanus sativus* (oilseed radish) biodiesel. Industrial Crops and Products, 45, 155-159. [Student Advisee's Paper]
27. Bolan, N.S., R. Thangarajan, B. Seshadri, U. Jena, **K.C. Das**, H. Wang, and R. Naidu. 2013. Landfills as a biorefinery to produce biomass and capture biogas. Review Paper.

Bioresource Technology, 135, 578-587

28. Viswanathan, T., S. Mani, **K.C. Das**, S. Chinnasamy, R. Singh and M. Singh. 2012. Effect of cell rupture methods on the drying characteristics and lipid composition of microalgae. Bioresource Technology, 126, 131-136. [Student Advisee's Paper]
29. Mattos, E.R., M. Singh, M.L. Cabrera, and **K.C. Das**. 2012. Effects of inoculum physiological stage on the growth characteristics of *Chlorella sorokiniana* cultivated under different CO_2 concentrations. Applied Biochemistry and Biotechnology, 168(3):519-530. [Doctoral student advisee's paper]
30. Novak, J.M., W.J. Busscher, D.W. Watts, J.E. Amonette, J.A. Ippolito, I.M. Lima, J. Gaskin, **K.C. Das**, C. Steiner, M. Ahmedna, D. Rehrah, and H. Schomberg. 2012. Biochars impact on soil-moisture storage in an ultisol and two aridisols. Soil Science, 177(5):310-320.
31. Jarvis, J.M., A.M. McKenna, R.N. Hilten, **K.C. Das**, R.P. Rodgers, and A.G. Marshall. 2012. Characterization of pine pellet and peanut hull pyrolysis bio-oils by negative-ion electrospray ionization Fourier Transform ion cyclotron resonance mass spectrometry. Energy & Fuels, 26, 3810-3815.
32. Singh, K., L.M. Risse, **K.C. Das**, J. Worley, and S. Thompson. 2012. Pyrolysis of poultry litter fractions for bio-char and bio-oil production. Journal of Agricultural Science and Applications 1(2):37-44. [Doctoral student advisee's paper]
33. Schomberg, H.H., J.W. Gaskin, K. Harris, **K.C. Das**, J.M. Novak, W.J. Busscher, D.W. Watts, R.H. Woodroof, I.M. Lima, M. Ahmedna, D. Rehrah, and B. Xing. 2012. Influence of biochar on nitrogen fractions in a coastal plain soil. Journal of Environmental Quality, 41(4):1087-1095.
34. Jena, U., **K.C. Das**, and J.R. Kastner. 2012. Comparison of the effects of Na_2CO_3, $Ca_3(PO_4)_2$, and NiO catalysts on the thermochemical liquefaction of microalga *Spirulina platensis*. Applied Energy, 98, 368-375. [Student advisee's paper]
35. Vandenbrink, J.P., R.N. Hilten, **K.C. Das**, A.H. Paterson, and F.A. Feltus. 2012. Analysis of crystallinity index and hydrolysis rates in the bioenergy crop *Sorghum bicolor*. Bioenergy Research, 5(2):387-397.
36. Jena, U. and **K.C. Das**. 2011. Comparative evaluation of thermochemical liquefaction and pyrolysis for BioOil production from microalgae. Energy & Fuels, 25(11):5472-5482 [Student advisee's paper]
37. Hunt, R.W., S. Chinnasamy, and **K.C. Das**. 2011. The effect of naphthalene-acetic acid on biomass productivity and chlorophyll content of green algae, coccolithophore, diatom and cyanobacteria cultures. Applied Biochemistry and Biotechnology, 164(8):1350-1365. [Student advisee's paper]
38. Vishwanathan, T., S. Mani, **K.C. Das**, S. Chinnasamy, and A. Bhatnagar. 2011. Thin layer drying kinetics and chemical composition of microalgae consortium. Transactions of the ASABE, 54(6):2245-2252
39. Hilten, R., R. Speir, J. Kastner and **K.C. Das**. 2011. Production of aromatic green gasoline additives via catalytic pyrolysis of acidulated peanut oil soap stock. Bioresource Technology, 102(17):8288-8294 [Student advisee's paper]
40. Singh, M., D.L. Reynolds, and **K.C. Das**. 2011. Microalgal system for treatment of effluent from poultry litter anaerobic digestion. Bioresource Technology, 102(23):10841-10848. [Post-doctoral advisee's paper]
41. Steiner, C., N.D. Melear, K. Harris, and **K.C. Das**. 2011. Biochar as bulking agent for poultry litter composting. Carbon Management, 2(3):227-230. [Post-doctoral advisee's

paper]

42. Putt, R., M. Singh and **K.C. Das**. 2011. An efficient system for carbonation of high-rate algae pond water to enhance CO2 mass transfer. Bioresource Technology, 102(3):3240-45
43. Garcia, S., K. Jangid, W.B. Whitman, and **K.C. Das**. 2011. Transition of microbial communities during the adaptation of anaerobic digestion of carrot waste. Bioresource Technology, 102(15):7249-7256. [Student advisee's paper]
44. Doydora, S., M. Cabrera, **K.C. Das**, J. Gaskin, L. Sonon, and W. Miller. 2011. Release of nitrogen and phosphorus from poultry litter amended with acidified biochar. IJERPH Special issue: Soil Pollution – Prevention and Mitigation, 8(5):1491-1502. [Student advisee's paper]
45. Jena, U., **K.C. Das** and J.R. Kastner. 2011. Effect of operating conditions of thermochemical liquefaction on biocrude production from *Spirulina platensis*. Bioresource Technology, 102, 6221-6229. [Student advisee's paper]
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Proceedings/Books/Miscellaneous Publications (Total **15**)

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Presentations – Conferences and Trade Journal Papers (Total **156**)

1. Parimi, N.S., M. Singh and **K.C. Das**. 2015. Enhancement of algal biomethane production through pretreatments and protein extraction. ASABE International Annual Meeting, New Orleans LA, July 2015.
2. Parimi, N.S., M. Singh and **K.C. Das**. 2015. Impact of nitrogen removal on biomethane production from algae. International Bioenergy and Bioproducts Conference, Atlanta GA, Oct 2015.
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4. Kastner, J.R., W. Costanzo, R. Hilten, A. Smola, and **K.C. Das**. 2014. Coupled low temperature algae hydrothermal liquefaction and catalytic hydrotreating to produce low nitrogen fuel intermediates. AICHE Annual Meting, Paper No. 369604, Nov 2014.
5. Bolan, N.S., R. Thangarajan, B. Seshadri, R. Naidu, **K.C. Das**, U. Jena and H. Wang. 2014. Landfills as a biorefinery to produce biomass and capture biogas. Keynote address by Professor Bolan at the Biological Waste as Resource – Focus on Food waste Conference. Hong Kong Institute of Education, 1-3 Dec.
6. Wang, S., **K.C. Das**, B. Kiepper, and G. Hawkins. 2014. Anaerobic co-digestion of poultry processing liquid wastes. Presented at the BSRI – Bioenergy Science and Research Institute Annual Retreat Conference, Georgia Center for Continuing Education, UGA, May 2.
7. Parimi, N.S., M. Singh, J.R. Kastner, **K.C. Das.** 2014. Extraction and isolation of proteins from algal biomass to enhance biofuel production. Poster presented at 4th International Algal Biomass, Biofuels and Bioproducts Conference, Jun 15-18, Santa Fe, NM.
8. Greene, W.D., R. Adolphson, **K.C. Das**, P. Dwivedi, J. Evans, D. Geller, B. Hubbard, B. Jackson, M. Kane, S. Mani, D. Markewitz, J.D. Peterson, and D. Zhao. 2014. Interdisciplinary woody biomass research, teaching and outreach at UGA. Sustainability Science Symposium and Workshop. Feb 28, 2014, University of Georgia, Athens GA.
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12. Wang, S., **K.C. Das**, B.H. Kiepper, and G.L. Hawkins. 2012. Performance assessment of various packing media for use in anaerobic digestion of poultry processing wastewater. ASABE Annual Meeting Proceedings.
13. Jena, U. and **K.C. Das**. 2012. Production of biocrude and high value aqueous co-products from algae in a biorefinery process. Institute of Biological Engineers Annual Meeting, Indianapolis IN, March 2012.
14. **Das, K.C**. 2012. Biofuels research and development in algae and other sustainable options. Energy Solutions for the Southeast, Nov 28-30, Tifton GA.

15. Jena, U., R. Hilten, J. Miller, J.R. Kastner, S. Mani, **K.C. Das** and B. Bunting. 2012. Catalytic hydrogenation of fast pyrolysis oil. Bioenergy Systems Research Institute Annual Retreat, University of Georgia, Athens GA, April 9, 2012.
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22. Almeida, A., **K.C. Das**, and N. Balagurusamy. 2010. Biochemical methane potential of desert plants: *Aloe vera* and *Opuntia robusta* in Comarca Lagunera, Mexico. Proceedings of the 3rd Intl Symposium on Energy from Biomass and Waste, Venice, Italy, Nov 8-11.
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25. Viswanathan, T., S. Mani, S. Chinnasamy, **K.C. Das**. 2010. Effect of cell rupturing methods on the drying characteristics of microalgae. Society of Industry Microbiol., 32nd Symposium on Biotech for Fuels and Chemicals, Clearwater Beach FL, Apr 19-22.
26. **Das, K.C**., S. Chinnasamy, G. Hawkins and C. Steiner. 2009. Organic waste management - Bioproducts and Biofuel Opportunities. AgriINTEX International Conference - Next Generation of Indian Agriculture, Coimbatore, India, October 2-5, 2009 [International Invited Keynote Presentation]
27. Mani, S., **K.C. Das**, and J.R. Kastner. 2009. Biomass Torrefaction – A promising method for thermochemical conversion technology. IEA Bioenergy Conference, Vancouver, BC, Canada, Aug. 23-26, 2009.
28. Harris, K., J.W. Gaskin, H. Schomberg, D. Fisher, C. Steiner, **K.C. Das**. 2009. Biochar effects on carbon and nitrogen in a loamy sand soil. ASA-CSSA-SSSA International Annual Meeting, Pittsburgh, PA. Nov 1-5, 2009.
29. Novak, J., W. J. Busscher, H. Schomberg, I. Lima, J.H. Loughrin, D. W. Watts, J. Gaskins, **K. C. Das**, C. Steiner, M. Ahmedna, D. Rehrah, S. Bae, and B. Xing. 2009. Development of Designer Biochar to remediate specific chemical and physical aspects of degraded soils.

North American Biochar Conference, Boulder CO. University of Colorado at Boulder, Center for Energy and Environmental Security. August 9-12.

30. Ames, Glenn C., Martha Allexsaht-Snider, and **K.C. Das**. 2009. Training, Internships, Exchanges, and Scholarships (TIES) Initiative: A Mexico-US Higher Education Partnership in Human Capital Development. 12th Annual Conference on the Americas, February 6-7.
31. Steiner, C., J. Gaskin, K. Harris, and **K.C. Das**. 2009. The Influence of crop residues and carbonized crop residues on nitrogen dynamics. North American Biochar Conference, Boulder CO. University of Colorado at Boulder, Center for Energy and Environmental Security. August 9-12.
32. Steiner, C., K. Harris, J. Gaskin, and **K.C. Das**. 2009. Fertilizing efficiency of Carbonized chicken litter. North American Biochar Conference, Boulder CO. University of Colorado at Boulder, Center for Energy and Environmental Security. August 9-12.
33. Jena, U., and **K.C. Das**. 2009. State of the art thermochemical liquefaction of biomass for biofuel generation. Annual meeting of American Society Agricultural and Biological Engineering, Reno, Nevada, USA. June 20-24.
34. **Das, K.C.**, Christian Arturo Espino Lopez, Gerardo Martinez Castro, and Senthil Chinnasamy. 2009. Bioenergy production from animal wastes- an eco-friendly approach for improving environmental sustainability of livestock industry in Laguna Region, Mexico. 12th Annual Conference on the Americas, February 6-7.
35. Singh, K., M. Risse, J. Worley, **K. C. Das**, and S. Thompson. 2008. Effect of fractionation and pyrolysis on fuel properties of poultry litter. Peer reviewed proceedings. Air and Waste Management Annual Meeting and Expo, Portland, Oregon. [Nominated for Young Professional Best Paper Award 2008 Air and Waste Management Association]
36. Singh, K., E. W. Tollner, S. Mani, L. M. Risse, **K. C. Das**, and John Worley. 2008. Transforming solid wastes into high quality bioenergy products: Entropy analysis. ASME Paper No. 1924. Peer reviewed proceedings, North American Waste to Energy Conference (NAWTEC-16), Philadelphia, PA. May 19-21.
37. Singh K., E. W. Tollner, S. Mani, L. M. Risse, **K. C. Das**, and J. Worley. 2008. Emergy analysis of a pyrolysis process. Peer review proceedings, Fifth Biennial Energy Research Conference, University of Florida, Gainesville, Florida, Jan 31 - Feb 2.
38. Jena, U., S. Chinnasamy, S. Mani, and **K. C. Das**. 2008. Thermochemical liquefaction of microalgae into biofuels. Annual Environmental Conference, Atlanta, Georgia, Oct 9.
39. Jena, U., and **K. C. Das**. 2008. Kinetic study of catalytic decomposition of paper mill sludge, paulownia wood waste and micro algae using thermo gravimetric analyzer. Annual meeting of American Society Agricultural and Biological Engineering. Providence, Rhode Island, USA. June 29- July 2.
40. Jena, U., S. Chinnasamy, and **K. C. Das**. 2008. Transformation of algae into biofuel and chemicals. Annual meeting of Georgia section of American Society Agricultural and Biological Engineering, Georgia section of Soil and Water Conservation Engineering, Georgia section of International Erosion Control Engineering, Athens, GA, USA. June 4-6.
41. Jena, U., and **K. C. Das**. 2008. Gasification study of paper mill sludge, paulownia wood waste and micro algae using thermo gravimetric analyzer. Annual meeting of Institute of Biological Engineering, Chapel Hill, NC, USA. March 6-8.
42. **Das, K.C.**, B. Bibens, J.R. Kastner, and R.Hilten. 2008. Biorefinery and Carbon Cycling – Producing biochar along with biofuels. Paper presented at the 2008 Conference of the

International Biochar Initiative – Biochar, Sustainability and Security in a Changing Climate, Sept 8-10, Newcastle, United Kingdom.

43. **Das, K.C.** 2008. Pyrolysis based biorefinery – Multiple co-products and their utilization. Beneficial use of industrial materials summit. Organized by the United States Environmental Protection Agency and the United States Department of Agriculture, Denver, Colorado, USA, March 31.
44. Singh, K., M. Risse, J. Worley, **K. C. Das**, and S. Thompson. 2008. Effect of fractionation and pyrolysis on fuel properties of poultry litter. Peer reviewed proceedings. Air and Waste Management Annual Meeting and Expo, Portland, Oregon. [Nominated for Young Professional Best Paper Award 2008 Air and Waste Management Association]
45. Singh, K., E. W. Tollner, S. Mani, L. M. Risse, **K. C. Das**, and John Worley. 2008. Transforming solid wastes into high quality bioenergy products: Entropy analysis. ASME Paper No. 1924. Peer reviewed proceedings, North American Waste to Energy Conference (NAWTEC-16), Philadelphia, PA. May 19-21.
46. Singh K., E. W. Tollner, S. Mani, L. M. Risse, **K. C. Das**, and J. Worley. 2008. Emergy analysis of a pyrolysis process. Peer review proceedings, Fifth Biennial Energy Research Conference, University of Florida, Gainesville, Florida, January 31 - February 2.
47. Jena, U., S. Chinnasamy, S. Mani, and **K. C. Das**. 2008. Thermochemical liquefaction of microalgae into biofuels. Annual Environmental Conference, Atlanta, Georgia, October 9.
48. Jena, U., and **K. C. Das**. 2008. Kinetic study of catalytic decomposition of paper mill sludge, paulownia wood waste and micro algae using thermo gravimetric analyzer. Annual meeting of American Society Agricultural and Biological Engineering. Providence, Rhode Island, USA. June 29- July 2.
49. Jena, U., S. Chinnasamy, and **K. C. Das**. 2008. Transformation of algae into biofuel and chemicals. Annual meeting of Georgia section of American Society Agricultural and Biological Engineering, GA Soil and Water Conservation Engineering, Georgia section of International Erosion Control Engineering, Athens, GA, USA. June 4-6.
50. Jena, U., and **K. C. Das**. 2008. Gasification study of paper mill sludge, paulownia wood waste and micro algae using thermo gravimetric analyzer. Annual meeting of Institute of Biological Engineering, Chapel Hill, NC, USA. March 6-8.
51. Joshee, N., S. Corbett, **K.C. Das**, and A.K. Yadav. 2008. Paulownia: A multipurpose tree. Conference presentation at The VI International Symposium of Floriculture and Silviculture in Arid Zones, 2008. La Paz, Baja California, Mexico. March 12-15.
52. Gaskin, J.W., A. Speir, K. Harris, D. Lee, and **K.C. Das**. 2008. Effect of pyrolysis chars on corn yield and soil quality in a loamy sand soil of the southern United States. Conference of the International Biochar Initiative -Biochar, Sustainability and Security in a Changing Climate, 2008, Newcastle, United Kingdom, Sept 8-10.
53. Steiner, C., K. Harris, J. Gaskin, and **K.C. Das**. 2008. Pyrolytic char characterization for its use as a soil amendment. Paper presented at The Conference of the International Biochar Initiative -Biochar, Sustainability and Security in a Changing Climate. Newcastle, United Kingdom, Sept 8-10.
54. Baker, S.A., M.D. Westbrook., W.D. Greene, **K.C. Das**, J.D. Peterson, and R.L. Izlar. 2008. Evaluation of integrated harvesting systems in pine stands of the southern United States. World Bioenergy Conference, Jonkoping, Sweden, May 23-25.
55. **Das, K.C.** 2008. Catalytic processes for conversion of biomass to liquid fuels. Forestry Resources Association Annual Conference, Myrtle Beach, SC, April 14.

56. **Das, K.C.** 2008. Pyrolysis based biorefinery -Multiple coproducts and their utilization. Beneficial use of industrial materials summit. Denver, CO, March 31- 10.
57. Singh, K., **K.C. Das**, M. Risse, and J. Worley. 2007. Determination of Composition of Cellulose and Lignin Mixture using Thermo Gravimetric Analysis (TGA). ASME Paper No. 32222. Peer reviewed proceedings, North American Waste to Energy Conference (NAWTEC-15). Three Park Avenue. NY: ASME.
58. **Das, K.C**. 2007. Sustainable biomass conversion through large scale composting – process, principles, and technologies. Workshop and seminar, Dec 13-14, SRM University – Department of Biotechnology, Chennai, India.
59. **Das, K.C**. 2007. Biorefining and thermochemical conversion of biomass to energy and products. [International invited presentation], University of South Australia, Mawson Lakes Camus, South Australia, May 7.
60. Mani, S. and **K.C. Das**. 2007. Life cycle analysis of charcoal production from biomass. AIChE Annual Conference, Salt Lake City, Utah, USA.
61. **Das, K.C.** 2007. Thermochemical biorefineries and the use of products for fuels, biochar and chemicals. [International invited presentation], Shanghai Academy of Environmental Sciences, Shanghai, China, July 11.
62. **Das, K.C.** 2007. Sustainable biomass conversion through large scale composting -process, principles, and technologies. Workshop and seminar at SRM University -Department of Biotechnology, Chennai, India. Dec 13, 14.
63. Steiner, C., W.G. Texiera, J. Lehmann, B. Glaser, **K.C. Das**, M. de Arruda, and W. Zech. 2007. Agrichar charcoal use -studies in the humid tropics. Poster presented at the International Agrichar Initiative Conference, Terrigal, NSW, Australia. April 29-May2.
64. **Das, K.C.** 2007. Biorefinery and hydrogen fuel cells research and education program. DOE Biomass Program - Integrated Biorefineries Program Peer Review, Denver Co, August 10.
65. Singh, K., L.M. Risse, J. Worley, **K.C. Das**, and S. Thompson. 2007. Energy and BioOil production from poultry litter using fractionation and pyrolysis -A quality assurance project plant (QAPP). Paper No. 078021 presented at ASABE Annual international meeting, Minneapolis, Minnesota, June 17-20.
66. Singh, K., L.M. Risse, J. Worley, **K.C. Das**, and S. Thompson. 2007. Adding value to poultry litter using fractionation, pyrolysis, and pelleting. Paper No. 074064 presented at ASABE Annual international meeting, Minneapolis, Minnesota, June 17-20.
67. Hunt, R., S. Chinnasamy, and **K.C. Das**. 2007. Microalgae based biodiesel production using poultry litter. Presented at the "Incredible anaerobes -from physiology to genomics to fuels". The Georgia Center, University of Georgia, March 2-3.
68. Cyetkovic, Z., Y. Genest, E.T. Davies, **K.C. Das**, and J. Doran Peterson. 2007. Ethanol production from pulp and paper sludge. Presented at the "Incredible anaerobes -from physiology to genomics to fuels". The Georgia Center, University of Georgia, March 2-3.
69. **Das, K.C**. 2007. Pyrolysis processes and products. Presentation at the "Biomass: Dispelling myths and advancing the truth about this valuable resource" workshop, Forsyth GA. The Georgia Forestry Association. Feb 27.
70. Gaskin, J., A. Speir, K. Harris, D. Lee, L. Morris, and **K.C. Das**. 2007. Effect of Two Types of Pyrolysis Chars on Corn Yield, Soil Nutrient Status, and Soil C in a Loamy Sand Soil of the Southeastern United States. Abstracts of American Society of Agronomy, Crop

Science Society of America, and Soil Science Society of America International Annual Meetings. New Orleans, LA. Nov. 4-8.

71. Harris, K., J. Gaskin, and **K.C. Das**. 2007. Effect of Feedstock and Production Method on Pyrolysis Char Properties for Use as an Agricultural Soil Amendment. Abstracts of American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America International Annual Meetings. New Orleans, LA. Nov. 4-8.
72. Gaskin, J.W., A. Speir, L.M. Morris, L. Ogden, K. Harris, D. Lee, and **K.C. Das**. 2007. Potential for pyrolysis char to affect soil moisture and nutrient status of a loamy sand soil. Proceedings of the 2007 Georgia Water Resources Conference. University of Georgia. Athens, GA. March 27-29.
73. Garcia-Perez., M., C-Z. Li, M. Rhodes, and **K.C. Das**. 2007. Challenges and opportunities for the use of crude bio-oils as source of fuels and chemicals. Bioenergy Australia, Fremantle Western Australia, Dec 6-7.
74. **Das, K.C**. 2006. Presentation at the annual composting technology workshop, University of Georgia, Athens. October 10-12, 2006.
75. **Das, K.C**. 2006. Biorefining principles and opportunities. Presentation to the State of Georgia Animal Waste Roundtable meeting, October 3, Georgia Center, The University of Georiga, Athens, Georgia, USA.
76. **Das, K.C. 2006.** Biorefinery Engineering – Bioconversion, composting and other processing, for value added production. Presentation at the National Agricultural Research Institute, Georgetown, Guyana, June 13. [International invited presentation]
77. **Das, K.C. 2006.** Composting technology principles and state of the art. Presentations at the Guyana School of Agriculture, Mon Repos Guyana, June 12. [International invited presentation]
78. **Das, K.C.** 2006. Biorefining principles and opportunities. [Invited presentation] The University of Georgia Academy of the Environment Symposium, October 24, Georgia Center, The University of Georgia, Athens, Georgia USA.
79. Gaskin, J., L. Morris, D. Lee, R. Adolphson, K. Harris, and **K.C. Das**. 2006. Effect of pyrolysis char on corn growth and loamy sand soil characteristics. Abstracts of American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America International Annual Meetings. Indianapolis, IN. Nov. 12-16.
80. Harris, K., J.W. Gaskin, L.S. Sonon, and **K.C. Das**. 2006. Characterization of pyrolysis char for use as an agricultural soil amendment. American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America International Annual Meetings. Indianapolis, IN. Nov. 12-16.
81. Sonon, L. K. Harris, J. Gaskin, and **K.C. Das**. 2006. Phosphorus sorption characteristics of Tifton soil amended with pyrolysis-derived chars. Abstracts of American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America International Annual Meetings. Indianapolis, IN. Nov. 12-16.
82. **Das, K.C**., J.A. Garcia-Nunez, and M. Garcia-Perez. 2006. Overview of a Biorefinery and Opportunities in the Palm Oil Sector. Plenary address at the 15th International Palm Oil Conference, Cartagena, Colombia, Sept 19-25 [Memorias: XV Conferencia International sobre Palma de Aceite, Cartagena Colombia, Sept 19-22]
83. Garcia-Nunez, J.A., M. Garcia-Perez, and **K.C. Das**. 2006. Determination of kinetic parameters of thermal degradation of palm oil mill byproducts using thermogravimetric

analysis and differential scanning calorimetry. Paper presented at the International ASABE conference, Portland, Oregon, July 9-12.

84. Greene, W.D., and **K.C. Das**. 2006. Forest biomass potential for pyrolysis -Raw material issues and potential products. Paper presented at the 60th International Convention of the Forest Products Society of America. Newport Beach CA June 25-29.
85. **Das, K.C**. 2006. Biorefining principles and opportunities. Presentation to the State of Georgia Animal Waste Roundtable meeting, Georgia Center UGA. October 3.
86. **Das, K.C.**, T.T. Adams, and E.D. Threadgill. 2006. Update on research and outreach in biorefining at the University of Georgia. ASABE State Section Meeting. Athens GA. April 21.
87. **Das, K.C.**, T.T. Adams, and E.D. Threadgill. 2005. Biorefinery and Carbon Cycling Engineering. Poster presentation at the Renewable Resources and Biorefineries Conference, Ghent Belgium, Sept 19-21.
88. Barczak, S., **K.C. Das**, and R. Kilpatrick. 2005. Water Quality Implications of Bio-fuels development in Georgia. Proceedings of the 2005 Georgia Water Resources Conference, held at the University of Georgia. Kathryn J. Hatcher, editor, Institute of Ecology, The University of Georgia, Athens, Georgia. April 25-27.
89. **Das, K.C.**, and E.D. Threadgill. 2005. Biorefinery- Integrated processing of biomass to multiple products. Presentation to the SAF Meeting, Macon GA. [Continuing Education Credits] Aug 23.
90. **Das K.C.** 2005. Principles of biomass conversion through thermochemical processes. Lecture at the Horticulture College, Tamil Nadu Agricultural University, Theni, India. Dec 2005 [International invited presentation]
91. **Das K.C.** 2005. Biorefining Technologies: Overview and Assessment. BioCycle Conference, Charlotte, North Carolina, USA, Nov 13-16 [Invited Presentation].
92. Threadgill, E.D., and **K.C. Das**. 2005. Challenges to biomass conversion: Biomass opportunities and realities in the Southeast United States. Warnell School and NCAD Conference. Aug 29.
93. **Das, K. C.**, T.T. Adams, and E.D. Threadgill. 2005. BIOREFINERY - Integrated system for the conversion of Biomass to Chemicals, Fuels, and Bio-products. SC-NC-GA State Section ASAE meeting. Charleston SC, June 2-3.
94. **Das, K.C.**, T.T. Adams, R. Adolphson, and E.D. Threadgill. 2005. Biorefinery - Integrated system for the conversion of Biomass to Chemicals, Fuels, and Bio-products. Alternate Energy Technology Innovation, Georgia Tech Savannah Conference, Savannah GA, May 12.
95. **Das, K.C.**, T.T. Adams, R. Adolphson, and E.D. Threadgill. 2005. Biorefinery - Integrated system for the conversion of Biomass to Chemicals, Fuels, and Bio-products. Georgia Industrial Technology Partnership Conference, Atlanta GA, April 27.
96. Day, D., J. Lehmann, C. Steiner, **K.C. Das**. 2005. Long-term sequestration of carbon in soils using Charcoal from renewable energy production. Third USDA Symposium on Greenhouse Gases & Carbon Sequestration in Agriculture and Forestry; Wyndham Baltimore - Inner Harbor, Baltimore, Maryland March 21 -24. [Abstract and presentation]
97. **Das, K.C.** 2004. Composting Training to the Tribes -Coordinated by the US EPA and Carolina Composting Association. Cherokee NC. August.
98. Chinnasamy, S and **K.C. Das**. 2004. Converting sugar industry wastes into ecofriendly bioproducts. BioCycle 45(6):58-60.

99. Xia, K., G. Pillar, **K.C. Das**, and A. Bhandari. 2004. Pharmaceuticals, personal care products, and other organic chemicals in biosolids. Sustainable Land Application Conference, Lake Buena Vista, Florida. University of Florida -IFAS. Jan 4-8.
100. **Das, K.C.**, J.R. Kastner. 2004. Dust as a pathway for transport of odors. Annual International Meeting of the ASAE, Ottawa, Canada.
101. **Das, K.C.**, J.R. Kastner, N.D. Melear, and J.Q. Buquoi. 2003. Waste Ash Amendments for Reducing Odors during Decomposition of Organic Wastes. Annual International Meeting of the ASAE, Las Vegas, NV.
102. Kastner, J. R., (invited speaker), **K.C. Das**, C. Hue, R. McClendon, and Q. Buquoi. Odor Profile and Control. 2003. Poultry Protein & Fat Seminar, Memphis TN. October 9-10.
103. Kastner, J. R., **K.C. Das**, C. Hue, R. McClendon, and Q. Buquoi. 2003. Kinetics and Modeling of Odor Oxidation Using Chlorine Dioxide for Emission Control Utilizing Wet Scrubbers. Third International Conference on Air Pollution From Agricultural Operations, Durham, NC. October 12-15.
104. **K.C. Das**. 2003. Composting as a method of organic waste recycling. International Seminar on Pollution Abatement in Industries – All India Distiller's Association, New Delhi, India, Dec 15-17 [International invited presentation]
105. Kastner J. R., **K.C. Das**, and Q. Buquoi. 2003. The Potential of Coupling Biological and Chemical/Physical Systems for Air Pollution Control: A Case Study in the Rendering Industry. Third International Conference on Air Pollution From Agricultural Operations, Air Pollution, Durham, NC. October 12-15.
106. Kastner J. R., **K.C. Das**, and N. Melear. 2003. Low Temperature Catalytic Oxidation of Sulfur Compounds Using Ash: Reaction Engineering for the Reuse of Waste Material. Institute of Biological Engineering Annual Symposium, Athens GA.
107. Kastner J. R., **K.C. Das**, A. Logan, M. Jones, Q. Buquoi, C. Hue, and R. McClendon. 2003. Potential Coupling of Biological and Physical/Chemical Systems for Air Pollution Control: Analysis in the Rendering Industry. Institute of Biological Engineering Annual Symposium, Athens GA.
108. **Das, K.C.**, M.L. Cabrera, and J.T. Kirkland. 2002. Characteristics of rainfall runoff from biosolids composting windrows. Composting in the Southeast, Palm Harbor, FL. Oct. 6-9.
109. Governo, J.D., **K.C. Das**, and S.A. Thompson. 2002. Compost Wizard ©: Modeling A Compost Facility. Proceedings of the World Congress of Computers in Agriculture and Natural Resources (13-15, March 2002, Iguacu Falls, Brazil), pp. 318-324.
110. Governo, J.D., B. Faucette, S.A. Thompson, and **K.C. Das**. 2002. University of Georgia conducts state composting assessment and product characterization. Composting in the Southeast, Palm Harbor, Florida. October 6-9.
111. **Das, K.C.**, E.W. Tollner, and T.G. Tornabene. 2002. Pulp and paper industry byproducts composting: Process development and implementation. International Symposium on Composting Technology and Compost Utilization. The Ohio State University, Columbus, Ohio. May 6-8.
112. **Das, K.C.** 2002. Compost Operator Training. Invited presentation, 1-day training to the Carolina Recycling Association members, Nov 7, Rock Hill, South Carolina.
113. **Das, K.C.** 2002. Fundamental and advanced topics in composting and facility management. Invited 3-day regional training program offered through the Carolina Recycling Association, Nov 12-15, Pittsboro, North Carolina.

114. **Das, K.C.** 2001. Odor related issues in large-scale composting. Presented at the BioCycle Conference, Atlanta, Georgia. August 27-28.
115. Governo, J.D, **K.C. Das**, and S.A. Thompson. 2001. Modeling the design of windrow composting to maximize the bottom-line. ASAE Annual meeting, Sacramento, California. [Graduate student paper]
116. Kastner, J.R., and **K.C. Das**. 2001. Effect of ash on the catalytic removal of hydrogen sulfide from a mixed gas stream. ASAE Annual meeting, Sacramento, California.
117. **Das, K.C.** "Composting process technology and management" [Aug 2001]. Invited to present a 3-day educational training workshop to 13 attendees of the Seminole tribe of Florida, Brighton Reservation, Brighton, Florida.
118. **Das, K.C.** "Composting process technology and management" [Aug 2001]. Invited to present a 3-day educational training workshop to 13 attendees of the Seminole tribe of Florida, Brighton Reservation, Brighton, Florida.
119. **Das, K.C.** "Composting technology and management aspects" [Aug 2000]. Organized and presented this 3-day workshop at Cherokee, NC for the Tribal Association for Solid Waste and Environmental Response (TASWER). The 22 attendees included tribal representatives from all over the USA.
120. **Das, K.C.**, E.W. Tollner, and M.A. Eiteman. 2000. Improving composting by control of the solid matrix structure. Transactions of the Y2K Composting in the Southeast, Charlottesville, VA.
121. Kastner, J.R., **K.C. Das**, and R.S. Cherry. 2000. Sizing biofilters using kinetics and reactor design equations. ASAE Paper 00-4097. ASAE Annual Meeting, Milwaukee, Wisconsin.
122. Ding, Y., **K.C. Das**, W.B. Whitman, and J.R. Kastner. 2000. Microbial ecology and process performance of a biofilter treating multiple gas contaminants. ASAE Paper 00-4096. ASAE Annual Meeting, Milwaukee, Wisconsin. [Graduate student paper]
123. Tollner, E.W., and **K.C. Das**. 2000. The University of Georgia Bioconversion Center. Transactions of the Y2K Composting in the Southeast, Charlottesville, VA.
124. Faucette, B., **K.C. Das**, and L.M. Risse. 2000. Evaluation of aerated container composting of pre-consumer and post consumer food residuals. Transactions of the Y2K Composting in the Southeast, Charlottesville, VA.
125. **Das, K.C.**, E.W. Tollner, T.G. Tornabene, and F.D. Whorley. 1999. Composting treatment of paper mill residuals. ASAE Paper 99-5039. ASAE Annual Meeting, Toronto, Canada.
126. **Das, K.C.**, et al. 1999. Biofiltration of odorous gases from a dehydrated foods operation. The Georgia Operator, Summer 1999, p 35-52.
127. **Das, K.C.** 1999. Invited presentation on the design and management of composting systems. University of Tennessee -Producing and Using Wood Workshop, Knoxville TN. October.
128. **Das, K.C.** 1999. GWPCA conference on Biosolids in Athens, GA. November. [Invited presentation].
129. **Das, K.C.** 1999. Invited presentation on Odor/VOC reduction technologies. GWPCA industrial waste conference, Cobb Galleria. February.
130. **Das, K.C.** 1999. The TASWER-Tribal association for solid waste and environmental remediation. Invited presentation on the technology options for solid waste treatment. Cherokee, NC.
131. **Das, K.C.**, E.W. Tollner, and T.G. Tornabene. 1998. Composting pulp and paper industry solid wastes: process design and product evaluation. In: Proceedings of the Composting in

the Southeast-Conference and Expo. Athens, GA, Sept. 9-11, 1998. Published by the University of Georgia, Athens, Georgia.

132. Lewis, D., **K.C. Das**, R. Reed, G. Harris, L.M. Risse, R. Roberts, L. Royal, J. Wilson, and J. Lott. 1998. A preliminary report on a Georgia city's innovative composting project cooperation between the city of Douglas and the University of Georgia: College of Ag. Proceedings Composting in the Southeast Conference and Expo. September 9-11.
133. Foote, R., and **K.C. Das**. 1998. Hall county waxed corrugated cardboard composting pilot project. 1998. Proceedings Composting in the Southeast Conference and Expo. Sept. 9-11.
134. Dudak, S., **K.C. Das**, and W.P. Miller. 1998. Blends of composted biosolids and bottom ash as potting media to grow ornamentals. Proceedings Composting in the Southeast Conference and Expo. September 9-11.
135. Tollner, E.W., J. Smith, and **K.C. Das**. 1998. Development and preliminary validation of a compost process simulation model. Proceedings Composting in the Southeast Conference and Expo. September 9-11.
136. Ndegwa, P.M., S.A. Thompson, and **K.C. Das**. 1998. Effects of stocking density and feeding rate on vermicomposting of biosolids. Proceedings Composting in the Southeast Conference and Expo. September 9-11.
137. Smith, M.C., **K.C. Das**, E.W. Tollner, W.H. Johnson, T.L. Davis, and J.G. Layton. 1998. Characterization of landfilled municipal solid waste following in situ bioreduction. Proceedings Composting in the Southeast Conference and Expo. September 9-11.
138. Tollner, E.W., J. Smith, and **K.C. Das**. 1998. Development and preliminary validation of a compost process simulation model. Proceedings Composting in the Southeast Conference and Expo. September 9-11.
139. **Das, K.C.**, P.A. Annis, and E.W. Tollner. 1997. Bioconversion process design applied to textile industry solid wastes. ASAE Annual International Meeting, Minneapolis, MN. Paper No. 97-5022. August.
140. McGuckin, R.L., M.A. Eiteman, and **K.C. Das**. 1997. Enhancement of food waste compost structure with synthetic bulking agents. ASAE Annual International Meeting, Minneapolis, MN. Paper No. 97-6051. August.
141. **Das, K.C.**, P.A. Annis, and E.W. Tollner. 1997. Bioconversion of textile industry solid wastes to value-added products. International conference and exhibition of the American Association of Textile Chemists and Colorists. Atlanta GA. Sept 28.
142. **Das, K.C.**, P.A. Annis, and E.W. Tollner. 1997. Bioconversion of wool industry solid wastes to value-added products. 2nd Annual conference on recycling of fibrous textile and carpet waste, Georgia Institute of Technology, Atlanta GA. May.
143. **Das, K.C.**, P.A. Annis, E.W. Tollner, and C.Q. Yang. 1997. Compostability evaluation of textile industry by-products. The 1997 Carpet, Apparel and Textile Environmental Conference, University of Georgia, Athens, April 14-15.
144. **Das, K.C.**, and E.D. Threadgill. 1997. Bioconversion research and demonstration at the University of Georgia. Proc. Southeastern sustainable animal waste management workshop. Tifton, GA
145. **Das, K.C.**, S. Dudka, and W.P. Miller. 1996. Synthetic soil made from blends of biosolids and fly-ashes. Agronomy Abstracts, Nov 1996. Annual meetings of American Society of Agronomy, Crop Science and Soil Science Society of America, Indianapolis IN, Nov 3-8.

146. **Das, K.C.**, and H.M. Keener. 1996. Increasing in vessel efficiency at a commercial Biosolids composting facility: Practical aspects of moisture loss estimation and control. Composting in the Carolinas - Conference and Expo, Myrtle Beach, SC. October 23-25
147. **Das, K.C.**, and H.M. Keener. 1996. Dynamic simulation model as a tool for managing a large scale composting system. 6th International Conference of Computers in Agriculture, ASAE, Cancun, Mexico
148. Keener, H.M., D.L. Elwell, and **K.C. Das**. 1996. Technical evaluation of composting of sewage sludge with tree-bark and other wood waste as compared to woodchips. Unpublished report to The Columbus Division Sewer and Drainage, City of Columbus, OH. August
149. Keener, H.M., D.L. Elwell, **K.C. Das**, and R.C. Hansen. 1995. Specifying design/operation of composting systems using pilot scale data. 7th International Symposium on Animal and Food Processing Waste, ASAE, St Joseph, M
150. Keener, H.M., D.L. Elwell, **K.C. Das**, and R.C. Hansen. 1995. Minimizing the cost of compost production through facility design and process control. European Commission Intl. Conf. "The Science of Composting", Bologna, Italy. May 30-June 2
151. **Das, K.C.**, and H.M. Keener. 1995. Process control based on dynamic properties in composting: moisture and compaction considerations. European Commission International Conference "The Science of Composting", Bologna, Italy. May 30-Jun 2.
152. **Das, K.C.**, and H.M. Keener. 1994. Moisture Prediction and Control on a Continuous Basis in Full Scale Composting Reactors: Reports I, II. Phase II of the Study conducted at the City of Akron Composting Facility, Akron OH. Unpublished Report to the City of Akron. October
153. Keener, H.M., D.L. Elwell, **K.C. Das**, and R.C. Hansen. 1994. Remix Frequency of Compost Based on Moisture Control. International Summer Meeting of The American Society of Agricultural Engineers, Kansas City, Missouri. Paper No. 944066. June.
154. **Das, K.C.**, and H.A.J. Hoitink. 1993. Quantitative Respirometry for the Analysis of Compost Stability: The Laboratory Procedure. Internal Publication. Circulated to compost producers using the procedure state wide.
155. Keener, H.M, D.L. Elwell, R.G. Hansen and **K.C. Das**. 1993. Effects of Product Mix and Twice Weekly Turning on Composting Rates for Food-Waste -- Phase I. Unpublished Report to EarthGro Inc., Lebanon, Connecticut.
156. **Das, K.C.**, and M.D. Evans. 1991. Image processing algorithms for detecting infertile eggs during early incubation. International summer meeting of the American Society of Agricultural Engineers, Albuquerque, New Mexico. Paper No. 917010. June.

Selected National and International Invited Presentations (14)

1. **Das, K.C.** 2017. Biorefineries for production of fuels and value added products in agriculture. Invited keynote address at Fermentation for value added products (FerVAP) in agriculture conference held at KKU, Khon Kaen, Thailand. July 25-27, 2017.
2. **Das, K.C.** 2014. Biorefining in the sugar sector – Production of methane from vinasse. International workshop on sugarcane production chain. University of Sao Paulo, ESALQ, Piracicaba, Brazil, 22-24 July [Invited speaker]
3. **Das, K.C.**, S. Chinnasamy, G.L. Hawkins, and C. Steiner. 2009. Organic waste management – Bioproducts and Biofuel Opportunities. AgriINTEX International

Conference – Next Generation of Indian Agriculture, Coimbatore, India, October 2-5, 2009 [International Invited Keynote Presentation]

4. **Das, K.C.** 2007. Thermochemical biorefineries and the use of products. Shanghai Academy of Environmental Sciences, Shanghai, China, July 11. [International Invited Presentation]
5. **Das, K.C.** 2007. Biorefining and thermochemical conversion of biomass to energy and products. University of South Australia, Mawson Lakes Campus, South Australia, May 7. [International Invited Presentation]
6. **Das, K.C.** 2007. Keynote address at the International Biotechnology Symposium celebrating the 25th anniversary of the Faculty of Biological Sciences at the Universidad Autonoma de Coahuila, Torreon Mexico, 23-26 October.
7. **Das, K.C.** 2006. Biorefinery Engineering - Bio-and thermo-chemical processing for value added production. National Agricultural Research Institute, Guyana. June 13. [International Invited Presentation]
8. **Das, K.C.** 2006. Composting technology principles and state of the art. Presentations at the Guyana School of Ag. Mon Repos Guyana, June 12. [International Invited Presentation]
9. **Das, K.C.** 2005. Principles of biomass conversion through thermochemical processes. Lecture at the Horticulture College, Tamil Nadu Agricultural University, Theni, India. December. [International Invited Presentation]
10. **Das, K.C.** 2003. Composting as a method of organic waste recycling. International Seminar on Pollution Abatement in Industries -All India Distiller's Association, New Delhi, India, Dec 15-17. [International Invited Presentation]
11. **Das, K.C.** 1999. The Univ. of Tennessee -Producing and Using Wood - Workshop, Knoxville TN. Invited presentation on the design and management of composting systems. October. [Invited Speaker]
12. **Das, K.C.** 1999. GWPCA industrial waste conference, Cobb Galleria. Odor/VOC reduction technologies. Atlanta GA., Feb. [Invited Presentation]
13. **Das, K.C.** 1999. The TASWER-Tribal association for solid waste and environmental remediation. Invited presentation on technology options for solid waste treatment. Cherokee, NC. [Invited Speaker]
14. S. Dudak, **K.C. Das**, and W.P. Miller. 1998. Blends of composted biosolids and bottom ash as potting media to grow ornamentals. Composting in the Southeast Conference and Expo., Athens GA., Sept. 9-11. [Invited Speaker]

<u>Other Technical Presentations/Reports and Summer Schools</u>

1. Bioconversion feasibility study for Clay, Quitman, and Randolph counties, Georgia. Report to Southwest Georgia Regional Development Authority [Dec 2000].
2. Hosted a 1-day conference for the USAID-Solid Waste Technology Exchange Group from India. Developed package of technical abstracts and relevant publications of department faculty for this group [Aug 1999]

1. Compost Operator Training. 1-day training to the Carolina Recycling Association members. Rock Hill SC. [November 7, 2002] [Invited Presentation]
2. Fundamental and advanced topics in composting and facility management. Invited 3-day regional training program offered through the Carolina Recycling Association. Pittsboro, NC [November 12-15, 2002]

3. Compost Operator Training Workshop: A two-day workshop providing attendees exposure to the physical, chemical and biological aspects of composting as a waste treatment process. Coverage focused on design, operation and management of large-scale organic waste composting facilities [Multiple years 1998-2003].
4. "Composting process technology and management". 3-day educational training workshop to 13 attendees of the Seminole tribe of Florida, Brighton Reservation, Brighton, Florida. [Aug 2001] [Invited Presentation]
5. "Composting technology and management aspects". Organized and presented this 3-day workshop at Cherokee, NC for the Tribal Association for Solid Waste and Environmental Response (TASWER). The 22 attendees included tribal representatives from all over the USA. [Aug 2000].
6. "Odor related aspects of large scale composting". Workshop presented at the Composting in the Southeast Conference in Charlottesville, VA. The 32 attendees included professionals from around the southeast United States. [Oct 2000]

PATENTS, DISCLOSURES AND APPLICATIONS

(Awarded U.S. Patents= **6**; PCT Applications= **1**; Disclosures= **1**)

1. U.S. Patent No. US 9,175,235 B2. Torrefaction reduction of coke formation on catalysts used in esterification and cracking of biofuels from pyrolyzed lignocellulosic feedstocks. Inventors: J.R. Kastner, S, Mani, R. Hilten, and **K.C. Das**. UGARF Inc., Athens GA. Date Patent Issued: Nov 2, 2015.
2. U.S. Patent No. US 8,900,416 B2. Production of higher quality bio-oil by in-line esterification of pyrolysis vapors. Inventors: R.N. Hilten, **K.C. Das**, J.R. Kastner, and B.P. Bibens. UGARF, Inc., Athens GA. Date Patent Issued: Dec 2, 2014.
3. U.S. Patent No. 8,722,389. Method and System of Culturing an Algal Mat. Inventors: **K.C. Das**, B.R. Cannon, A. Bhatnagar, and S. Chinnasamy. U.S. Department of Energy, Argonne IL. Date Patent Issued: May 13, 2014.
4. U.S. Patent No. US 8,656,636 B2. Biological optimization systems for enhancing photosynthetic efficiency and method of use. Inventors: R.W. Hunt, S. Chinnasamy, **K.C. Das**, and E.R. de Mattos. UGARF, Inc., Athens GA. Date Patent Issued: Feb 25, 2014.
5. U.S. Patent No. US 8,252,561 B2. Production of biofuel using molluscan pseudofeces derived from algal cells. Inventors: **K.C. Das**, S. Chinnasamy, J. Shelton, S.B. Wilde, R.S. Haynie, and J.A. Herrin. UGARF, Inc., Athens GA. Date Patent Issued: Aug 28, 2012.
6. U.S. Patent No. US 8,302,346 B2. Biological optimization systems for enhancing photosynthetic efficiency and methods of use. Inventors: R.W. Hunt, S. Chinnasamy, **K.C. Das**, and E. Rolim de Mattos. UGARF, Inc., Athens GA. Date Patent Issued: Nov 6, 2012.
7. U.S. Utility Patent Application. 2013. Algal floway (AGF) system for economical and efficient harvesting of algal biomass and method of use. Application No. 13/827,879. Filed March 14, 2013. UGARF. Inventors: Manjinder Singh and **K.C. Das.** UGARF No. 1879.

8. Patent Disclosure: 2013. Vapor/Liquid phase catalytic esterification of Bio-Oil targeting direct conversion of anhydrous sugars and carbohydrates to platform chemicals. Kastner, J.R., R.W. Hilten, and **K.C. Das**. Filed with UGARF 14 October 2013.
9. PCT International Patent Application. Filed 12 Aug 2010. Application No. PCT/US2010/045266. Biochars, methods of using biochars, methods of making biochars, and reactors. UGARF. Inventors: **K.C. Das**, N. Balagurusamy, S. Chinnasamy, G.J. Martinez Castro and C.A. Espino Lopez.

PROFESSIONAL MEMEBERSHIPS

1. Member of American Society of Agricultural and Biological Engineers (1993-Present)
2. Member UGA's Sustainable Food Systems Initiative (since 2015)

POSTDOCTORAL ASSOCIATES AND STUDENT RESEARCH GUIDE

Postdoctoral advisees [Total **9**]

1. Dr. Manjinder Singh – Algal biofuels production and use [2010–17]
2. Dr. Roger Hilten – Thermochemical conversion of biomass [2012–14]
3. Dr. Umakanta Jena – Thermochemical conversion of biomass [2011-12]
   Presently Assistant Professor at New Mexico State University, Las Cruces NM.
4. Dr. Kaushlendra Singh – Thermochemical conversion of biomass [2008-10]
   Presently Associate Professor at West Virginia University, Morgantown WV.
5. Dr. Christoph Steiner – Biochar production and use [2008–09]
   Presently Scientist at University of Kassel, Agroecosystems Research in the Tropics and Subtropics (Africa-Germany Partnership), Witzenhausen, Germany.
6. Dr. Senthil Chinnasamy – Algal biofuels production and use [2007-10]
   Presently Chief Technology Officer – Biotechnology Division, ABAN Infrastructure Ltd., Chennai, India.
7. Dr. Ashish Bhatnagar – Algal biofuels production and use [2008-09]
   Presently Associate Professor, MDS University, Ajmer India.
8. Dr. Manuel Garcia Perez – Thermochemical conversion [2005–06]
   Presently Associate Professor, Biological Systems Engineering, Washington State University, Pullman WA.
9. Dr. Mounir Minkara – Biomass conversion through biotreatment. [2001–02]
   Presently Director of Water Quality Program, City of Chattanooga TN.

Major Professor/Co-Major Professor [Total **21**]

1. Ms. Aswinin Kannan – M.S. Environmental Engineering – Sustainable management of water quality in an urban lake. . [**Major Professor** – Fall 2016 to Present].
2. Mr. Daniel Geller – PhD. Biological Engineering – Cultivation of cold-tolerant microalgae for enhancing multi-season productivity. [**Major Professor** – 2013 to 2017].
3. Ms. Sirisha Parimi – Ph.D. Biological Engineering. Optimization of downstream processing by pretreatment of algal biomass [**Major Professor** – 2012 to Spring 2016]
   Presently Research Biotechnologist at Cargill, Minneapolis MN.

4. Mr. Shunli Wang – PhD. Biological Engineering. Anaerobic digestion of industrial and food processing wastewaters [**Major Professor** – 2010 to Summer 2016]
Presently postdoctoral associate at the University of Georgia, Athens GA
5. Mr. Eric Myers – M.S. Biological Engineering. Development of sustainable bio-based harvesting of algae. [**Major Professor** – Fall 2013 to Summer 2015].
Presently Project Manager, Texas A&M Agrilife, Pecos TX.
6. Mr. Erico Mattos – Ph.D. Crop and Soil Science. Enhancement of algae production through photosynthetic optimization [**Co-Major Professor** and **Primary Research Guide** – Chair: Dr. Miguel Cabrera; 2009-2014]
Presently an Entrepreneur doing technology transfer as Chief Technology Officer of Phytosynthetix, LLC, Athens GA, USA.
7. Ms. Carrie Ross – PhD. Animal and Dairy Science. Anaerobic digestion enhancement using microbial carriers. [**Co-Major Professor** – Chair: Dr. Mark Froetschel; 2009-2012] *Presently Assistant Professor, Abraham Baldwin College, Tifton GA.*
8. Mr. Roger Hilten – Ph.D. Biological Engineering. Thermal conversion of biomass and catalytic upgrading of pyrolysis oils [**Major Professor**: 2007-2012].
9. Mr. Umakanta Jena – PhD. Biological Engineering. Thermal conversion of algal biomass to value added products [**Major Professor**: 2006-2011].
Presently Assistant Professor at New Mexico State University, Las Cruces NM.
10. Mr. Ryan Hunt – M.S. Biological Engineering. Biostimulation of algae production [**Major Professor**: 2007-2010].
Presently an Entrepreneur doing technology transfer as Chief Technology Officer, ALGIX LLC, Meridian MS.
11. Mr. Kaushalendra Singh - PhD. Biological Engineering. Thermal conversion of poultry litter for energy and products. [**Co-Major Professor**: 2005-2008]
Presently Associate Professor at West Virginia University, Morgantown WV
12. Ms. Sarahi Garcia - M.S. Biological Engineering. Anaerobic digestion inoculum development and modeling. [**Major Professor:** Fall 2008- 2010]
Completed Ph.D. at Friedrich-Schiller University, Jena Germany. Presently Postdoctoral associate at Uppsala University, Sweden.
13. Mr. Kevin Lee - M.S. Biological Engineering. Use of paper mill wastewaters for biogas production. [**Major Professor:** Fall 2008- 2010] *Completed Ph.D. at Georgia Institute of Technology, Atlanta GA, USA. Presently in Medical School.*
14. Ms. Nisha Vaidyanathan – M.S. Biological Engineering. Attached growth microalgae bioreactor development and testing [**Major Professor**: 2008-10]
Presently Associate Scientist, Bristol-Myers-Squibb, Boston MA
15. Mr. Nicholas Chammoun - M.S. Biological Engineering. On farm production of energy using oilseed radish, *Raphinus sativus*. [**Major Professor:** 2007-2009]
Presently serving as an Officer in the United States Marine Corps.
16. Ms. Sarah Doydora – M.S. Crop and Soil Science. Use of biochar in containing the release of nutrients during land application of poultry litter [**Co-Major Professor** – Dr. Miguel Cabrera; 2009]. *Presently doing Postdoctoral work at NCSU, Raleigh NC.*

17. Mr. Erik Jarrett - M.S. Biological Engineering. Development and testing of a packed bed thermogravimetric analyzer for biomass thermal conversion. [**Major Professor:** 2005-2008]
18. Mr. Jarrod Smith - M.S. Biological Engineering. Comparison of pyrolysis process and products from high fat biomass [**Major Professor**: 2008].
Presently R&D supervisor at Albemarle Corp., Baton Rouge LA
19. Mr. Jesus Garcia - M.S. Biological Engineering. Thermochemical conversion of palm oil mill residues for biochar and bio-oil production [**Major Professor**: 2005].
Completed Ph.D. at Washington State University. Presently Processing Program Manager, CENIPALMA, Bogota, Colombia.
20. Ms. Yan Ding – M.S. Biological Engineering. Microbial ecology and kinetic study of a biofilter treating hydrogen sulfide and methanol. [**Major Professor**: 2001]
21. Dr. Chun Liang – M.S. Artificial Intelligence. Experimental and neural network modeling of physical variables during the composting of biosolids. [**Co-major Professor** and **Primary Research Advisor**: 2001]
Presently Professor, Miami University, Oxford, Ohio.

Graduate Committees

Served on 33 Graduate Research Committees at the M.S. and Ph.D. levels. Fields of study include Biological Engineering, Environmental Engineering, Biochemical Engineering, Agricultural Engineering, Ecology, Crop and Soil Science, Textile Merchandizing and Interiors Science, Applied Economics, and Forestry.

Other student guidance

Served as research guide to over 25 students at the undergraduate and high school levels, including exchange students from France, Thailand and Brazil. Served as lead scientist in 2001, hosting a US EPA funded STEM internship workshop where four senior-level students, recruited from a national search, was trained over the summer.

AWARDS AND RECOGNITION

1. Jefferson Science Fellow of the National Academies of Science, Engineering and Medicine. Served a 1-year assignment (2019-20) in Washington DC with the US Agency for International Development (USAID) in the role of Senior Science Advisor to the Agency.
2. Listed in Clarivate Analytics' 2018 list (released in 2019) of world-class researchers selected for their exceptional research performance, demonstrated by production of multiple highly cited papers that rank in the top 1% by citations in *Web of Science* in the cross-disciplinary field.
3. Georgia Athletic Association Endowed Chair in Engineering – 2017 – Awarded for ongoing research and proposed vision towards addressing global grand challenges in environmental and agricultural sustainability leading to global food security.
4. Rufus Chaney Research Award 2015-16 for excellence in research in organic waste management. Awarded by the U.S. Composting Council, Jan 2016, Jacksonville FL.

5. UGA Research Superstar 2014, 2015, 2016. Honored for research accomplishments at reception hosted by Provost Pamela Whitten.
6. Top 15 downloaded paper in 2015 – Co-author of paper titled "Biochar amendment to soils with contrasting organic matter levels: effect on N mineralization and biological soil properties". 2015. Global Change Biology – Bioenergy, 7(1):135-144.
7. ASABE Graduate Student Research Award Winning Paper on 2008 – Co-author (and dissertation advisor) of paper titled "Effect of fractionation on fuel properties of poultry litter". Applied Engineering in Agriculture 24(4): 383-388.
8. ASABE International best paper award in 2006 – Co-author (and MS thesis advisor) of paper titled "Enhanced biofiltration of hydrogen sulfide in the presence of methanol and resultant bacterial diversity". Transactions of the ASABE, 49(6):2051-2059.
9. Air and Waste Management Association's nomination for young professional best paper award in 2008 - Co-author (and dissertation advisor) of paper titled "Effect of fractionation and pyrolysis on fuel properties of poultry litter". Peer reviewed proceedings. Air and Waste Management Annual Meeting and Expo, Portland, Oregon.

SELECTED SERVICE AND PROFESSIONAL DEVELOPMENT ACTIVITIES

INTERNATIONAL

1. International exchange visit to Costa Rica – hosted by multiple entities. Visited and engaged with faculty and students at EARTH University - Guacimo, CATIE – Turialba (Centro Agronómico Tropical de Investigación y Enseñanza - Center for Agronomic Research and Education), Instituto Tecnológico de Costa Rica – San Jose, University of Costa Rica – San Jose, and several organic farms growing banana, coffee, and crop-livestock integrated agriculture. May 8th – 22nd 2018.
2. International exchange scholars visit to Khon Kaen University, Thailand. Presented a seminar, engaged with faculty, and identified areas of common interest and complementary expertise between KKU and UGA. Developed the basis for future research collaborations. 23rd July to 7th Aug 2017.
3. Visited and engaged with scientists at CGIAR's CIMMYT – International Center for the improvement of maize and wheat, Mexico City. May 3, 2017.
4. Program Committee Member – organizational lead and panel moderator at the conference titled "*Engineering and technology innovations for global food security*", Stellenbosch, South Africa. Global conference of the American Society of Agricultural and Biological Engineers (October 2016).
5. Program Committee Member – planning committee on conference titled "*Sustainable Utilization of Tropical Plant Biomass: Bioproducts, Biocatalysts, and Biorefinery*". Tamil Nadu Agricultural University, Coimbatore INDIA. Nov 17-19, 2016.
6. Hosted international visiting scientist to UGA – Dr. B. Ramakrishnan, Principal Scientist at the Indian Agricultural Research Institute, Pusa, New Delhi. July 23-31, 2016.
7. Hosted international visiting scientist to UGA – Dr. Reda Abou-Shanab, Faculty at University of Alexandria, Egypt. Nov 2014-Feb 2015.

8. Hosted international visiting scientist to UGA – Dr. Richard Wilson, Faculty member at SRM University, Chennai, India. Aug—Dec 2015.
9. Invited External Examiner of dissertation – University of Adelaide, Australia. 2015.
10. Organizing committee member representing University of Georgia. *First International Workshop on sugarcane production chain*. Co-organized by University of Sao Paulo-ESALQ (Piracicaba, Brazil), Dedini Corporation (Sao Paulo, Brazil), Sugar Processing Research Institute (New Orleans), and University of Georgia (Athens GA). July 22-24, 2014, Piracicaba, Brazil.
11. Invited Center Proposal expert reviewer for the Science Foundation of Ireland, Dublin Ireland. Center: Plant and AgriFood Innovation Center. May 13-20, 2014.
12. Invited proposal reviewer for Research Council of Norway, Oslo, Norway in 2014.
13. Invited External Examiner of dissertation – Pondicherry University, India in 2013.
14. Invited External Reviewer of a project at King Abdulaziz City of Science and Technology. Review conducted by the AAAS in 2013.
15. Led a scientific delegation of 6 persons from UGA and Georgia Industry on an educational exchange visit to India in 2013. Visited several industry sites, educational centers, and met with industry, educational and government leaders.
16. Invited proposal reviewer for KNAW Royal Netherlands Academy of Arts and Science in 2010.
17. Invited external reviewer for the Parsons Energy Research Program, University College Dublin, Dublin, Ireland in 2010.
18. Established a research collaborative memorandum of understanding (MOU) between UGA-Biorefinery Center and Cenipama (Palm Oil Research Center), Bogotá, Colombia in 2006.
19. Associate Editor – TRANSACTIONS OF THE ASAE – Specializing in Biological Treatment of Solid wastes [Jun 2000 – 2010].
20. Member of the Scientific Advisor Board for the international journal, Compost Science and Utilization [Feb 2001 – 2005].
21. Peer-reviewer for multiple journals – Examples include Waste Management, ACS Sustainable Chemistry and Engineering, Frontiers in Energy Research, etc.

NATIONAL

1. Member USDA-NIFA national proposal review panel (A1521 Engineering Products) in 2011. Reviewed 11 proposals and served on panel discussions for 47 proposals.
2. Member NSF-Energy for Sustainability review panel, Washington DC in 2010.
3. Invited to provide **Expert Testimony to the U.S. Congress** House Committee on Small Business – Hearing relating to the biofuels industry – May 2009. *Video link*: http://www.youtube.com/watch?index=16&feature=PlayList&v=_5LcbpluKqc&list=PL9D8DC00E8639FFE2

UNIVERSITY AND STATE OF GEORGIA

1. Chair of the Georgia Section of the ASABE. Led an executive committee of six persons serving the 144 members of ASABE within the state of GA through activities including Annual Conference, site visits, panel discussions etc. (July 2015 – June 2018)
2. Co-chair of the College of Engineering's "Agricultural Engineering Visioning". A national committee to develop a vision for the future of the agricultural engineering program at the University of Georgia (Nov 2016 - Aug 2017)
3. ABET Accreditation Program Assessment – Biological and Agricultural Engineering Program – 2001 to Present.
4. Served in various roles (including Committee Chair) in several Faculty Hiring Committees and Promotion and Tenure Committees in the College.
5. Peach State LSAMP – Minority recruiting event for the University of Georgia. Conference presentation of my research to mentor potential students, judging of student presentations and one-on-one mentoring discussions. October 19, 2017.

RESEARCH GRANTS AND CONTRACTS: SUMMARY

Since 1995 Dr. Das has participated as Principal Investigator (PI) or Co-PI in the development of over 150 competitive research grant proposals targeting State, Federal, and Industry funding sources. Of these, over 75 proposals totaling $8 million have been successful and resulted in awards of R&D dollars to the University of Georgia. In addition, starting 2004 he has been serving as Director of the UGA Biorefinery and Carbon Cycling Program that is funded through State and Federal grants totaling $7.4 million (in addition to the amount mentioned above). Dr. Das has had responsibility for strategic development of the program, hiring scientific staff and students, and budget management of over $15 million in his professional career. Programmatic areas of research, development and technology transfer include biomass conversion for biofuels and products, including biochar and BioOils; and organic waste management.

TECHNOLOGY TRANSFER EXPERIENCE

1. Between 2004 and 2008, Dr. Das worked with Eprida Inc. (a private company based out of Georgia, USA) in pre-commercial testing of biomass pyrolysis and conversion of pyrolysis gases, through catalytic conversion, to hydrogen. The technology was developed by the National Renewable Energy Laboratory (Golden, Colorado) and technology transfer was provided by the University of Georgia. Dr. Das served as the technical lead from the University of Georgia on this project.
2. Dr. Das has served as research leader of five programmatic areas within the Biorefinery and Carbon Cycling Program (www.biorefinery.uga.edu) including: [1] Thermochemical (pyrolysis, liquefaction and gasification); [2] Biochar; [3] Microalgae-biofuels; [4] Biogas; and [5] Composting. Although his personal research program covers all these areas, he is focusing on waste to energy in microalgae and anaerobic digestion. He has had many years of experience working with the private sector and local government in both engineering outreach and technology transfer.
3. Dalton Utilities (Dalton, Georgia; 2007-13): Worked on developing an algae-based biofuels production system that is targeted at biomass production and wastewater treatment (Phosphorus removal from wastewater). Work includes laboratory scale testing and onsite pilot testing at the company site.

4. Dr. Das has worked extensively in organic waste management technology transfer to municipalities and private companies all over the USA. Specific examples are:
   4.1. Wilbros LLC (Toccoa, GA; 2013-14): Provided technical assistance, process management guidance, and implemented odor reduction protocols at the 250 t/d commercial solid waste composting facility.
   4.2. Sevierville Solid Waste Authority, Inc. (Sevierville, Tennessee; 2008-10): Provided design and management guidelines for odor control at a 250 t/d municipal solid waste composting site.
   4.3. Newnan Utilities (Newnan, Georgia; 2004-07): Designed and facilitated construction of a 150 t/d yard waste and biosolids composting operation. Technology transfer included startup, operator training, and development of record keeping for certification.
   4.4. Gold Kist, Inc. (Ballground, Georgia; 1999): Worked with food processing company to establish baseline volatile organics emissions and developed process control methods to reduce emissions. Work was done on-site at the process mill.
   4.5. Weyerhaeuser, Inc. (Oglethorpe, Georgia; 1998): Worked on pilot testing a paper mill sludge composting facility at the process mill. Process development and optimization, and technology transfer.
   4.6. City of Douglas, Georgia (1997): Designed and facilitated construction of a municipal composting operation for a community of 15,000 people. Technology transfer included startup, process control development, operator training, and development of record keeping for certification.
   4.7. Kurtz Brothers, Inc. (Akron, Ohio; 1993-94): Worked with an 80 dry-ton/day commercial composting company to establish a process control operations on site.

<u>EXPERIENCE IN ESTABLISHIG MAJOR RESEARCH PROGRAMS</u>

During the 25 years Dr. Das has worked at the University of Georgia, he has developed two large interdisciplinary research, teaching and outreach programs that have risen to national and international recognition. In 1995 he provided leadership to develop a program in organic waste management and value-added processing. When he arrived on campus, there were no laboratory facilities or research personnel in this area. He provided leadership to the design and construction of 10,500 ft^2 lab space, an 8-acre research site, and purchase and commissioning of over a million dollars of laboratory and field equipment. The total budget for this program development was over $4 million (spread over multiple years). This research program grew to an internationally recognized program and through his work he has published 38 peer-reviewed journal articles covering composting and biological odor control areas; several technology transfer activities to industry and local government, and training of students and research staff. His efforts brought in an additional approximately $2 million dollars of extramural grant funding to support this research and development work (1995-2003). This program evolved from one focused on biomass conversion for environmental protection, to what is today an integrated program developing technology for biomass fuels and bioproducts.

In 2003, UGA partnered with Eprida Inc. and the National Renewable Energy Laboratory (Golden CO) to develop biorefinery technologies for biomass to hydrogen production. This process included BioOil production and steam reforming, and biochar production and use. Dr. Das has been serving as Director of this research program since its inception. Over the last 15 years, he led a group of researchers that developed laboratory capabilities (including micro-TGA,

2-L batch reactors, 5 kg/hr continuous reactors, 500 kg batch biochar system, and worked with the 1000 kg/d pilot system), instrumentation capabilities (For detailed listing please visit: http://www.biorefinery.uga.edu/facilities.html), hired and trained research staff, students, and laboratory personnel, and managed a multi-million dollar budget in this research program. He continues to write grant proposals to support this program and provides technical leadership. In this role, He has been active in collaboration with Forestry, Crop and Soil Science, Microbiology, Biochemistry, Animal Science, and a variety of other disciplines. He also works very closely with industry and local government. Examples include large companies such as Weyerhaeuser, Pilgrims Pride, and Georgia-Pacific; smaller companies (startups) such as Eprida, Tolero Bioenergy, and local government entities such as Dalton Utilities, DeKalb County Sanitation, City of Douglas, GA, etc. He has also led teams in research project collaborations with University of Puerto Rico, Clark Atlanta University, Georgia Institute of Technology, National Renewable Energy Lab, Virginia Tech, etc.

His research efforts at the University of Georgia have resulted in authoring or co-authoring over 110 peer-reviewed journal articles; training over 40 graduate students, 9 post-doctoral associates, and several research staff and undergraduate students. Students and scientists who trained in his group now represent faculty members at land-grant universities in the U.S., working in local and federal government, and the private sector.

INTERNATIONAL RESEARCH AND EDUCATIONAL INNOVATIONS

Professor Das' educational philosophy is built on three themes that he considers critical in today's world. These are [1] internationalization, [2] experiential learning, and [3] entrepreneurship and technology transfer. Engineers who will live and work in a highly globalized world that is rapidly changing and will soon be populated by over 9 billion people require significant nimbleness. Today's engineers need to understand and be able to work well with different cultures and peoples, they need to be able to learn quickly and respond to changes quickly, and they need to have the ability to take their learning and rapidly apply it to the benefit of society and the world.

Internationalization

Dr. Das has over his career developed strong international programs focusing on research, education and experiential learning. These include a 2007 partnership with multiple universities in Mexico that resulted in 9 exchange students from Mexico who came to UGA over a period of 3 years and either studied to get graduate degrees or engaged in direct experiential learning in the laboratory. All but one of the students continued on to get graduate degrees (at other institutions in the U.S. and Europe) after completing their research internship. The program was funded by Higher Education for Development, an organization that administers grants for the US AID.

In 2003-05, Dr. Das hosted a Fulbright Scholar from Colombia who came to UGA to pursue a graduate degree. This led to several exchange visits between his lab and Cenipalma (Colombia's National Agency for Research supporting the Palm Oil industry) located in Bogota. Dr. Das was invited in 2006 to present the keynote address at the *15th International Palm Oil Conference*, Cartagena, Colombia, Sept 19-25 [Memorias: XV Conferencia International sobre Palma de Aceite, Cartagena Colombia, Sept 19-22].

Since 2003 Dr. Das has been actively engaging and building partnerships with three key universities in India. His efforts have established International Cooperative Agreements between UGA and three Indian universities, namely, SRM University, Anna University and Tamil Nadu Agricultural University. This has resulted in several exchange scholars visiting UGA for durations of 2 weeks to 6 months. He received a grant from the USDA International Science and Education Program that allowed him to lead a group of 10 students as part of a 16-day Study Abroad to India in March of 2015, conduct multiple exchanges of faculty (over 3 years), and lead a scientific and business delegation visiting India in January of 2013. Dr. Das' personal vision is that UGA faculty and students have an opportunity to understand challenges in India and be able to collaborate with Indian scientists and solve problems of mutual interest. To this end, he has taken several UGA faculty members to India over multiple study tours. Faculty members who have traveled with him in the recent past include Drs. Gary Hawkins, Mark Eiteman, Jason Locklin, David Gattie, Dan Geller, Glenn Ames and Jack Houston, all professors in the College of Agriculture and Environmental Sciences or College of Engineering.

In 2008, Dr. Das hosted an exchange student from University of Sao Paulo (USP), Brazil that led to developing a strong partnership between his lab and that of Professor Antonio Baptista of USP-ESALQ, Piracicaba, Brazil. He has traveled to Brazil several times, established an International Cooperative Agreement with USP, and hosted 7 exchange students (for 9 months each) in his lab over the last few years. Professor Baptista has visited UGA four times and the collaborations have resulted in several grant applications for furthering the work targeted at environmental challenges in the sugarcane industry. In 2014 Dr. Das co-organized the First International Workshop on Sugarcane Production Chain (July 22-24, 2014, Piracicaba, Brazil), which was a partnership between University of Sao Paulo-ESALQ (Piracicaba, Brazil), Dedini Corporation (Sao Paulo, Brazil), Sugar Processing Research Institute (New Orleans), and the University of Georgia (Athens GA).

Experiential learning

In Spring Semester (Jan-May) 2017, Dr. Das collaborated with four other faculty members representing different disciplines on campus to offer a team-taught, experiential learning course on design thinking and entrepreneurship. Faculty members and students represented the School of Art, College of Business, College of Environment and Design, College of Engineering and UGA's Office of Research. Through the semester students were guided to work in multi-disciplinary teams to develop monetizable solutions to societal problems such as reducing food waste, increasing low-income housing, water conservation, etc. Teams developed a business plan and at the end of the semester made an investor pitch to local government officials and university faculty.

In 2015, Dr. Das led a team of undergraduates in a study abroad to India. The focus of the study was environmental and energy related challenges and opportunities in India. The team included 10 undergraduates (6 women and 4 men) and four faculty members. This UGA team partnered with 10 students from the host Indian institution (SRM University – Chennai) and toured various sites, attended lectures, and had meetings with industry and government regulatory agencies. The group was divided into five teams of four students each (2 from UGA and 2 from SRMU) who worked on selected topics as a term project. Final deliverables included a presentation and report detailing the challenge and a potential solution.

In 2003, Dr. Das won the Lowry H. Gillespie Award for Engineering Curriculum Enhancement at UGA for a plan to increase the level of experiential learning in the classes he was teaching. He has continued to make it a priority to increase the number of site visits and lab experiences in the classes he teaches. He also is a strong proponent of research experiential learning and has served as mentor to high school students through CAES's Young Scholars Program and UGA's Young Dawgs Program, and UGA's undergraduate research through CURO.

In 2001, Dr. Das received a grant from the US EPA to host a summer research internship in his lab. Through a national search, four undergraduate engineering students were selected for that 2.5-month internship. The outcomes of that experience led to making experiential learning a core part of his educational philosophy.

Dr. Das' assigned teaching includes two undergraduate engineering courses and a graduate entrepreneurship and technology transfer course. In addition to these, he voluntarily engages in CURO (ENGR4960H, 4970H, 4990H, 5900H), Design (ENGR4920), and several interdisciplinary special courses and seminars (AESC3126, FORS8020, FRES 1010, ENGR8580, ENGR8980, ENGR4980, AAEC4990). He uses these opportunities to engage students and help them broaden their educational experience and their worldview.

Entrepreneurship and Technology Transfer

Dr. Das' research philosophy is built around the idea of solving present and imminent problems faced by society in the environmental and energy areas. He believes that research for generation of knowledge that is disseminated through publications and presentations is only the first step. As applied researchers we have an obligation to take that knowledge and apply it to bettering the world around us. His work has resulted in over 110 peer-reviewed research articles, 6 issued U.S. Patents and the formation of 3 start-up companies (two by his students and one himself). The most successful of these, ALGIX (http://algix.com/) was co-founded in 2010 by former graduate student Ryan Hunt and has operations in Alabama, Mississippi, Ohio and Jamaica. ALGIX is a clean technology company that uses algae to remediate aquaculture ponds (making them more sustainable) while converting the algae to bioplastics for the packaging, automobile and consumer products markets. Another startup, Phytosynthetix (http://phytosynthetix.com/) co-founded by former student Erico Mattos is developing patented inventions that came out of work by Dr. Mattos and others in Dr. Das' team. This work relates to increasing lighting efficiency during photosynthesis. Several of Dr. Das' students and postdoctoral advisees have gone on to work in industry. For example, Dr. Chinnasamy, a former postdoc is presently CTO of one of the largest algal-biotech companies in Asia and is commercializing algal biofuels in India.

Dr. Das also teaches the College of Engineering's Tech-Transfer and Entrepreneurship course (GRSC8100). This class was co-developed with Mr. Stefan Schulze who runs UGA's BioBusiness Center. Additionally, he is active with a campus-wide group that is promoting entrepreneurship through Th*inc* week activities (https://thinc.uga.edu/), and is working to establish the "eHub", a space where people interested in technology transfer and entrepreneurship can work together and learn from each other.

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Note: *Dr. Verma was research leader of the unit I worked in for a couple of decades and has observed my professional growth. He can provide a reference on leadership abilities relevant to program vision, program growth, collaborations across disciplines and overall leadership skills.*

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Note: *Dr. Melear has worked closely with me in my research program for over 15 years in the role of Research Coordinator. He can speak to my skills, ability, and style of leadership in research, communication of vision, and day-to-day supervision and management of teams.*

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Note: *Dr. Tingi is a former Ph.D. student advisee who worked in pyrolysis research. Subsequently, he worked at West Virginia University and in the private sector for several years. Presently he is with USDA-FAS managing the Borlaug Program among others. He can comment on mentorship skills, student research guidance, and collaborative skills.*

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Note: *Ms. Steensland was previously with a DC-based NGO named Global Harvest Initiative, when we began collaborating. She can comment on networking skills, working with private sector and NGOs, and general vision and desire to contribute towards solutions to global challenges.*

Diversity Statement – K.C. Das

In my experience, a diverse, inclusive community or organization is strong, lively, creative, supportive, curious, open-minded, and cohesive. I believe that diversity and inclusion must be pursued deliberately and thoughtfully as many human biases and mental models are picked up in subtle and unintentional manners. For me, diversity is about people, and a truly diverse community is built on the effort and contributions of all its members. As a department leader, I will lead by example and invest in continuing to inspire a passion for diversity in the faculty and students. I would also be responsible for ensuring the policies and processes of the department to facilitate and support a diverse vision for the community. I would encourage dialogues and opportunities to learn about and from each other. My door would always be open to hearing from faculty or students with questions, concerns, or ideas.

OSU's IDEAL Framework is an excellent roadmap for building diversity. I appreciate its holistic approach and including all of the community. Setting metrics and assessments is essential, and I believe it is best done collaboratively to develop shared targets and inclusive perspectives. To include the community and building leadership, I would put together a working group of students, faculty, and staff that sets annual goals, engages the community, creates internal assessments and feedback, and plans activities for the department. I would ensure that IDEAL principles are emphasized in all aspects of departmental work, including recruiting students and faculty.

<u>My personal experience of diversity</u>:

As an immigrant, I have been fascinated and at times discouraged by America's journey toward a "more perfect union." Nevertheless, it has been the most enriching experience of my life, and a good bit of the reason has to do with open-mindedness and seeking to move out of my comfort zone. When I arrived in the U.S. to pursue graduate school, I wanted to experience diversity for myself. It was common in those days for Indian students to live and socialize with each other. I wanted to meet people from different cultures, so I chose to live with students from Germany, Israel, and the U.S., several of whom are dear friends to this day. This gave me an appreciation of how things look and feel different to different people based on their experiences. Diversity genuinely makes the team strong in every aspect.

I believe my experience as an immigrant could be particularly valuable to students and could attract students from around the world to study at BEE. As an immigrant, you are immediately a fish-out-of-water; your new surroundings can be as overwhelming as they are invigorating, and the ability to "think on your feet and learn quickly" becomes critical. I also learned the importance of tolerance, particularly when encountering others who are not as tolerant of you.

One of the things that I find meaningful is OSU's commitment to working with indigenous populations of the Northwest. For many years (please see CV for additional information), I have worked on education and technology transfer in organic waste management to several indigenous peoples, including the Eastern Band of Cherokee and the Seminole Tribes. I know from those experiences the respect tribes have for biological and ecological systems, and they have

tremendous insights born of experience and history. The work also contributes to strengthening the bonds between neighbors.

Diversity in intellectual, cultural, and professional backgrounds of people also provides significant strength. Early in my career, I was part of a team of approximately 20 people from around the southeast that worked together over 12 months to organize a regional conference in Athens, Georgia. My approach was to focus on three essential qualities of successful teamwork, namely, social capital, communication, and diversity. I believe that every member of the team needs to know that their role is essential; they need to be heard and have a stake in the whole project's success. I achieved this by developing social capital, a time-consuming task but worth the while because it resulted in many team members voluntarily working outside of their assigned responsibilities to help others. This indicated to me that they thought and cared about other people's needs, roles, and success. Prior to business meetings that occurred about every two months, we met for an hour over a meal together with no agenda and spent social time getting to know each other. In addition, I engaged as a moderator during business meetings to ensure clear and effective communications. Everyone was heard, and action items and responsibilities were clearly designated and communicated right after the meeting. Selection of the team was also critical in providing effectiveness and diversity of thought. Members came from diverse backgrounds, including local government, federal agencies, the private sector, and universities. The gender mix and age of members in the team were also diverse. All of these contributed to the team's effectiveness. It has been a long time since that experience, but I can still feel the joy of working in that quality team. My approach to a future situation would be very similar, recognizing that I have gotten better at it with experience.

I have had many experiences that contributed to my diverse worldview. I do not dwell on any single or group of my positive or not-so-positive experiences, but they would inform my approach as department head.