

# Integrated Curriculum Vitae

## **Kritee (Kanko), Ph.D.**

Zen priest (Osho) and teacher (Sensei)  
Senior Scientist, Global Climate, Environmental Defense Fund

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## **Eco-dharma leadership**

Voluntary work at the interface of Spirituality, social and climate justice advocacy

- Co-Founder and Executive Director, Boulder Ecodharma Sangha (2013 – present)
- Co-Founder and faculty, Earth-Love-Go (2016 – present)
- Guest lecturer, Naropa University Peace Studies program (2016 – present)
- Co-Founder & Board of Director, Rocky Mountain Ecodharma Retreat Center (2017-present)
- Faculty, Ecosattva training, One Earth Sangha which is expressing a national Buddhist response to climate change and other threats to our one home (2017)
- Impermanent Sangha retreat faculty: Leading wilderness retreats since 2002 (2018)
- Mentor, Earth Guardians (Indigenous youth activists) (2018)

## **Employment**

### **Environmental Defense Fund**

Senior Scientist and Senior Manager, Global Climate (Jan 14 – present)  
High Meadows Post-doctoral Fellow, Office of Chief Scientist (Nov 11 – Dec 13)

Global climate, environment and health expert involving mercury, nitrogen and agriculture

- Lead Researcher for “Climate smart farming emission measurement program”
  - Participant in presenting and writing proposals/reports to funders
  - Manager of 20 personnel in 5 laboratories across 4 states in India
  - Frequent traveler to India to train multi-partner and multi-lingual team
  - Author of many agro-economy centric peer-reviewed articles.
- Collaboration broker for EDF, agriculture & climate experts in Asia and the U.S.
- Developer of climate smart farming based carbon offset methodologies
- Advisor to [Legal Counsel](#) team on the Mercury and Air Toxics Standards
- [Advocate among scientists](#) & EDF staff blogger

### **Princeton University**

Dreyfus Post-doctoral Fellow, Dept. of Geosciences (July 08 – Aug 10)

Reactive nitrogen, biogeochemistry, ocean and climate research

- Studied bacterial denitrification and global budget of nitrogen in the ocean
- Published 6 peer reviewed articles

### **Rutgers University**

Post-doctoral research faculty, Dept. of Environmental Science (Sept 10- Oct 11)  
Doctoral research assistant (Sept 04- June 08)

Mercury, geochemistry, genetics and bioremediation research:

- Developed techniques to differentiate between different sources of mercury
- Published 12 frequently cited articles (**~500 citations**)
- Co-authored three major Federal funded grants (>\$2 million),
- Received 5 International and domestic awards

### **New Jersey Board of Public Utilities**

Eagleton Fellow, Bloustein School of Planning & Public Policy (Jan -May 08)

### **Queensland Institute of Medical Research, Australia**

Cancer research Intern (Apr–Aug 99)

## **Education**

- 1996-2001** Integrated Bachelors and Masters of Technology (Equivalent of B.S and M.S)  
Department of Biochemical Engineering & Biotechnology  
Indian Institute of Technology, New Delhi (IITD), India
- 2001-08** Ph.D., Microbiology and Molecular Genetics Program,  
Department of Microbiology and Biochemistry  
**Rutgers University, New Jersey**
- 2007-08** Governor's Executive Fellowship  
**Eagleton Institute of Politics, Rutgers University**
- 2016** Permaculture Design Course (PDC)  
**Central Rocky Mountain Permaculture Institute**
- 2017-18** Eco-Social Design & regenerative livelihoods certificate course  
**Gaia University**

## **Ecodharma: Selected interviews and articles** (available at boundlessinmotion.org)

- Interview: On being the only Indian Woman Priest in the Zen Tradition, **Secular Buddhist Association** (Podcast) (2017)
- Whiteness and Privilege in Ecodharma: How can we confront them compassionately? Rocky Mountain Ecodharma Retreat Center blog (2017)
- Climate Despair vs. Action: A False Choice? Ecodharma Retreat Center blog (2017)
- One unified movement towards joy, health, kindness and justice: What is our role? (2016)
- Three pillars of Eco-Dharma (Sacred) activist movement (2016)
- This Buddhist Life: Q&A with Kritee: **Tricycle** (2015)
- Climate Takuhatsu (spiritual begging): **Zen peacemakers** blog (2015)
- Understanding Climate drivers: International Western Dharma Teachers Gathering, **Omega Institute** (2015)
- Can our spiritual paths help us to choose heroic and just transitions over global climate chaos? **Tikkun Daily** (2015)
- Embody Fierce Compassion: Buddhists at the People's Climate March: **Buddhist Peace Fellowship** blog (2014)
- EcoScience 101: EcoDharma conference 2014 Wonderwell Mountain Refuge, NH (2014)
- A Primer: Science and Policy Response to Climate Change, **One Earth Sangha** [Mindfulness and Climate Action series](#) (2014)

## **Ecodharma organizational experience** (Details available at boundlessinmotion.org)

- Convener and teacher, Meditation and Eco-Dharma retreats/workshops (2013 – present)
- Lead convener "Inter-faith Meditate-Pray the Frack out of Boulder" (2017)
- Convener and speaker: Decolonizing climate activism (2017)
- Convener and speaker: Three pillars of Ecodharma activism (2017)
- Multiple events on Standing Rock, Non-violent communication, community-building, honoring emotions, local economies and permaculture (2016 - present)
- Carbon Karma vigils (2014-2015)

## **Ecodharma Blogs & Interviews**

- [Tricycle](#)
- [Tikkun Daily](#)
- [Secular Buddhist Association](#)
- [Rocky Mountain Ecodharma Retreat Center](#)
- [Conscious Unfolding blog](#)

## **Ecodharma invited talks**

- **Kritee K.**, Hope in the midst of suffering and trauma: Buddhist perspective, Lecture for Undergraduate course "What is suffering", School of International Service, American University **2019** Washington DC
- **Kritee K.**, Zen Buddhist perspective on intersectionality between social and climate justice (Through Teleconference), [Interfaith Reflections on Just Transitions: Linking Climate and Economic Justice](#), Jan-Feb **2019**, Dhaka, Bangladesh
- **Kritee K.**, Spirituality and Science: Environmental Ethics, University of Southern California **2018**
- **Kritee K.**, Plenary Roundtable: REGENERATIVE AGRICULTURE at Regenerative Future Summit, May **2017**, Boulder, CO
- **Kritee K.**, Satyagraha, Eco-Dharma & other topics Naropa University Peace Studies Program **2016-2018**
- **Kritee K.** Climate Calamity: Psycho-spiritual implications, [Interface Boulder](#) **2016** Boulder
- **Kritee K.**, Understanding Climate drivers: International Western Dharma Teachers Gathering Omega Institute, **2015** NY

## **Professional organizational experience**

1. Lead convener "Climate smart farming of rice, millets and groundnut: Final result dissemination tour in Andhra Pradesh, Tamil Nadu and Karnataka (2016)
2. Lead convener "The influence of changes in farming practices, vegetation, and land-use on climate adaptation, mitigation and ecosystem and socio-economic services" International American Geophysical Union's Fall meeting (2014)  
*Mitigating greenhouse gas (GHG) emissions associated with farming and land use are crucial for avoiding catastrophic climate change. Yet these objectives must be achieved while improving yields to meet the fuel, food and fiber needs of a growing population. The presentations included discussion of the effect of innovative wet (i.e., rice) and dryland farming techniques (including water, fertilizer and/or soil management) on GHG emissions, yields, and socio-economic services.*
3. Co-convener of a Special Session entitled "Mercury Emission Reductions in the Power Sector in the U.S" at the 11th ICMGP International Conference on Mercury as a Global Pollutant, which will take place in Edinburgh, Scotland (2013)
4. Co-organizer of "Greenhouse gas (GHG) emission modeling," an Emerging Issues workshop at Environmental Defense Fund (EDF), New York (2013)  
*EDF is engaged in a number of agricultural projects where accurate estimates of GHG emissions are needed. Modeling GHG emissions can provide a cost-effective understanding of the carbon footprint of farming activities. Several models (e.g., DNDC and Daycent) are available for estimating GHG emissions and EDF is interested in better understanding these models and where best to apply them.*
5. Convener and organizer "Greenhouse gas (GHG) emission measurement," a hands-on workshop for laboratory staff and experts from the Fair Climate Network, [Accion Fraternal Ecology Centre](#), Anantapur, Andhra Pradesh, India (2012)
6. Convener: [Letter to President Barack Obama in support of Mercury and Air Toxics Rule by mercury physicians and scientists](#) (2011)
7. Organizer -Mercury Biogeochemical Cycling Journal Club, Rutgers University (2011)  
*Biweekly discussion of hot papers in mercury biogeochemistry for members of several mercury Laboratories at Rutgers and Princeton*

8. Co-convenor of a session entitled "Mechanistic Understanding of Factors Influencing Non-mass Dependent Fractionation" at American Geophysical Union (AGU)'s Fall Meeting from 14<sup>th</sup> to 18<sup>th</sup> December (2009) in San Francisco, CA.
9. Interdisciplinary Environmental Remediation Discussion Club, "PCB contaminated Hudson River Superfund Site" Rutgers University (Spring 2004)  
*For a group of faculty members, students, community activists and representatives from NJ Department of Environmental Protection held weekly debates on the health effects, risk perception and assessment, and technical feasibility of the available remediation options.*

### **Major Scientific Research Experience**

- Understanding the role of water, fertilizer and organic matter application in controlling the emission of greenhouse gases (nitrous oxide and methane), soil health and water quantity and quality at small-holder farms in Asia (with Prof. Steven Hamburg and Richie Ahuja)
- Stable isotope fractionation during denitrification & implications for marine N isotope budget. (with Postdoctoral Advisor, Prof. Daniel Sigman, Princeton University)
- Stable isotope fractionation of mercury during its microbial transformations. (Prof. Tamar Barkay and John Reinfelder, Rutgers Univ. and Prof. Joel Blum, Univ. of Michigan)
- A chemical & computational model to predict genes and analyze prokaryotic genomes. (Masters Advisor: Prof. B. Jayaram, Indian Institute of Technology)
- Study of molecular interactions of a putative tumor suppressor protein p73. (Intern Project: Apr–Aug 1999 (Prof. Martin Lavin, Molecular Oncology Lab, QIMR, Australia)

### **Peer reviewed publications**

1. J. Rudek, Tinh T. K., Tin H. Q., Sanh N. V., Thu Ha T., R. Ahuja, K. Kritee, S. Hamburg and *five others* (2019) Triple win through low carbon rice farming in the Mekong Delta: higher yields, more profits and reduced greenhouse gas emissions due to water and nitrogen management. *In preparation*
2. **Kritee K.**, D. Nair, T. Adhya, R. Ahuja and *9 others* (2019) Non-linear reduction in nitrous oxide emissions through improved nutrient management for millets and peanut in rainfed semi-arid tropical India. *In preparation for Agriculture, Ecosystems and Environment*
3. L. C. Motta, **K. Kritee**, M. Tsui, T. Barkay, J. D. Blum, J. R. Reinfelder (2019) Effects of pH, dissolved O<sub>2</sub>, and wavelength of light on mercury isotope fractionation during photochemical reduction of organically complexed Hg(II) *In prep for Environmental Science and Technology*
4. **Kritee K.**, Joseph Rudek, Jeremy Proville, Tapan K. Adhya, Terrance Loecke, Drishya Nair, Richie Ahuja, and Steven P. Hamburg Reply to Wassmann et al. (2019): More data at high sampling intensity from medium- and intense-intermittently flooded rice farms is crucial. *Proceedings of National Academy of Sciences* 116 (5) 1466-1467
5. **Kritee K.**, Joseph Rudek, Steven P. Hamburg, Tapan K. Adhya, Terrance Loecke, and Richie Ahuja (2018) Reply to Yan and Akiyama: Nitrous oxide emissions from rice and their mitigation potential depend on the nature of intermittent flooding *Proceedings of National Academy of Sciences* 115 (48) E11206-E11207
6. **Kritee K.**, D. Nair, J. Proville, D. Zavala-Araiza, R. Ahuja, J. Rudek, T. Esteves, T. Adhya, S. Hamburg, T. Loecke and *10 others* (2018) High nitrous oxide fluxes from rice indicate the need to manage water for both long- and short-term climate impacts. *Proceedings of National Academy of Sciences* 115 (39) 9720-9725

7. **Kritee, K.**, L. C Motta, M. Tsui, J. D. Blum, J. R. Reinfelder (2017) Photomicrobial Visible Light-Induced Magnetic Mass Independent Fractionation of Mercury in a Marine Microalga *ACS Earth Space Chem.*, Article ASAP **DOI:** 10.1021/acsearthspacechem.7b00056
8. **Kritee K.**, Nair D., Tiwari R., Rudek J., Ahuja R., Adhya T. K., Loecke T., Hamburg S., Tetaert, F., Reddy S., Dava O. (2015) Groundnut cultivation in semi-arid peninsular India for yield scaled nitrous oxide emission reduction. *Nutrient Cycling in Agroecosystems* 103 (1): 115-129.
9. Tiwari R., **Kritee K.**, Adhya T. K., Loecke T., Rudek J., Nair D., Ahuja R., Balireddygar S., Balakrishna S., Ram K., Venkataiah L.C., Dava O., Madasamy M., Salai A. (2015), Optimization of sampling and analytical methodology for measurement of greenhouse gas emissions from small-scale rainfed cropping systems of peninsular India. *Carbon management* 6:169-184
10. **Kritee, K.**, J. D. Blum, J. R. Reinfelder and T. Barkay (2013) "Microbial stable isotope fractionation of mercury: A synthesis of present understanding and future directions." *Chemical Geology* **336**: 13-25
11. **Kritee, K.**, D. M. Sigman, J. Granger, A. Jayakumar, C. Deutsch (2012) Reduced isotope fractionation by denitrification under conditions relevant to the ocean. *Geochimica et Cosmochimica Acta* **92**: 243-259.
12. Karsh, K. L., J. Granger, **K. Kritee** and D.M. Sigman (2012), Eukaryotic assimilatory nitrate reductase fractionates N and O Isotopes with a ratio near unity. *Environmental Science and Technology*, 46 (**11**): 5727-35.
13. T. Barkay, **Kritee K.**, E. Boyd, and G. Geesey (2010), A thermophilic bacterial origin of the microbial mercuric reductase and subsequent constraints on its evolution by redox, light, and salinity, *Environmental Microbiology*. **12** (11):2904-2917.

----- Evaluated as a **Must Read** by Faculty of 1000

14. **Kritee K.**, T. Barkay and J. D. Blum (2009), Mass dependent stable isotope fractionation of mercury during *mer* mediated microbial degradation of monomethylmercury *Geochimica et Cosmochimica Acta*. **73** (5): 1285-1296
15. **Kritee K.**, J. D. Blum and T. Barkay (2008), Mercury stable isotope fractionation during reduction of Hg(II) to Hg(0) by different microbial pathways, *Environmental Science and Technology*. **42** (24): 9171-9177.
16. **Kritee K.**, J. D. Blum, M. W. Johnson, B. A. Bergquist and T. Barkay (2007), Mercury stable isotope fractionation during reduction of Hg(II) to Hg(0) by mercury resistant microorganisms. *Environmental Science and Technology*. **41**:1889-1895

----- A "hot" and "a most cited" ES&T article in 2007

17. S. Dutta\*, P. Singhal\*, P. Agarwal\*, R. Tomer\*, **Kritee K.\***, E. Khurana and B. Jayaram (2006), A Physicochemical Model for analyzing DNA sequences. *Journal of Chemical Information and Modeling* **46**: 78-85

**\* equal contributors**

### Published proceedings

1. **K. Kritee**, D. Nair, D. Zavala-Araiza, J. Proville, T. Adhya, J. Rudek, T. Loecke, S. Balireddygar, K. Ram, M. Reddy, D. Athiyaman, R. Ahuja, S. Hamburg (2018) Recently discovered high nitrous oxide fluxes at rice farms worrisome but manageable with co-management of water and fertilizers. Agricultural GHG Emissions and Food Security –

Connecting research to policy and practice –Edited by C. Heidecke, H. Montgomery, H. Stalb, and L. Wollenberg (Berlin, Germany).

2. Richie Ahuja, **K. Kritee**, Sarat Kannepalli, Rishika Jerath, Prashant Chavhan, Kamal Krishna Singh, Shashank Vatsa (2018) Scaling up climate-smart farming practices through ICT enabled platforms in India. Agricultural GHG Emissions and Food Security – Connecting research to policy and practice –Edited by Claudia Heidecke, Hayden Montgomery, Hartmut Stalb, Lini Wollenberg (Berlin, Germany).
3. **K. Kritee**, R. Ahuja, D. Nair, T. Esteves, J. Rudek and T. T. Ha (2015) Identifying, monitoring and implementing “sustainable” agricultural practices for smallholder farmers over large geographic areas in India and Vietnam *Eos Trans. AGU Fall Meet. Suppl.*, GC12C-05
4. **K. Kritee**, R. Tiwari, D. Nair, T. Adhya & J. Rudek (2014), Creating rigorous pathways to monetize methane & nitrous oxide emission reductions at small rice farms in semi-arid peninsular India *Eos Trans. AGU Fall Meet. Suppl.*, GC11E-0597
5. S. Rajan, **K. Kritee**, C. Keough, W. Parton and S. M Ogle (2014), Calibration of Daycent biogeochemical model for rice paddies in three agro-ecological zones in Peninsular India to optimize cropping practices and predict GHG emissions *Eos Trans. AGU Fall Meet. Suppl.*, GC11E-0599
6. J. Rudek, N. Sanh, T. Tinh, H. Tin, T. T. Ha, D. Pha, T. Q. Cui, N. H. Tin, N. N. Son, H. H. Thanh, H. T. Kien, **K. Kritee** and R. Ahuja (2014), Low Carbon Rice Farming Practices in the Mekong Delta Yield Significantly Higher Profits and Lower Greenhouse Gas Emissions *Eos Trans. AGU Fall Meet. Suppl.*, GC11E-0600
7. **K. Kritee**, R. Tiwari, D. Nair, T. D. Loecke, T. K. Adhya, J. Rudek, R. Ahuja, S. Hamburg (2013) Greenhouse gas emissions from rice, peanut and millet farms in peninsular India: Effects of water and nitrogen management *Eos Trans. AGU Fall Meet. Suppl.*, GC33A-1098
8. J. Rudek, **K. Kritee**, R. Ahuja (2012) Optimizing nitrogen fertilizer use on small landholder farms in India and Vietnam Reactive Nitrogen from Agriculture: Emissions, Consequences, and Management", American Chemical Society National Meeting, Philadelphia, PA ([link](#))
9. **Kritee K.** (2010), Mass Independent Fractionation of Mercury and Microbiology: Where Can They Intersect? *Geochimica et Cosmochimica Acta*. **74** Supplement 1: A541 (**Invited**)
10. Deutsch, C. A., **K. Kritee**, D. M. Sigman, S. Khatiwala and J. Granger (2010), The isotopic signature of denitrification and the global marine nitrogen balance, *Eos Trans. AGU*, **91**(26), Ocean Sci. Meet. Suppl., Abstract IT11A-05
11. **K. Kritee**, D. M. Sigman, and J. Granger (2010), Dependence of the Nitrogen Isotope Effect of Denitrification on the Cell Specific Nitrate Reduction Rate and its Implications for Denitrification in the Ocean, *Eos Trans. AGU*, **91**(26), Ocean Sci. Meet. Suppl., Abstract IT 11A-06
12. **K. Kritee**, D. M. Sigman, and J. Granger (2009), Nitrogen Isotope Fractionation Increases with the Cell-Specific Dissimilatory Nitrate Reduction Rate, *Eos Trans. AGU*, **90**(52), Fall Meet. Suppl., Abstract H53D-0964
13. J. Granger, K. Karsh, W. Guo, D. Sigman and **Kritee K.** (2009) The Nitrogen and Oxygen isotope composition of nitrate in the environment: The systematics of biological nitrate reduction. *Geochimica et Cosmochimica Acta*, **73** (13) Supplement 1:A357
14. **Kritee K.**, T. Barkay and J. D. Blum (2008) Absence of magnetic isotope fractionation for Hg during dark biological processes: experimental evidence and theoretical considerations *Eos Trans. AGU*, **89** (53), Fall Meet. Suppl., V52B-06 (**Invited**)

15. **Kritee, K.**, Barkay, Tamar, Blum, J. D. (2008) Mass dependent isotope fractionation of Hg during biotic degradation of methyl-Hg & reduction of Hg(II). *Geochimica et Cosmochimica Acta*, **72** (12) Supplement 1: A499.
16. **Kritee, K.**, Blum, J. D., Johnson, M. W., Bergquist, B. A., Barkay, T. (2007) Variation in the extent of mercury (Hg) stable isotope fractionation during reduction of Hg(II) to Hg(0) by different microbial strains *Abstracts of the General Meeting of the American Society for Microbiology*, p107.
17. **Kritee K.**, B. Klaue, J. D. Blum and T. Barkay (2005), Biological mercury isotope fractionation. *Geochimica et Cosmochimica Acta*. **69** (10) Supplement 1: A708
18. **Kritee K.**, B. Klaue, T. Barkay & J.D. Blum (2004), Mercury isotopic fractionation observed during the reduction of Hg(II) to Hg(0) by the bacterial mercuric reductase. *RMZ – Materials and Geoenvironment*. **51**(2): 1154-55.

### **Federal research grants**

- Principle Investigator & co-author for an ICCO Foundation grant: The Low Carbon Farming Emissions Measurement & Methodology Development Project (2013)
- Lead researcher and consultant for writing a grant funded by the National Science Foundation (NSF): "Mass-Dependent and Independent Mercury Isotope Fractionation during Microbial Methylation and Redox Transformations in Natural Waters" (2009)
- Isotope consultant for a grant funded by the Department of Energy (DOE): "Defining the Molecular-Cellular-Field Continuum of Mercury Detoxification" (2008)
- Participation in writing and researching for a funded National Science Foundation (NSF) grant "Collaborative research: Mercury isotope fractionation during microbial and abiotic redox transformations" (2004)
- United States Geological Survey (USGS) funded New Jersey Water Research Resource Institute (NJWRI) Graduate Student Grant

### **Science and policy: White papers, reports and comments**

1. **Kritee K.**, J. Proville, D. Zavala-Araiza, J. Rudek, R. Ahuja, S. Hamburg, T. K. Adhya, T. Loecke and D. Nair. (2018) Global risk assessment of high nitrous oxide emissions from rice production. Incorporating the discovery of high N<sub>2</sub>O fluxes under intermittent flooding. [A White paper](#). Published by Environmental Defense Fund, New York.
2. **Kritee K.**, J. Rudek, J. Proville, T. K. Adhya, T. Loecke, D. Nair, R. Ahuja, and S. P. Hamburg (2018) Reply to Wassmann et al: More data at high sampling intensity from medium and intense-intermittently flooded rice farms is crucial. [Supplementary information for response published by Proceedings of National Academy of Sciences](#) Published by EDF, New York.
3. **Kritee K.** (2016) Environmental Defense Fund's Comments on Gold Standard's Cool Farm Tool based methodology.
4. Robert Parkhurst, **Kritee K.** and 12 other EDF co-authors (2016) Environmental Defense Fund's response to Clean Development Mechanism's Concept Note: Exploration of methodological options for developing 'agriculture CDM' (CDM-EB87-AA-A10)
5. **Kritee K.** (2015) Comment to Global Research Alliance: Agricultural climate adaptation-mitigation synergies

6. **Kritee K.** (2014) Inter-comparison of existing agricultural carbon offset methodologies approved by Verified Carbon Standard (VCS), American Carbon Registry (ACR), Clean Development Mechanism (CDM), and Climate Action Reserve (CAR) submitted to [ICCO Cooperation](#) and VCS.

## **Conference presentations**

1. **Kritee K.,** R. Ahuja, T. Adhya *et al.* Generalized recommendations for farmers for reducing both nitrous oxide and methane emissions from rice: Importance of monitoring flooding regimes. International Rice Congress 15-17 Oct, 2019 Singapore
2. **Kritee K.,** D. Nair, R. Ahuja *et al.* High nitrous oxide fluxes under reduced flooding conditions indicate need to co-manage water and nitrogen at rice farms. International Rice Congress 15-17 Oct, 2019 Singapore
3. **Kritee K.,** High nitrous oxide fluxes at rice farms: Short talk at 'Carbon Sequestration for Climate Change Mitigation' Session at the 5th International Rice Congress – A Joint Session Organized by IRRI and "4 per 1000" Initiative. 15-17 Oct, 2019 Singapore
4. **Kritee K.** & Richie Ahuja Rice nitrous oxide: a new solvable problem. FAO organized workshop on Rice Landscapes & Climate Change: Options for mitigation in rice-based agroecosystems and Scaling-up of climate-smart rice cultivation technologies in Asia. Bangkok 10-12 Oct 2018
5. S. Kannepalli, **Kritee K.**, D. Nair, R. Tiwari and R. Ahuja, Climate smart farming in four agro-ecological regions in peninsular India. International Meeting and Workshop on Building Perspective and Capacity to Measure Climate Change Impacts due to Changes in Agricultural Practices Vijayawada, Andhra Pradesh, India Oct-Nov 2017
6. **Kritee K.**, D. Nair, D. Zavala-Araiza, J. Proville, R. Ahuja, J. Rudek, T. K. Adhya, S. P. Hamburg *et. al.* Discovery of high rice nitrous oxide emissions calls for integrated management of water, nitrogen and organic matter for reducing net greenhouse gas emissions due to rice cultivation. International Conference on FOOD, WATER, ENERGY nexus in arena of Climate change. Anand Agricultural University, India Oct 14-16, 2016
7. D. Nair, **Kritee K.,** R. Ahuja, T. Adhya, T. Loecke, S. Reddy and O. Dava Drought adaptation and exponential decrease in nitrous oxide emissions from sustainable groundnut cultivation in semi-arid peninsular India. FOOD, WATER, ENERGY nexus in arena of Climate change. Anand Agricultural University, India Oct 14-16, 2016
8. **K. Kritee** Climate resilient farming in India. Agriculture in Bihar: Current Status, Pressing Issues and Potential Solutions. Convergence, Patna, Bihar Jan 2016
9. **K. Kritee**, L. C. Motta, M. Tsui, T. Barkay, J. D. Blum, and J. R. Reinfelder Mass independent stable isotope fractionation of mercury during intra- and extracellular algal transformations of inorganic and organic mercury *The 11<sup>th</sup> International Conference on Mercury as a Global Pollutant.* Edinburgh Scotland, Jul 28 - Aug. 2, 2013
10. **Kritee, K.,** J. D. Blum, M. Johnson, B. A. Bergquist, and T. Barkay. The measurement of microbial mercury stable isotope fractionation and its potential utility for distinguishing between Hg sources. *The 8<sup>th</sup> International Conference on Mercury as a Global Pollutant.* Madison, WI, Aug. 11–16, 2006. (**Outstanding Presentation award**)
11. **Kritee K.,** J. D. Blum, and T. Barkay, Microbial Mercury isotopic fractionation during the reduction of Hg(II) to Hg(0). *North Eastern Microbiologists: Physiology, Ecology and Taxonomy Annual Meeting*, Blue Mountain Lake, NY. June 23-26, 2006



## **Invited science and policy lectures**

1. **Kritee K.**, Rice nitrous oxide. National Rice Research Institute, **2019** Cuttack, Odisha, India
2. **Kritee K.**, Agricultural GHG (Methane and nitrous) emissions from rice farming in India. Global Research Alliance (Paddy Rice Research Group) meeting, **2015** Nanjing, China
3. **Kritee K.**, Climate Smart Agriculture in Asia: Measurements, Implementation Strategy and Challenges, *Nov 2014*, The Center for Science and Technology Policy Research (CSTPR), University of Colorado, Boulder, CO
4. **Kritee K.** Low carbon farming in South India – invited by South Asian Students in Sciences, *April 2013*, Rutgers University
5. **Kritee K.** Tracing the history of mercury pollution – the stable isotope approach – invited by Dept. of Environmental Science, *Oct 2011*, Rutgers University
6. **Kritee K.** Metal and Microbes, for Environmental and Pollution Microbiology – invited by Prof. [Lily Young](#), May **2011**, Rutgers University
7. **Kritee K** and Daniel Sigman Bridging microbiology and geochemistry – Reduced N isotope effect during denitrification: Implications for global marine fixed N budget. – invited by *Dept. of Biochem. & Microbiol.*, Feb 11<sup>th</sup> **2011**, Rutgers University
8. **Kritee K.**, Mass independent fractionation of mercury and (micro)biology: Where can they meet? Goldschmidt Conference **2010** Knoxville, TN
9. **Kritee K.** Mercury, Microbes and Mass Independent Fractionation - invited by [Prof. Robert Sherrell](#), **2010** Institute of Marine and Coastal Sciences, Rutgers University
10. **Kritee K.**, J. D. Blum, and T. Barkay, Absence of magnetic isotope fractionation for Hg during dark biological processes: experimental evidence and theoretical considerations. *American Geophysical Union Fall Meeting* Dec. 15<sup>th</sup> -19<sup>th</sup>, **2008** San Francisco, California
11. **Kritee K.**, Remarks as Governor’s Executive Fellow: Class of 2008 Closing program, Eagleton Institute of politics, May 19<sup>th</sup>, **2008** Rutgers University
12. **Kritee K.**, Microbial Stable Isotope Fractionation of mercury by mercury resistant microbes. *GEOTOP Université du Québec à Montréal* May 8<sup>th</sup>, **2007** Canada
13. **Kritee K.** Heavy metal and radionuclide remediation - invited by Prof. [Lily Young](#) **2006**, Rutgers University

## **Scientific Conferences**

1. Fifth International Rice Congress, Oct 15-17, Singapore, **2018** (Multiple talks)
2. Food and Agriculture Organization’s Rice Landscapes & Climate Change: Options for mitigation in rice-based agroecosystems and Scaling-up of climate-smart rice cultivation technologies in Asia. Oct 10-12, Bangkok, Thailand **2018** (Talk)
3. International Conference on Agricultural Greenhouse Gas Emissions and Food Security – Connecting research to policy and practice”, Sept 10-13, Berlin, Germany **2018** (Talk)
4. American Geophysical Union meeting, Dec. 14 -18, San Francisco, CA. **2015** (Talk)
5. American Geophysical Union meeting, Dec. 15 -19, San Francisco, CA. **2014** (Poster)
6. Fourth International Rice Congress, Oct 27 – Nov 1, Bangkok, Thailand, **2014**
7. American Geophysical Union meeting, Dec. 9 -13, San Francisco, CA. **2013** (Poster)
8. The 11<sup>th</sup> International Conference on Mercury as a Global Pollutant, Scotland **2013**

9. American Geophysical Union meeting, Dec. 5 -9, San Francisco, CA. **2011**
10. The 10<sup>th</sup> International Conference on Mercury as a Global Pollutant, Canada Jul 24-29 **2011**
11. Goldschmidt 2010, June 13 – 18, Knoxville, TN, **2010** (*Invited Talk*)
12. Ocean Sciences, Feb 22-26 Feb, Portland, OR **2010** (Talk)
13. American Geophysical Union meeting, Dec. 14 -18, San Francisco, CA. **2009** (Poster)
14. American Geophysical Union meeting, Dec. 15 -19, San Francisco, CA. **2008** (*Invited Talk*)
15. The 16<sup>th</sup> Goldschmidt Conference, Vancouver, Canada. July 13 – 18, **2008** (Talk)
16. American Society of Microbiology's 107<sup>th</sup> General Meeting, Toronto, Canada. **2007** (Poster)
17. Joint Molecular Biosciences Symposium, Rutgers University Feb 23, **2007** (Talk)
18. The 8<sup>th</sup> International Conference on Mercury as a Global Pollutant, Madison **2006** (Poster)
19. North Eastern Microbiologists: Physiology, Ecology and Taxonomy Annual Meeting, Blue Mountain Lake, NY. June **2006** (Talk)
20. The 15<sup>th</sup> International Goldschmidt Conference, Moscow, Idaho. May 20 – 25, **2005** (Poster)
21. The 7<sup>th</sup> International Conference on Mercury as a Global Pollutant, Ljubljana, Slovenia, June 27 – July 2, **2004**. (Talk)

### **Policy workshops/conferences**

1. Climate Friendly Agro-biodiversity in India's Vulnerable Ecosystem Buffer Zones, Ashoka Trust for Research in Ecology and the Environment (ATREE), Bangalore, India **2019**
2. Global Research Alliance (Paddy Rice Research Group) meeting, Bangkok, Thailand **2018**
3. Center for Carbon Removal meeting on western lands strategy and terrestrial carbon sequestration, Denver, Colorado **2018**
4. Convergence: Joining hands for farmers, Conference co-organized with Farms and Farmers Patna, Bihar **2016**
5. Climate smart agriculture – Conference organized by Colorado Water Institute **2016**
6. Accelerating policy-relevant environmental research, Joint Environmental Defense Fund – Cornell Atkinson Center for a Sustainable Future Retreat, Cornell University, Ithaca, NY **2015**
7. 12th International Conference of East and Southeast Asia Federation of Soil Science Societies(ESAFS), China **2015** (Talk)
8. Global Research Alliance (Paddy Rice Research Group) meeting, Nanjing, China **2015** (Invited Talk)
9. Reducing the costs of GHG Estimates in Agriculture to Inform Low Emissions Development – FAO and CCAFS organized workshop, Nov 10-12, Rome, Italy **2014**
10. 11<sup>th</sup> EPRI Greenhouse Gas Offsets Workshop on Creating Nitrous Oxide (N<sub>2</sub>O) Emission Reductions in U.S. Agriculture (aka "Nutrient Management"), Washington, DC, Nov 4, **2011**
11. Microbes & Their Role in Conservation: The Center for Biodiversity & Conservation's 12<sup>th</sup> Annual Symposium, American Museum of Natural History, NY April 26-27, **2007**
12. Reaching our targets: Innovative Global Warming Solutions for New Jersey, NJ **2007**
13. Meadowlands Commission Scientific Workshop on Restoration and Contaminants, NJ **2006**
14. Second Passaic River Symposium: Progress and Challenges, Montclair University. **2006**
15. Environmental Protection Agency Mercury Fate & Transport Workshop, Washington DC. **2003**

### **Mentoring experience**

#### ***Environmental Defense Fund*** (Jan 2012 – present)

Research Director, Low carbon farming (GHG emission reduction) program, India

- Sarat Kannepalli, Rakesh Tiwari, Drishya Nair, Tashina Esteves (EDF contractors, [Fair Climate Network](#))
- Shalini Reddy, Kalpana Kallmadi & Obulapathi Dava ([Accion Fraternal](#) and [Social Education and Development Society](#), Andhra Pradesh)
- Shantappan, Murugan & Vadivel ([Palmyrah Workers Development Society](#), Tamil Nadu)
- Karthik Ram & Abhilash ([Bharat Environment Seva Team](#), Tamil Nadu)
- Soma Shekar & Leelavathi (Social Animation Center for Rural Edu. & Dev., Karnataka)
- Ramakrishna Varaprasad, Kishore ([Timbaktu Collective](#), Andhra Pradesh)

#### **Mentor, Rutgers (2005- 2011)**

Laura Motta

Sophomore, Rutgers

2010-2011

Brittany Karas	Junior, Rutgers	Summer 11
Matt Meredith	Senior, Colby College, Maine	Summer 05
Richard Pescatore	Undergraduate Research Centre Rutgers University	Spring 05

**Mentor, Princeton (2008-2010)**

Jason Cutrera

Fall 08-Fall 09

**Invited Guest Lecturer, Rutgers (2004-2011)**

General Microbiology (11:680:390)

3 semesters

Microbial Ecology (16:681:572)

4 semesters

**Teaching Assistant, Rutgers (2002-2004)**

Applied Microbiology (11:126:486)

1 semester

General Microbiology (11:680:390)

2 semesters

Microbial Ecology (16:681:572)

1 semester

**Synergistic Activities**

**Grant proposal Panel Reviewer (2014-2015)**

National Institute of Food and Agriculture (NIFA), US Department of Agriculture (USDA)

**Reviewer for peer-reviewed journals**

Environmental Science and Technology

Journal of Hazardous Materials

Environmental Chemistry

The Science of Total Environment

Chemical Geology

Geochimica Et Cosmochimica Acta

Chemical Engineering Communications

Chemical and Biochemical Engineering Quarterly

Analytical Chemistry

Nutrient Cycling in Agro-Ecosystems

American Chemical Society Omega

ACS Earth and Space Chemistry

Agriculture, Ecosystems & Environment

Environmental Science & Technology Letters

Marine Chemistry

Science of the Total Environment

Current Medicinal Chemistry

International J. of Env. Research & Public Health

**Mentor**

Academy for the Advancement of Science and Technology Science Day (2011)

**Blogs and other contributions**

- Jeremy Proville, Kritee K., Richie Ahuja (2018) Climate smart rice farming: Integrated co-management of fertilizers with mild-intermittent flooding. [Global Water Forum](#)
- **Kritee K.**, Jeremy Proville, Terry Loecke, Richie Ahuja (2018) Global anthropogenic climate impacts must include nitrous oxide emissions from rice fields. [Climate 411](#)
- Richie Ahuja, Tapan Adhya & **Kritee K.** (2018) Climate smart rice farming: Integrated co-management of fertilizers with mild-intermittent flooding [Climate 411](#)
- **Kritee K.** (2016) New studies point to a pathway to find India's most effective climate-smart farming practices [EDF Talks Global Climate](#)
- **Kritee K.**, Richie Ahuja, Tal Lee Anderman (2014) 'Feeding 9 billion' requires facing up to climate change [EDF Talks Global Climate](#)
- **Kritee K.**, (2013) Global climate change can make fish consumption more dangerous [Climate 411](#)
- **Kritee K.** and Mandy Warner (2013) Protecting the Planet: A Report from the International Conference on Mercury in Edinburgh [Climate 411](#)

- **Kritee K.** and Richie Ahuja (2013) How can we grow more rice - with less land, water and pollution? [EDF Voices](#)
- **Kritee K.** (2011) America's Leading Mercury Scientists Call for Strong Air Pollution Standards [Climate 411](#)
- **Kritee K.** with Dominique Browning and others (2011) [Mercury pollution resources](#), Moms Clean Air Force: *how mercury pollution from coal power plants makes its way to our food, the relative roles of natural and international sources, the reasons of acute toxicity of mercury compounds, socio-economic impact of EPA's Mercury and Air Toxics Standards (MATS)*

### **Membership and affiliations**

- Graduate Student Representative: Rutgers Committee on Sustainability (2006-2008) ([Link to our first report](#))
- Professional Member:
  1. American Geophysical Union (2008 - present)
  2. American Society of Microbiology (2005 - present)

### **Awards and Honors**

- Dreyfus post-doctoral fellow in Environmental Chemistry, Princeton University (2008-2010)
- Governor's Executive Fellow, Eagleton Institute of Politics, Rutgers University, NJ (2007-08)
- Frank R. Lillie and Wheeler Family Founders' Scholarship, Marine Biological Laboratory (2007)
- American Society of Microbiology's Student Award, Toronto, Canada (2007)
- Author of "a HOT paper," one of most cited papers in the field of Chemistry, American Chemical Society (2007)
- Annual Robison Scholarship Award for Excellence in Graduate Studies, Rutgers Univ. (2007)
- Outstanding student presentation award, The 8<sup>th</sup> International Conference on Mercury as a Global Pollutant. Madison, WI (2006)
- Graduate Fellow, Undergraduate Research Centre at Rutgers Univ. (Spring 2005)
- Graduate Aptitude Test in Engineering (GATE) Scholarship (99 percentile), India (2000)
- Summer Undergraduate Research Award, Indian Institute of Technology, India (1998).

### **References**

Available upon request