

# Dr. Yama Dixit

Nationality: Indian

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## EDUCATION

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- 2009-2013    **St. John's College, University of Cambridge, UK**  
**PhD in Earth Sciences**
- Dissertation: "*Holocene monsoon variability inferred from palaeolake sediments in Northwestern India*".
- 2008-2009    **Jawaharlal Nehru University, New Delhi, India**  
**MPhil Environmental Sciences** – Distinction
- Thesis: Sedimentology and geochemistry of Delhi Ridge sediments
- 2006-2008    **Jawaharlal Nehru University, New Delhi, India**  
**MSc Environmental Sciences** – Distinction
- Thesis: Geochemical analysis of Brahmaputra river sediments and determination of weathering index.
- 2003-2006    **Hansraj College, Delhi University, India**  
**BSc (Hons) Chemistry** – Rank 1/40; Distinction

## PROFESSIONAL EXPERIENCE

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- 01/2018 - present    **Research Fellow**  
*Earth Observatory of Singapore (EOS), Nanyang Technological University, Singapore*
- Investigating Barium isotopes as a proxy of paleoproductivity
  - Reconstruction of late quaternary paleoenvironments of Singapore.
- 07/2015-09/2017    **Marie Curie PRESTIGE Research fellow and LabexMER postdoctoral fellow,**  
*Marine Geosciences Research Unit, IFREMER, Brest, France*
- Set up trace metal determination method on small foraminifera samples from marine sediments
  - Reconstructed quantitatively the rainfall variability and associated salinity changes in the Western Mediterranean during warm periods of last three interglacials including the Holocene
- 07/2014 - 06/2015    **Institute Postdoctoral Fellow,**  
*Department of Earth Sciences, Indian Institute of Technology Kanpur, India*
- Synthesized and analysed the existing paleoclimate records from various archives for the last millennium to improve the current state of understanding of the climate of the past millennium in the Indian subcontinent

- 10/2013 – **Postdoctoral Research Assistant,**  
01/2014 *Department of Earth Sciences, University of Cambridge*
- Studied various planktic and benthic foraminifera species from North Atlantic
  - Applied gypsum hydration water isotopes for terrestrial paleoclimate studies
- 05/2007- **Indian Academy of Sciences (IAS) – Summer Research Intern,**  
07/2007 *National Institute of Oceanography, Goa (India)*
- Studied the evolution of nutrients (nitrates and phosphates) in the Mandovi estuary, Goa (India) during pre and post-monsoon season.

## SCHOLARSHIPS AND AWARDS

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- 2015 **Marie Curie PRESTIGE Incoming Fellowship**
- 2015 **LabexMER International Postdoctoral Fellowship** in Marine Sciences
- 2015 **European Research Council Travel grant XIX INQUA 2015, Nagoya, Japan.**
- 2014 **Institute Postdoctoral Fellowship** at IIT Kanpur, India
- 2012 **International Association of Sedimentologists (IAS) Travel Award:** EGU General Assembly, Vienna, Austria
- 2011 **IAS Travel Award:** AGU Chapman Conference on Climates, Past Landscapes, and Civilizations in Santa Fe, New Mexico, USA
- 2011 **Graduate Student Award** at Congrès des doctorants 2011, IPGP, Paris, France
- 2010 **St. John's College Travel and Research grant:** EASAA Vienna, Austria
- 2009 **Gates Cambridge Scholarship** (*First ever Indian recipient in Earth Sciences*) for study towards PhD at University of Cambridge
- 2009 PhD offer from **University of Oxford** (*Declined*)
- 2009 **Deutsche Forschungsgemeinschaft (DFG) Fellowship** for Lindau Nobel Laureates meeting in Chemistry, Germany
- 2008 **UGC – NET** in Environmental Sciences
- 2008 **Junior Research Fellowship - CSIR** in Earth, Atmospheric and Ocean and Planetary Sciences (*All India Rank 1*)
- 2007 **Indian Academy of Sciences - Summer Research Fellowship,** National Institute of Oceanography, Goa, India
- 2006 **Sh. Gurudas Trikha Memorial Prize** for First rank in BSc (hons) Chemistry
- 2005 **Smt. Krishna Kumari Trikha Award** for First rank in BSc (hons) 2<sup>nd</sup> year

## GRANT APPLICATIONS

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**Earth Observatory of Singapore Institute funding, EOS, Singapore** “Biogeochemistry of barium in rivers and oceans of SE Asia” (Co-PI) (PI: Dr. Xianfeng Wang)

ROLE: conceived the project concept and wrote the grant

**Earth Observatory of Singapore Institute funding, EOS, Singapore** “Late Quaternary palaeoenvironments of the Kallang Basin, Singapore” (Co-PI) (PI: Dr. Adam Switzer)

ROLE: conceived the project concept and wrote the geochemistry and palaeoclimate components of the grant

**Marie Curie PRESTIGE Incoming Fellowship, European Commission,** “Past 500 ka rainfall variability in the western Mediterranean basin: lessons from the marine sediments off East

Corsican margin”, PRESTIGE-2015-1-0018 (~60k Euros)

- ROLE: conceived the project concept, wrote and submitted the grant, executed the project including experiments and collaborations, managed the grant including risk assessment and contingency planning, and preparation and submission of the reports and deliverables.

**Institute Postdoctoral Fellowship**, Indian Institute of Technology Kanpur, “Monsoon variability on the Indian subcontinent inferred from lakes in North Indian plains” (~700k INR)

- ROLE: conceived the project concept and wrote the grant

**MoES Government of India**, Indian Institute of Technology Kanpur, “Establishing a Critical Zone Observatory (CZO) in the Ganga Basin’ (PI): D. Paul; Co-PI: Shivam Tripathi, S.N. Tripathi, I. Sen, **Yama Dixit**, Rajiv Sinha (IIT Kanpur)

- ROLE: contributed to writing part of the grant and planning timeline.

## INVITED TALKS

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| 03/2017 | IFREMER Annual Meeting, Plouzane, France<br>‘Quantitative constraints on the rainfall variability in the Western Mediterranean implications for sapropel deposition’                          |
| 11/2016 | LabexMER seminar, Institut universitaire européen de la mer (IUEM), France<br>‘Understanding the climate variability in the Western Mediterranean during the Mediterranean sapropelic events’ |
| 12/2012 | Invited by Prof. Rita Wright at New York University, US<br>‘Climate Change and cultural implications on the Indus Valley Civilization’  |
| 05/2012 | National Symposium, Cambridge Centre for Climate Science, Cambridge<br>‘Climate change and the Indus Valley Civilization’   |
| 04/2012 | Cambridge Asian Archaeology Group, Department of Archaeology and Anthropology, Cambridge. ‘Testing the ‘climate-cultural evolution’ hypothesis for the Indus Valley Civilization’             |
| 06/2011 | Graduate Students’ Symposium, St. John’s College, Cambridge<br>‘Impact of Climate Change on the Indus Valley Civilization, India  |
| 04/2011 | Congrès des doctorants 2011 at IGP, Paris, France ‘Stable isotope geochemistry Palaeo-lake Riwasa for Holocene Palaeoclimate history of NW India’   |

## TRAINING AND WORKSHOPS

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| 07/2016 | Urbino Summer School in Paleoclimatology, Urbino, Italy   |
| 12/2008 | Research trainee, “Application of radiogenic isotopes in geochronology and geochemistry”, Department of Earth Sciences, University of Pondicherry (India) |
| 05/2007 | Introduction to Oceanography, National Institute of Oceanography, Goa (India)   |

## TEACHING EXPERIENCE

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| 06-08/2018 | <b>Supervised</b> five undergraduate summer internship projects (NTU, Singapore).   |
| 10/2017    | <b>Supervisor</b> of a fieldtrip for sample collection from paleolakes in Thar Desert for PhD thesis of Alena Gieshe (collaboration with University of Cambridge) |

- 10/2014 – **Lecturer** for class of MTech/PhD, IIT Kanpur (2 Semesters)
- 06/2015 **Taught the following courses:**  
*Global Climate Change (Abrupt climate events, Paleolimnology),  
 Ocean acidification  
 Isotopes in paleoclimatology and paleoceanography  
 Lacustrine and Marine archives for paleoclimate reconstruction  
 ‘Sedimentology and Basin analysis’ (Lithospheric mechanics, Basins due to lithospheric stretching, Basins due to Flexure)*
- 05/2015 **Supervisor** and leader of a fieldtrip for sample collection from Mesa Tal and Baraila Taal, paleolakes on the eastern alluvial plains in Northern India
- 04/2013 **Field Demonstrator** for Sedimentology and Geomorphology fieldtrip to East Mersea, UK
- 2010-2012 **Teaching Assistant** and **Laboratory Demonstrator** for ‘Sedimentology’ and ‘Global Climate Studies’ module, University of Cambridge, UK
- 2010-2012 **Field Demonstrator** for geochemistry and sedimentology course field trip to Dorset and Isle of Arran, UK; Safety and Hazard Officer for Arran (Scotland)
- 10/2010 **Field Leader** for reconnaissance and sample collection field work of paleolakes in Northwestern India

## STUDENT SUPERVISION

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- 01/2015- 6 Undergraduate project students at NTU, IFREMER and IITK
- 01/2016 – Lea Bonnin, Masters II candidate, *University of Brest Occidentale and IFREMER,*  
 08/2016 *France*
- 07/2016 – Jamie Dix, PhD candidate (*Principally supervised with Prof Aradhna Tripathi*), *UCLA,*  
 Present *USA*

## PROFESSIONAL SERVICE

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**Referee for journals:** *Geology, Quaternary Science Reviews, Journal of Paleolimnology, Palaeogeography, Palaeoclimatology, Palaeoecology, International Journal of Climatology, Environmental Earth Sciences*

**Affiliations:** American Geophysical Union, International Association of Sedimentologists

**Organizing committee member:**

- **Co-chaired** a session at AGU Chapman Conference on ‘Climates, Past Landscapes, and Civilizations’ in Santa Fe, New Mexico, USA (2011)
- **Session convener** “Testing the proxies for ocean productivity from centennial to longer timescales” at 9<sup>th</sup> International Conference on Asian Marine Geology, Shanghai (Oct 2018)

## PUBLICATIONS

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### *Journal Articles*

#### **2018**

1. **Dixit, Y.**, Toucanne S., Tripathi A., Lora J., Fontanier C., Bonnin, L., Jouet G, Eccentricity forcing on the precession-derived Mediterranean rainfall during the past interglacials. (In revision *Science Advances*).

2. Pasquier V., Toucanne S., Sansjofre P., **Dixit Y.**, Revillon S., Mokeddem Z., Rabineau M., 2018 Organic matter isotopes reveals enhanced rainfall activity in North-Western Mediterranean borderland during warm substages of the last 200 kyr. (Accepted, *Quaternary Science Reviews*).
3. **Dixit, Y.**, Hodell, D.A., A. Giesche, Tandon, S.K., Gasquez, F., Curtis, J., Petrie, C.A., Saini, H.S., Mujtaba, S.A.I., Singh, R.N., Petrie, C.A., 2018 Intensified summer monsoon and the urbanization of Indus Civilization in northwest India. *Scientific Reports*, 8(1), 4225. (Impact factor: 4.259).

Special highlight: [“From the lab: How adequate rainfall helped Indus Valley Civilisation flourish”](#)  
– *The Indian Express*

## **2017**

4. Petrie, C.A., Singh, R.N., Bates, J., **Dixit, Y.**, French, C.A.I., Hodell, D.A., Jones, P.J., Lancelotti, C., Lynam, F., Neogi, S., Pandey, A.K., Parikh, D., Pawar, V., Redhouse, D.I., Singh, D.P., 2017 Adaptation to variable environments, resilience to climate change: investigating Land, Water and Settlement in Indus northwest India. *Current Anthropology*, v.58, p. 1-30. (Impact factor: 1.925, Citation 18).6

## **2016**

5. **Dixit, Y.**, Tandon, S.K., 2016, Hydroclimatic variability on the Indian subcontinent in the past millennium: Review and assessment, *Earth-Science Reviews*, v.161, p.1-15. (Impact factor: 7.339, Citation 10).

## **2015**

6. **Dixit, Y.**, Hodell, D.A., Sinha, R., Petrie, C.A., 2015, Oxygen isotope analysis of single ostracod valves record seasonal lake water variability in paleolake Riwasa (India), *Journal of Paleolimnology*, v.53, p.35–45. (Impact factor: 2.017, Citation 10).

## **2014**

7. **Dixit, Y.**, Hodell, D.A., Petrie, C.A., 2014, Abrupt weakening of the summer monsoon in northwest India ~4100 yr ago. *Geology*, v. 42, p. 339-342. (Impact factor: 4.635, Citation 88).

Special media highlights in: [Nature](#), [University of Cambridge research news](#), [The Independent](#), [New Scientist](#), [The Times of India](#), [Science Daily](#), [Eurekalert!-Science news \(AAAS\)](#), [Business Standard](#).

8. **Dixit, Y.**, Hodell, D.A., Sinha, R., Petrie, C.A., 2014, Abrupt weakening of the Indian summer monsoon at 8.2 kyr B.P. *Earth and Planetary Science Letters*, v. 391, p. 16-23. (Impact factor: 4.724, Citation 45).

## **Before 2014**

9. **Dixit, Y.**, Hodell, D.A., and Petrie, C.A., 2011, A climatic record from Paleolake Riwasa, Haryana, India. *Manaviki*, v. 1(2), p. 35-43.

### ***Selected Conference Presentations***

1. Dix J., **Dixit Y.**, Doss W., Dill R., Chang F., Tripathi A., Constrain the outflow of the Amazon River for the past ~40ka using Ba/Ca. GSA Annual Meeting, October 2017 Seattle, Washington, USA. *(Poster)*
2. **Dixit Y.**, Toucanne S., Fontainier C., Jouet G., Bonnin, L., Tripathi A., North Mediterranean hydroclimate influences on sapropel deposition. Goldschmidt conference, August 2017 Paris, France. *(Oral)*
3. Defliese W., **Dixit Y.**, Retallack G., Lalonde S., Tripathi A., Constraints on Paleoenvironments and Surface Temperatures in the Neoproterozoic and Paleozoic and Implications for Metazoan Evolution, August 2017 Paris, France. *(Poster)*
4. **Dixit Y.**, Toucanne S., Fontainier C., Jouet G., Bonnin, L., Tripathi A., Rainfall Variability in the North-Central Mediterranean during MIS7 and MIS5: New insights for sapropel deposition. PAGES meeting, May 2017 Zaragoza, Spain. *(Poster)*
5. **Dixit Y.**, Toucanne S., Fontainier C., Jouet G., Bonnin, L., Tripathi A., A multi-proxy approach to reconstruct climate variability in the western Mediterranean across the penultimate and last glacial period. AGU 2016 Fall Meeting, San Francisco. *(Poster)*
6. **Dixit, Y.**, Hodell, D.A., Petrie, C.A., 2015, Holocene paleoenvironmental history of the Thar Desert using gypsum deposits in paleolake Karsandi, Rajasthan. XIX INQUA Congress 2015, Nagoya, Japan. *(Oral)*
7. **Dixit, Y.**, Hodell, D.A., Petrie, C.A., 2015, Seasonal climate variability inferred from oxygen isotopes of single ostracod valves. XIX INQUA Congress 2015, Nagoya, Japan. *(Oral)*
8. Hodell, D.A., **Dixit, Y.**, Petrie, C.A., 2012, Abrupt climate change and the decline of Indus urbanism, AGU 2012 Fall Meeting, San Francisco. *(Poster)*
9. **Dixit, Y.**, Hodell, D.A., Petrie, C.A., 2012, Holocene monsoon variability inferred from palaeolake sediments in NW India. EGU 2012 General Assembly, Vienna *(Poster)*
10. **Dixit, Y.**, Hodell, D.A., Petrie, C.A., 2011, A Holocene climate record from palaeolakes in NW India, AGU 2011 Fall Meeting, San Francisco. *(Poster)*
11. **Dixit, Y.**, Hodell, D.A., Petrie, C.A., 2011, Holocene Palaeoclimate History of the Plains of NW India Inferred from Palaeolake Riwasa, AGU Chapman Conference on Climates, Past Landscapes, and Civilizations in Santa Fe, New Mexico. *(Poster)*
12. **Dixit, Y.**, Hodell, D.A., Petrie, C.A., 2010, Paleoclimate record from lake Riwasa, Haryana, India: a stable isotopic study, European Association for South Asian Archaeology and Art conference 2010, Vienna. *(Poster)*