

Nava Raj Subedi

Department of Physics & Astronomy
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EDUCATION:

Mississippi State University, Mississippi State, MS, USA 2016
PhD in Applied Physics
Dissertation: *Characterization of microparticles through digital holography.*
Advisor: Dr. Matthew J. Berg.

Mississippi State University, Mississippi State, MS, USA 2014
MS in Physics
Advisor: Dr. Matthew J. Berg.

Tribhuvan University, Kathmandu, Nepal 2005
MS in Physics
Thesis: *First-Principles Study of the Stability of Ozone Clusters $[(O_3)_n]$, For $n=1-4$.*
Advisors: Dr. Devendra Raj Mishra and Dr. Shekhar Gurung.

Tribhuvan University, Kathmandu, Nepal 2001
BS in Physics

CURRENT WORK:

Lecturer in Physics (Temporary position) January 2017 -Present
Department of Physics and Astronomy
Mississippi State University, Mississippi State, MS

Postdoc (Volunteer at Prof. Gombojav) January 2017 -Present
(**Fluorescence, Raman, and Ultrafast Spectroscopy Laboratory**)
Department of Physics and Astronomy
Mississippi State University, Mississippi State, MS

WORKING EXPERINCES:

Graduate Research Assistant August 2015- December 2016
Department of Physics and Astronomy
Mississippi State University, Mississippi State, MS

Graduate Teaching Assistant
Department of Physics and Astronomy
Mississippi State University, Mississippi State, MS August 2010-2015

Lecturer in Physics
Goldengate International College, Kathmandu, Nepal 2009-2010
❖ Teaching Physics and Instructing Lab for Senior Undergraduates.

Lecturer in Physics

United College, Lalitpur, Nepal 2005-2010
 ❖ Teaching Physics and Instructing Lab for High School (+2 Levels) Students

Instructor in Physics

Nimble Academy, Kathmandu, Nepal 2004-2010
 ❖ Teaching Physics to various level students

SCIENTIFIC LANGUAGES AND SKILLS:

LaTeX, Mathematica, C++, MATLAB, High precision optical alignment, Coherence imaging, Optical system design and construction, Holographic interferometry, and Optical imaging.

HONORS & AWARDS:

Travel Grant (To attend APS March Meeting at New Orleans) 2017
 American Physical Society (APS), GIMS Chapter

Travel Assistance Grants for Graduate Students (TAGGS) 2015
 Office of Graduate School, Mississippi State University

Graduate Student Association (GSA) Travel Award (OSA July Meeting) 2014
 Graduate Student Association, Mississippi State University

Student Travel Award Initiative 2014
 Bagley College of Engineering, Mississippi State University

Dean's Office Travel Grant 2014
 College of Arts & Science, Mississippi State University

Outstanding performance in laboratory safety 2012-2014 2014
 Department of Health and Safety, Mississippi State University

Graduate Student Association (GSA) Travel Award (APS March Meeting) 2014
 Graduate Student Association, Mississippi State University

Travel Assistance Grants for Graduate Students (TAGGS) 2014
 Office of Graduate School, Mississippi State University

PGSA Journal Club Series Presenter Award Fall 2013
 Physics Graduate Student Association, Mississippi State University
First Position

PGSA Journal Club Series Presenter Award Spring 2013
 Physics Graduate Student Association, Mississippi State University
First Position

<i>Army Research Office Graduate Mentoring Fellow</i>	Summer 2013
Undergraduate Research Apprenticeship Program, U.S. Army Research Office	
<i>Bob Cook Travel Grant</i>	2013
Department of Physics and Astronomy, Mississippi State University	
<i>Dean's Office Travel Grant</i>	2013
College of Arts & Science, Mississippi State University	
<i>Bagley College of Engineering Travel Grant</i>	2013
Bagley College of Engineering, Mississippi State University	
<i>Merit Student Award</i>	2004
Nepal Academy of Science and Technology (NAST)	
(Award for top 2 students in Master's Degree of Science in Physics)	
<i>Best Student Award</i>	2004
Department of Physics, Tribhuvan University, Nepal	

PUBLICATION:

1. Matthew J. Berg, **Nava R. Subedi**, and Peter A. Anderson, "Measuring extinction with digital holography: Nonspherical particles and experimental validation," (**Under review**).
2. **Nava R. Subedi**, Matthew J. Berg, and GORDEN VIDEEN, "Simultaneous forward and backward digital holography of microparticles," (**Under review**).
3. Matthew J. Berg and **Nava R. Subedi**, "Holographic Interferometry for Aerosol Particle Characterization", *J. Quant. Spectrosc. Radiat. Transfer* 2015.
4. Matthew. J. Berg, **Nava. R. Subedi**, Peter. A. Anderson and Nicholas. B. Fowler, "Using Holography to Measure Extinction", *Optics Letters*, Vol. 9, Issue 9, pp. 3993-3996 (2014) [Also featured in OSA's *Virtual Journal for Biomedical Optics*, **9**(9), p. 3993].
5. **Nava. R. Subedi**, Nicholas. B. Fowler, and Matthew. J. Berg, "Backscatter Digital Holography of Microparticles", *Optics Express*, Vol. 21, Issue 10, pp. 12611-12616 (2013) [Also featured in OSA's *Virtual Journal for Biomedical Optics*, **8**(6), p. 12611].

PEER-REVIEWED CONFERENCE PAPER:

1. Matthew Berg, **Nava Subedi**, Nicholas Fowler, "Particle Characterization with digital holography", 10th International Conference on Laser-light and Interactions with particles, August 25-29, 2014, Marseille, France.

2. **Nava. R. Subedi**, Peter. A. Anderson, and Matthew. J. Berg, “*Measurement of the extinction cross section of a single wavelength-sized particle*”, Imaging and Applied Optics Congress, July 13-17, 2014 Seattle, WA, USA.

PATENT:

- ❖ Started patent disclosure process through Army Research Laboratory for a device that can be used for stand-off interrogation of microparticles of different types.

PRESENTATIONS:

1. **Poster:** *Simultaneous multiple samples investigation with digital holographic microscopy*, APS March Meeting, March 13-17, 2017 New Orleans, LA, USA (**upcoming**).
2. **Invited Talk:** *Contact-free particle characterization with digital holographic microscopy*, Mississippi University for Women November 02, 2016.
3. **Talk:** *A New Experimental Approach in Digital Holographic Microscopy to Insight into Submicron-sized Particle's Scattering Properties*, UM – MSU Joint Physics Research Symposium 2016, February 27, 2016, Oxford, MS.
4. **Talk:** *Particle Imaging, Characterization and Extinction Measurement with Digital Holography*, APS March Meeting, March 02-06, 2015 San Antonio, Texas, USA.
5. **Talk:** *Wonder of Digital Holographic Microscopy*, 3MT Competition, November 19 - 20, 2014, Mississippi State University, MS.
6. **Talk:** *Measurement of the extinction cross section of a single wavelength-sized particle*, OSA Optics & Photonics Congress on Imaging and Applied Optics, July 13-17, 2014, Seattle, WA, USA.
7. **Talk:** *Digital holographic microscopy for imaging and characterization of micron-sized particles*, 12th Annual Mississippi State University Graduate Student Research Symposium (GSRS), March 23, 2013.
8. **Poster:** *Measurement of the extinction cross section of a single wavelength-sized particle*, Bagley College of Engineering Poster Competition, March 24-25, Mississippi State University, USA.
9. **Talk:** *Digital holographic microscopy for imaging and characterization of micron-sized particles*, APS March Meeting, March 03-07, 2014, Denver, Colorado, USA.
10. **Talk:** *Mie Solution to Maxwell's Equations (Mie Scattering)*, PGSA Journal Club Presentation Series, November 04, 2013, Mississippi State University, USA.
11. **Talk:** *Realm of Digital Holographic Microscopy*, PGSA-Journal Club presentation, April 19, 2013, Mississippi State University, USA.

12. **Talk:** *Digital holographic microscopy for composition information of aerosol particles*, 11th Annual Mississippi State University Graduate Student Research Symposium (GSRS), March 23, 2013.
13. **Talk:** *Digital Holography of aerosol particles due to backscattered light*, 77th Annual Meeting of Mississippi Academy of Sciences (MAS), February 21-22, 2013, Hattiesburg, MS, USA.

WORKSHOPS ATTENDED:

1. Wolfram Science Summer School 2013 [July 01-July 20], Bentley College, Boston, MA, USA.
2. Workshop on Concepts in electromagnetic scattering for particulate-systems characterization [May 18-19, 2012], Memphis, TN, USA.
3. Refresher Training for Physics Teachers involved at Bachelor Level Campus [June 7-13, 2009] organized by Department of Physics, Tri-chandra Multiple Campus and University Grand Commission, Nepal.
4. Public Speaking Training [April 15-May 09, 2009] organized by British Council, Nepal.
5. Effective Public Speaking Training [June 5-6, 2002] organized by Pokhara Jaycees, Nepal.
6. Parliamentary Procedure Training [September 4-5, 2002] organized by Pokhara Jaycees, Nepal.
7. Medical Transcription Training [January 14, 2002-September 13, 2002] from Unlimited Numedia, Nepal.

LEADERSHIP AND OUTREACH:

<i>Coordinator</i> , PGSA Outreach Department of Physics and Astronomy, Mississippi State University	January, 2016 - Present
<i>Volunteer</i> , American Red Cross Disaster Action Team (DAT), North Mississippi Chapter	December, 2014 – Present
<i>Judge</i> , Spring Undergraduate Research Symposium 2015	April 15, 2016
<i>Judge</i> , Mississippi State Region V Science and Engineering Fair	February, 2016
<i>Team Member</i> , PGSA Outreach activity New Hope School, Columbus, MS	October, 2015
<i>Judge</i> , Summer Undergraduate Research Symposium 2015	July 30, 2015

Ambassador and Planning Committee Member, Graduate Student Association (GSA) at
Mississippi State University July 2014 – June 2015

Judge, Mississippi State Region V Science and Engineering Fair February, 2015

Coordinator, PGSA Journal Club August, 2013 – January, 2015
Department of Physics and Astronomy, Mississippi State University

Team Member, PGSA Outreach activity October, 2014
Columbus High School, Columbus, MS

Participant, Multicultural Leadership Retreat 2014 August 22-23, 2014
Holmes Culture Diversity Center (HCDC), Mississippi State University

President, Nepalese Students' Association March, 2014-March, 2015
Student Organization, Mississippi State University

Judge, Mississippi State Region V Science and Engineering Fair
February & April, 2014

Vice-President, Physics Graduate Student Association (PGSA) 2014-2015

Volunteer, Habitat for Humanity February, 2014
Volunteer to build a home for a local family in need.

Team Member, PGSA Outreach activity December, 2013
Heritage Academic, Columbus, MS

Judge, Mississippi State Region V Science and Engineering Fair
February & April, 2013

Chair, PGSA-MSU 2013 logo designed committee January, 2013
Department of Physics and Astronomy, Mississippi State University

Blood Driver Program October, 2012
Nepalese Students' Association, Mississippi State University

PARTICIPATIONS:

4th National Conference on Science and Technology 2004
Nepal Academy of Science and Technology (NAST), Kathmandu, Nepal

5th Rotaract District Assembly 2003-2004 (Aawaj) 2003
Rotaract District-3290, Kathmandu, Nepal

APPRECIATIONS:

1. *Letter of appreciation*, for outstanding results in Physics in the Higher Secondary Board Exam of 2008 and becoming one of the renowned +2 colleges in Nepal
United College, Lalitpur, Nepal

2. *Letter of appreciation*, for outstanding contribution in the different programs organized by the club in the year 2002-2003, Rotaract Club of Pokhara (RI District-3290)

PROFESSIONAL SOCIETIES:

1. *Student Member*, Optical Society of America (OSA).
2. *Student Member*, American Physical Society (APS).
3. *Life member*, Nepal Physics Society (NPS); a reciprocal society of APS.
4. *Executive Board Member*, Nepal Physical Society [2009-2011].