

# Research & Innovation

UNIVERSITY OF NORTH DAKOTA

[About](#)   [Events Calendar](#)   [Submit a Story](#)

## Dr. Xiaodong Zhang Awarded NSF Grant: To See from Unseen

[Grant Awards](#)

September 22, 2015   Department of Earth System Science & Policy, NSF  
 Grant   0 Comment

While human eyes can discern the color, the intensity, and the direction of light, we cannot see the polarization, although this property manifests itself abundantly in nature and is used by many animals. For example, skylight on a cloudless day shows maximum polarization at 90° to the sun's rays, a phenomenon used by bees for navigation. Squid, sensitive to linearly polarized light, can detect zooplankton prey that are otherwise transparent to visual predators. Polarization, resulting ultimately from the interaction of electromagnetic radiation with asymmetry (e.g., asymmetric molecules, nonspherical shape, or oblique incidence), contains a great deal of information about particles. Dr. Xiaodong Zhang, an associate professor with the Department of Earth System Science and Policy, was recently awarded an NSF grant of \$442,821 to develop a methodology of utilizing this "unseen" light property to discern various particles, living and nonliving, in the ocean. "Collaborative Research: Inferring Marine Particle Properties from Polarized Volume Scattering Functions"

[← Atmospheric Sciences Seminar September 24, 2015](#)

[National Research Administrators Day, September 25, 2015 →](#)

### Search

 


Subscribe!

### Upcoming Events

[2017 Dakota Conference in Minot](#)

June 13, 2017

[2017 Dakota Conference in Minot](#)

June 14, 2017

[2017 Dakota Conference in Minot](#)

June 15, 2017

### Categories

Uncategorized (30)

---

## Leave a Reply

Your email address will not be published. Required fields are marked \*

Comment

Name \*

Email \*

Website

Post Comment

All comments will be reviewed prior to posting.

---

[Research Main \(39\)](#)

---

[Grant Awards \(123\)](#)

---

[Events \(240\)](#)

---

[Announcements \(370\)](#)

---

## Tags

---

[American Indian Health Research Conference Atmospheric Sciences Atmospheric Sciences Seminar](#) [Award Awards Bakken Biology Biology Seminar Biomedical Sciences cancer Center for Rural Health Chemistry Chemistry Seminar COBRE](#) [College of Business & Public Administration College of Engineering & Mines Colloquium CRH DOD DOE EERC Engineering EPSCoR FAA Frank Low Research Day \*\*Grant Opportunities\*\*](#) [Institutional Review Board John D. Odegard School of Aerospace Sciences \*\*NASA\*\* National Science Foundation NDUS \*\*NIH NSF\*\* Physics & Astrophysics Presentation Research North Dakota Research Seminar Seminar \*\*SMHS\*\*](#) [Space Grant Consortium Space Studies SSAC \*\*STEM UAS\*\*](#) [UAS Summit & Expo](#)

## Archives

---

[September 2016](#)

---

[August 2016](#)

---

[July 2016](#)

---

[June 2016](#)

---

[May 2016](#)

---

[April 2016](#)

---

[March 2016](#)

---

[February 2016](#)

---

[January 2016](#)

---

[December 2015](#)

---

[November 2015](#)

---

[October 2015](#)

---

[September 2015](#)

---

[August 2015](#)

---

[July 2015](#)

---

[June 2015](#)

---

[April 2015](#)

---

[March 2015](#)

---

---

## [Contact Us](#)

Division of Research & Economic  
Development Twamley Hall Room  
103 264 Centennial Drive Stop 8367  
Grand Forks, ND 58202-8367  
701.777.6736  
[vpr@research.UND.edu](mailto:vpr@research.UND.edu)

## [Learn More](#)

Discovery Magazine  
Grants & Contracts Administration  
IP Commercialization  
Research Capacity Building/ND  
EPSCoR  
Research Development &  
Compliance

## Got a Research Story?

[Submit a Story](#)