

# **Student Chapter Semi-annual Report**

**Dec 2007**

**The University of New Mexico**

**SPIE Student Chapter**

1313 Goddard, SE (MSC04 2710)

Albuquerque, NM 87106

USA

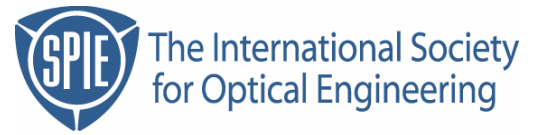
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## **Introduction about the chapter:**

The SPIE student chapter of New Mexico has been constituted in August 2006 by 12 students and 4 student officers were elected in September 2006.

Our student chapter focus on two main objectives: 1) Through the extended network of Student Chapter to improve student member's academic ability, and open doors for our members to communicate with established professionals workings in the fields of optics, photonics and related disciplines. 2) Outreach to community children, try to inspire our children to become the future Scientists.



**2007 officers:**

President: Jiayi Shao - [jshao@unm.edu](mailto:jshao@unm.edu)

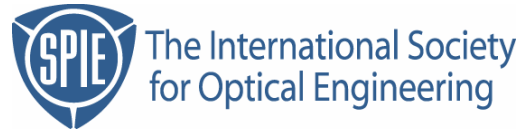
Vice President: Rajeev Shenoi - [rshenoi@ece.unm.edu](mailto:rshenoi@ece.unm.edu)

Secretary: Chenggao Wang - [puffwang@unm.edu](mailto:puffwang@unm.edu)

Treasurer: Yaxin Yu - [yuy@unm.edu](mailto:yuy@unm.edu)

**Adviser:**

Dr. Sanjay Krishna – [skrishna@chtm.unm.edu](mailto:skrishna@chtm.unm.edu)



**List of current members:**

<b>Name</b>	<b>Expires</b>	<b>e-mail</b>
Ram Attaluri	31 August 2007	<a href="mailto:ramsaran@chtm.unm.edu">ramsaran@chtm.unm.edu</a>
Ravi Kalyanam	31 August 2007	<a href="mailto:rkalyana@unm.edu">rkalyana@unm.edu</a>
Koji Masuda	31 October 2007	<a href="mailto:kmasuda@unm.edu">kmasuda@unm.edu</a>
Fred Newman	31 August 2007	<a href="mailto:Fred_Newman@Emcore.com">Fred_Newman@Emcore.com</a>
Denis Seletskiy		<a href="mailto:denisel@unm.edu">denisel@unm.edu</a>
Elena Plis	31 August 2007	<a href="mailto:alien@chtm.unm.edu">alien@chtm.unm.edu</a>
David Ramirez	31 August 2007	<a href="mailto:davramir@unm.edu">davramir@unm.edu</a>
Alex Raub	29 February 2008	<a href="mailto:alex.raub@chtm.unm.edu">alex.raub@chtm.unm.edu</a>
Jiayi Shao	31 August 2008	<a href="mailto:jshao@unm.edu">jshao@unm.edu</a>
Rajeev Shenoj	31 August 2008	<a href="mailto:rshenoj@ece.unm.edu">rshenoj@ece.unm.edu</a>
Svjatoslav J Smolev	31 January 2008	<a href="mailto:smolev@chtm.unm.edu">smolev@chtm.unm.edu</a>
David Taliaferro	29 February 2008	<a href="mailto:dtaliafe@unm.edu">dtaliafe@unm.edu</a>
Guillermo Vera	31 March 2008	<a href="mailto:alonzo@unm.edu">alonzo@unm.edu</a>
Chengao Wang	31 January 2008	<a href="mailto:puffwang@unm.edu">puffwang@unm.edu</a>
Christopher Wilcox	31 January 2008	<a href="mailto:Christopher.Wilcox@kirtland.af.mil">Christopher.Wilcox@kirtland.af.mil</a>
Nathan Withers	31 January 2008	<a href="mailto:nwithers@chtm.unm.edu">nwithers@chtm.unm.edu</a>
Yaxin Yu	31 August 2007	<a href="mailto:yuy@unm.edu">yuy@unm.edu</a>
Arezou Khoshakhlagh	30 November 2008	<a href="mailto:karezou@unm.edu">karezou@unm.edu</a>
Nina R. Weisse-Bernstein	31 December 2008	<a href="mailto:nina@unm.edu">nina@unm.edu</a>

## Chapter current activities:

1. We Organized a [SPIE Optics + Photonics](#) practice talks at Aug 17<sup>th</sup> for students who will give the presentation at SPIE Optics + Photonics 2007 at San Diego, CA. Chapter member Rajeev V. Shenoi gave the presentation “*Plasmon Assisted Photonic Crystal Quantum Dot Sensors*”.

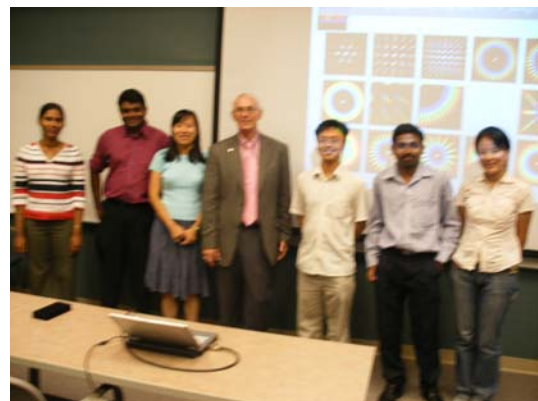


2. We organize a welcome BBQ party at Aug 24<sup>th</sup> for all new and returned UNM students, introduce the SPIE student chapter of UNM and the benefit of members to them, and try to increase chapter members.



3. The invited the speaker from the SPIE Visiting Lecturer Program, Prof. Eustace Dereniak, gave us an invited lecture at Sep 6 2007. **Lecture Title: Snapshot Imaging Spectrometers and Polarimeters:** Because of the recent availability of large focal plane arrays and fast computers, a revolutionary technique for snapshot imaging spectro-polarimeters has been developed. This lecture will review some of the techniques for developing classical imaging spectrometers, which led to the development of a snapshot imaging spectrometer using computed tomography imaging spectrometry (CTIS). CTIS is a snapshot imaging spectrometry method in which both spatial and spectral information is reconstructed using the inverse mathematical technique of medical computed tomography. The techniques of measuring the polarization Stokes parameters, either by modulation of the spectrum or the spatial frequencies across an image, will be also discussed. The combination of these techniques provides the basis for a snapshot imaging complete Stokes spectro-polarimeter that can be implemented with no moving parts. Thus far, visible, SWIR spectro-polarimeter have been developed, and an LWIR instrument is presently being fabricated.

After the talk, we hold an officer meeting with Prof. Eustace Dereniak and our chapter adviser Prof. Sanjay Krishna to discuss attractive chapter activities to increase more chapter members. Prof. Eustace Dereniak gave us several helpful suggestions.



4. We successfully arranged a community outreach project on Oct 26 2007. The West Mesa High School SPIE Chapter, located at Albuquerque, NM, has 12 high school SPIE student members with the average age of 17, and their adviser is Mr. Carmen DiGregorio [digregorio\\_car@aps.edu](mailto:digregorio_car@aps.edu). We offered a lab tour for them at the Center of High Material Center (CHTM) at UNM. Rick Bradley, the CHTM manager, help us arrange it. High school members have a widow tour at the cleanroom, Laser Lab tour, and the Molecular Beam Epitaxy grow Lab tour. Finally we introduced the college scholarship and member benefit of SPIE and how to join or start up a SPIE student chapter when they enter the college.

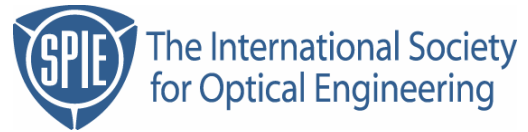


5. Each year our chapter can get some free books from SPIE. At the end of Oct, we chose 25 from the free book list, and they will mail to us at the spring of 2008.
6. We hold a pizza party at the Nov 30 to appreciate all the support from chapter members and hard work of chapter officers in 2007, and we re-elected 4 new officers for the term of 2008. The 4 new chapter officers are:

President: Arezou Khoshakhlagh - [karezou@unm.edu](mailto:karezou@unm.edu)  
Vice President: Rajeev Shenoj - [rshenoj@ece.unm.edu](mailto:rshenoj@ece.unm.edu)  
Secretary: Nina R. Weisse-Bernstein - [nina@unm.edu](mailto:nina@unm.edu)  
Treasurer: David Ramirez - [davramir@unm.edu](mailto:davramir@unm.edu)

## **Publications & Conferences:**

7. Chapter member, Rajeev V. Shenoi, presented “*Plasmon Assisted Photonic Crystal Quantum Dot Sensors*” at SPIE Optics and Photonics, San Diego, 2007
8. The NAMBE 2007 was hosted at Sep 23-30 in Albuquerque. Our chapter members, David Ramirez , Jiayi Shao, Rajeev Shenoi, Yaxin Yu, Arezou Khoshakhlagh, attended this conference. Jiayi Shao has a poster “*Shape Engineering of self-assembled InAs Quantum Dots via Selective Capping Techniques*”.



### Further activities:

9. Keep update the student chapter website. Put upcoming event, current and further activates plan on it.
  
10. There is a science fair for high school students every March in Albuquerque, NM. Some graduate students will be volunteers and judges. It is a good opportunity to reach our future Scientists again!
  
11. We try to hold a join SPIE chapter event with the SPIE student chapter at University of Arizona College of Optical Sciences.

### Financial information:

<b>Description</b>	<b>Date of transaction</b>	<b>Expenses</b>	<b>Total</b>
Initial Balance	June 2007		\$292.83
Funding deposit from SPIE	Aug 2007	+\$700.00	\$992.83
SPIE Optics + Photonics practice talks	Aug 17 2007	-\$128.70	\$864.13
welcome BBQ party	Aug 24 2007	-\$97.18	\$766.95
invited the talk from SPIE	Sep 6 2007		
Lunch		\$74.20	
Seminar refreshment		\$28.92	
Dinner		\$76.00	
Sub total		-\$179.12	\$587.83
Pizza party	Nov 30 2007	-\$111.29	\$476.54
<b>Final Balance</b>			<b>\$476.54</b>