



The University of California at San Diego



**CMRR-SSD**

Solid State Drive Program at the  
Center for Magnetic Recording Research



**Non-Volatile Systems  
Laboratory**

Department of Computer Science and Engineering

Please join us at **BOOTH 109**

Exhibit Times:

**Wednesday, August 12**  
noon – 2:00 pm  
5:30 – 7:30 pm

**Thursday, August 13**  
noon – 2:00 pm

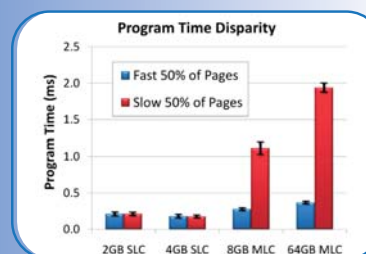


*Four research presentations:*



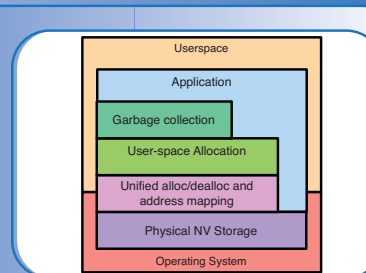
**Tuesday, August 11, 8:40 am**  
**Characterizing Flash Memory Devices**

Ms. Laura Grupp  
Non-Volatile Systems Laboratory (NVSL)  
Department of Computer Science and Engineering  
lgrupp@cs.ucsd.edu



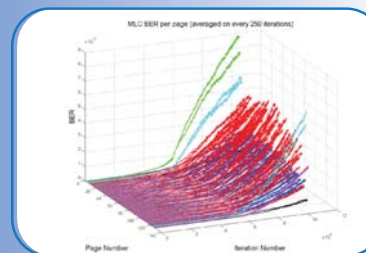
**Thursday, August 13, 8:30 am**  
**New Abstractions for Fast Non-Volatile Storage**

Mr. Joel Coburn  
Non-Volatile Systems Laboratory (NVSL)  
Department of Computer Science and Engineering  
jdcoburn@cs.ucsd.edu



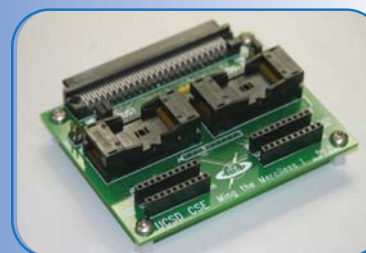
**Thursday, August 13, 10:00 am**  
**Error Correction Coding for Flash Memories**

Mr. Eitan Yaakobi  
Signal Transduction and Recording (STAR) Group  
Center for Magnetic Recording Research (CMRR)  
eyaakobi@ucsd.edu



**Thursday, August 13, 2:00 pm**  
**Secure Erasure of Flash Memory**

Mr. Adrian Caulfield  
Non-Volatile Systems Laboratory (NVSL)  
Department of Computer Science and Engineering  
acaulfie@cs.ucsd.edu



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# Non-Volatile Memories Workshop

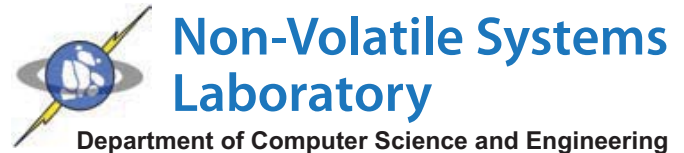
November 18-19, 2009  
La Jolla, CA



**PROPOSED TOPICS:**  
Circuits and flash memories hardware  
ECC and coding for flash memories  
Flash memory systems  
Flash memory architecture  
Other non-volatile memories  
Tutorials and panel discussions

Learn more and register at [cmrr.ucsd.edu](http://cmrr.ucsd.edu)

Hosted by:



Lead by Prof. Paul Siegel and Prof. Jack Wolf

The Center for Magnetic Recording Research (CMRR) is an interdisciplinary research organization at the University of California, San Diego. For more than two decades, CMRR has been a leader in fundamental and applied research in support of the advancement of magnetic data storage technology, a cornerstone of the modern information age. In cooperation with industry and government partners, the Center pursues a diverse program of forward-thinking research while producing highly trained graduate students and postdoctoral professionals. CMRR-SSD is a major new research initiative at UCSD, focusing on issues of reliability, security, data integrity, and system applications of solid-state, non-volatile storage.



Lead by Prof. Steve Swanson and Prof. Rajesh Gupta

The Non-Volatile Systems Laboratory (NVSL) at UCSD was founded in 2008 and focuses on developing hardware and software prototypes to understand the hardware, software, security, and reliability implications of non-volatile, solid-state memories. Our approach is to build hardware and software systems ranging from embedded storage arrays to flash-enabled high-performance clusters that allow us to characterize the challenges and test solutions on "real world" systems. We work with researchers at the Center for Magnetic Recording Research, the San Diego Super Computing Center, and within the Computer Science and Engineering Department to bring a wide range of expertise to bear on each of these issues.