PRESS RELEASE: Ferris Receives $330,860 Grant from the National Science Foundation

Sandy C Gholston to: Archive 12/07/2011 04:38 PM

Included below is a press release regarding a $330,860 grant received by Ferris State University Information Security and Intelligence program faculty members Greg Gogolin and Barbara Ciaramitaro to study digital storage media failure. Any questions regarding this release can be directed to Sandy Gholston, interim assistant director of News Services and Social Media Public Relations.

For Immediate Release
Dec. 7, 2011

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BIG RAPIDS – Ferris State University Information Security and Intelligence professor Greg Gogolin's interest in DVDs goes well beyond that of your average movie buff — assuming he or she is still watching *Casablanca* on disc.

"Let's say you put a DVD in your player, and it doesn't work. So you take it out and wash it, and all of a sudden, it works," says Gogolin. "But what physical characteristics are making that media unreadable, and at what point did it become unreadable?"

To most DVD-watchers, such questions are not very important: The disc either plays or it doesn't. However, damage thresholds and data recovery are of great interest to Gogolin and the information technology, security and intelligence communities. The National Science Foundation awarded Gogolin and fellow Ferris ISI professor Barbara Ciaramitaro a $330,860 grant for study of digital storage media failure. The award will let Gogolin buy new lab equipment and offer undergraduate and graduate research assistantships.

The new equipment includes a high-speed video camera and digital laser microscope to help detect tiny irregularities that cause digital media storage materials to fail.

"There may be a 'sweet spot' you can repair and get data off of, versus the point at which it is damaged beyond recovery," explains Gogolin.

The high-speed camera will let Gogolin and his students observe the playback problems of misshapen discs in super-slow motion. Defects can cause discs to wobble when spun at normal speed, which is too fast to be observed in real time. Understanding exactly how different physical factors impact playback will help technicians develop better methods for data recovery from damaged storage media.

His research also could have a variety of commercial applications, such as designing more durable memory for digital media and developing anti-theft and authentication barriers for electronic devices.

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