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University of Arkansas, Fayetteville

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## Louis to Receive Unique Dual Doctorate



*Lydie Louis, University of Arkansas*

Lydie Louis, a graduate student at the University of Arkansas, expected to spend three months in France studying nanostructures at Ecole Centrale Paris, a premier school focused on science and technology.

She ended up spending two years in the City of Light, earning enough credits to allow her to graduate this spring with a dual doctorate

in microelectronics and photonics from both the University of Arkansas and Ecole Centrale Paris.

Louis is the first student in the interdisciplinary microelectronics-photonics graduate program to earn a dual doctorate. She started her graduate studies in Fayetteville in 2004 and earned a master's degree in microelectronics-photonics in 2006. She studied at Ecole Centrale Paris from 2008 to 2009 and part of 2010.

Louis, who would like to pursue a research position at a national laboratory or in private industry, said she imagines her feeling of relief when she receives her diplomas.

"I will be very, very happy because it took a very long time," she said with a smile.

Louis works with ferroelectric materials at the nanometer scale. Ferroelectric materials are used in medical ultrasound to examine fetuses and internal organs, in military sonar for underwater navigation and detection, and in cell phones. These materials have a spontaneous charge separation that allows them to generate an electric field when their shape is changed — thus mechanical energy becomes electrical energy.

"In my experimental work, I synthesize one-dimensional nanowires or nanotubes," she said. "I grow a ferroelectric inside these nanostructures, building the material and shaping it."

[Learn More](#) ➔

## Mulvenon Appointed Director



Sean Mulvenon,  
University of Arkansas

Sean W. Mulvenon has been appointed director for research assessment and promotion at the University of Arkansas, a new position in the office of vice provost for research and economic development.

The appointment is for 18 months and can be renewed, said Jim Rankin, vice provost for research and economic development.

Mulvenon's primary goals are to establish more effective and efficient data structures,

reporting features and research functionality in the office of vice provost for research and economic development, an academic unit dedicated to growing the research infrastructure and capacity of the university.

Mulvenon previously served as the university's assistant vice provost for research from 2008-10.

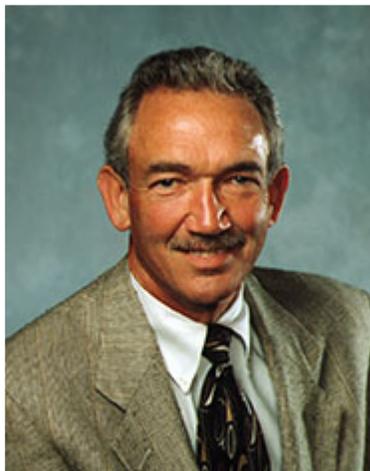
"A tremendous challenge in growing our scholarly productivity, grant awards, and recognition as a research institution is overcoming the myth that this emphasis detracts from the University of Arkansas being a student-centered academic institution," Mulvenon said.

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## Woods Publishes Shadow Warrior

William Colby, who spent decades in the Central Intelligence Agency and served as its director in the 1970s, was so physically unassuming that historian Randall B. Woods calls him the "anti-James Bond."

In *Shadow Warrior: William Egan Colby and the CIA*, his new biography of Colby,



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#### The Arkansas Catalyst

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### GRANT AWARD WINNERS

The following is a sampling of faculty awards in March, with the principal investigator, the award amount and the sponsor. An asterisk (\*) indicates the continuation of a previous award.

- Gregory Dumond, \$226,543, National Science Foundation
- Andy Pereira, \$111,241, Virginia Polytechnic Institute and State University
- Laurent Bellaiche,

Woods argues that underneath the glasses and buttoned-down persona was a “courageous, natural leader of men, a veteran of conventional and unconventional combat, a patriot committed to the defense of his country, a man drawn to the sound of battle.”

Randall Woods, University of Arkansas

\$105,000, U.S. Army Research Office  
— Vincent Chevrier, \$105,000, NASA  
— Marty Matlock, \$85,655, National Science Foundation...

Woods is a Distinguished Professor of history in the J. William Fulbright College of Arts and Sciences at the University of Arkansas. In his book, he traces the life of Colby, who began working with the Office of Strategic Services — the precursor to the CIA — during World War II and spent more than a decade leading secret actions in Vietnam. In Southeast Asia, according to Woods, “Colby was a champion of covert action, secret armies, pacification and counterterrorism.”

[Learn More](#) 

## University Centers Partner on Research

The RFID Research Center in the Sam M. Walton College of Business and the Center for Advanced Spatial Technologies (CAST) in the J. William Fulbright College of Arts and Sciences have partnered to conduct research that will integrate emerging visual identification technologies to use for retail applications.

Visual identification technologies use inexpensive 2-D and 3-D imaging technologies, commonly found in cell phones and video game devices, to identify objects by color, shape and size without the need for traditional barcodes or product numbers.

Products on store shelves or in warehouses can be recognized quickly and linked to product information databases. When linked to associated product information, the product can be added to inventory, verified for correct location and removed from inventory at checkout.

The centers will collaborate on research to make visual identification technologies reliable for business applications, including identifying items missing from store shelves, speeding up self-checkout and locating items in distribution centers.

[Learn More](#) 

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# University of Arkansas Arkansas Newswire

## Louis to Receive Diplomas from U of A and Ecole Centrale Paris

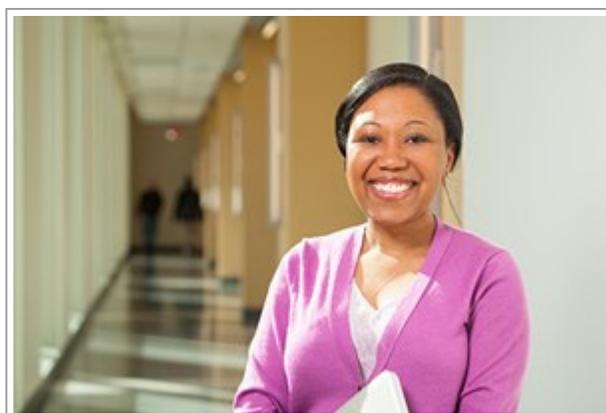
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### Graduate student earns unique dual doctorate

Monday, March 18, 2013

FAYETTEVILLE, Ark. – Lydie Louis, a graduate student at the University of Arkansas, expected to spend three months in France studying nanostructures at Ecole Centrale Paris, a premier school focused on science and technology.

She ended up spending two years in the City of Light, earning enough credits to allow her to graduate this spring with a dual doctorate in microelectronics and photonics from both the University of Arkansas and Ecole Centrale Paris.



Lydie Louis, doctoral student, University of Arkansas. Photo by Russell Cothren.

Louis is the first student in the interdisciplinary microelectronics-photonics graduate program to earn a dual doctorate. She started her graduate studies in Fayetteville in 2004 and earned a master's degree in microelectronics-photonics in 2006. She studied at Ecole Centrale Paris from 2008 to 2009 and part of 2010.

Louis, who would like to pursue a research position at a national laboratory or in private industry, said she imagines her feeling of relief when she receives her diplomas.

“I will be very, very happy because it took a very long time,” she said with a smile.

Faculty at both institutions developed a joint curriculum for Louis, said physicist Laurent Bellaiche, her faculty adviser at the U of A. The National Science

Foundation supported the collaboration through grants, and Ecole Centrale Paris also provided a stipend, Bellaiche said.

Ecole Centrale Paris is comparable in reputation to the Massachusetts Institute of Technology, Bellaiche said.

“Lydie has been working on nanostructures, either modeling them — the work mostly done here — or by growing them and characterizing them, which was done in France,” Bellaiche said. “I think that it was very important for her to learn both simulations and experiments in nanoscience, a topic that is of particular interest.”

Louis works with ferroelectric materials at the nanometer scale. Ferroelectric materials are used in medical ultrasound to examine fetuses and internal organs, in military sonar for underwater navigation and detection, and in cell phones. These materials have a spontaneous charge separation that allows them to generate an electric field when their shape is changed — thus mechanical energy becomes electrical energy.

“In my experimental work, I synthesize one-dimensional nanowires or nanotubes,” she said. “I grow a ferroelectric inside these nanostructures, building the material and shaping it.”

In Ecole Centrale Paris’ doctoral program, Louis worked in the laboratory and collaborated on other theoretical studies. She completed her course work and doctoral candidacy exams at the University of Arkansas, and she had to report to advisers and faculty committees at each campus. Her advisers at Ecole Centrale Paris include Brahim Dkhil and Gregory Geneste.

Louis was born to Haitian parents and grew up in the tiny island of Guadeloupe, part of the French Antilles. French is her native language, which made her a good candidate to study in Paris, she said.

“I knew I wouldn’t need much language preparation to start my studies there,” she said. “It was a great opportunity.”

When she immigrated to the United States in 1997, she spoke no English. But she was very good in science. While in high school in Guadeloupe she passed Advanced Placement tests in both calculus and physics. Louis earned a bachelor’s degree in electrical engineering from the City College of New York in 2004.

In her last year at the city college, she became a Louis Stokes Alliance for Minority Participation Scholar, an NSF-funded program that assists universities and colleges in increasing and diversifying the number of students successfully completing high quality degree programs in science, technology, engineering and mathematics disciplines.

In the spring of 2004, she attended the Stokes Alliance national conference in New Orleans, where the University of Arkansas was sponsoring some of the poster competitions. While at the awards dinner, she happened to sit next to Ken Vickers, director of the microelectronics-photonics program at the U of A.

“While I was speaking to him, they called my name because I had won the poster competition in engineering,” Louis said. “He was frankly amazed that we had randomly chosen seats next to each other, as he told me that because I had won first place I would be coming to the University of Arkansas for a visit, all charges paid. I visited and really liked it.”

Louis holds memberships in Eta Kappa Nu, the Electrical and Computer Engineering Honor Society; the Institute of Electrical and Electric Engineers; and the National Society of Black Engineers.

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# University of Arkansas Arkansas Newswire

## Mulvenon Appointed Director for Research Assessment and Promotion

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Thursday, March 14, 2013

Sean W. Mulvenon has been appointed director for research assessment and promotion at the University of Arkansas, a new position in the office of vice provost for research and economic development.

The appointment is for 18 months and can be renewed, said Jim Rankin, vice provost for research and economic development.

Mulvenon's primary goals are to establish more effective and efficient data structures, reporting features and research functionality in the office of vice provost for research and economic development, an academic unit dedicated to growing the research infrastructure and capacity of the university. Mulvenon previously served as the university's assistant vice provost for research from 2008-10.



Sean Mulvenon

He will remain director of the [National Office for Research on Measurement and Evaluation Systems \(http://normes.uark.edu/\)](http://normes.uark.edu/), which Mulvenon founded in 1996 with a \$500 grant. The office has grown to an organization housed in the College of Education and Health Professions with annual funding in excess of \$1 million.

“A tremendous challenge in growing our scholarly productivity, grant awards, and recognition as a research institution is overcoming the myth that this emphasis detracts from the University of Arkansas being a student-centered academic institution,” Mulvenon said. “Our success in growing the research capacity at the university will increase academic expectations in the classroom and the value of degrees from the U of A.

“If the U of A continues to grow its research capacity, ranging in initiatives from energy to health, it will ultimately translate to new businesses and job opportunities in Arkansas,” he said.

Mulvenon, a professor of educational statistics and research methods, joined the College of Education and Health Professions faculty in 1995. He held the university’s George M. and Boyce W. Billingsley Chair for Educational Research and Policy Studies from 2004-09.

From 2005-08, he worked in Washington, D.C., as a senior adviser to the office of the deputy secretary in the U.S. Department of Education.

Mulvenon earned both a doctorate and a master’s degree in measurement, statistics and methodological studies from Arizona State University. A native of Yakima, Wash., he received a bachelor’s degree in physics from Eastern Washington University.

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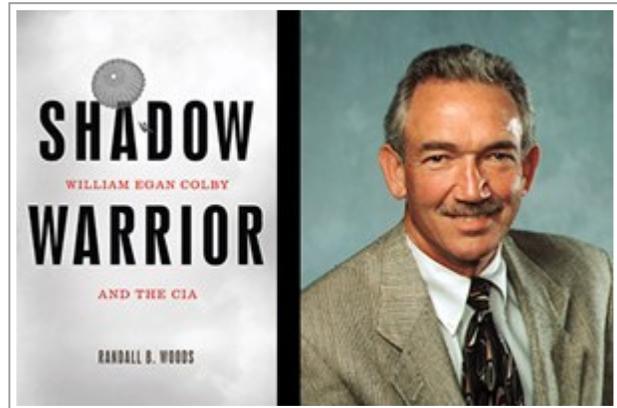
# University of Arkansas Arkansas Newswire

## Life of Ex-CIA Director Brought Out of the Shadows

### **In new biography, U of A historian examines William Colby**

Monday, April 08, 2013

FAYETTEVILLE, Ark. – William Colby, who spent decades in the Central Intelligence Agency and served as its director in the 1970s, was so physically unassuming that historian Randall B. Woods calls him the “anti-James Bond.”



In *Shadow Warrior: William Egan Colby and the CIA*, his new biography of Colby, Woods argues that

underneath the glasses and buttoned-down persona was a “courageous, natural leader of men, a veteran of conventional and unconventional combat, a patriot committed to the defense of his country, a man drawn to the sound of battle.”

Woods is a Distinguished Professor of history in the J. William Fulbright College of Arts and Sciences at the University of Arkansas. In his book, he traces the life of Colby, who began working with the Office of Strategic Services — the precursor to the CIA — during World War II and spent more than a decade leading secret actions in Vietnam. In Southeast Asia, according to Woods, “Colby was a champion of covert action, secret armies, pacification and counterterrorism.”

Woods describes Colby as a controversial figure whose views toward secrecy and unconventional warfare made him both a heretic and a prophet in the U.S. government. His life also provides a window into the secret wars in Vietnam.

“If one wants to look at the Cold War and how it was fought in the Third World through political action — counterinsurgency — he’s really a good vehicle to look at that,” Woods said. “The book is about him but it’s also about the times he lived

through. It was a way to look at the other war in Vietnam, the secret war. It was an opportunity to look at interesting times as well as an interesting life.”

Colby became director of the CIA in 1973. Between 1974 and '75, he decided it was time for the CIA to come clean about its long-kept secrets. He acted on the decision even though it was heresy to many in the CIA and President Gerald Ford's administration, Woods said.

The agency had participated in domestic spying, assassination plots against foreign leaders, experiments with mind-altering drugs, even the 1973 coup that overthrew Salvador Allende in Chile. Together, the classified documents were contained in a set of reports known as the agency's "family jewels.”

Colby recognized that most of the information had been revealed through the media, anyway.

“The revelations split the intelligence community in two, with half regarding Colby as a traitor, and half seeing him as a savior,” Woods writes.

Colby evaluated the escalation of public distrust of government during the Watergate scandal and reasoned that not publicly disclosing the secrets could mean the end of the CIA, Woods said.

“A large majority of the people in the CIA and the intelligence community — and in the Ford administration — wanted to stonewall,” Woods said. “Colby said, ‘If we don't cooperate to a certain degree, the CIA is going to be destroyed and this country will be without an intelligence service in a dangerous world. He carried the day and shared information. He refused to share information about individuals or about techniques. But he got fired for it. He lost his job.”

In late 1975, Ford, at the urging of Secretary of State Henry Kissinger, replaced Colby with George H.W. Bush.

“Traditionalists in the CIA still haven't forgiven Colby,” Woods said.

Even before he took the director's seat at the CIA, Colby ruffled feathers in the military establishment because he advocated unconventional warfare in Vietnam. That stance made him unpopular among the generals running the war, Woods said.

“These alternatives, he argued, were far preferable to conventional combat by main-force units, which killed tens of thousands and usually destroyed the country in

which the battles were fought,” Woods writes. “As far as the traditional military was concerned, Colby was a heretic, but for advocates of unconventional warfare, he was a prophet.”

Colby’s philosophy carried the day and by the late 1970s the United States had changed its approach, Woods said

“The traditional military hasn’t taken kindly to commandoes or special forces or irregulars,” he said. “They want to do things in a conventional way, with tanks and divisions. Colby thought that was a disaster, particularly in the Third World. He thought what we were doing [through search-and-destroy tactics] was creating more enemies than we were killing. He was an advocate of arming and organizing the locals, using proxy armies, keeping our footprint as small as possible.”

Although he was a commando in World War II and had presided over the infamous Phoenix program in Vietnam, which led to the deaths of at least 20,000 civilian supporters of the North Vietnamese, Colby was a “deceptively mild-mannered, innocuous-looking man,” Woods writes, “... who could not easily attract the attention of a waiter in a restaurant.”

Colby used his appearance to his advantage in the spy game, Woods said.

“He was the ‘gray man,’” he said. “He wasn’t flamboyant. He cultivated an image of blandness because it facilitated his activity as a spy, as a secret agent. The conventional haircut, the glasses ... the guy was a war hero and a killer, a man who held people’s lives in his hands.”

On April 27, 1996, the 76-year-old Colby died under mysterious circumstances near his vacation cottage in southern Maryland.

In great detail, Woods recounts the last day Colby was seen and the discovery of his body nine days later on the shoreline of Neale Sound on Chesapeake Bay. The police announced that there were no signs of foul play. Some surmised that he suffered a heart attack while canoeing at night and had fallen in the water. Others, including one of Colby’s sons, think he committed suicide by drowning. The state medical examiner’s officer issued a preliminary verdict of accidental death.

“I can’t prove that he was killed but it was very suspicious,” Woods said. “He was missing a week and his body wasn’t decomposed. He had a lot of enemies and he did a lot of things that I don’t know about, a lot of bad things.”

*Shadow Warrior* is Woods' eighth book. He has also co-written or co-edited four other books. Nearly all of them have dealt with 20<sup>th</sup>-century U.S. diplomatic relations or American politics, including his noted biographies of J. William Fulbright and Lyndon Johnson. His book on Fulbright was nominated for a Pulitzer Prize and National Book Award.

*Shadow Warrior* is published by Basic Books. Woods is the John A. Cooper Professor of History at the U of A and has been named the John G. Winant Visiting Professor of American Government at Oxford University for the fall 2013 term.

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# University of Arkansas Arkansas Newswire

## University Centers Combine Efforts to Enhance Visual Identification Technologies

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### Research will move video game technology to retail commerce

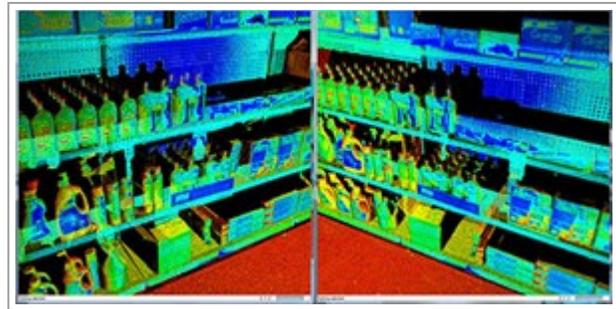
Thursday, March 28, 2013

FAYETTEVILLE, Ark. – The RFID Research Center in the Sam M. Walton College of Business and the Center for Advanced Spatial Technologies (CAST) in the J. William Fulbright College of Arts and Sciences have partnered to conduct research that will integrate emerging visual identification technologies to use for retail applications.

The two University of Arkansas centers will also work together to develop standards for widespread adoption of the technologies.

Visual identification technologies (VIT) use inexpensive 2-D and 3-D imaging technologies, commonly found in cell phones and video game devices, to identify objects by color, shape and size without the need for traditional barcodes or product numbers. Products on store shelves or in warehouses can be recognized quickly and linked to product information databases. When linked to associated product information, the product can be added to inventory, verified for correct location and removed from inventory at checkout.

Visual identification technologies are becoming more common. People use these technologies everyday in video games that allow users to mimic dance moves and swing virtual tennis rackets.



With visual identification technologies, a single 3-D data collection allows viewing and measurement from multiple viewpoints.

“There are millions of devices in the hands of retailers and consumers across the United States today that can take a picture of an item – an apple or a detergent bottle, for example – send that picture to a server and then let software automatically identify the item,” said Justin Patton, managing director of the RFID Center. “The process is as simple as scanning a barcode, but it works from all angles and can capture many items at once. An image is enough, and the hardware is cheap.”

The university centers will collaborate on research to make visual identification technologies reliable for business applications, including identifying items missing from store shelves, speeding up self-checkout and locating items in distribution centers. The researchers will then work with global standards organizations to develop open standards that will allow for broad adoption.

“What is needed is a common digital data standard for shared items that can be used across platforms and amongst retailers,” said Jackson Cothren, associate professor of geosciences and director of CAST. “You can buy a bag of chips at a concert in Germany or at a gas station in New Mexico, and the standard VIT traits of that item are shared. This will have a major impact on the retail industry in the next three years.”



Two views of a 3-D model created by a five-minute store scan.

The RFID Research Center serves a large network of retailers and suppliers and has broad knowledge of store processes. The center has been successful at integrating new technology at large retailers such as Walmart, Dillard’s, JC Penney and Bloomingdale’s.

CAST has developed two-dimensional and three-dimensional analytics for geospatial location and mapping and shape analysis of natural and manmade objects. The center has developed digital standards for collecting and archiving of these data.

Together, the RFID Research Center and CAST have identified the most effective emerging technologies, all of which can be

integrated with open databases to produce simple, fast and inexpensive visual identification technologies.

Preliminary research began in 2010 with early prototypes of Microsoft Kinect systems that can identify grocery items. The centers are now conducting studies on deep scans of actual store environments and within laboratory space at the RFID Research Center. The researchers have created 3-D models of the products and store environments comprised of billions of data points. They have begun to identify promising data that can be used to create a standard library of object information. Initial results will be issued in the fall of 2013.

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