



FLORIDA INSTITUTE FOR HUMAN & MACHINE COGNITION

ihmc

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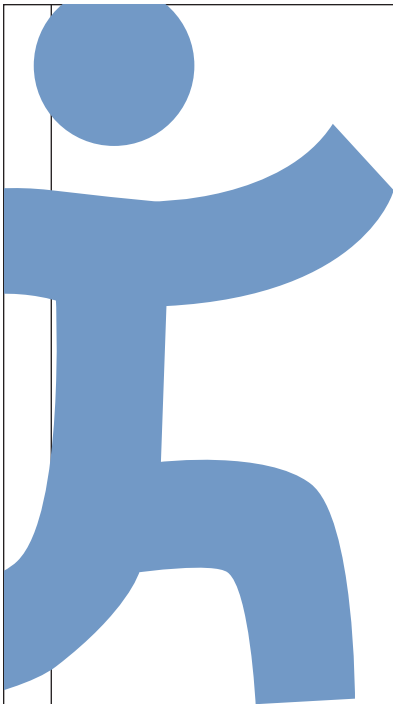


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FLORIDA INSTITUTE FOR HUMAN & MACHINE COGNITION



Dear Friends:

IHMC reached a highly-anticipated milestone recently with the opening of our new research facility in Ocala. This newsletter is dedicated in large part to the excitement surrounding the IHMC expansion in Ocala and the energy associated with establishing a new site and recruiting new research personnel.

IHMC Ocala is located in the newly renovated former Ocala City Library, on the main square in the heart of historic downtown Ocala. Our chosen architecture maintains the basic character of the wonderful old building, while providing a modern, high tech feel that reflects the innovative nature of our research institute.

IHMC researchers and staff are excited about playing an important role in Ocala's increasingly vibrant downtown and in community life in general. First-time visitors are pleasantly surprised to find the many excellent restaurants, shops, coffee bars, etc. within a very short walking distance of our new home. We also continue to be grateful for and greatly encouraged by the enthusiastic support of the Ocala residents and local governmental officials.

Most importantly, the expansion into Central Florida has facilitated IHMC's success in recruiting an initial cadre of researchers and staff that dramatically expands our research footprint in the State of Florida. We are particularly pleased that internationally renowned computer scientist Yorick Wilks has relocated from the United Kingdom and joined the IHMC team in Ocala. Yorick is joining Marco Carvalho, who leads the initial research team we created in Ocala, in helping IHMC to build a burgeoning set of collaborations with the universities, corporate industry and other research entities that reside in the Central Florida area. Indeed, one of the primary reasons that IHMC chose the Ocala site was the convenient access to these potential research partners, which will enable us to increase the breadth of IHMC's research network and further enhance our ability to support customers such as NASA and the Department of Defense. Happily, this location is already beginning to provide the new research collaboration opportunities that we anticipated.

We hope you enjoy this newsletter and that you get a sense of IHMC's excitement about our new Ocala facility. Please drop by and visit our new research site at your first opportunity.

Best Wishes,

Kenneth M. Ford, Director



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Machine Cognition

A University Affiliated
Research Institute



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Ocala facility opens



Harrison "Jack" Schmitt opening Ocala evening lecture series

In January, 2010, IHMC scientists and staff officially moved into our new research facility in Ocala, Florida. In the works for several years, this expansion strengthens IHMC's position as a statewide research organization and provides a centralized location for its projects with research universities and private sector collaborators in the central Florida region.

As an interdisciplinary research institute, IHMC's expansion to Ocala provides the opportunity for stronger connections with many collaborators, such as faculty at the University of Florida, the University of South Florida, the University of Central Florida, and the Florida Institute of Technology. Additionally, the proximity allows younger researchers to simultaneously work at IHMC and pursue their doctorates at these schools.

Ocala is also close to private corporations with whom IHMC has

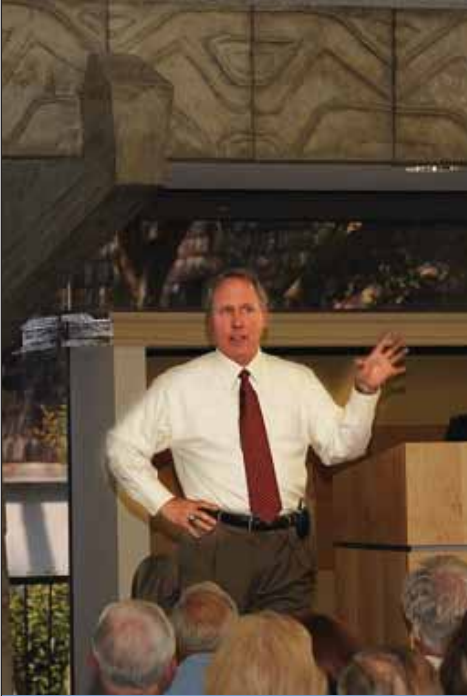
worked, such as Lockheed Martin and Boeing and convenient to the Space Coast. The typical research and development model has universities and research institutes like IHMC performing basic and applied research, and then working with private sector partners to expand on promising ideas and commercialize the technology into useful products. By strengthening ties with corporations, IHMC can help facilitate the commercialization of its research.

The new facility, located in the heart of downtown Ocala at 15 SE Osceola Avenue, is located in a former city library building. As at IHMC's main facility in Pensacola, this location will foster the

creative interaction of researchers and staff with the community. These urban locations also tend to be most attractive to the creative class, the type of colleagues whom IHMC regularly attracts.

While the outside of the library appears largely the same, the interior of the facility has undergone a complete and green renovation. The fully redesigned facility resembles a walkable village with offices scattered throughout the first floor, a classroom area that is used for the evening lectures and science outreach activities, a graduate student research area, two conference rooms that can be refitted as a large conference area, many small meeting spaces, a reception area

■ ■ **By strengthening ties with corporations, IHMC can Facilitate the commercialization of some its research.** ■ ■



Astronaut and IHMC Senior Researcher, Tom Jones, during his evening lecture in Ocala

and a kitchen facility. The full basement, once utilized as a book storage area, is now being utilized for research labs and will be a future home to more offices as the Ocala research staff grows. The interior façade is bright and cheerful with decorative gray blocks and bright wall panels, neutral toned carpet squares and many windows that offer light and different views of day and evening downtown activity.

A critical component of the renovation are the environmental improvements. The renovations were designed to meet LEED (Leadership in Energy and Environmental Design) Gold certification.

Currently there are thirteen permanent employees at the Ocala facility including lead researchers Yorick Wilks, a leader in the field of natural language processing and artificial intelligence; Marco Carvalho, a lead researcher in the field of biologically-inspired tactical security infrastructure, and Guy Boy, whose research focuses on human computer

IN RESIDENCE

■ ■ ■ Prominent computer scientist Yorick Wilks joins IHMC



YORICK WILKS

Dr. Yorick Wilks joins IHMC Ocala as a senior researcher. He is a leader in the field of natural language processing and artificial intelligence. Other interests include the Semantic Web and the possibility of companion-like interfaces.

He was previously a Professor of Artificial Intelligence at the University of Sheffield and a Senior Research Fellow at the Oxford Internet Institute at Balliol College. He also was the founding Director of the Institute of Language, Speech and Hearing (ILASH) at Sheffield University. He has published numerous articles on artificial intelligence and nine books, including, in 2010, *Close Encounters with Artificial Companions*. He is a Fellow of the American and European Associations for Artificial Intelligence, a member of the UK Computing Research Council and on the boards of fifteen AI-related journals. He designed CONVERSE, the dialogue system that won the Loebner prize in

New York in 1997, and was the founding Coordinator of the EU 6th Framework integrated project COMPANIONS on conversational assistants as personalized and permanent web interfaces. The distinguishing feature of a COMPANION is its detailed knowledge of its owner as well as the wider-world; its current major implementation is a elicitor and organizer of someone's personal knowledge and digital records, but the general concept is being adapted to learning, health and travel environments.

Prior to his work at Sheffield, he studied math and philosophy at Cambridge, was a researcher at Stanford AI Laboratory, and then Professor of Computer Science and Linguistics at the University of Essex, before moving back to the US for ten years to run a successful and self-funded AI laboratory in New Mexico, the Computer Research Laboratory, a new institute set up by the state of New Mexico as a center of excellence in artificial intelligence in 1985.

In 2008 he was awarded the Zampolli Prize at LREC08 in Marrakech, and the ACL Lifetime Achievement Award at ACL08 in Columbus, OH. In 2009 he was awarded the Lovelace Medal by the British Computer Society. Just recently, he was elected a Fellow of the ACM. At IHMC Yorick will work on a range of AI-related activities that have language processing and reasoning components, particularly ones related to cognitive orthoses, or extensions, and companionable assistive dialogue systems.

He is also interested in the foundations of the World Wide Web and how much of what is now on it can be transformed into the Semantic or Data Web.

FEATURED NEWS



Marco Carvalho, Brian O'Connor and Kurt Kelly

interaction and cognitive engineering. Joining these three key researchers is IHMC Deputy Director, Tim Wright.

In addition to the three research scientists and Deputy Director, the Ocala facility is also home to a number of promising young researchers and scientists working under the direction and guidance of the Research Scientists. In addition, Ocala has three administrative people handling the daily operations and special events at the Ocala facility.

Since the dedication of the Ocala facility on January 29, 2010, the Ocala location has been the host of numerous meetings and activities. These events range from individual visits from key state and federal leaders to several large multi-day research meetings bringing people to Ocala from across the nation to the regular meetings of the IHMC governing Board and Science

Advisory Council. In addition to these scheduled events this spring, IHMC Ocala began its Evening Lecture Series and to date has had five lectures from influential speakers. All the lectures have been well attended and several Ocala businesses have been wonderfully supportive to help IHMC sponsor these lectures by assisting with the costs of travel and speaker stipend, meals, reception, and the hotel stay of the guest speakers.

Over 120 community and business leaders from Marion County joined IHMC on Friday January 29 to help in dedicate the new Ocala facility. The dedication ceremony and reception, sponsored by SunTrust, included a number of speakers, including Joan Stearns, wife of Congressman Cliff Stearns; Assistant Secretary of Commerce John Fernandez; State Representative Larry Cretul, Speaker of the Florida House; State Senator Evelyn Lynn; Mayor Randall Ewers; IHMC Board of Directors Chair Dick Baker; and IHMC Director Dr. Ken Ford.

The event was coordinated by IHMC's Pam Dana who introduced the speakers and discussed the significance each speaker has made to this IHMC Ocala facility becoming a reality. In his remarks, Ocala Mayor Randy Ewers said, "I am so pleased and excited to officially call IHMC Ocala one of our own. This entire community has enthusiastically jumped in and rolled up their sleeves in partnership to bring this value-added institute to the heart of Ocala.

We look forward to the continued success of IHMC Ocala from Marion County."

Following the dedication and reception, Dr. Harrison (Jack) Schmitt, Apollo-17 astronaut and IHMC Senior Research Scientist, kicked off the IHMC Ocala lecture series. Interest in his lecture was high, and IHMC hosted more than 160



Audience at Ocala dedication of new IHMC Facility

Since the dedication of the Ocala facility on January 29, 2010, the Ocala location has been the host of numerous meetings and activities.

people who attended to hear Schmitt describe his experiences and provide insight into NASA operations. On February 23rd, Walter Kulash described innovations in traffic engineering and new approaches in traffic management to a packed audience in his lecture "Stuck In



NASA Blue Sky Meeting of scientists and researchers held at the Ocala facility in January 2010

FEATURED NEWS

OCALA, THE TEAM

Tim Wright

Deputy Director
VADM Wright joined the staff of the Institute for Human and Machine Cognition in August of 1996 where he is now serving in the role of Deputy Director. He commanded a fighter squadron, a carrier air wing, a fleet oiler, an aircraft carrier, a carrier battle group and the U.S. Seventh Fleet. He also was Chief of Naval Education and Training in Pensacola, Florida and, concurrently, Director of Naval Training on the staff of Chief of Naval Operations in Washington, D.C.

Guy Boy

Senior Research Scientist
Before joining IHMC, Dr. Boy was Founder and President of the European Institute of Cognitive Sciences and Engineering in France. Dr. Boy’s research is focused on cognitive engineering, usability, human centered automation and design, safety critical systems, operational documentation and knowledge management. He is also a University Professor at FIT.

Yorick Wilks

Senior Research Scientist
See Biography, Page 4

Marco Carvalho

Research Scientist
Dr. Marco Carvalho has a M.S. in Mechanical Engineering from the University of Brasilia, a M.S. in Computer Science from the University of West Florida and a Ph.D. in Computer

Science from Tulane University. His research interests are primarily in the areas of tactical and cognitive networks, applied machine learning and network security.

Adrián Granados

Research Associate II
Adrián Granados currently works on Mobile Ad-Hoc Networks projects. He received his B.S. in Computer Science from the Instituto Tecnológico de Costa Rica in 2002 and his M.S. in Computer Science from UWF.

Carlos Perez

Research Associate II
Carlos Perez is working on the CmapTools project and Mobile Ad-Hoc Networks related projects. He received his B.S. in Computer Science Engineering from EAFIT University at Medellín, Colombia and his M.S. in Computer Science from UWF.

Marco Arguedas

Research Associate
Marco Arguedas received his B.S. in computer science engineering from the Costa Rica Institute of Technology. At IHMC, Marco works on web search and information retrieval.

Giacomo Benincasa

Research Associate
Giacomo Benincasa received his BEng and MEng in Computer Engineering from the University of Modena and Reggio Emilia, Italy. His current work at IHMC focuses on the Dissemination Service for Tactical Network Environments project.

Erika Benvegnù

Research Associate
Erika Benvegnù has a B.S. in Computer Science Engineering from the University of Padova. She also has a M.S. from the University of Ferrara, Italy. She is currently working on Mockets and on PIM.

Massimiliano Marcon

Research Associate
Massimiliano Marcon earned his B.S. from the University of Padova, Italy, and his M.S. from the University of Ferrara, Italy, both in Computer Science Engineering. His research is focused on distributed systems, computer security and information visualization.

Sankrith Subramanian

Research Intern
Sankrith Subramanian is currently a Ph.D. student at the University of Florida. At IHMC he studies multi-layer control issues for tactical networks.

Lina Alvarez

Administrative Coordinator
Lina Alvarez is the administrative coordinator at IHMC Ocala. Lina has a B.A. in Business Administration.

Rose Aguilar

Staff Assistant
Rose Aguilar works as a part time staff assistant in the Ocala office and assists Tim Wright and Lina Alvarez.



County Commissioner Stan McClain, Ricki McClain, and Matt Doster, executive director of IT Florida at the Ocala dedication

(thinking about) Traffic.” He contends that traffic performance should be balanced against other desired qualities of the street, such as its value as an “address,” its retail friendliness, and its role as a premiere public space of the community.

“I am so pleased and excited to officially call IHMC Ocala one of ours.”

—Mayor Randy Ewers

FEATURED NEWS

On April 14th, nationally prominent food writer John Edge entertained and informed a full crowd with his talk on the emerging culture of American Street Food and its influence on downtown culture, ethnicities and art. Street food can help visitors understand more about people and places.

On May 5th, Br. Guy Consolmagno entertained a large audience with his lecture, “God’s Mechanics” in which he examined the personal religious life and theology of scientists and engineers — “Techies” — based on conversations with Techies and his personal perspective as a Jesuit scientist and astronomer at the Vatican.

On June 2nd, Astronaut and IHMC Scientist Tom Jones in his talk, “Getting to Know the Asteroid in Your Future: Risks and Opportunities from Near-Earth Objects” explained to a packed crowd of listeners how the NEO population presents the U.S. space effort with an opportunity for future human exploration and how these ancient, intriguing objects



US Asst. Secretary of Commerce John Fernandez and House Speaker Larry Cretul at Ocala opening

can offer a scientific bonanza as well as invaluable space resources for the economic development of space. The inaugural spring lecture series at the Ocala facility was a huge success.

Since its opening, Ocala has also hosted the IHMC Board of Directors meeting and dinner in late January, 2010 and the IHMC Science Advisory Council

annual meeting in February of 2010. Both of these events were well attended by the Board members who traveled from across the United States to visit Ocala and each event included tours of Ocala and fine dining experiences in local restaurants. The Ocala location is the perfect setting for these group meetings and science related events.



Congressman Cliff Stearns visits with Ken Ford in the Ocala facility

HAPPENINGS

NEWS OF IHMC

Ford serves as panelist for Isaac Asimov debate

IHMC's director, Ken Ford, was a panelist in this year's Isaac Asimov Memorial Debate held at the Hayden Planetarium in New York City. The Hayden Planetarium website describes this debate as bringing *the finest minds in the world to the Museum each year to debate pressing questions on the frontier of scientific discovery.* The theme of this year's event, held in March, was "Moon, Mars and Beyond: Where next for the manned space program?"

Discussion centered on whether NASA should return to the Moon, where we have already been, or proceed straight to Mars.

The debate was quite broad on this issue, encompassing science, launch hardware, international competition, national security, shrinking budgets, and political will. The Obama administration's recent decision to delay indefinitely our next voyage to the Moon while simultaneously planning a new launch vehicle to take us out of low earth orbit made this Asimov Debate particularly topical and newsworthy. The



Neil deGrasse Tyson introduces panelists at Isaac Asimov Memorial Debate

debate was moderated by Hayden Director Neil deGrasse Tyson. The other panelists were General Lester Lyles, United States Air Force (Ret); Paul Spudis, Lunar and Planetary Institute; Steven Squyres,

Cornell University; and Robert Zubrin, Mars Society. Apollo 11 astronaut Buzz Aldrin made a surprise appearance at the end of the conversation after having listened to the debate.



Panelists address future of space exploration to a full house at the Isaac Asimov Memorial Debate

HAPPENINGS

NEWS OF IHMC



Yorick Wilks

Wilks elected as ACM Fellow

Yorick Wilks was elected this year as an Association for Computing Machinery (ACM) Fellow. Wilks's research on meaning-based understanding of natural language by computers was cited as the basis for his selection.

The ACM Fellow Program recognizes and honors individuals for their achievements in computer science and information technology and for their significant contributions to the mission of the ACM. This year 47 individuals were inducted as fellows at an awards banquet on June 26th in San Francisco, bringing the total number of fellows to 722.

The men and women honored as ACM Fellows have made critical contributions toward and continue to exhibit extraordinary leadership in the development of the Information Age. Their works span all horizons in computer science and information

technology: from the theoretical realms of numerical analysis, combinatorial mathematics and algorithmic complexity analysis; through provinces of computer architecture, integrated circuits and firmware spanning personal computer to supercomputer design; into the limitless world of software and networking that makes computer systems work and produces solutions and results that are useful for people everywhere.



Guy Boy

Boy to chair HCI-Aero Conference

IHMC's Guy Boy is the program committee chair for the

Human-Computer Interaction (HCI) - Aerospace conference to be held in November, 2010, in Cape Canaveral, FL. The goal of HCI-Aero 2010 is to focus on sharing lessons learned across industry, government and academia, and the development of new methods that allow us to continue the current, unprecedented safety observed in aviation operations.

The methods for description, development and evaluation of Human-Computer systems are evolving as new aeronautics and spaceflight technologies are introduced. In aeronautics, the introduction of new airborne and ground-based technologies have placed a fresh emphasis on understanding the changing roles; interactions and coordination activities between pilots, controllers and automated distributed systems. On the spaceflight side, commercial space operations, interoperability, safety issues, standards, and extended human spaceflight stress the need for new crew-ground interaction paradigms. More than ever, these technologies, as well as the human agents in the system, will need to coordinate their intentions and activities in a timely, efficient and robust manner.

HCI-Aero 2010 seeks to gather experts and novices from industry, government and academia in the field of human factors in aerospace computing systems. Researchers and practitioners will present



Choh Man Teng

innovative methods, techniques, tools and technology. This includes the evolution of crew-ground interactions, laboratory research and field investigations, human factors issues, industrial developments and perspectives including cabin systems, certification and rulemaking, and maintenance.

Teng enjoys sabbatical in Portugal

IHMC's Choh Man Teng is spending a sabbatical year at the Center for Artificial Intelligence at the New University of Lisbon in Portugal. Research areas at the center include knowledge representation and reasoning, logic programming, machine learning and constraint programming. Teng is collaborating with several researchers there, including Greg Wheeler, a long time colleague. Projects she is working on include integrating probability and logic, and another on solving probabilistic constraints.

RECENT LECTURES

■■■ IHMC'S EVENING LECTURE SERIES



Charles Carlson

Charles Carlson provides roadmap for investing

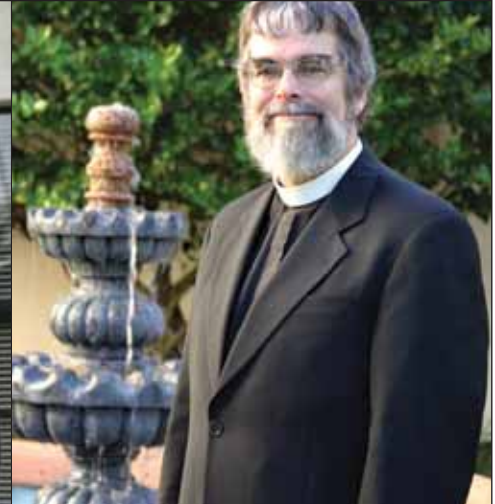
The recent rally in the economic markets has been following predictable trends, according to Charles Carlson. He explained these trends and how others might be expected to influence the market in the near future during his lecture “Where is this market heading? Here’s your roadmap for investing in 2010.” Many of the dynamics that investors have seen recently follow theories outlined by Charles Dow over one hundred years ago. Investors can profit from unemotional investing, relying on the power of process to analyze the data and make wise investment decisions. Carlson is the Chief Executive Officer of Horizon Publishing, one of the oldest investment newsletter publishers. He is also the Chief Executive Officer of Horizon Investment Services, one of the oldest investment newsletter publishers in the country. He is widely published in the financial field, both authoring books and contributing to other publications.



Rick Baker

Rick Baker shares lessons in governing

Rick Baker, then-mayor of St. Petersburg, Florida, described his experience as mayor in his lecture “Building Seamless Cities”. He explained how the job of mayor has three main elements: dealing with the day-to-day business of the city, addressing crises, and advancing a vision for the city. Too often mayors get bogged down in the first two, leaving no time for furthering the city. Baker described several instances where he advanced his vision by his style in handling the regular management of the city. At the time of his talk, Baker was the Mayor of St. Petersburg, Florida. He was first elected in 2001 to lead Florida’s 4th largest city. When he was reelected in November 2005, he garnered over 70% of the vote, winning every precinct in the city, but was term-limited out of office in 2009. In 2008, Mayor Baker was named as the 2008 United States Mayor/ Public Official of the year by *Governing Magazine*. Prior to his election, he practiced corporate and business law.



Guy Consolmagno

Guy Consolmagno explores scientists and religion

Scientists’ and engineers’ perspective on religion is shaped by how they approach their fields. Br. Guy Consolmagno described his examination of the personal religious life and theology of scientists and engineers during his lecture “God’s Mechanics: The Religious Life of Techies.” From interviews with “techie” he discovered, for example, that engineers often choose a religion based on “utility” while scientists look for which is more “true”. Understanding how scientists accept religion provides lessons for how religious people can accept science. Consolmagno is a Jesuit brother and holds a Ph.D. in planetary science from MIT. He is a researcher at the Vatican Observatory, where his research explores connections between meteorites, asteroids, and the evolution of small solar system bodies. He also curates the Vatican meteorite collection. He is the author of a number of popular books including, *God’s Mechanics: How Scientists and Engineers Make Sense of Religion*.

RECENT LECTURES

■■■ IHMC'S EVENING LECTURE SERIES



Jeannette Wing

Jeannette Wing explains power of computational thinking

Computational thinking is an approach to solving problems, building systems, and understanding human behavior that draws on the power and limits of computing. As Dr. Jeannette Wing explained during her lecture “Computational Thinking and Thinking about Computing,” computational thinking has already begun to influence many disciplines, from the sciences to the humanities, but the best is yet to come. She advocates for adding computational thinking to the educational system to strengthen every child’s analytical ability. It is not enough to teach how to use software or to program computers, but students need the ability to reason in the abstract to succeed in our increasingly complex society. Wing is the Assistant Director for Computer and Information Science and Engineering (CISE) Directorate at the National Science Foundation. Wing is currently on leave from Carnegie Mellon where she is the President’s Professor of Computer Science.



Daniel Nocera

Nocera outlines plans for sustainable energy

The supply of secure, clean, sustainable energy is arguably the most important scientific and technical challenge facing humanity. Dr. Daniel Nocera described his research on generating sustainable energy during his lecture “Personalized Energy for 1 (x 6 Billion): A Solution to the Global Energy Challenge.” Global energy consumption will double by mid-century and triple by the end of the century. Even with conservation, alternative energy technologies, like nuclear, biomass, and wind, will not be enough, and standard technologies will cause large negative consequences. Nocera’s research aims to create a secure, carbon neutral, and plentiful energy source, based on photosynthesis. Nocera is the Henry Dreyfus Professor of Energy at the Massachusetts Institute of Technology, Director of the Solar Revolutions Project and Director of the Eni Solar Frontiers Center at MIT. He is also the founder of Sun Catalytix to commercialize his new research.



Walter Kulash

Kulash describes innovations in traffic

Standard approaches to traffic congestion, like adding capacity, accelerate the growth of congestion rather than stem it. Additionally, the quality of communities degrades as we continue to pave them. Walter Kulash explained new approaches to traffic management during his lecture “Stuck In (thinking about) Traffic.” He contends that traffic performance should be balanced against other desired qualities of the street, such as its value as an “address,” its retail friendliness, and its role as a premiere public space of the community. Kulash recently retired as a partner with the Orlando-based community planning firm of Glatting Jackson Kercher Anglin, Inc, and now practices as an independent public-interest traffic engineer. He is at the forefront of the field of traffic calming and specializes in “livable traffic” design. He has worked on traffic and transit planning projects throughout the U.S. and Canada.

RECENT LECTURES

■■■ IHMC'S EVENING LECTURE SERIES



Jack Burns

Burns argues for the moon

The Moon is a unique platform for fundamental astrophysical measurements of gravitation, the Sun, and the Universe, explained Jack Burns during his lecture "Exploring the Cosmos from the Moon." The measurements from the moon can provide high precision data for the exploration of general relativity and alternative models of gravity. Telescopes on the moon could provide an unparalleled observatory of many cosmic phenomena, including the first stars, black holes and quasars. These advantages should provide a sufficient incentive for us to create a presence on the moon. Burns is a Professor in the Department of Astrophysical and Planetary Sciences at the University of Colorado (CU) in Boulder. He is also Vice President Emeritus for Academic Affairs and Research for the CU System. He is the director of the Lunar University Network for Astrophysics Research (LUNAR).



John T. Edge

Edge explores street food

Humble street food is an essential element to our culture, explained John Edge during his lecture "American Street Food: A Thinking Eater's Survey." For eaters, street food is among the most primal of bites, nutrition reduced to its most elemental form, consumed on the go. For cooks, street food offers an entrepreneurial path toward self-reliance. Street food can serve as a window into cultures, a connection with people and places, and a key to understanding local customs. Edge is director of the Southern Foodways Alliance, an institute of the Center for the Study of Southern Culture at the University of Mississippi, where he documents and celebrates the diverse food cultures of the American South. A prolific writer, he has a monthly column for the New York Times and is a contributing editor at Garden & Gun, among other publications. He is at work on a new cookbook that catalogues modern American street and truck food.



John Grunfeld

Grunfeld describes vision of Hubble

The Hubble Space Telescope has provided a whole new perspective of our universe to many people, both scientific and lay. Dr. John Grunfeld has been a leader in servicing the telescope, and shared his insight into the impact of the telescope during his lecture "Hubble Servicing Mission 4." In May 2009 Grunfeld was part of a team of astronauts that flew to the Hubble Space Telescope to complete a final makeover. New instruments added on this mission allow Hubble to observe from the near infra-red to the ultraviolet end of the spectrum. The new images since these improvements hint at a bright scientific future for Hubble. Grunfeld is the Deputy Director of the Space Telescope Science Institute. He traveled on five space flights, including three to service the Hubble. He served as the NASA Chief Scientist detailed to NASA Headquarters in 2003-2004, where he helped develop the President's Vision for Space Exploration.

RECENT LECTURES

IHMC'S EVENING LECTURE SERIES



Thomas Jones

Jones explores risks and opportunities of NEOs

We circle the sun amid a swarm of asteroids and comets whose orbits approach or cross Earth's. Termed Near-Earth Objects, these relics of planetary formation pose a considerable long-term impact hazard to our planet, explained Dr. Thomas Jones during his lecture "Getting to Know the Asteroid in Your Future: Risks and Opportunities from Near-Earth Objects." In addition to their threat, NEOs provide a unique opportunity for space exploration. Jones is a veteran NASA astronaut, speaker, author, and IHMC Research Scientist. He holds a doctorate in planetary sciences and flew on four space shuttle missions. He writes frequently about space exploration and aviation history in magazines and books. He is a former member of the NASA Advisory Council, serves on the board of the Association of Space Explorers, and is a regular on-air contributor for Fox News Channel's spaceflight coverage



Andrew Young

Young provides inside view into national politics

John Edwards' rapid rise to political prominence was very promising, including a run for vice president and serious challenges for the Democratic nomination for president. Andrew Young provided insight into the inside world of Edwards and the scandals that surrounded him during his lecture "Balancing Individual Ethics with the American Dream." Young was a key staff member in the John Edwards 2008 presidential campaign. He was involved in the building of Edwards's image as well as hiding personal challenges that Edwards faced. Young even claimed paternity of Edward's child with Rielle Hunter to help avoid a scandal during the presidential campaign. Edwards eventually admitted to paternity. Young is the author of *The Politician: An Insider's Account of John Edwards's Pursuit of the Presidency and the Scandal That Brought Him Down* that describes in detail his years working on Edward's political campaigns.

FALL LECTURE SERIES

PENSACOLA

Season Sponsor:
Clark Partington Hart

September 29:
Tom Murphy
Building a Competitive City

October 27:
John Logsdon
Space Policy, JFK, and Space Exploration

November 17:
Rusty Schweickart
Deflecting an Asteroid

December 1:
Chuck Carlson
Stock Market Trends

December 8:
Charlie Bolden
NASA's Future Direction

December 15:
John Norquist
City Building and Economic Development

OCALA

Co-hosted by:
The College of Central Florida

September 8:
Dan Britt
The History of Climate

October 14:
Eileen Collins
Lessons Learned from the Space Shuttle Era

November 9:
Glenn Sturm
Developing Sustainable Businesses

HAPPENINGS

■■■ IHMC EDUCATION PROGRAMS



Tom Eskridge and students creating JELL-O lenses at aviation museum activity

I LOVE Science completes fourth year

I LOVE Science completed its fourth year with nearly 100 volunteers partnered with most of the 250 5th grade classrooms in Escambia and Santa Rosa counties. This year, we also expanded the program to Okaloosa County with a small trial effort, which, due to the success there, will be expanded for the 2010-2011 school year. Many volunteers have been with the program since inception and have adopted additional classrooms and expanded their own experiences. Teachers rely on volunteers to enliven their science instruction and reinforce concepts in the classroom. Volunteers are now getting started with activities for the fifth year of this educational program.

Seventh year of Science Saturdays a success

Science Saturdays enjoyed another successful year. Nearly 300 kids in grades 3 through 5 attended the regular monthly Science Saturdays sessions, many came for multiple sessions, filling approximately 400 slots in the various sessions. Activities this year included roller coasters, structures, pendulums, electronics, chemistry, flight, and balloon cars. This year a new session on computational thinking was developed. This was inspired by a recent lecture at IHMC by Jeannette Wing of the National Science Foundation, where students learned about binary numbers, data compression, and the fundamentals of computing. We offered additional Saturday sessions this year

for topics where student interest was high in order to allow all interested children to participate.

In addition to the regular sessions, IHMC partnered with the National Museum of Naval Aviation in Pensacola to offer a special Science Saturdays session. This session focused on optics, and attendees explored lenses and light using gelatin lenses and CD spectrographs. Attendees also had an opportunity to watch the Hubble IMAX movie at the museum where they saw the phenomenal application of the basic science they had just experienced.

IHMC launches program to teach computer programming

IHMC introduced local students to Scratch computer programming through two initiatives this year. The first, in conjunction with Overgroup, a Pensacola based software firm, was a Saturday program coinciding with the international Scratch Day. Scratch is a program developed by MIT to provide young students with an accessible platform for learning the fundamentals of programming. At the City of Pensacola's



Studying optics at Aviation Museum



Students engaging with I LOVE Science

HAPPENINGS

■■■ IHMC EDUCATION PROGRAMS



Students enjoying Scratch Day at Fricker Center

Fricker Community Center computer lab, scientists introduced students to the basics of the Scratch interface. In addition, they taught fundamental concepts of computer programming. Students wrote simple programs during the session and were taught the skills necessary to continue using the free program at home or during future visits to the community center.



Scientists introduce students to fundamental concepts of computer programming

Based on the success of this program IHMC worked with local high school students to expand this partnership. Six teenagers spent four weeks working at IHMC during the summer on the program. Most had no prior programming experience and enjoyed the chance to learn programming as well as visiting IHMC labs and meeting with researchers. The teens

created a Scratch curriculum and educated middle school aged students at the Fricker Center's summer computer program. This experience culminated with a visit to IHMC by the summer students at the community center where they visited IHMC labs and presented their final programs to IHMC researchers and staff.



Paul Sheaffer working with student on Scratch



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