

INDUSTRIAL ASSESSMENT CENTERS

Student and Alumni Newsletter

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DOE To Reduce the Number of IACs in 2007!



Hello again IAC student and alumni colleagues! While the current U.S. energy situation has the demand for our graduates at an all time high, DOE is planning to reduce the number of Industrial Assessment Centers in the program by 2007. According to its latest solicitation for recompeting the schools within the program, DOE plans to cut the number of centers by nearly half next year and commits to funding these centers for two years only, rather than the normal five. My guess is the motivation for this move is tied to the increasing pressure on the federal budget, rather than the awesome performance of our centers, students, and alumni. As participants in this great program over the years, I'm certain our students, alumni, clients, and schools will be saddened to learn of the unfortunate situation.

Despite DOE's plans for the IAC, market demand for our new graduates and alumni continues to grow rapidly. I regularly receive inquiries from recruiters and employers interested in hiring IAC students. Many of these openings are posted on the IAC student/alumni website at www.iacforum.org. I also know that it's not unusual for soon-to-be graduates to go on several recruiting visits and receive multiple job offers. It's unfortunate that current conditions in the energy markets are driving this interest, but it's encouraging that your skills and experience are increasingly valued by employers seeking engineers who are well-prepared to provide solutions for their respective situations.

As I close this message, I would like to remind you to visit the website at www.iacforum.org and mark your calendars for the 2006 IAC Lead Student Meeting. The website has recently received a facelift, and we hope that the new discussion boards will be a more useful means of facilitating your communications. Also, the 2006 meeting will be held February 9–10 at the L'Enfant Plaza Hotel in Washington, DC. Alumni and employers are welcome to attend (contact martinma@ornl.gov if interested).

*Michaela Martin, PE, CEM
IAC Student Activities Coordinator
Oak Ridge National Laboratory*

DOE's Save Energy Now Initiative Offers Assessments and Information to U.S. Industry



The Industrial Technologies Program launched the **Save Energy Now** initiative to help U.S. businesses, factories, and manufacturing facilities save energy and continue to thrive during this time of diminished supplies and rising energy costs.

Energy supply disruptions caused by Hurricanes Katrina and Rita and recent hikes in energy prices are affecting everyone in the United States, including the nation's industrial sector.

Save Energy Now is part of a national campaign unveiled by Secretary of Energy Sam Bodman to highlight easy ways for Americans to save energy now and throughout this winter, when fuel prices are expected to remain high. This initiative will provide U.S. industry with technical assistance and information to save energy and money and increase productivity now. Visit the website at www.eere.energy.gov/industry/saveenergynow/.

From Energy Policy to Steam Training: Broad Range of Topics at 2005 Lead Student Meeting

Susie Allen (allensusie@comcast.net)

The 2005 IAC Lead Student Meeting took place February 16–18 in Washington, D.C. Students spent two days absorbing information from a



Mark Gerrish (UMASS) participates in a discussion during the 2005 Lead Student Meeting

plethora of sources and presentations. The meeting opened with an IAC/ITP update from Sandy Glatt (former IAC Program Director) followed by student activities updates from Michaela Martin

(Student Activities Coordinator) and a field update by Don Kasten from Rutgers University. From there, attention shifted to Mike Hiedary, representing the Bradley University IAC, with a discussion of the value of unique ARs in improving implementation rates. Then it was on to Drew McMahan for an overview of the 2004 Directors Meeting held in San Diego, California.

The lunchtime keynote speaker, Lowell Unger of the Alliance to Save Energy, discussed key issues in U.S. energy policy and the status of the energy bill. David Rogers, the acting program manager for DOE's Industrial Technologies Program, spoke on how energy policy is implemented through DOE's Energy Efficiency and Renewable Energy programs.

The afternoon career panel included speakers from industry, public service, and consulting firms, in a discussion of career options for IAC graduates. The



Several students enjoy casual discussion and dinner at Old Ebbitt Grill

day wound down with a roundtable discussion regarding student certificates, DOE-sponsored research opportunities, and ways to improve the IAC experience. The final day of the meeting was de-

voted to steam end-user training, developed by DOE's BestPractices program.

Complete presentations as well as photos and agenda information covering the 2005 Lead Student Meeting can be found on the IAC Student Forum website at www.iacforum.org

Vital Statistics: The Importance of the Student Registry

Susie Allen (allensusie@comcast.net)

The student registry is a vital part of the IAC program. Through the registry, the program administrators know who is currently active at each center and who is serving as lead student. Keeping this information accurate and up-to-date allows program notices, job opportunities, and other updates to be communicated to our students efficiently and quickly. The registry also provides key metrics that DOE and Congress use to evaluate the program's performance and establish funding levels. It is important for centers to keep registry information regularly updated.

FAQs about the IAC student registry:

Q. Is registering with the IAC program required?

A. Yes, registering is required of all IAC students. If you are not in the Student Registry, you will not be granted a program certificate.

Q. Does anyone really look at the data?

A. Yes, the data are analyzed monthly and reported to program administrators to determine the level of success the program is achieving.

Q. How long does it take to register?

A. Registration is conducted electronically through the IAC student forum website and takes only a few minutes.

Q. Will I be plagued with spam and junk mail after registering?

A. No. The registry information is used solely for communication among students, alumni, and administrators within the program. All data used for reporting are listed by ID number; names and addresses of students and alumni are NEVER distributed to, sold to, or accessed by anyone outside the IAC program.

Q. Can I update or change my status or information in the registry?

A. Yes. It's quite simple to make changes within the registry when necessary, and it's vital that each student do this to keep all data and records accurate and up-to-date.

Q. Is taking the exit interview a necessary part of the student registry?

A. Yes. Data from the exit interview provides information by which the program is measured. It is imperative that each student complete the interview upon leaving the IAC. Completion of the exit interview automatically changes your status from active to inactive. Lead students may use the Lead Student Query to ensure that registry and student status information is up-to-date.

Q. Do directors and administrators have access to exit interview questions and answers?

A. The exit survey data are collected by ID number, not by name; therefore a level of anonymity is maintained. This allows students to comfortably give honest assessments and answers to the questions in the exit survey.

Perfect Implementation: Rutgers Highlights Successful Assessments

Susie Allen (allensusie@comcast.net)

Each year the IAC performs nearly 700 assessments, saving customers throughout the country thousands of dollars in annual energy bills. No two assessments are the same, but some are a bit more unusual than others. At Rutgers University, the IAC Field Manager recently released several case studies from successful and unique IAC assessments. Whether the assessment involves an oil field equipment maker, a metal finishing plant, or a plastics manufacturer, IACs are out there finding ways to conserve resources, eliminate waste, and make the most efficient use of the energy consumed.

It is generally not too difficult for an experienced energy engineer to assess a facility and find numerous opportunities for cost and energy savings; the challenge lies in convincing management to make an investment in energy savings that may not be realized for months or years. So it's always

interesting when an assessment team can work with a plant to attain a 100% implementation rate.

The IAC at Louisiana Lafayette was able to reach just such a goal with their assessment of Cooper Cameron, a company that makes oil field equipment. Through compressed air, scheduling, waste reduction, and lighting, the team was able to identify a potential annual savings of 115,000 MMBtu and \$795,000 in reduced energy and waste. Another assessment that achieved a perfect implementation rate was performed by the University of Massachusetts IAC at Polymetallurgical Corporation. This metals manufacturer cut its utility expenses by more than \$70,000 upon implementation of the team's recommendations.

The full report outlining these and other assessments including unique recommendations, implementation rates, and energy and cost savings can be found on the Rutgers site at http://iac.rutgers.edu/technicaldocs/case_studies.php.

Save More Energy — Help Your Customers Find Funds to Implement ARs!!

Michaela Martin (martinma@ornl.gov)

Students and IAC energy professionals should regularly visit the website from the Federal Energy Management Program (FEMP) on energy efficiency funds and demand response programs at www.eere.energy.gov/femp/program/utility/utilityman_energymanage.cfm. The website provides updated, state-by-state details on possible funding sources for commercial, industrial, and federal energy projects.



Map of energy-efficiency funds and demand response programs, DOE-FEMP.

For example, the Express Efficiency Program in California provides rebates to small- and medium-sized customers (500 kW or less and/or 20,800 therms/month or less) for specific energy-efficient products including lighting, air conditioning, refrigeration, motors, and natural gas-fired equipment, such as boilers. Customers can receive rebates up to a maximum of \$200,000 per service agreement, per fuel (electric or gas), each year.

In Texas, the Public Utilities Commission oversees the Commercial and Industrial Standard Offer Program. This program provides incentives to implement energy-efficiency measures in retrofits or renovations. Incentives are paid for both energy and summer peak-demand savings and are based on either deemed savings values or measurement and verification. Though incentive levels and eligibility requirements vary across the utilities in Texas, the basic program requirement is that customers have a peak demand of at least 100 kW. Conservation measures are not prescribed, but together must provide at least 10 or 20 kW (depending on the utility) of summer peak demand savings per project. Incentive payments range from \$150 to \$200 per kW (at peak) and \$0.05 to \$0.07 per kWh (of first-year savings).

**A “Mole’s-Eye View” from West Point:
A Student’s Perspective of the 2005 Directors Meeting**

*Bill Eger, Graduate Student – University of Dayton
(egeriicw@notes.udayton.edu)*

To quote Henry Ford: “Coming together is a beginning; keeping together is progress; working together is success.” This spirit was apparent during the 2005 IAC Directors Meeting. The beautifully nestled banks of the Hudson River and lively spirit of West Point’s Thayer Hotel welcomed representatives from each university-hosted center, Rutgers University, and DOE. Attendees were there to provide a review of the previous fiscal year and, more importantly, to look forward to the IAC’s future influence and impact on industrial energy management.

The 2005–2006 fiscal year marks several key DOE motivations. The overarching question is: What is the IAC program’s impact on student development and effectiveness in training the next generation of fundamentally sound, energy-literate engineers?

Experiential feedback is invaluable for the future of the IAC program. A very simple way for you to help the program, according to Michaela Martin, IAC Student Activities Coordinator, is through student registration and exit interviews. Furthermore, informing your directors, Michaela, and DOE of your successes while in school and after graduation provides important feedback on how the program can better accommodate educational opportunities for students. Contrary to popular belief, directors and IAC administration are extremely interested in forging relationships with students and alumni and meeting their needs. So, if you have an idea, comment, concern, or thought... speak up!

As in past years, DOE is keen to use and distribute DOE tools and BestPractices software. Once audits, analysis, and reports are complete, these tools and software packages can assist the plant managers, engineers, and maintenance personnel in maintaining and managing their facilities’ energy systems. Having IAC students and staff understand, use, and promote such tools is an important vehicle for mass distribution; through real-world IAC experiences, the tools can be adapted to better serve the needs of clients.

In conjunction with promoting the BestPractices tools, general reporting is of utmost importance. As students and directors, it is imperative to maintain quality and consistency in reporting to our clients. Specific examples where questions have arisen include maintaining checks and balances to prevent savings from being overstated; applying energy savings to every recommendation (even waste and productivity ARs!); maintaining report readability; and reporting appropriate positive and negative energy and cost estimates (e.g., negative values when including fuel-switching components of an AR). In all cases, regardless of specific center operation, students should cross-check each other’s work and be open to internal peer review. Not only do such internal “checks and balances” provide a medium for improving one another’s quality of work, but the excellence of a center as a whole.

Several industry practitioners and university researchers presented innovative technologies and their means of creative industrial application. Example topics included geothermal sinks/sources, solar-thermal and solar-photovoltaic systems, boiler heat transfer and combustion improvements, and

thermal storage opportunities. These seldom-used methods of energy-efficiency improvement have potential for enormous implications in industrial energy management. With these background and economic considerations for industrial applications, the presented material laid new framework for energy-saving recommendations.

Increasingly, the availability of rebates is becoming a useful incentive to organizations wishing to implement energy-saving technologies. Such incentives, made possible through "societal benefit" taxes, are available through federal, state, and local governments and through utility-specific financing (see the previous article on the FEMP website for efficiency and demand response funds available to our customers). Students should be aware of these opportunities as possible funding mechanisms for clients. National databases and utility-specific information regarding incentives are available at most IAC center locations. Furthermore, the subsidizing of renewable energy projects is becoming more popular as fossil-fuel independence becomes a mainstream topic. Such subsidization, through Renewable Energy or Tradable Certificates, is a vehicle to promote a sustainable energy future among industrial clients. In either case, funds for organizations to consider energy-efficient retrofits or clean forms of energy are readily available. Students, working with directors, are encouraged to pursue such opportunities applicable to their respective clients.

Several centers presented unique case studies highlighting innovative deviations from "normal" auditing challenges. These case studies gave insight into how IAC students are pursuing "outside-the-box" approaches to industrial energy challenges, for example, extending an acid bath's life; recommending a hydrogen research park; even auditing an off-shore drilling rig! These are all examples of what students are accomplishing in the field.

The "moles-eye" view of the Directors Meeting provided an interesting opportunity to learn about the many programmatic and top-level issues within the IAC program. The topics discussed and goals set forth illustrate possibilities for immense levels of success. Success is imminent when directors and program administrators come together and dedicate themselves to work toward the common goal

of improved energy-efficiency capabilities. And working with expertly trained young engineers makes for an ever stronger and more successful IAC Program.



Spotlight on Syracuse

*Dave Britt – Syracuse University IAC
(dave_britt7@hotmail.com)*

This past year has seen many positive developments at the Syracuse University (SU) IAC, all in support of providing professional-grade services to our client base.

The SU IAC is busily working to improve its staff skills. Two graduate students (David Britt of Victory, New York, and Michael Matzura of Parkridge, New Jersey) attended a New York State Energy and Research Authority (NYSERDA)-sponsored conference on "Combined Heat and Power (CHP) Opportunities in the Food Industry" to increase center knowledge on CHP opportunities, technologies, and regulations.



**The Syracuse University
IAC Team**

The SU IAC is looking for opportunities to promote CHP technology. In addition, a CHP feasibility study, sponsored by a local utility, now in its second year, is providing the SU IAC an invaluable opportunity to learn about the complex topic of CHP. Plans are underway to design and construct a working CHP model to promote the technology and for educational purposes. SU IAC graduate students Michael Fortin, Michael Matzura, and David Britt are using their IAC experience to advise the energy projects.

The SU IAC staff is currently developing a training manual to expedite and formalize internal training of new staff. This is in addition to an operations manual that the SU staff completed in February, posted on the IAC student forum website at www.iacforum.org:8080/iac/tools.jsp. The center will be implementing this manual soon as it is in the process of hiring two new undergraduate analysts.

Through dedication and hard work, as well as rigorous quality checks, the Syracuse staff made significant improvements to its energy assessment reports. Report quality has improved greatly due to internal standardization guidelines and a robust review process. At the 2005 IAC Directors Meeting at West Point, New York, the SU IAC report was considered best in readability according to tests performed by Rutgers.

The SU IAC has continued to develop its mutually beneficial partnership with the Manufacturers' Association of Central New York (MACNY) and has forged a new relationship with the Mohawk Valley Applied Technology Corporation (MVATC). Recently, an SU IAC Case Study was featured in a MACNY publication. Professional relationships with industrial and economic associations have been tremendously helpful in acquiring new clients. Efforts have been made to minimize prospective clients' difficulty in starting the energy audit process. The recently updated SU IAC website (<http://iac.syr.edu/Index.html>) allows potential clients to complete a "Contact Us" form and accelerate the process.

Several energy projects with some level of IAC involvement are underway at SU. Senior Mechanical Engineering Capstone design projects researching renewable energy viability, energy conservation measures, and energy-efficiency



Syracuse IAC Director Frederick J. Carranti shares his knowledge with IAC graduate student Michael Matzura

measures at an office building (led by SU IAC Analyst Matan Marom) all began last month. Frederick J. Carranti, P.E., SU IAC Director, has been active in raising awareness of energy usage and conservation in the community. In particular, he has become a contributing member of both the Syracuse University Energy Council and Onondaga County Citizen Energy Committee.

An additional Assistant Director has been named to the center. Dr. John F. Dannenhoffer has nearly 25 years of experience in the industrial arena in design, modeling, and analysis and project management. He will be a tremendous asset to the SU IAC in the coming years. Dr. Jensen Zhang will continue as Assistant Director, providing expertise in IAQ and HVAC issues.

In 2005, two SU IAC staff members, David Britt and Brian Annicharico, became certified in the IAC Program. Staff member Michael Matzura is working towards IAC program certification. This important credential is becoming recognized in consulting circles.

The SU IAC is well represented by recent alumni achievements. Brian Annicharico and Adam Knapp are practicing as professional energy consultants. Adam, a Certified Energy Manager (CEM), has joined a prestigious local consulting firm. The firm, C&S Companies, has been so pleased with Adam's IAC experience that they are now actively recruiting IAC graduates. For more information, contact Adam at C&S Companies through the link provided on the IAC student forum website at www.iacforum.org:8080/iac/announcements.jsp.

The Importance of the IAC

Matt Swanson, University of Illinois-Chicago IAC (mswans2@uic.edu)

In April 2004, the UIC-IAC conducted an assessment of an aluminum smelter in the Chicago area.



Matt Swanson hard at work in the UIC IAC

One recommendation was to purchase and install a vertical floatation decoater, a new process just starting to penetrate the market. As UIC-IAC Lead Student, I researched, wrote, and presented the recommendation to

the client. Afterwards, I wrote a paper about the technology and presented it to the 2005 ACEEE Summer Study in West Point, NY.

About a year and a half ago, the IAC team at UIC did an assessment of an aluminum smelter. Little did I know that I would be giving a presentation at the ACEEE Summer Study the next summer regard-

ing a new technology that we recommended for adoption by the plant. Although confident in my presentation skills, as an undergraduate student, the thought of presenting a non-commercialized technology in front of several established engineers was overwhelming.

The fact that I was presenting at this particular conference was interesting. In the time I have spent at the IAC, I have had the privilege of attending several seminars and conferences, which has enabled me to form a large network of contacts in energy engineering. Several of the people I knew were in attendance at the ACEEE Summer Study, and several of those people were kind enough to attend my presentation. The engineers in the room considered me a peer, not a student. In fact, the design engineer of the technology I presented later told me that he could not have presented it better himself. Giving this presentation ranks as one of the best experiences of my life. For me, one benefit that the IAC provides students that an internship cannot is the feeling of being accepted by the engineers in the industry.

(You can find Matt Swanson's paper and presentation on the IAC Student Forum website at www.iacforum.org.)

University of Dayton IAC Students Extend Services to Non-Profit Organization

Bill Eger, Graduate Student – University of Dayton IAC (egeriicw@notes.udayton.edu)

Last year, the University of Dayton IAC was contacted by The Ability Center (TAC) Industries to perform an assessment. TAC is a non-profit industry in Springfield, Ohio, established to provide employment and services to those with mental disabilities. TAC employs 450 people with disabilities in various jobs. Although TAC did not meet the standard IAC criteria, the students at the UDIAC agreed to perform the assessment;



Armon Holt, Bill Eger and Kevin Carpenter were part of the Dayton-IAC team for The Ability Center (TAC) assessment

not as an IAC-sponsored assessment but as a free service.

To make the most of the opportunity, UDIAC assistant director Becky Blust included four undergraduate students from her project management class to assist the IAC students with the assessment and to communicate directly with the client. Blust's students contributed to the project by writing fundamental recommendations and assembling the report. One student, Armon Holt, recalls the value of the project and the interaction with the IAC students: "They showed me how to really think outside the box and showed me how a team of engineers with different specialties can work together and achieve the same goal."

Together, the team identified more than \$50,000 in energy-savings opportunities. "We're using the report as our strategic energy-conservation plan for the next five years," said Eldon Storer, Quality Assurance Manager at TAC. The largest identified opportunity, installing capacitors to improve the plant power factor, has already been implemented. This action alone is projected to save the company more than \$16,000 per year with a payback of less than six months. TAC was also open to more novel technologies such as solar energy, which many other industries do not find feasible. One recommendation included active solar space heating. The students who performed the audit found it very encouraging to discover an industrial plant where all workers were valued and whose company objective and motivation was not simply for capital gain but rather for the common good of individuals. We look forward to maintaining contact with TAC and watching their progress in energy savings measures.

University Briefs

Arizona State University

Ahmed Alghandoor presented a paper on energy savings potential from the IAC program at the ACEEE Summer Study in Industry, in West Point, New York. Ahmed's trip was funded by the IAC through ORNL.

Bradley University

In the past several months, we have been striving to improve the readability and reliability of our reports. For example, to further explain the assessment recommendations, we add pictures or schematics of the proposed idea. As the saying goes, "a picture's worth a thousand words," and if we can reduce the ambiguity of the recommendations, the client is more likely to implement them. Also, instead of placing the technical and savings calculations within each recommendation, we now place the calculations in an individual appendix at the end of the report for each recommendation. We realized that upper-level management has more say in recommendation implementation. For each recommendation, management wants to know the cost savings, payback period of capital investment, and how the implementation will positively impact their overall process efficiency and improve their facility's bottom line. If they want to know how the savings were calculated, they can simply refer to the appendix.

In May 2005, with IAC funds from ORNL, Jeff Schmidgall attended two conferences presented by the Compressed Air Challenge. Equipped with the knowledge from this BestPractices conference, Jeff recently gave a presentation to the BUIAC staff and fellow classmates that emphasized the great cost savings potential of compressed air systems. He also explained basic compressed-air system components and practical ideas for improving the efficiency of these systems.

For summer 2005, Eric Ross and Noah Burkett received EPA internships. Their IAC experience gave them an advantage when applying for these positions.

Colorado State University

Dr. Douglas Hittle was appointed the new CSU IAC Director in May 2005, and Jonathan Hicks was appointed the new lead student in August 2005. CSU is continuing to serve a wide geographical area by revisiting New Mexico, North Dakota, and Wyoming.

We visited a wide variety of manufacturers this year from beverage and bread producers, electronic circuit board and silicon wafer manufactur-

ers, wood fabricators, final-step assembly plants that made products from electrical generators, to front-end loaders and airplanes. One plant we visited, a town-run brick manufacturer, was more than 100 years old. This manufacturer recently installed state-of-the-art robotic equipment for mixing, shaping, drying, and firing its bricks. This system also uses a comprehensive heat recovery system to reduce gas consumption of the overall process. Other efficient technologies we saw were the use of high bay fluorescent lighting and a sawdust baghouse air-recirculation unit.

Over the past year, new recommendations in renewable resources have been considered and suggested by CSU IAC staff. Many solar ideas have been recommended—solar walls, solar trough hot water heating, solar generator set heating, and suntube skylighting. Other interesting recommendations have focused on the use of small electrical generation equipment for combined heat and power applications. Equipment installations suggested ranged from a sustainable biomass generation unit to small microturbine generators.

The program recently graduated four team members. Two are pursuing further educational programs in the energy field. Paulo Tabares is working on a PhD in HVAC systems, and Scott Johnson is pursuing a master's degree in renewable energy systems. The other two IAC students leaving, Jesse Dean and Robert Adair, are employed and working in the energy field. Since losing these members, CSU IAC has recently hired four new students: Maren Bennet, Eric Grosso, Karthik Krishnan, and Ravi Singaraju. Maren is a new graduate student attending CSU on an assistantship through the IAC.

University of Florida

UFIAC, along with the University of Florida's College of Engineering, has joined the efforts of many across the country to help the victims of Hurricane Katrina. UFIAC students helped collect canned goods and other items across the various Engineering departments for transport to the affected areas.

We are pleased to welcome four new members to our IAC: KuangHao Yeh, Mike Rademaker, Amey Kelkar, and Gaye Kidan.

Georgia Tech

The Georgia Tech IAC has now completed more than 800 industrial assessments in and around Georgia.

Paolo Baldisserotto graduated with a Masters degree in Mechanical Engineering from Georgia Tech in the fall of 2004. Paolo was a co-op student at the Georgia Tech IAC for four semesters during his Bachelors study, and continued working part-time at the IAC while obtaining his Masters.

Will Randall graduated with a Bachelors degree in Industrial Engineering at the end of spring 2005. Will worked with the Georgia Tech IAC for four semesters and is attending law school in Ohio.

Andy Riddle has completed four semesters of co-op with the IAC program and continues working part-time with us during his senior year. Andy will graduate in Chemical Engineering at the end of spring 2006.

Brian Giles, Valerie Lie, and Achin Chugh continue working with the IAC program at Tech on alternating semesters.

Iowa State

This has been a productive year for the Iowa State University IAC. Undergraduate student Trevor Gilbertson received his IAC certification. With IAC funds from ORNL, Alex Rodrigues, Som Shrestha, and Mirka Deza completed the compressed air training levels "Fundamentals of Compressed Air Systems" and "Advanced Management of Compressed Air Systems." Alex also went to Ann Arbor, Michigan, and earned certification in process heating.

Iowa State has named a new lead student, Justin Walker. Justin will be entering graduate school for Industrial Engineering in spring 2006.

Lehigh

This past year, Chad Kettering met the requirements for IAC certification.

Louisiana Lafayette

The University of Louisiana at Lafayette Industrial Assessment Center is off to a good start this new fiscal year. The UL IAC completed four assessments by the end of October 2005. The team consists of four experienced members: Chris Reynolds and Jesus DaCosta, Engineering and Technology Management; Keith Stutes, Industrial Technology; and Jason Bourgeois, Mechanical Engineering. The UL IAC has also hired three new members: Amanda Marchand and John Pechon, Mechanical Engineering; and Chad Olsen, Engineering and Technology Management.

Hurricanes Katrina and Rita directly affected UL IAC territory in Louisiana, Mississippi, and Texas. Manufacturing has taken a large hit and many previous customers of the UL IAC were damaged and destroyed. The UL IAC is doing everything possible to help its customers in the rebuilding process.

Loyola Marymount

Kaiki Ragragola, Sherif Tewfik, Ryan Tiraschi, Joseph Jabra, and Daniel Etcheto earned IAC student certificates in July 2005.

North Carolina State University

Dr. Stephen D. Terry, Engineering Extension Specialist in Mechanical & Aerospace Engineering at NCSU, fulfilled the requirements to become a Qualified Steam Tool Specialist/Instructor in the Steam Best Practices Program.

Garrett Raper attended the Annual Student IAC Meeting in Washington, DC, in February 2005.

In June 2005, Justin Ng was selected as the new Lead Student for the NCSU IAC.

Three NCSU students attended the June 2005 Steam End Users Course in Norfolk, Virginia. Dr. Stephen Terry taught the course.

In August 2004, Danville Utilities of the City of Danville, Virginia, asked the NCSU IAC to assist local industry in reducing its energy usage. Danville Utilities' electric rates were scheduled to increase by 50 percent on July 1, 2005, and the company was concerned about the effect this new rate would have on the local industrial plants. The NCSU

IAC has responded to this emergency and has conducted five IAC assessments in the Danville area. Additionally, the NCSU IAC will be conducting special energy seminars tailored specifically to the needs of Danville Utility industrial customers.

Mississippi State University

The Mississippi State IAC attended the four-part CHP webcast. Each part was based on a different site where CHP is being used. The webcast presented information about the setup, cost, and benefits of each of the projects.

Oklahoma State University

Seak-Hwa Tan participated in 19 assessments and received an IAC student certificate in July 2005.

Oregon State University

The OSU IAC has been proud to send out qualified engineers and improve its own productivity these past six months.

Recent graduating IAC veterans have taken advantage of great opportunities presented to them. One graduate is now pursuing a post-graduate degree in the field of renewable energy. Another veteran has taken a position in the Oregon Secondary Wood Products Industry as a quality assurance engineer.

The OSU IAC has adopted a more visually based report tracking system. A tracking sheet for each active report displays (1) important contact information, (2) utility analysis results, and (3) milestones achieved in report baseline and AR development. Posting and maintaining these sheets in clear view has improved internal productivity by simplifying communication. Report leads and the team can now easily share important data, assess each member's progress, and identify report bottlenecks.

San Diego State University

Four San Diego State University IAC students graduated during the past year and are now working as energy engineers. Annika Moman and Carlos Valdez joined other IAC alumni in working at the San Diego Regional Energy Office. Currently, we have five students working for the center. This year

with IAC funds from ORNL, Nicole Kennard and Oli Bachie attended professional energy-related conferences (The Industrial Energy Technology Conference in New Orleans and the Institute of Industrial Engineers Annual Conference in Atlanta, respectively). Both conferences provided valuable experiences for the attendees. In addition, the materials brought back from the conferences were used by other students who did not have the opportunity to attend. It was inspiring to learn about the latest technologies in energy efficiency and to gather knowledge from the experiences of various experts.

San Francisco State University

Five students graduated from the IAC program in May. Three of these have been hired at energy companies. Iva Zho was hired by NEXANT; Crystal Vine, by Quantum Consulting; and James Gingras, by Enovity. These students all graduated with a B.S. in Mechanical Engineering. All three companies operate in San Francisco Bay Area. The other two students (Amit Kanungo, EE, and Lawrence Nti, ME) are on F-1 visas, which complicates their being hired. We continue to be contacted by companies (like KEMA) who need IAC-trained people.

Syracuse University

Graduate student Michael Matzura received an IAC student certificate in October 2005. Michael completed 53 assessments during a 15-semester service period. Congratulations, Michael! For more on the accomplishments of the entire Syracuse IAC see the "Spotlight on Syracuse."

Texas A&M

Luke Hargrove has been named lead student for the Aggies IAC. Luke also attended the ACEEE Summer Study in Industry with IAC funds from ORNL.

University of Dayton

The University of Dayton would like to congratulate Kevin Carpenter on graduation and a successful two and a half years with the IAC program. Kevin made significant contributions to over 54 audits and as Lead Student, guided the UD IAC with unmatched leadership and success. In April, Kevin

was awarded the Dr. Henry Chuang award by the University of Dayton for his significant contribution to the field of energy-efficiency and energy conservation. Kevin is currently entertaining several opportunities to work for energy-related organizations. Good luck, Kevin!



Dayton's students know how to "juggle" their busy assessment schedule

IAC students are in the midst of a myriad of independent research projects. Student research initiatives include methodologies for measuring, modeling, and reducing air

flow through boiler and oven systems; comparing statistical models and characterization of facility energy use with actual implemented savings data; economic modeling and characterization of retrofit considerations; and design of a net-zero-energy university house to be built in summer 2006. The house will provide a student living/learning environment for energy and sustainability issues.

University of Illinois-Chicago

The members of the University of Illinois at Chicago IAC have had a busy summer traveling the globe to present papers, perform assessments, or explore Europe.

Arturo Hernandez coauthored a paper for publication with ASME. With IAC funds from ORNL, he also presented the paper in Houston at the ASME Fluid Engineering Summer Conference. Matt Swanson became the first undergraduate ever to achieve a DOE BestPractices Qualified Steam Specialist certification. Aaron Hart spent the summer helping the Army Corps of Engineers by participating in an energy assessment on the Steward Army Base in Hinesville, Georgia. Jonathan Aardsma spent the summer on a solo trek through Europe before returning to the states to begin work with Noel Corral at the Energy Resources Center. Recent IAC student Steve Spentzas has been hired as a graduate student at DOE's Midwest CHP Application Center.

University of Massachusetts-Amherst

UMass has published a new Chilled Water Assessment tool to add to the DOE's Best Practices tools. A version was published on the web site in April and development and improvements continue.

UMass has been pushing hard this year to get students qualified as DOE BestPractices Tools Specialists. Alex Von Braun was qualified a Pump System Assessment Tool (PSAT) specialist last June and Ricardo Baquero, Lauren Mattison, and Mark Gerish qualified as Steam Tool Assessment specialists in July 2005.

Many students have graduated from the program and continue in the energy field: Mike Socks is working for Efficiency, Vermont, a statewide provider of energy-efficiency services under contract to the Vermont Public Service Board. Mia Devine is working for the Alaska State Energy Office. Brendan O'Connor received his Masters from the University of Massachusetts and is now pursuing his PhD at the University of Michigan. Christopher Beebe is working for Keyspan Energy promoting energy efficiency and CHP projects for the gas utility. To fill the large shoes vacated by the above, the center has hired three new graduate and two new undergraduate engineers.

University of Miami

During 2004–2005, the University of Miami Industrial Assessment Center (MIAC) further developed our software used for logged electrical data analysis. The new interface is Visual-Basic based and user friendly. Our center gained two new undergraduates and a graduate. One of our IAC graduates finished his Masters in Industrial Engineering and is now working for Florida Power and Light. We are also bidding farewell to one of our IAC graduate students who has participated in 121 assessments since September 2000, the highest number of assessments by an IAC student amongst all 26 IAC centers in the country. He is finishing his PhD in Industrial Engineering and is joining Boston Scientific in Miami Lakes from October 2005. Funded through ORNL, two of our present IAC graduates attended the 2005 WEEC conference held in Austin, Texas, in September 2005. One student attended the seminar on AEE's Certified Measurement and Verification Professional program.

University of Michigan

Dr. Margaret Wooldridge replaced Dr. David Everest as the Assistant Director of our center in December 2004. Three of our students received IAC student certificates in April 2005: Michael Hong, Jonathan Urbanek, and Wee Hong Wong. Our center is on schedule to complete its 300th audit milestone by December 2005.

University of Texas at Arlington

Rory Cannaday received his IAC student certificate in March 2005. Assistant Director Sarah Phillips left the center January 2006; she will be dearly missed.

University of Utah

Following the flurry of summer assessments, we are hard at work on reports. Once again we visited wide variety of manufacturers—from military electronics (shhh, it's top secret) to ice cream (mmmmm, they gave samples)—from south (St. George, Utah), to north (Boise, ID). We will miss several great students who obtained their bachelors degrees and moved on: two have jobs in industry with energy efficiency job tasks and one went to graduate school in Charlottesville, VA. One student, Doug Crawford, has made the transition from undergraduate to graduate with us. Doug will be working with a local company (previously visited by the BestPractices teams) on pinpointing demand issues. We have four new students who have a lot of enthusiasm and are learning quickly. Over the summer two students, Ryan White and Anthony Vance, completed training as Qualified Specialists for the Steam System tools.

University of Wisconsin at Milwaukee

Last July, UW-Milwaukee Center celebrated its 500th assessment, which coincides with the centers 20th year of operation. The entire staff of the UWM



Cause for celebration: the UW Milwaukee IAC completes its 500th assessment

IAC is proud to have served Wisconsin companies for such a long time and looks at the milestone as simply one of many to come. The event was celebrated with cake and group photos and attended by the largest assessment staff the UWM IAC has ever sent. Dr. Umesh Saxena has been the director of the UWM center since its inception in 1986 and plans to continue guiding its course in the future.

West Virginia University

IAC-WVU was awarded the Center of the Year Award at 2005 Directors' meeting in West Point, New York. We congratulate our ex-student Hima Bindu Godavarthy on accepting the position of Manufacturing Quality Engineer at Hydro Aluminum in Florida.

Two graduate students (Yogesh Mardikar, February 2005, and Raviraj Chavan, July 2005) and three undergraduate students (Katherine Taylor, Christopher Rairden, and Amber Staud, August 2005) were hired as new IAC students. All underwent extensive safety training by Dr. Gopala followed by another training offered by the Environment Health and Safety program at WVU.

Three IAC students were awarded the certificate for the Fundamentals of Compressed Air Systems training class at the PPG facility in Natrium, West Virginia, on April 5, 2005.

Subodh Chaudhari finished his thesis on Investigation of the Load Profile of Induction Motors for his MS degree and graduated in summer 2005. He joined the fall 2005 PhD program and works at the IAC.

Dr. Gopalakrishnan and Deepak Gupta attended the 2005 ACEEE Summer Study meeting in West Point, New York, and presented a refereed paper and poster on "Energy Efficiency Measures in the Wood Manufacturing Industry."

Dr. Plummer retired after his exemplary service to the university and the WVU IAC, and Dr. Gopalakrishnan was named as the new IAC director at WVU in August 2005.

IAC Program Contact Information

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Calendar

- The deadline for applications for DOE **funding for Industrial Assessment Centers** is January 24, 2006. The solicitation for applications can be found at: <http://e-center.doe.gov/iips/faopor.nsf/All+Solicitations/DE-PS36-06GO96000?OpenDocument>.
- The **IAC Lead Students Meeting** will be held at L'Enfant Plaza Hotel in Washington, DC, February 9–10, 2006. Travel arrangements for students will be handled through ORNL. Alumni interested in attending should contact Michaela Martin at martinma@ornl.gov.
- **ASHRAE Winter Meeting** January 21–25, 2006. Chicago, Illinois. www.ashrae.org/template/AssetDetail/assetid/45794
- **Association of Energy Engineers World Energy Engineering Congress (WEEC)**, September 13–15, 2006, Washington, DC. <https://www.aeecenter.org/Shows/>
- **Industrial Energy Technology Conference (IETC)**, May 9–12, 2006, New Orleans, Louisiana. http://energysystems.tamu.edu/education/IETC_2005/index.html