



Call for Papers, Registration, and Meeting Information

Illinois State Academy of Science
102nd Annual Meeting

April 9-10, 2010

Hosted By

Millikin University, Decatur, Illinois

Divisions of the ISAS

Agriculture
Anthropology & Archaeology
Botany
Cell, Molecular & Developmental
Biology

Chemistry
Computer Science
Earth Science
Engineering & Technology
Environmental Science

Health Sciences
Microbiology
Physics, Mathematics &
Astronomy
Zoology

Submission of Abstracts

ISAS members, and individuals who are joining the ISAS, are invited to submit abstracts of papers and posters for presentation in any of the above recognized ISAS divisions. Accepted posters will be presented Friday, April 9, 2010 between 3:15 and 5:15 PM. Oral presentations accepted by Division Chairs will be scheduled for Saturday, April 10, 2010 between 8:00 AM and 4:30 PM. Since the abstracts will be published as a special issue of *Transactions of the Illinois State Academy of Science*, they should be prepared with care.

- All abstracts will be submitted using the online form that may be reached from the Members Only link of the ISAS website (<http://www.il-acad-sci.org/>). Members sign in using their ISAS username and password.
- Abstracts can be submitted beginning December 1, 2009 and **submissions will close at 5:00 PM on February 15, 2010.**
- **Presenters must be members of the ISAS before submitting their abstracts. However, to facilitate abstract submission, non-members may obtain a temporary username and password by using the following link <http://www.il-acad-sci.org/Register.aspx>.** After completing the form, a temporary username and password will automatically be sent to your e-mail. Afterward, you may login through the Members Only page and click on the "Add/Edit Your Abstract Submission" link to submit your abstract.
- Once you have submitted your abstract, you must also register for the meeting and pay your 2010 membership dues, if applicable (see below).

Registration Information

Individuals are invited to register for the ISAS annual meeting by returning the enclosed registration form (see last page) or registering online at <http://www.acteva.com/booking.cfm?bevaid=192950>. **The deadline for receipt of pre-registration forms is March 18, 2010, after which registration fees increase by \$10.** You will also be able to register April 9 and 10th at the registration table in the east lobby of Leighty-Tabor Science Center.

For the 2010 meeting, the ISAS Council will sponsor the first 100 student registrations and waive the \$35 meeting registration fee. However, students who are not members or have not renewed their membership in 2010 must still pay \$22.50 to join the ISAS. Each student who wishes to receive free registration must register at the website <http://www.acteva.com/booking.cfm?bevaid=192950> or follow the instructions below.

- Call or e-mail Ms. Robyn Myers (217-782-6436; rmyers@museum.state.il.us) with your request for free student registration. Include in your e-mail or phone call your name, school affiliation, and ISAS membership number, if applicable.
- Ms. Myers will assign you a Student Registration Code Number and send it to your e-mail address.
- Please put your Student Registration Code Number on the registration form.
- Students who follow this procedure must submit their registration and any payment necessary postmarked by March 18.

Millikin University students with a valid student ID (who are not authors or co-authors of meeting presentations) are invited to attend oral paper and poster sessions free of charge. These students must register as a "Non Member Guest (Millikin student, no meals)." Guest of attendees wishing to attend the keynote addresses must register as a "Non Member Guest (other, includes meals)," a \$30 cost.

When registering, please consider a contribution to the Academy. The ISAS Council appreciates in advance your consideration of a donation.

Remember, if you are planning to present at the meeting, three separate actions are required: 1) submission of your abstract (deadline is February 15), 2) registration for the meeting (pre-registration deadline is March 18), and 3) become a member of the ISAS or renew your ISAS membership for 2010. You will not be able to submit an abstract unless you are a current member of the ISAS or receive a temporary username and password. Individuals who are not currently ISAS members, who plan to submit an abstract, can get a temporary username and password at the following link <http://www.il-acad-sci.org/Register.aspx>.

Schedule of Events

Friday, April 9

- 11:00 – 5:30 **Registration** – East Lobby of Leighty-Tabor Science Center
11:00 – 1:00 **ISAS Council Meeting (includes lunch)** – Lindsay Schuab in Richards Treat University Center
12:00 **Lunch (on your own)**
12:00 – 3:00 **Posters set-up** – Kirkland Fine Arts Center
1:00 – 3:00 **Graduate School/Job Fair** – Lower Level of Richards Treat University Center
3:00 – 3:15 **Break**
3:15 – 5:15 **Poster Session** – Kirkland Fine Arts Center
5:15 – 5:30 **Break**
5:30 – 7:30 **Banquet/Keynote Address: Mark Matlock** – Lower Level of Richards Treat University Center
7:30 – 7:45 **Break**
7:45 – 9:15 **Star Gazing** – Requarth Observatory in Leighty-Tabor Science Center
Overnight Decatur Conference Center, Millikin University, or other arrangements

Saturday, April 10

- 7:30 – 12:00 **Registration** – East Lobby of Leighty-Tabor Science Center
7:30 – 8:00 **Breakfast** – East Lobby of Leighty-Tabor Science Center
8:00 – 9:45 **Oral Presentations/Division Meetings** – Leighty-Tabor Science Center, Kirkland Fine Arts Center, Shilling Hall, Pilling Chapel
9:45 – 10:00 **Break**
10:00 – 12:00 **Oral Presentations/Division Meetings** – Leighty-Tabor Science Center, Kirkland Fine Arts Center, Shilling Hall, Pilling Chapel
12:00 – 1:30 **Lunch/ISAS Business Meeting/Keynote Address: Robert Finley** – Lower Level of Richards Treat University Center
1:30 – 3:00 **Oral Presentations/Division Meetings** – Leighty-Tabor Science Center, Kirkland Fine Arts Center, Shilling Hall, Pilling Chapel
3:00 – 3:15 **Break**
3:15 – 4:30 **Oral Presentations/Division Meetings** – Leighty-Tabor Science Center, Kirkland Fine Arts Center, Shilling Hall, Pilling Chapel
4:30 – 5:00 **Award Announcements** – Lower Level of Richards Treat University Center
5:00 **102nd Annual ISAS Meeting Adjourned**

FRIDAY, APRIL 9TH 2010

Lunch

Lunch on Friday is on your own unless attending the ISAS Council Meeting. Attendees can go to Wornick Dining Hall or Big Blue Bistro in Richards Treat University Center. Also, there are several places to eat around campus including Lock, Stock, & Barrel, Jimmy Johns, Subway, Donnie's Homespun Pizza, and Garcia's Pizza.

ISAS Graduate School/Career Fair

The ISAS will be hosting a graduate school/career fair for attendees of the meeting. This fair will be held in the lower level of Richards Treat University Center from 1:00 – 3:00 PM. Participants in the fair will include federal, state, and local agencies, private industry, and graduate/professional schools. The fair will be immediately followed by a poster session in which students will be able to present their research to potential graduate schools and employers.

Poster Session

A poster session will be held from 3:15 – 5:15 PM in the Kirkland Fine Arts Center. Presenters can hang their posters up any time between 12:00 – 3:00 PM. Posters are to remain up until 5:15 on Friday. Attendees are encouraged to view posters at any time and visit with poster authors during the formal poster session. Presenters are expected to stand by their poster from 3:15 – 5:15 PM. Judges from each Academy Division, where applicable, will be reviewing posters at this time for award judging.

Poster easels and cardboard backing will be provided. Please bring your own thumbtacks to attach your poster to the backing. No tape is permitted. **Poster size is limited to a maximum of 36 inches high by 48 inches wide.**

Banquet

The banquet will occur in the lower level of Richards Treat University Center after the poster session and will take place from 5:30 – 7:30 PM. Mark Matlock will be the keynote speaker and will talk about the future of agriculture as a renewable resource.

Keynote Address

5:30 – 7:30 PM

Lower Level of Richards Treat University Center

Providing Renewable Resources via Agriculture



Mark Matlock
Sr. Vice President Research
J.R. Randall Research Center
ADM Co.
1001 N. Brush College Road
Decatur, IL 62521
Matlock@ADM.com
Phone: 217-451-2460
Fax: 217-451-2927

Mark Matlock is senior vice president for the ADM Research Division where he directs food ingredient research. Mark joined ADM in 1980 as an analytical chemist and has held positions as manager of process development; laboratory manager of ADM BioProducts; & director of food applications. Mark received a Bachelor of Science degree in chemistry from Millikin University in 1976 and a Master of Science degree in polymer chemistry from the University of Akron in 1987. Mark is author or co-author of seven U.S. patents, two of which relate to an analytical instrument (OSI) that measures the

oxidative stability of vegetable oils. He has conducted research that has led to new soy protein isolates for ADM. He has managed research efforts that led to the introduction of trans free fats for margarines and shortenings via a novel enzymatic rearrangement technology. Also, he was elected president of the American Oil Chemists' Society for 2003-2004 and in May 2007, he was awarded AOCS Fellow status by their governing board.

Summary of Keynote Address: Agriculture is capable of providing renewable resources that can be transformed into a wide range of products for food, feed, fuel and industrial chemicals. Growing food and feed requirements have consistently been supplied by agriculture through steadily improving yields from the same unit of land. The same agricultural processing operations used to produce hundreds of ingredients for food and animal feed also provide us the ability and scale to efficiently produce clean, renewable fuels. In addition, new bio-based industrial chemicals can have advantages over petrochemicals such as lower toxicity, biodegradability, and new functionality. As our petroleum based resources become more challenged, opportunity is created for renewable bio-based resources to help fill the gap.

Star Gazing

Following the banquet, from 7:45 – 9:15 PM, attendees will be able to participate in star gazing at the Requarth Observatory in Leighty-Tabor Science Center. This event will be outside, so please dress appropriately. In case of bad weather, there will be an astronomy presentation.

Hotel Arrangements

A group rate for rooms has been arranged at the Decatur Conference Center & Hotel and Millikin University. There are also other hotels available in nearby Forsyth, Illinois.

Decatur Conference Center & Hotel
4191 W US Highway 36
Decatur, IL 62522
217-422-8800

www.hoteldecatur.com

14 single queen size bedrooms
23 double full size bedrooms
\$80.00 plus tax

Make reservations under Illinois State Academy of Science at Millikin University

Deadline for group rate is March 10

Millikin University
1184 W. Main Street
Decatur, IL 62522

25 single or double rooms
\$20.00 per person - bring own linens (i.e., pillow and sleeping bag)
\$37.00 per person - includes linens

To make reservations, call (217-362-6463) or e-mail (amshonkwiler@millikin.edu) Stacey Shonkwiler
Deadline for reservations is March 22

SATURDAY, APRIL 11TH 2010

Breakfast

On Saturday, a light breakfast of bagels and muffins will be available from 7:30 – 8:00 AM in the east lobby of Leighty-Tabor Science Center. Attendees looking for a heartier breakfast can go to the Greenhouse Restaurant at the Decatur Conference Center & Hotel or other restaurants in Decatur or Forsyth.

Oral Presentations

Oral presentations will be held from 8:00 AM – 4:30 PM in Leighty-Tabor Science Center, Kirkland Fine Arts Center, Shilling Hall, and Pilling Chapel. Presenters will have 15 minutes for their presentations. **Powerpoint presentations (Microsoft Office PowerPoint 2003) should be forwarded to Stacey Shonkwiler (amshonkwiler@millikin.edu) no later than April 8, 2010 to ensure compatibility with computers at Millikin.** Presenters should also bring a flash drive with a copy of their presentation as a backup.

Lunch/ISAS Business Meeting

Lunch will occur in the lower level of Richards Treat University Center from 12:00 – 1:30 PM. Robert Finley will be the keynote speaker and will talk about the Advanced Energy Technology Initiative.

Keynote Address

12:00 – 1:30 PM

Lower Level of Richards Treat University Center

The Illinois Basin-Decatur Sequestration Test Site: A Leading-Edge Test of Geological Carbon Sequestration in the U.S.

Robert J. Finley
Director, Advanced Energy Technology Initiative
Institute of Natural Resource Sustainability
University of Illinois
615 E. Peabody Drive
Champaign, Illinois 61820
Phone: 217 244-8389
Fax: 217 333-2830
finley@isgs.illinois.edu

Robert J. Finley is the Director of the Advanced Energy Technology Initiative at the Illinois State Geological Survey, Institute of Natural Resource Sustainability, at the University of Illinois, Champaign, Illinois. He joined the Illinois Survey in February 2000 after serving as Associate Director at the Bureau of Economic Geology, The University of Texas at Austin. Rob's area of specialization is fossil energy resources and carbon sequestration. His work has ranged from large-scale resource assessment, addressing hydrocarbon resources at national and state scales, to evaluation of specific fields and reservoirs for coal, oil, and natural gas. He is currently heading a major project on carbon sequestration in the Illinois Basin, the Midwest Geological Sequestration Consortium, aimed at researching carbon sequestration as potential response to global climate change. Rob has served on

committees of the National Petroleum Council, the American Association of Petroleum Geologists, the National Research Council, the Stanford Energy Modeling Forum, and the U.S. Potential Gas Committee. Rob holds a Ph.D. in geology from the University of South Carolina; he is currently also an Adjunct Professor in the Department of Geology, University of Illinois at Urbana-Champaign.

Summary of Keynote Address: After assessments of the geological carbon sequestration capacity of the Illinois Basin that began in 2003, the Midwest Geological Sequestration Consortium (MGSC) selected a test site for geological sequestration at Decatur, Illinois in 2007. In 2009, an injection well was drilled to a depth of 7,230 ft at the Archer Daniels Midland (ADM) agricultural products processing facility in Decatur, and ADM will begin supplying 1,000 tonnes per day of carbon dioxide for injection beginning in early 2011. Before injection, a 3D seismic survey will be acquired, processed, and interpreted (winter-spring 2010), and a second 7,000 ft well will be drilled (summer-fall 2010) for pressure and fluid sampling before and during injection. Injection is expected to take up to three years with 1 million tonnes total volume to be injected. The well is the first Class I Nonhazardous injection well permitted in the U.S. for testing geological sequestration at the deployment scale.

Carbon dioxide in a supercritical state will be injected into the Cambrian-age Mount Simon Sandstone, the lowermost sedimentary unit in the Illinois Basin. The Mount Simon is about 1,650 ft thick at the site and is overlain by 300 ft of shale, siltstone and tight limestone of the Eau Claire Formation which forms the reservoir seal. Favorable porosity and permeability were found in the Mount Simon, and initial injection will take place into 55 ft of perforations opened at the base of the formation. The Mount Simon was probably deposited as a bed-load (braided) fluvial system and is therefore sand-rich, but internal reservoir quality variations do exist and will serve as baffles to the buoyant movement of the carbon dioxide, based on initial reservoir modeling. An extensive environmental monitoring program is currently in place around the site to gather baseline data. Monitoring will continue during injection and for at least two years beyond injection.

Award Announcements

Following the oral presentations, award announcements will take place at 4:30 PM in the lower level of Richards Treat University Center.

OTHER INFORMATION

Special Needs

Participants with special needs, such as vegetarian meals, are asked to inform the Vice-Presidents of the meeting as early as possible in order that their requests can be adequately taken into consideration. Contact one of us below and we will be glad to assist you.

Questions – Please Ask the 2010 ISAS Vice-Presidents

Dr. David Horn, Department of Biology, Millikin University, 1184 W. Main Street, Decatur, IL 62522, 217-424-6392, dhorn@millikin.edu

Stacey Shonkwiler, Department of Biology, Millikin University, 1184 W. Main Street, Decatur, IL 62522, 217-362-6463, amshonkwiler@millikin.edu

Millikin University Campus Map

BUILDING GUIDE

- (42) 3D Art & Theatre Center
- (24) ADM-Scovill Hall - C3 Express with Java City
- (22) Alpha Chi Omega
- (19) Alpha Tau Omega
- (15) Alumni/Development Center
- (33) Aston Hall
- (8) Barlett Tennis Courts
- (31) Blackburn Hall
- (13) Corner House
- (5) Decatur Indoor Sports Center (DISC)
- (18) Delta Delta Delta
- (44) DeJong Hall - Bookstore, Java City at Common Grounds
- (37) Frank M. Lindsay Field
- (29) Gorin Hall - Admission, Birks Museum
- (38) Grinstead Physical Education Center
- (14) Health and Counseling Center
- (43) Hessler Hall
- (3) Jimmy John's
- (27) Kirkland Fine Arts Center
- (23) Leighty-Tabor Science Center
- (17) Millikin East & West Apts.
- (20) Huss House
- (35) Mills Hall
- (10) New Hall #2
- (6) New Hall #3
- (7) New Hall #4
- (1) Office of Residence Life, Micro-teaching Lab, Domino's, Subway
- (36) Old Gym
- (25) Perkinson Music Center
- (21) Pi Beta Phi
- (28) Pilling Chapel - Elevator
- (46) Pipe Dreams Studio
- (41) Power Plant
- (39) Practice Fields
- (34) Richards Treat University Center - WJMU 89.5 FM, Worknik Dining Room, TBD Fast Casual Restaurant, C-Store with Java City
- (30) Shilling Hall - PACE, Student Service Center, Einstein Bros. Bagels
- (9) Sigma Alpha Epsilon
- (4) Soccer Fields
- (45) The SPEC
- (26) Staley Library
- (40) Stan Hall Maint. Bldg. - Central Receiving
- (12) Tau Kappa Epsilon
- (32) Walker Hall
- (11) Weck Hall
- (2) The Woods at Millikin Apts

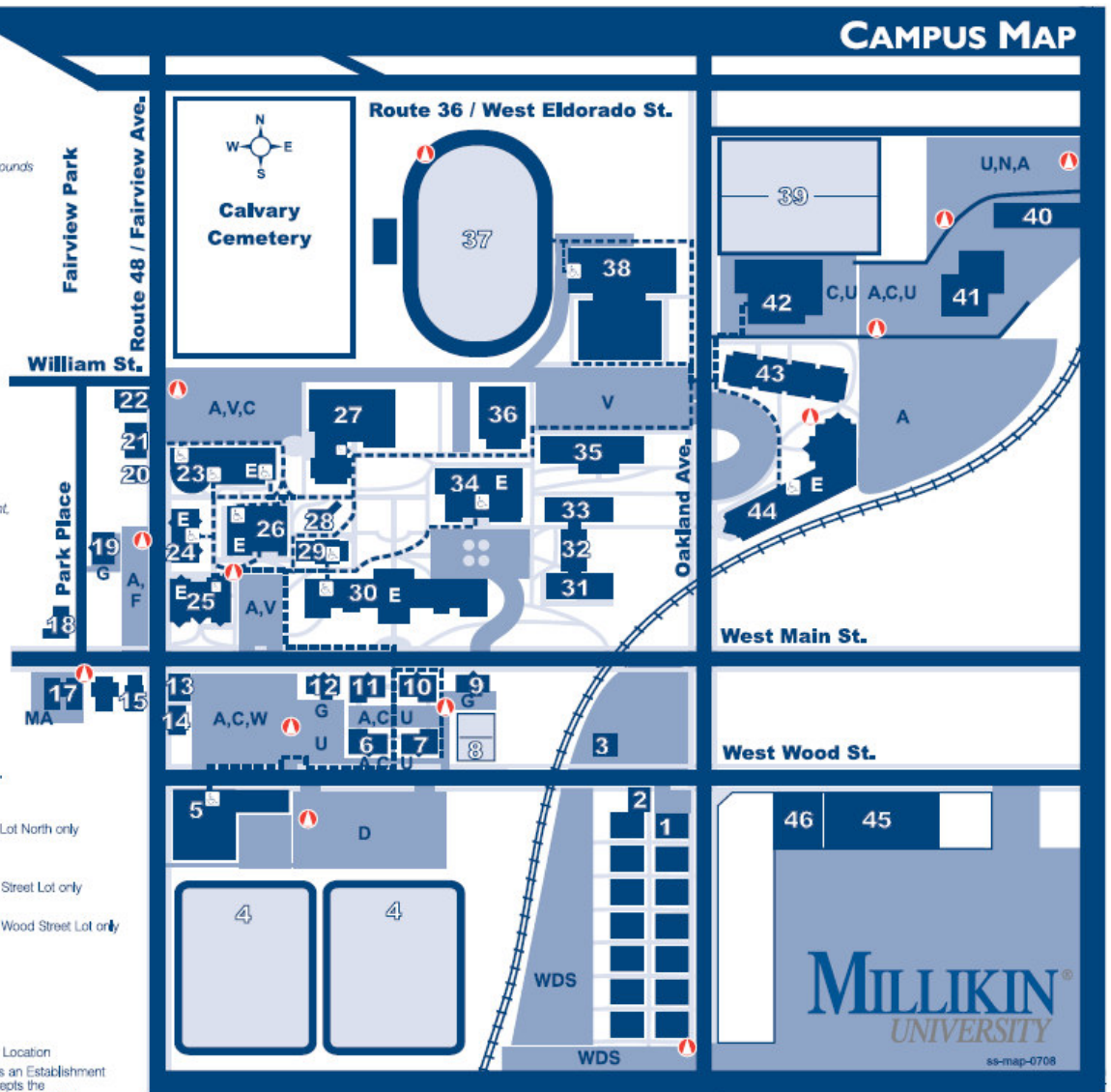
PARKING GUIDE

Handicap Parking is available in all lots.

- A** Faculty/staff parking from 7am to 5pm Mon-Fri. No parking from 4-7am without special permission.
- C** Designated Commuter Parking
- D** Commuter Parking in Fairview Lot only.
- F** Underclass Residential Restricted Parking in DISC Lot North only
- G** Greek Parking
- MA** Residential Parking in Millikin Apartment Lot
- N** Underclass Residential Restricted Parking in North Street Lot only
- U** Residential Upperclass Parking
- W** Underclass Residential Restricted Parking in North Wood Street Lot only
- WDS** Woods Residential Parking only
- V** Visitor Parking

LEGEND

- Emergency Blue Light Phone
- Accessible Circulation Path
- Handicap Accessible Entrance
- Elevator Location
- Indicates an Establishment that accepts the Flex Dollar Meal Card



STUDENT REGISTRATION CODE (assigned by ISAS) _____

ILLINOIS STATE ACADEMY OF SCIENCE

102nd Annual Meeting

April 9-10, 2010

Millikin University

(Please type or print)

Name: _____
Last First

Affiliation: _____

Mailing Address: _____
Street

City

State

Zip Code

Membership Status (please check appropriate place)

Regular Member: _____

Student Member: _____ **Under 21? Y N**

Honorary Member: _____

Life Member: _____

Emeritus Member: _____

Non Member: _____

Non Member Student Registration: _____ **Under 21? Y N**

Non Member Guest (Millikin Student, no meals): _____

(student ID card required; paper and poster sessions attendance only)

Non Member Guest (other, includes meals): _____

(must accompany member)

Name of accompanying registered member: _____

Registration Fees: (Note: This form may be photocopied if more than one registration is submitted)

ALL presenters must register for the meeting and also must be 2010 ISAS members.

| | <u>Price</u> | <u>Total</u> |
|---|--------------|--------------|
| ISAS Members ¹ | \$80.00 | \$ _____ |
| ISAS Student Members ¹ | \$45.00 | \$ _____ |
| Non-Member ^{1,2} | \$125.00 | \$ _____ |
| Non-Member Student ^{1,2} | \$67.50 | \$ _____ |
| Non-Member Guest (Millikin Student, no meals) <i>(see status above)</i> | \$0.00 | \$ _____ |
| Non-Member Guest ¹ (other, includes meals) <i>(see status above)</i> | \$30.00 | \$ _____ |
| Contribution to ISAS General Fund | | \$ _____ |
| Contribution to ISAS Division Fund (list division) _____ | | \$ _____ |
| Contribution to ISAS Student Grants Program | | \$ _____ |

¹ – Includes Reception ² – Includes 1-year Academy Membership

TOTAL (payment must accompany form): \$ _____

Registration forms must be received by the Academy no later than April 5, 2010!!

Please make checks payable to the **ILLINOIS STATE ACADEMY OF SCIENCE**. (No credit cards)

Send to: Illinois State Academy of Science
Illinois State Museum
502 S. Spring Street
Springfield, IL 62706-5000

Telephone: 217-782-6436
Fax: 217-782-1254

(Do not write below this line)

NO: _____

Date: _____

Received of: _____

Amount Paid: \$ _____