



The MMS Scope

Minnesota Microscopy Society

Local affiliate of the **Microscopy Society of America**
and the **Microanalysis Society**

february 2018

In this Issue:

Tour at Ziegler CAT:

The Ziegler CAT Rebuild Center repairs/rebuilds components from Caterpillar products from all over the upper Midwest. Mark your calendar today to tour their Rebuild Center's analytical lab and register by Feb 12.

Up ahead:

MinnTS on March 6 (at Ecolab again this year) and Spring Symposium on May 4. Save these dates on your calendar now and plan to participate.

2018 MMS dues:

Please remember to submit your annual dues to maintain your MMS membership.

Thank you, volunteers!

A big thank you to all MMS volunteers who gave their time to the 9th *Microscope Day* on Nov. 4, 2017 at the Science Museum.

February 15, 2018



TOUR of ZIEGLER CAT Rebuild Center Analytical Lab



Tour Ziegler's analytical lab to learn about fluid testing that keeps Ziegler CAT products working in the field, how they monitor customers' machines in the Condition Monitoring Group, and walk the floor where the oversized components are worked on and tested.



SCHEDULE on THU, FEB 15

| | |
|-----------|-------------------|
| 6:00 p.m. | Arrival |
| 6:10 p.m. | Overview |
| 6:20 p.m. | Lab/facility tour |
| 7:15 p.m. | Depart |



LOCATION

Ziegler CAT Rebuild Center

1201 West 96th Street,
Bloomington, MN
55420

[Google map](#)

(See logistics and tour notes on page 2.)



RESERVATIONS

RSVP by **Mon., Feb. 12 @ 5:00 p.m.**

First come, first served. 30 attendee maximum.

Register at Reservations@MnMicroscopy.org

and *please indicate whether you plan to stay for dinner.*



DINNER

Dinner at *98 Pounds Chinese Buffet* in Bloomington for any tourgoers who would like to dine after the event.



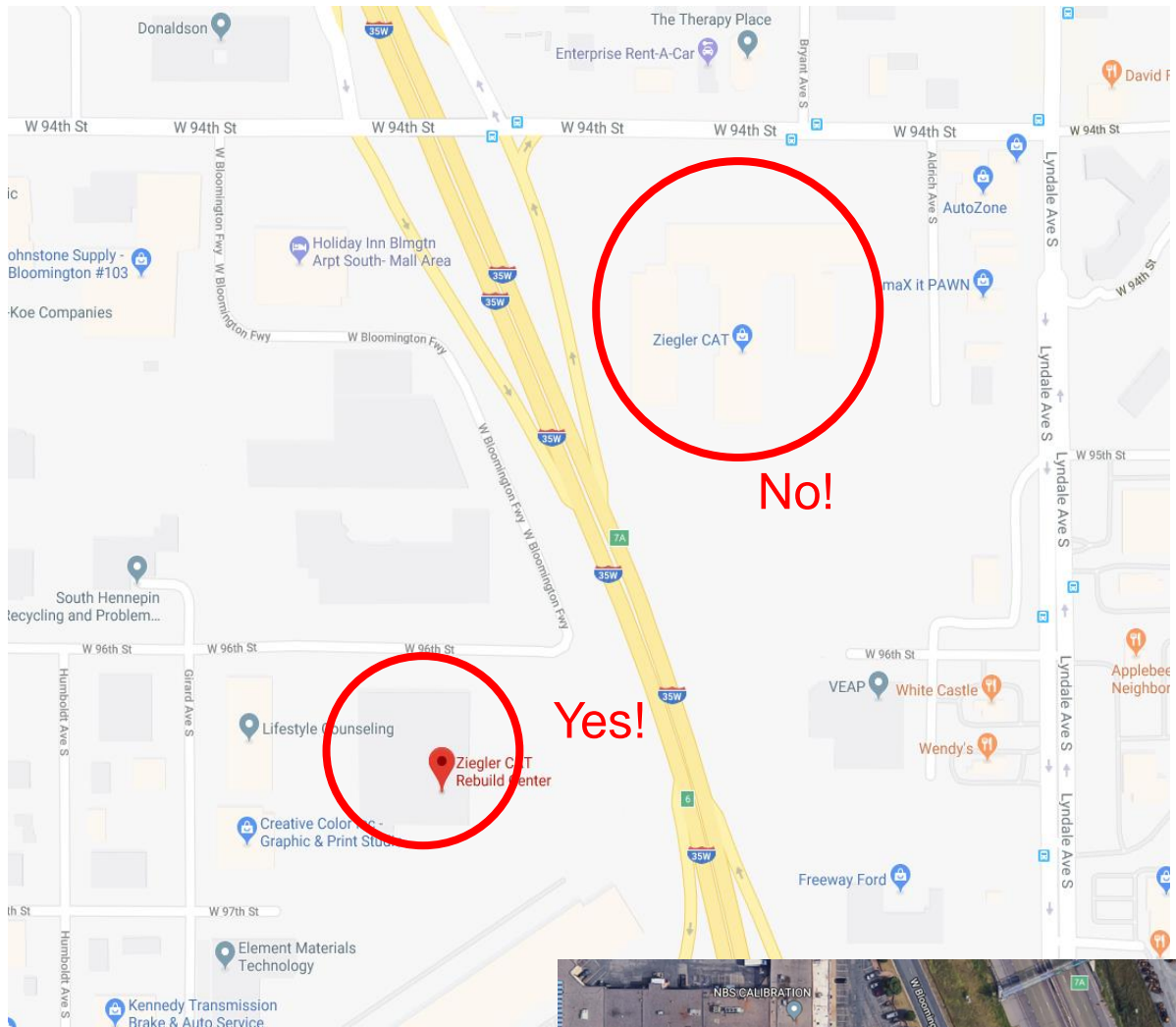
[824 West 98th Street, Bloomington 55420](#)

MMS Ziegler CAT Tour | continued



TOUR DIRECTIONS & NOTES

Please note the address: The Ziegler Rebuild Center is on the **west** side of I-35W. We are not at the dealership on the east side (see maps below).



Bring safety glasses if you can.
Ziegler CAT will provide if you forget or don't have them.





CALENDAR of EVENTS

6 MAR 2018

16th Annual MinnTS (Minnesota Technical Symposium)

Ecolab Innovation Center // [Ecolab Schuman Campus](#)

655 Lone Oak Dr.

Eagan, Minn. 55121

Topic: AI - Autonomous Vehicle Solutions

Speakers:

- ❖ **Matthew Linder, AI engineer for VSI Labs**
- ❖ **Jay Hietpas, Director of MnDOT Autonomous Shuttle Bus Pilot Project**

(See pp. 4-5 for more event info and speaker bios/abstracts.)



4 MAY 2018

MMS Spring Symposium

Minnesota Science Museum

120 W. Kellogg Blvd.

St. Paul, Minn.

Topic: History and Advancement of Electron Microscopy

Confirmed speakers/orgs:

- ❖ **C. Barry Carter, University of Connecticut**
The Future of TEM and Why We Must Remember the Past
- ❖ **Oxford**
Presentation on fast EBSD/TKD (details to come)
- ❖ **Thermo (formerly FEI)**
Presentation on histology sectioning within the SEM (details to come)
- ❖ **JEOL**
Presentation on new SXES detector (details to come)
- ❖ **Bruker (formerly Hysitron)**
Presentation on mechanical testing inside the SEM/TEM (details to come)



DON'T FORGET!



Please remember to pay your 2018 MMS membership dues.



16th Annual MinnTS

(Minnesota Technical Symposium)

www.minnts.org

Tuesday, March 6

AI: AUTONOMOUS VEHICLE SOLUTIONS



Matthew Linder

Autonomous Solutions
Researcher, VSI Labs



Jay Hietpas

Director, MnDOT Office of
Traffic, Safety and Technology



SCHEDULE on TUE, MAR 6

- 4:30 p.m. Ecolab R&D Center tours begin
- 5:00 p.m. Last R&D Center tours depart
- 5:00-6:00 p.m. Registration, social with refreshments
- 6:00-7:00 p.m. Dinner (pasta primavera w bread, salad and dessert)
- 7:00-7:15 p.m. Welcome message, introductions (Gary Korba)
- 7:15-8:00 p.m. Matthew Linder – *The Role of Artificial Intelligence (AI) in Autonomous Driving*
- 8:00-8:15 a.m. Break
- 8:15-9:00 p.m. Jay Hietpas – *Autonomous Bus Technology*



LOCATION

Ecolab Research Center – Bldg F
Schuman Campus
Eagan, MN

[map it](#)



655 Lone Oak Drive, Eagan, 55121



RESERVATIONS

Cost: \$30

Deadline: **Wednesday, Feb. 28, 11:59pm**

Reservations may be made via PayPal by going to the MinnTS website at www.MinnTS.org (beginning Feb 12).

No refunds for cancellations after Feb. 28.

MinnTS | 16th Annual Meeting

continued



SPEAKER BIOS

Matthew Linder is an Autonomous Solutions Researcher at Vision Systems Intelligence, VSI, a local autonomous vehicle (AV) technology research firm. He researches components of AV systems including sensors, processors, software, development tools, deep learning tools and deep learning architectures. Matthew holds a bachelor's degree in computer science from the University of Minnesota at Morris.

✉ matthew@vsi-labs.com 📞 651-323-7229



Linder

Jay Hietpas is the State Traffic Engineer for the Minnesota Department of Transportation (MnDOT). As part of his duties, he oversees the policy and testing development of Connected and Automated Vehicle Technology. MnDOT is currently working with an autonomous vehicle manufacturer to test how these vehicles perform in winter weather conditions. Jay is also working with other state, county and city officials to develop a Minnesota strategic vision for advancing this technology in Minnesota. He has extensive experience in the development of highway and bridge infrastructure projects, including design, environmental documentation, contract development and contract administration. He is a licensed civil engineer in the state of Minnesota and holds a B.S. and M.S. in civil engineering from the University of Minnesota.

✉ jay.hietpas@state.mn.us 📞 651-234-7004



Hietpas



ABSTRACTS

Linder: *The Role of Artificial Intelligence (AI) in Autonomous Driving*

Matthew will talk about his work as an autonomous vehicle software developer and analyst with a focus on artificial intelligence for VSI Labs. VSI is considered one of the industry's top advisors by supporting R&D and planning departments within major automotive and suppliers worldwide. Matthew tracks and researches the various development and deployment activities of automakers and tech companies with respect to autonomous vehicles or self-driving cars. He also leads a small software development team that works on research projects that examine products, services and techniques used in autonomous driving.

Hietpas: *Autonomous Bus Technology*

Jay's presentation will focus on efforts being done in Minnesota to advance both the testing and policy development associated with autonomous and connected vehicles. He will highlight recent winter weather testing occurring with an autonomous bus, and highlight current projects to test connected vehicle technology in Minnesota.



THANK YOU



Project MICRO

Thank you, Project MICRO Volunteers!

Project MICRO and the Science Museum of Minnesota teamed up for the ninth time for Microscope Day on Saturday, **November 4, 2017**. We invaded all the exhibit floors to engage with museum visitors for four hours of focused microscopy fun with six different activities (see photos pp. 7-10). Thank you to our 16 tireless, enthusiastic MMS volunteers, who made this event so memorable: **Anna Abfalterer, Mary Buckett, David and Mara Burleson, Burton and Muriel Gavin, Jacob Held, Rajesh and Renu Kumar, Eric and Mia Morrison, Ann Palmer, Jeff Payne, Mark and Rowan Sanders, and Tiffany Senkow.**

A special thank you goes to **Jeff Payne** for bringing all the Project MICRO equipment, to **Mark Sanders** for bringing and demonstrating a special microscope from the University of Minnesota Imaging Center, and to **Ann Palmer** for organizing and coordinating this event with the Science Museum and taking photos.

Another very special thank you to **Ann Palmer** for her extraordinary, dedicated service these past nine years in establishing and maintaining Microscope Day with the Science Museum. This was her last year as MMS Microscope Day Coordinator and she has passed the baton to Project MICRO Director Jeff Payne. Please contact Jeff about Microscope Day for upcoming events.

THANK
YOU!



PROJECT MICRO PHOTO ALBUM



“Make-n-Take Microscopes”
with **Renu** and **Rajesh Kumar**.

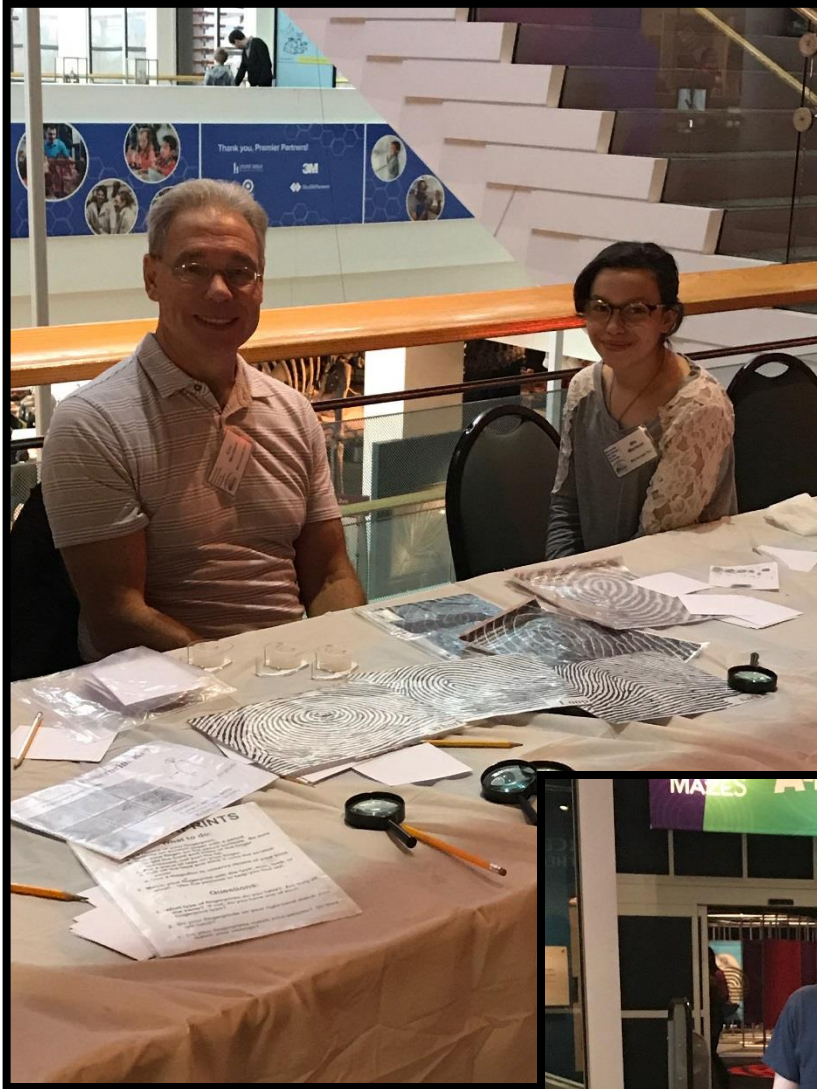


“The Microscopic World of Sand”
with **David** and **Mara Burleson**.





PROJECT MICRO PHOTOS - 2



“Fingerprints” with
Eric and Mia Morrison.



“Lights! Camera! Microscope!” with
Mark Sanders, demonstrating a
U of MN - Imaging Center microscope.



PROJECT MICRO PHOTOS - 3



“Lights! Camera! Microscope!” with **Rowan Sanders**, showing her EM Lab model (made by **Muriel Gavin**).



“Lights! Camera! Microscope!” with **Muriel and Burton Gavin**.



PROJECT MICRO PHOTOS - 4



“Microscopes Galore” with **Jeff Payne**, **Anna Abfalterer** and **Ann Palmer** (taking photo).



“Everyday Cool Stuff” with **Jason Held**, **Tiffany Senkow** and **Mary Buckett**.



MMS Cash Flow Summary 01/01/2017 through 12/31/17

INCOME

Dues

| | |
|------------|----------|
| Corporate | 2,800.00 |
| Patron | 675.00 |
| Regular | 230.00 |
| Student | 15.00 |
| Sustaining | 400.00 |

| | |
|--------------------------------|------------------------|
| Total Dues | 4,120.00 |
| Interest Income | 51.15 |
| Meeting Registration | 3,306.13 |
| Miscellaneous Income | 125.00 |
| Spring Symposium Income | <u>4,395.00</u> |

TOTAL INCOME **12,047.28**

EXPENSES

| | |
|---------------------------------|----------------------|
| PayPal Credit Card Fees | 293.93 |
| Insurance | 326.17 |
| Meeting Expenses: | |
| MMS Regular Meeting Expenses | 1,402.38 |
| MinnTS Meeting Expenses | 2,917.52 |
| Total Meeting Expenses | 4,319.90 |
| Miscellaneous | 156.98 |
| Newsletter | 720.00 |
| Project Micro | 111.04 |
| Spring Symposium Expense | 4,901.41 |
| Website | <u>979.40</u> |

TOTAL EXPENSES **11,808.83**

OVERALL TOTAL **238.45**



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Corporate Sponsors are the backbone of financial support for the Society. These members make it possible for the Society to support Project Micro and to cover many expenses of the regular meetings and the Spring Symposium. MMS gratefully acknowledges the corporate sponsorships provided by the following companies in 2016-2017. To become a Corporate Sponsor, complete and return the MMS membership form at the end of the newsletter.

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Dr Mr Mrs Ms First Name _____ Last Name _____

Affiliation _____ Phone (_____) _____

Street Address _____

City _____ State _____ ZIP _____

E-mail address _____

(Newsletter notifications will be e-mailed to the address above.)

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Payment: Check PayPal

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