



# ROTARY CLUB OF APPLETON

## GUSTO

Service Above Self

**May 13 , 2014**

### Upcoming Programs

**May 20**

#### Salon A

Youth Recognition Awards  
- Outstanding Seniors  
Thought of the Day -  
Nancy Leipzig

**May 27**

#### Salon A

Capturing Cosmic  
Neutrinos: What the  
Ghost Particle Tells us  
about the High Energy  
Universe - Jim Madsen  
Thought of the Day - Jake  
Woodford

### Officers 2013-2014

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#### Rotarians of the Year

Ruth Ann Heeter / Jay  
Drzewiecki

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#### Membership – 181

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Meets Tuesday Noon

### ROTARY CLUB OF APPLETON SCHOLARSHIPS

Each year, the Scholarship Committee selects two students who will receive \$5,000 scholarships - \$1,666/year for the first three years of college. Scholarship candidates must be a 2014 graduate of one of the five Appleton high schools, (including traditional and nontraditional attendance – home schooling must be accredited), plan to pursue a bachelor's degree at an accredited college or university, be in the upper 50% of his/her high school class, have a cumulative GPA of 3.0 through December 31, 2013 and show financial need. For the grant to continue to the grantee must remain a full-time student as defined by their college or university and maintain a 3.0 GPA on a 4.0 scale each semester. Sixty five applications were received and Kaitlyn Pritzl and Syndee Eckberg were chosen. Kaitlyn Pritzl is a student at Appleton East High School and will be attending U. W. Madison to major in psychology. She would like to be a child therapist working with abused children. Syndee Eckberg is a student at Appleton West High School and will be attending the University of Mobile Alabama to major in psychology with a minor in Spanish. She would like to work with children, study abroad and go on a mission trip. Kaitlyn and Syndee were thankful for receiving the scholarship so that they can focus on their studies rather than how they are going to pay for their education.

The Scholarship Committee also awarded U. W. Fox Valley Foundation and Fox Valley Technical College Foundation \$2,481.09 each for nontraditional scholarships. Thanks to the Scholarship Committee for their work: Nancy Johnshoy (Chair), Tonya Dederling, Dan Densow, Karen Dorn, Jeff Esker, Dennis Hultgren, Lynn Peters, Jan Quinlan and Gary Vaughan.

### INDUCTIONS

Today, the Rotary Club of Appleton inducted Patrick Minskey, David Weiss and Andrew Dane.

Patrick grew up in Green Lake, Wisconsin. At that time, kindergarten through 12<sup>th</sup> grade was all in one building. He had a graduating class of 24. After graduating from high school, Patrick attended U. W. Oshkosh to get his bachelor's degree in economics later getting this masters degree in finance. Patrick is single, has no pets and lives on the north side of Appleton. His interests include biking and golf. One thing you may not know about him is that he used to be an explosive expert. Currently, Patrick is a certified financial planner with Edward Jones and a very dynamic guy.

David Weiss was born and raised in Neenah. After graduating from high school, he attended Marquette University. David worked for an advertising agency in Milwaukee. He and his wife moved back to Neenah in 2010 to purchase the family farm and develop a wildlife rehabilitation center. David and his wife have a 4 month old son Fritz. Currently, David is the Director of the Boys and Girls Brigade in Neenah, a volunteer firefighter for the Town of Neenah and a 3<sup>rd</sup> generation Rotarian. He is also one of the founding members of the Fox Cities Morning Rotary Club.

Andrew Dane grew up in Madison. After graduating from high school, he attended U. W. Madison to get his bachelor's degree in conservation biology then moved out west to get his master's in urban and regional planning at the University of Arizona. Andrew was then involved in the Peace Corps as a environmental management specialist and as a technical trainer – environmental management in Guatemala. When he returned, he started a landscaping business and then sold it to a friend. Ten years ago, Andrew moved back to Wisconsin to be closer to family. He has lived in the Fox Valley for about 4 years and is the Senior Community Development and Sustainability Specialist at Short Elliott Hendrickson Inc.

### GUESTS, VISITORS AND MAKE-UPS

**Guests** today Syndee Eckberg, Kate Marquardt, Cheryl, Kaitlyn and Thomas Pritzl, Mary Downs with Alyce Dumke and Eric Glassow with Egide Nimubona.

**Visiting** us today was Karen Severance from Denton, Texas (Susie Ronde was Karen's guest).

**Making up** this week was Lynn Peters on e-Club.

## **ANNOUNCEMENTS**

- Appleton Rotary West Foundation will hold its Annual Fundraiser and Golf Outing on Tuesday, May 20 at Royal St. Patrick's in Wrightstown. Proceeds will fund college scholarships to students of the five Appleton area high schools. For more information or to register, please contact John Hendrickson at [jhendrickson@bankofkaukauna.com](mailto:jhendrickson@bankofkaukauna.com).
  - We will be partnering with other area Rotary Clubs to have a booth at the June 4 Chamber Business Expo (Radisson Paper Valley from 10 am-4:30 pm). Our goals: educate the community about what Rotary is and recruit new members. We're using VolunteerSpot to help us organize the staffing of our booth (2-hour time slots). Please click this link (<http://vols.pt/Qba95F>) to learn more and to sign up to help. Remember to proudly wear your Rotary name badge when you staff the booth! Thanks for helping to Engage Rotary and Change Lives!
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## **WELLNESS IN A HEARTBEAT: HOW CLIMATE CHANGE AFFECTS MICROBIAL LIFE BELOW THE SEAFLOOR OR "UNDER THE SEA..."**

Traces of past microbial life in sediments off the coast of Peru document how the microbial ecosystem under the seafloor has responded to climate change over hundreds of thousands of years. For more a decade scientists at the Max Planck Institute for Marine Microbiology and their colleagues at MARUM and the Univ. of Aarhus have investigated microbial life from this habitat. This "Deep Biosphere", reaching several hundred meters below the seafloor, is exclusively inhabited by microbes and is generally considered as stable. Nevertheless, only little is known about how this system developed over millennia and how this microbial life influences the cycling of carbon in the oceans. In a new study appearing in the *Proceedings of the National Academy of Sciences*. Sergio Contreras, a palaeoceanographer, and his Bremen colleagues use a careful examination of drill-cores from the continental shelf of Peru to actually show how surprisingly dynamic this deeply buried ecosystem can be.

Below the seafloor, consortia of two different domains of microorganisms (archaea and bacteria) tap the energy of methane, which they oxidize by using sulfate. This process is known as the anaerobic oxidation of methane (AOM) and has been intensively studied by Bremen researchers. Methane, also produced by archaea, emerges from deeper layers of the sediment, while sulfate diffuses slowly from the water column into the sediment. Both reactants meet at the so-called methane oxidation front. Only at this front are concentrations of sulfate and methane high enough for the microbial turnover to take place, and here the AOM process leaves behind mineral and biological fossil signatures. For example, archaeol, a constituent of the archaeal cell membrane, is an extremely stable molecule that is preserved over thousands to millions of years. Minerals such as barite (barium sulfate) and dolomite (magnesium calcium carbonate) also precipitate at this methane oxidation front due to microbial activity.

**Migration of the methane oxidation front** - In order to trace the migration of the methane oxidation front back over the last half million years, Contreras and his colleagues measured the barite, dolomite and archaeol content at high resolution in drill cores from the coast off of Peru. These up to 200-m-long cores from the Peruvian continental shelf were obtained during an expedition with the scientific drill ship JOIDES Resolution as part of the Ocean Drilling Program in 2002. To their surprise, Contreras and his colleagues detected a layer that was strongly enriched in archaeol, barite and dolomite, located 20 meter above the present-day methane oxidation front. They estimated that this layer was formed during the last interglacial time period about 125,000 years ago and that the methane front must have rapidly migrated downwards during the last glacial period. "Our data demonstrate how fast the microbial communities respond to changes in the oceanographic conditions, at least on a geological time scale," explains the biogeochemist Tim Ferdelman.

**Exploring the past with mathematical modeling** - To reconstruct the rapid shifts in the depth of the methane front, Contreras and his colleagues used a mathematical model for simulating the deep microbial activity and its dependence on climate change. The simulations clearly show that the amount of organic detritus raining out from the highly productive Peruvian surface waters is the crucial factor determining the relative position of the methane front. The amount of carbon deposited on the Peruvian shelf strongly depends on the global climate; thus the methane oxidation front moved upwards during warm periods due to intensified organic carbon deposition, and migrated downwards with the onset of cold, glacial periods due to low organic carbon deposition. "We can incorporate these new findings into models for the development of past or future Deep Biospheres", concludes Bo Liu who developed the model for this study.

The geologist Patrick Meister highlights the implications of this finding: "The detected traces provide the key to the history of the sub-seafloor microbial activity and its dynamic interaction with climate and oceanography for of the past 100,000 years. If we look further back in time, such as over the past million years, we might find even more drastic changes of microbial activity in the deep biosphere," speculates Meister.