

# The Blue Ridge Chemist

The Blue Ridge Chemist, since 1947 the  
Official Local Section Publication of the  
Virginia Blue Ridge Section, American Chemical Society



## VIRGINIA BLUE RIDGE SECTION AMERICAN CHEMICAL SOCIETY

**684<sup>th</sup> SECTION MEETING**  
**Roanoke Valley Governor's School**  
**Thursday, March 23, 2017**

### PROGRAM:

5:30-6:00 Social time, Lecture Hall, RVGS  
6:00-7:00 Dinner, Lecture Hall, RVGS  
7:00-8:00 Talk, Lecture Hall, RVGS

The social time, dinner, and presentation will all take place in the Lecture Hall at Roanoke Valley Governor's School. Dr. John Garst will be speaking. His talk is titled "A look at various commercially viable waste recovery processes."

The dinner menu is:

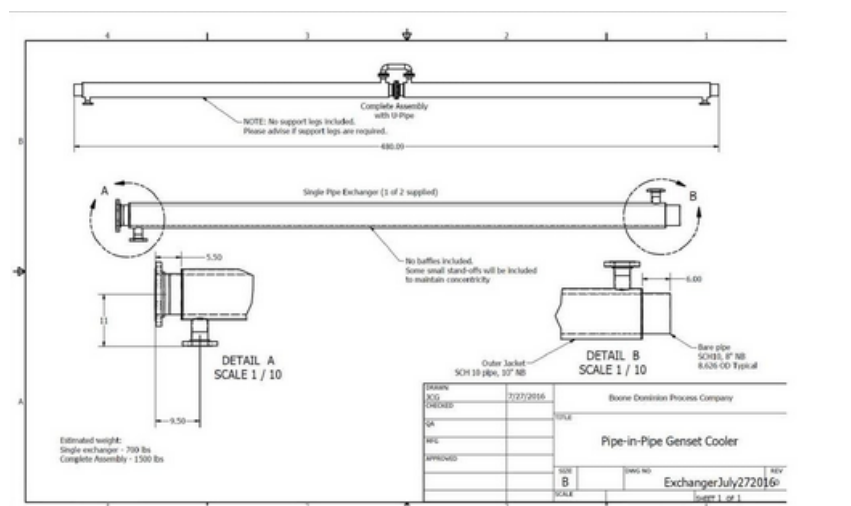
Mixed green salad with dressings  
Beef medallions with demi glaze & broiled tilapia  
Rice pilaf & seasonal roasted vegetables  
Assorted rolls / butter  
Assorted mini desserts  
Coffee, sweet & un-sweet tea

The dinner is \$14, with students and retired members being half price. Reservations for the dinner must be made by THURSDAYS March 16, (7 DAYS BEFORE THE MEETING) by contacting Steve Smith at phone number (540) 853-2116, or by e-mail to [ssmith@rvgs.k12.va.us](mailto:ssmith@rvgs.k12.va.us), or by writing to Steve Smith, Roanoke Valley Governor's School, 2104 Grandin Road SW, Roanoke, VA 24015.

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Roanoke Valley Governor's School Hosts March Meeting

<http://www.acs-vbrs.org>

## John Garst



Born and raised in Virginia, John earned a degree in chemistry from Dartmouth College in Hanover, NH. He is the founder and owner of Boone Dominion Process Company, which builds chemical process equipment.

### **A look at various commercially viable waste recovery processes**

**Sewage to Biodiesel:** Many municipal wastewater treatment plants have a FOG pit where Fats, Oils and Greases rise to the top of a pool or pond. The surface layer of a FOG pit is gathered by means of a rope skimmer. This material is rich in lipids but also in water and in solids (sand, grit, etc). A process has been developed to economically separate the lipids for use in esterification for production of biodiesel. The resulting effect is a renewable and cheap feedstock to make biodiesel. The municipal sewage treatment plant also benefits from a reduced chemical load and energy load from the treatment.

**Waste motor oil recycling via distillation:** Engine oil is changed frequently in automotive engines. The lubricant is not fully spent, but rather it is changed out before it loses its properties as a lubricant. Roughly 70% of the oil drained from the crankcase can be reclaimed and re-used. A typical process for this reclamation involves multi-stage distillation, with process feed rates often in excess of 8000 liters per hour. As the use of simple waste motor oil as a fuel falls out of favor, recycling it becomes more economically viable every day.

As a part of the April 10, 2017 meeting at Radford University, the Virginia Blue Ridge Section of the American Chemical Society is sponsoring the twenty-fifth Annual Undergraduate/High School Poster Session. Note that poster boards will be provided.

If you have a student or students, who will be participating, submit the following information by email to Dr. Christine Hermann (chermann@radford.edu) by April 3, 2017. **This is a firm deadline. No poster submissions will be accepted after this time.** All students and faculty will get email confirmation. If you did not get an email reply, then your submission was not received and you cannot present.

Name of Project \_\_\_\_\_

Name(s) of Student(s): \_\_\_\_\_

Affiliation (name of high school, college, or university): \_\_\_\_\_

Class of Student(s) (freshman, sophomore, junior, senior): \_\_\_\_\_

Student(s) email address: \_\_\_\_\_

Advisor's Name, Address, Telephone Number, and email address: \_\_\_\_\_

48" by 48" poster board with tripod on table or just table will be provided. Please specify what you need.

\_\_\_\_\_ poster board with tripod on table

\_\_\_\_\_ table needed

## Directions to the Roanoke Valley Governor's School

The Governor's School is located a little south of the corner of Grandin Road and Brandon Avenue. (Brandon Avenue is the continuation of Apperson Drive and Lee Highway.)

Driving south on I 581 (220), take the exit for Colonial Avenue. At the end of the exit ramp, turn right onto Colonial Avenue; continue below.

Driving north on I 581, take the second Wonju Street exit. Turn right at the end of the exit ramp onto Wonju Street. At the light, turn right onto Colonial Avenue and continue below.

Stay in the left lane on Colonial. Turn left at the light onto Brandon Rd. At the intersection of Brandon with Grandin Road, turn left, and shortly turn left again into the campuses of Patrick Henry High School and the Roanoke Valley Governor's School. After entering these campuses, the building ahead and a little to the right is the Governor's School.

Please call (540) 853-2116 for directions to the meeting, if they are not obvious.

## Map to the Roanoke Valley Governor's School

