K to Gray
Education, Outreach and Broader Impacts at the VCR-LTER

Arthur Schwarzschild
Science Education Coordinator

- Education
- Professional Development
- Outreach

Serving the Eastern Shore and Beyond
Northampton County, VA

- **Challenges**
  - 2nd poorest county in VA with a ~ 50% minority population and ~75% of students on reduced price/free meal plan
  - Middle School closed due to structural problems and students split between Elementary Schools and High School in 2012 (ES = K – 6, HS = 7 – 12)
  - 3 Superintendents, 3 HS Principals and 4 ES Principals in last 5 years

- Two Public Elementary Schools, each with ~500 students

- One Public High School
  - Enrollment ~ 650 HS students
  - 4 full time science teachers (3 out of 4 replaced in 2013)
  - 3 science classes required for graduation

- SLTER program supports 5 of the 6 science courses offered

- **All Northampton County public high school students impacted by SLTER at least twice before graduation.**
VCR Schoolyard LTER (SLTER)
A partnership between the VCR-LTER, UVA and the local Northampton County Public School system to help further education in science

MISSION:
• To enhance environmental science literacy/awareness in Northampton County public schools.
• To better prepare students through classroom activities and field experiences.
• To support teachers by providing training opportunities and curriculum resources.
K – 7th grade (>175 students/year)
• Talented and Gifted Program
• Oyster Gardening Program (every public and private school in the county)
• Eastern Shore Regional Governor’s School
• Summer Ecology Camp with TNC and Chesapeake Experience
8th – 12th grade (>125 students/year)

- Environmental Science and Marine Biology classes
- VCR-LTER Water and Nutrient Cycle Field Trip
- Environmental Monitoring Programs/Training/Equipment
- Guest Lectures
- REHS Program (2 - 4 interns/year)
Objectives of the REHS Program:

- Provide an opportunity for highly motivated High School students to gain first hand experience in Environmental Sciences, while conducting field research under the direct supervision of a trained scientist.
- Provide graduate students conducting research activities at the VCR-LTER program with enthusiastic and highly capable field assistance and mentoring experience.
- Further the research goals of the VCR-LTER program.
Education

Undergraduate (~90/year)
- College Field Trips
- REU internships (8-10/year) supported by NSF and other grants
- May Term: Intro to Marine Biology (University of Richmond non-science majors)
- January Term: STS 2500 Nature Writing Class (UVa STS Program)
Graduate

- ~20 VCR-LTER students funded annually
- Distributed Courses (2 VCR PIs)
- LTER Graduate Student Socials at National Science Conferences
- Mentorship Opportunities and training: REU & REHS Programs
- Public Seminar Series: Provides speaking opportunities

Fall 2014: Biology and Geomorphology of Coastal Wetlands

- Organized by GCE-LTER
- Co-Instructed by 7 LTER PIs (Kirwan and Blum from VCR)
- ~150 participants including:
  - Graduate students from 30 institutions
  - Coastal Managers from 9 NERRs Sites
  - Representatives from 2 Federal Agencies

Fall 2015: Sea level rise and saline intrusion
LTER Graduate Student Socials held at:
• CERF 2013 Sponsored by the VCR-LTER
• ESA 2014 Sponsored by HFR-LTER
• AGU 2014 Sponsored by VCR-LTER
• ESA 2015 Sponsored by HFR-LTER
2015 UVa Department of Environmental Sciences
Student Awards earned by LTER Students

• 4 of 6 Distinguished Majors Projects
• Undergraduate Trout Unlimited Award
• Graduate Award in Hydrology
• Graduate Award in Geology
• Graduate Award in Hydrology
• Graduate Interdisciplinary Studies Award