February 15 & 16, 2019

Virginia Institute of Marine Science
Gloucester Point, Virginia
Blue Crab Bowl: Winners 1998-2018

See our history of First Place teams from Virginia competitions, 1998 through 2018. Lists of participating teams for each year are posted on the Blue Crab Bowl website at http://web.vims.edu/adv/bcb/PDFnews.html.

1998 — 1st Annual
Central Shenandoah Valley Regional Governor’s School, Fishersville

1999 — 2nd Annual
Lord Botetourt High School, Daleville

2000 — 3rd Annual
Grafton High School, Yorktown

2001 — 4th Annual
Catholic High School, Virginia Beach

2002 — 5th Annual
Grafton High School, Yorktown

2003 — 6th Annual
Thomas Jefferson High School, Alexandria

2004 — 7th Annual
Thomas Jefferson High School, Alexandria

2005 — 8th Annual
Chesapeake Bay Governor’s School-Warsaw Campus

2006 — 9th Annual
Chesapeake Bay Governor’s School - Warsaw Campus

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BLUE CRAB BOWL 2019

22nd Annual Virginia Regional Competition of the National Ocean Sciences Bowl

Regional Co-Host Institutions:
Virginia Institute of Marine Science
William and Mary
and
Department of Ocean, Earth and Atmospheric Sciences
College of Sciences, Old Dominion University

The Blue Crab Bowl is one of 25 regional competitions of the National Ocean Sciences Bowl (NOSB®). The first NOSB competition was launched in 1998 by the Consortium for Oceanographic Research and Education (CORE) to further its mission of supporting and expanding oceans sciences education during the International Year of the Ocean. In 2007, CORE merged with the Joint Oceanographic Institutions (JOI) to form a new organization, the Consortium for Ocean Leadership. Representing over 90 of the nation’s leading oceanographic institutions, universities, industries and aquariums, the Consortium office in Washington D.C. hosts the NOSB National headquarters.

Virginia’s Blue Crab Bowl was among the original NOSB competitions. Designed to inspire and challenge high school students, the Bowl tests competitors’ knowledge of the marine sciences. Each match pits two teams of four students in an academic quiz-bowl format. Competitors use a buzzer system to respond to rapid-fire multiple choice and short answer questions read by a Moderator. Additionally, teams work collectively to produce written answers to complex analytical questions.

This year, sixteen teams from around the Commonwealth compete in round-robin divisions, then double elimination matches that narrow the field. The final tournaments rounds establish 1st – 4th place winners. The 1st Place team from the Blue Crab Bowl will represent Virginia in the national NOSB competition in Washington, D.C., April 11-14, 2019.

Spectators are welcome in competition rooms, but may not:
• enter or leave a room during a match;
• take pictures, notes or audio recordings during competitions;
• use cell phones, smart watches or texting devices in competition rooms;
• communicate with contestants during matches, after breaks; or
• talk in the halls outside competition rooms during matches.

Please respect the integrity of the competition and the considerable effort made by ALL teams and officials in preparing for this event.
Awards and Sponsors

**All Student Competitors**
- Blue Crab Bowl logo sweatshirts & logo lapel pins
- Blue Crab Bowl pop sockets & cell phone chargers
  - *Consortium for Ocean Leadership*

**All Coaches**
- Blue Crab Bowl logo sweatshirts
  - *Consortium for Ocean Leadership*
- Water Density Demonstration Mini-Tank
- 1-year membership, Mid-Atlantic Marine Education Association (MAMEA)
  - *Virginia Institute of Marine Science*
- VIMS water quality poster
  - *VIMS Advancement Department*
- 2019 Sand Calendar
  - *VIMS Marine Advisory Services – Education Team*

**New Coaches**
- 1-year membership, Mid-Atlantic Marine Education Association
  - *Mid Atlantic Marine Education Association (MAMEA)*

**1st, 2nd, 3rd, 4th Place Teams**
- Custom design Crab Bowl - Team Trophies
- USB Digital Microscope - Coach Award
- Custom Crab Mug - Student Award
  - *Virginia Institute of Marine Science*

**1st Place Team**
- Invitation to NOSB competition in Washington, D.C., April 11-14, 2019
  - and selected travel expenses
  - *Consortium for Ocean Leadership*

**1st Place Coach**
- Complementary registration for 2019 MAMEA Fall Conference
  - *Mid-Atlantic Marine Education Association*
- Gift certificate for educational resources
  - *Leave Only Bubbles/What If Scientific*

**Additional support graciously provided by:**
- Virginia Institute of Marine Science (VIMS), College of William & Mary
- Old Dominion University: College of Sciences; Department of Ocean, Earth and Atmospheric Science
- VIMS Marine Advisory Program
- VIMS Outreach Program, Advancement Dept.
- Virginia Sea Grant
- Hampton Inn-Gloucester, Gloucester Courthouse
**Events Schedule:**
**Virginia Institute of Marine Science, Gloucester Point**

**Friday, February 15, 2019:**

1:30-2:15 p.m. Team Check-In  
*VIMS Watermen’s Hall Visitor Center, VIMS Shop Open*

2:15-2:30 p.m. BCB Teams Coordinator Opening Announcements

2:30-4:00 p.m. VIMS Research Introduction & Lab Tour  
*VIMS Shop Open till 5pm*

~4:30 p.m. Hotel check-in, dinner on your own  
*Hampton Inn-Gloucester & Gloucester Courthouse*

7:00-9:00 p.m. Blue Crab Bowl Welcome  
Speaker, announcements, Mock Bowl, team photos & dessert  
*Watermen’s Hall, Auditorium*

**Saturday, February 16, 2019:**

7:00 -7:45 a.m. Officials’ Check-in & Refreshments  
*Chesapeake Bay Hall Lobby*

7:45-8:15 a.m. Officials’ Meeting  
*Chesapeake Bay Hall Lobby*

7:45-8:15 a.m. Team Registration  
*Watermen’s Hall Lobby*

8:30 a.m. Competition Welcome and ALL HANDS Meeting  
Mandatory for all competitors and coaches  
Announcements, rules review  
*Auditorium, Watermen’s Hall*

9:00 a.m. Round robin competitions begin.  
See match schedule and posted room assignments.

11:15 a.m. Lunch  
*Teams and supporters – Watermen’s Hall Lobby*  
*Officials and volunteers – Chesapeake Bay Hall Lobby*

11:15 a.m.- End of Day  
NOSB online survey access begins – for Students & Coaches  
*Watermen’s Hall 204 – Technology Classroom*

12:00 p.m. Double elimination rounds begin.  
*Match schedule and room assignments posted at Crab Pot Central in Watermen’s Lobby*

2:35 p.m. Trophy Rounds begin.  
Played continuously, with announced breaks.  
*Auditorium, Watermen’s Hall*

TBD  
Awards Ceremony directly follows the last competition round.  
Mandatory attendance, all teams. Coaches receive packets & awards.  
*Auditorium, Watermen’s Hall*

Immediately following the end of the Awards Ceremony,  
Official photos to be taken of Winning Teams
Teams & Coaches

Bishop Sullivan Catholic High School – Team A
Carol Stapanowich

Bishop Sullivan Catholic High School – Team B
Jennifer McMullen

Broadwater Academy – Team A
Joe Spagnolo

Broadwater Academy – Team B
Charles Carlson

Chesapeake Bay Governor’s School, Glens
Sara Chaves Beam

Chesapeake Bay Governor’s School, Warsaw
James Beam

Churchland High School
Cami Field

Fauquier High School
George Murphy

Governor’s School for Science & Technology
Margaret Mulvey

Isle of Wight Academy – Team A
Cassy Peffley

Isle of Wight Academy – Team B
Lisa Sumrak

Maury High School
Liz Hobson

Norfolk Collegiate School
Frank Thompson

Seton School – Team A
Tricia Kellogg

Seton School – Team B
Hank Konstanty

York High School
Melissa Wade

Officials & Staff

Moderators
Peter Bernhardt
Richard Brill
Celia Cackowski
Dreux Chappell
Greg Cutter
Sarah Nuss
Marta Sanderson
Dick Zimmerman

Science Judges
John Brubaker
David Burdige
Fred Dobbs
Rip Hale
Amanda Knobloch
Jan McDowell
Susan Park
John Whalen

Rules Judges
Jim Haluska
Victoria Hill
Quinn Roberts
Corday Selden
Kristen Sharpe
Erica Smith
Lauren Sommers
Laura Whitefleet-Smith

Time Keepers
Sally Brooks
Kallie Brown
Fei Da
Sveinn Einarsson
Anne Markwith
Rachel McMahon
Lindsey Nelson
Colton Watkins

Score Keepers
Emily Anderson
Kristen Bachand
Nicole Buckley
Samantha Fortin
Ryan Glaubke
Abigail Hils
Courtney Klepac
Jessie Turner

Room Runners
Austin Abbott
Michele Cochran
Jenny Dreyer
Isabel Dreyer

Team Challenge Graders
Derek Detweiler
Emily Hein
Emily Rivest
Peter Sedwick
Richard Whittecar

Chief Rules Judge
Lisa Lawrence

Chief Scorekeeper
Stephanie Salisbury

Event Support
Brynn Davis Pecher, ODU
Dave Ferree, VIMS
Sally Roman
Annie Schatz
Dana Snyder
Patrick Almazar
Denise Almazar
ODU/OEAS office & fiscal support
VIMS & Mar. Adv. Program
fiscal support
VIMS Outreach Program

Photography
Aileen Devlin, Virginia Sea Grant
Chris Katella, VIMS

Special Guests
Donglai Gong, Speaker
David Rudders, Awards Presenter
John Wells, VIMS Welcome

BCB Regional Coordinators
Carol Hopper Brill, VIMS
Bill Dunn, ODU
Officials’ Roles

• **Moderator**: Asks the questions
• **Science Judge**: Rules on answer acceptability
• **Time Keeper**: Keeps the match clock
• **Score Keeper**: Tallies team scores
• **Rules Judge**: In charge of procedure
• **Team Challenge Judge**: Grades Team Challenge Questions (TCQs)

Players

Each team consists of 4 students: 1 captain and 3 players. The team’s alternate player may rotate in at the beginning or end of a match segment.

Types of Questions

There are two “buzzer question” segments per match. Individual players of either team buzz in to answer multiple choice toss-up questions. If the answer is not acceptable, the Moderator offers the question to the opposing team. When teams give acceptable answers to toss-ups, they are offered a multiple choice or short answer bonus question. Teams may consult on bonus questions, but only the team captain may give the answer. Two team challenge questions (written, analytical) are presented between buzzer segments.

Answers

Responses to multiple choice questions can be the letter (W, X, Y, Z) or the word answer, exactly as specified in the NOSB notebook. Anything else is unacceptable, including the preface “My answer is...” The first answer stated is the one that counts. Responses to short answer questions must contain key words and concepts identified in the expected answer; the preface “My answer is” is permissible.

When do players use the buzzer and answer questions?

The buzzer is used only for toss-ups questions. Players buzz in after the question and prospective answers are read.

If a player buzzes in before the Moderator has completely read the question, the Moderator recognizes the player and the player answers the question. If the answer is unacceptable, the team loses 4 points and the question is read to the opposing team. If the answer is acceptable, the team gets 4 points and the chance to answer a bonus question. If a player “blurs” an answer without being recognized, their team loses its turn.

Timing

• After toss-up question is read: 5 sec. to buzz in.
• From being recognized to answer: 3 sec.
• After bonus question read to answer: 20 sec.
• For TCQ: 2-5 min.

Points

• Toss-up question: 4 points
• Bonus question: 6 points
• Interrupt, recognized, but answer not acceptable: -4
• Blurt, unrecognized: 0 and team loses chance to answer
• TCQ: 0-20 (partial credit possible)

Challenges to Rules or Scientific Answers

Players (not coaches, alternates or audience members) may request a challenge to a question answer or rules enforcement by raising their hand & being recognized by the Moderator, but only before the Moderator begins reading the next question. The Time Keeper stops the clock, room officials confer and make a ruling. If the ruling is challenged a 2nd time, Head Judges make a ruling. No challenges are permitted on 2nd rulings or TCQs.
Round-Robin Matches:  
Rounds 1, 2 & 3; Matches 1-24  
During the morning, in Round-Robin competitions, each team plays all others within its Division. Teams accumulate points based on number of wins, ties and losses (rather than raw scores).

Division 1  
T1 = Seton School - Team A  
T2 = Chesapeake Bay Gov. School, Warsaw  
T3 = Broadwater Academy - Team A  
T4 = Churchland High School

Division 2  
T5 = Bishop Sullivan Catholic High - Team A  
T6 = Isle of Wight Academy - Team A  
T7 = Maury High School  
T8 = Norfolk Collegiate School

Division 3  
T9 = Seton School - Team B  
T10 = Bishop Sullivan Catholic High - Team B  
T11 = Gov. School Science & Tech, Hampton  
T12 = York High School

Division 4  
T13 = Chesapeake Bay Gov. School, Glenns  
T14 = Isle of Wight Academy - Team B  
T15 = Fauquier High School  
T16 = Broadwater Academy - Team B

Elimination Rounds:  
Rounds 4, 5, 6 & 7; Matches 25-43  
The highest placing teams in each Division are assigned to the A Bracket, the remainder go in the B Bracket for the Elimination Rounds. B teams are eliminated after 1 loss, A teams after 2 losses. During the initial Elimination Rounds, Round 4 (Matches 25-32), A teams play other A teams, B teams play other B teams; four teams are eliminated. Starting with Round 5, remaining match winners play losers in three successive double-elimination series and eight more teams drop out. It is possible for a B team to stay in the running, just as it is possible for an A team to be eliminated – performance counts. Note: Teams eliminated in Round 4 will play a required Consolation Match during Round 5 – not for position, but for prizes.

Trophy Rounds:  
Rounds 8, 9, 10 & 11; Matches 44-47+  
Four teams progress to the trophy rounds, competing for 4th through 1st place.

To check on the progress and position of your team throughout the competition, visit Crab Pot Central in the Watermen’s Hall Lobby.

Key to Blue Crab Bowl Competition Rooms in Watermen’s & Davis Halls, VIMS Campus. Maps available at Crab Pot Central.

<table>
<thead>
<tr>
<th>Room</th>
<th>Events</th>
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<tr>
<td>Watermen’s Hall: Lobby, Reception Desk</td>
<td>Crab Pot Central: Team, supporter, VIP &amp; Media check-in; Team meals; Chief Scorekeeper &amp; scores posted; BCB Coordinators</td>
</tr>
<tr>
<td>Watermen’s: Auditorium</td>
<td>All hands meeting, competition room, trophy rounds, awards</td>
</tr>
<tr>
<td>Watermen’s: Classroom A/B</td>
<td>Competition room, rounds 1-7</td>
</tr>
<tr>
<td>Watermen’s: Classroom C</td>
<td>Competition room, rounds 1-7</td>
</tr>
<tr>
<td>Watermen’s: Dean/Director Conf. Rm.</td>
<td>Competition room, rounds 1-5</td>
</tr>
<tr>
<td>Watermen’s: Library</td>
<td>Competition room, rounds 1-5</td>
</tr>
<tr>
<td>Watermen’s: 204 Computer Lab</td>
<td>Student &amp; Coach on-line evaluations</td>
</tr>
<tr>
<td>Davis Hall: 102 Board Room</td>
<td>Competition room, rounds 1-5</td>
</tr>
<tr>
<td>Davis Hall: 201 Conf. Room</td>
<td>Competition room, rounds 1-5</td>
</tr>
<tr>
<td>Davis Hall: 244 Conf. Room</td>
<td>Competition room, rounds 1-5</td>
</tr>
<tr>
<td>Chesapeake Bay Hall: Lobby</td>
<td>Officials: check-in, meals &amp; meeting. Students: afternoon seating.</td>
</tr>
<tr>
<td>Davis Hall: 101 Conf. Room</td>
<td>TCQ Grading &amp; Head Rules Judge: Rounds 1-7</td>
</tr>
<tr>
<td>Watermen’s Classroom C</td>
<td>TCQ Grading &amp; Head Rules Judge: Rounds 8-11</td>
</tr>
</tbody>
</table>
In order to assure quiet in the competition rooms, there can be no talking or loitering in the halls during matches. Seating is available in the Chesapeake Bay Hall Lobby for those not competing or observing a competition.

As a demonstration of good sportsmanship, all teams are expected to attend the entire BCB program, including the awards ceremony.
Legend:
A = A Bracket teams & B = B Bracket Teams
Note: Beginning Round 5, A teams may play B teams
G = game = match #
W = winner of match # & L = loser of match #
19: Competition Brackets in Rounds 4-11

Round 5

Round 6

Round 10

Round 8

Round 9

ROUND 11

1st
2nd
3rd
4th
Chartered in 1940, the Virginia Institute of Marine Science (VIMS) is a graduate school of William and Mary. As one of the largest marine research and education centers in the United States, VIMS has a three-part mission to: conduct interdisciplinary research in coastal ocean and estuarine science; educate students and citizens; and provide advisory service to policy makers, industry, and the public.

The School of Marine Science (SMS) is the graduate education component of VIMS. Recognized worldwide for expertise in coastal marine science, VIMS’ faculty of over 50 includes representatives from numerous disciplines, including: biological, chemical, and physical oceanography; fisheries science; genetics; immunology; toxicology; wetlands science; aquatic disease; and computational modeling. The current student body of 85 is approximately half women, and includes students from around the world. The School’s purpose is to provide quality interdisciplinary education and research opportunities for students pursuing advanced degrees in marine science. Students participate in comprehensive coursework and interact closely with faculty involved in active research. Roughly half of SMS students are working on Masters theses, the rest on Doctoral dissertations. In collaboration with the School of Arts & Sciences at the William and Mary, VIMS offers an undergraduate Marine Science Minor.

The main campus in Gloucester Point includes sophisticated laboratories for advanced studies in several disciplines of marine science. A fisheries science building includes teaching and research labs, and a sample-processing facility. Aquaculture genetics and grow-out facilities are located on the main campus, as well as at a satellite center. VIMS maintains a field station on Virginia’s Eastern Shore which supports research and education with its laboratories, hatchery and other facilities. The Institute offers workshops and web-based resources for teachers, as well as public education opportunities including lecture series, open house and special events, public tours.

For more information, visit these websites:
http://www.wm.edu/
http://www.vims.edu/
Old Dominion University (ODU) is a competitive university that reviews applications on an individual basis. Each application is carefully read and reviewed by the Office of Admissions staff. While academic performance is a vital factor in the decision-making process, we also take into account athletic and student organization participation, as well as community service. ODU seeks well-rounded students who have a zest for higher education, like to take part in extra-curricular activities, and are interested in exploring career opportunities during their college experience.

The average freshman admitted to Old Dominion ranks in the top third of his or her high school graduating class. A typical candidate has a minimum of 16 high school academic units in English, math, science, foreign language and social studies, and actively participate in school and/or community-based clubs, organizations and athletics.

The Department of Ocean, Earth and Atmospheric Sciences (OEAS), founded at Old Dominion University in 1969, has a mission to acquire and disseminate knowledge of the earth system, including the relationships among the biological, chemical, geological and physical components of our planet. The Department has established an expertise in ocean margin processes, coastal system processes and coupled quantitative models. OEAS has a diverse faculty with broad-ranging interests, and offers a BS degree in Ocean and Earth Sciences, a MS degree in Ocean and Earth Sciences, and a PhD in Oceanography.

The Commonwealth Center for Coastal Physical Oceanography, designated as a Center for Excellence by the State Council of Higher Education for Virginia, broadens the OEAS Department’s ability to facilitate innovated research on the coastal ocean and to provide educational experiences for both students and the public at large.

For more information, visit these websites:
https://www.odu.edu/;
https://www.odu.edu/oeas;
http://www.ccpo.odu.edu/.
Blue Crab Bowl: Winners 1998-2018, continued

2007 — 10th Annual
Chesapeake Bay Governor’s School-Warsaw Campus

2008 — 11th Annual
Bishop Sullivan Catholic High School, Virginia Beach

2009 — 12th Annual
Bishop Sullivan Catholic High School, Virginia Beach

2010 — 13th Annual
Bishop Sullivan Catholic High School, Virginia Beach

2011 — 14th Annual
Bishop Sullivan Catholic High School, Virginia Beach

2012 — 15th Annual
Bishop Sullivan Catholic High School, Virginia Beach

2013 — 16th Annual
Bishop Sullivan Catholic High School, Virginia Beach

2014 — 17th Annual
Bishop Sullivan Catholic High School, Virginia Beach

2015 — 18th Annual
Bishop Sullivan Catholic High School, Virginia Beach

2016 — 19th Annual
Bishop Sullivan Catholic High School, Virginia Beach

2017 — 20th Annual
Bishop Sullivan Catholic High School, Virginia Beach

2018 — 21st Annual
Seton School – Team A, Manassas
2018 - 2019 SPONSORS

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NOSB is a program of the Consortium for Ocean Leadership