

Al Kalfus Long Island Math Fair

March 3, 2017

Preliminary Round

Suffolk County Community College

Ammerman Campus, Selden

Long Island Math Fair Committee

Joyce Bernstein, Alan Blayne, Christine Brown, Jerry Chen, Ian Dunst, Arulappah Eswarathasan, Martha Green, Lynda Hennig, Lucille Hunter, Richard Hunter, Nat Janoff, Marlene Kalfus, Myung-Chul Kim, Maxine Lifshitz, Christine Pette, Joseph Quartararo, Paulette Quartararo, Jane Sessler, Sylvia Silberger, Terry Springer, Charles Windwer

In Memory of our Founder Alfred Kalfus

Long Island Math Fair Sponsors

Suffolk County Community College, Suffolk County Mathematics Teachers Association, Nassau County Mathematics Teachers Association, and Nassau County Association of Mathematics Supervisors

Program

Suffolk County Community College

**Judges and Students check-in by 3 pm
Student Center**

Judging Preliminary Round: 3:30 pm

Building Key

| | | | |
|--------------------------------------|----------|-----------------------------------|----------|
| Babylon Student Center | C | Islip Arts Building | I |
| Riverhead Technology Building | R | Smithtown Science Building | T |

Special Thanks

We would like to give special thanks to Jerry Chen and Myung-Chul Kim for all the on-site planning at Suffolk County Community College for this year's Fair.

| Judge's Name | | School |
|---------------------|-----------|------------------------------------|
| Andrejkovics | Michael | Northport High School |
| Armenti | Alexa | Candlewood Middle School |
| Burg | Iris | Northport Middle School |
| Burke | Kevin | East Northport Middle School |
| Campanelli | Gary | Half Hollow Hills High School East |
| Cascone | Chris | Northport High School |
| Ciolfi | Tom | Half Hollow Hills High School East |
| D'Agostino | Heather | Ross School |
| DeMaio | Karen | Hauppauge Middle School |
| Dietrich | Nichole | East Northport Middle School |
| Fox | Patti | Half Hollow Hills High School West |
| Fricke | Danielle | West Hollow Middle School |
| Frisch | Andrew | Northport High School |
| Gerver | Rob | SUNY College at Old Westbury |
| Goldman | Steve | Half Hollow Hills High School East |
| Grunbeck | Dennis | Half Hollow Hills High School East |
| Hansen | Kevin | Trinity Regional School |
| Hantzschel | Shaun | Half Hollow Hills High School East |
| Hartmann | Kathleen | East Northport Middle School |
| Jewell | Cindy | Frost Middle School |
| Joseph | Kathy | East Northport Middle School |
| Kavner | Amanda | Half Hollow Hills High School East |
| Kubik | Glenn | East Northport Middle School |
| Kugler | Dorothy | Nassau Community College |
| Kuveke | Ashley | Northport High School |
| Lauritsen | Ann | Northport High School |
| LiBassi | Mindy | Western Suffolk BOCES |
| Liegey | Kathy | Half Hollow Hills High School East |
| Ligori | Matthew | Huntington High School |
| Maguire | Ashley | Half Hollow Hills High School West |
| Maritato | Karen | East Northport Middle School |
| Marquardt | Dr. Dan | Udall Road Middle School |
| McBride | Heather | Half Hollow Hills High School East |
| McCarthy | Stephanie | Half Hollow Hills High School East |
| McDonagh | Christine | East Northport Middle School |

| <u>Judge's Name</u> | | <u>School</u> |
|---------------------|------------|------------------------------------|
| McGinn | Donna | Northport Middle School |
| Middleton | Ryan | Northport High School |
| Moore | Kathy | Northport Middle School |
| Nordstrom | Ed | West Hollow Middle School |
| O'Halloran | Melissa | West Hollow Middle School |
| Pantke | Shaun | West Hollow Middle School |
| Perico | Anthony | Northport High School |
| Richardson | Mary | Trinity Regional School |
| Rozell | Kristen | Northport High School |
| Sagesee | Amelia | Huntington High School |
| Sciarrino | Larry | Udall Road Middle School |
| Shea | Thomas | Commack High School |
| Spriggs | Marguerite | Clarke High School |
| Sturchio | Alison | West Hollow Middle School |
| Sundberg | Brian | Northport High School |
| Temme | Stephen | Copiague Middle School |
| Tuorto | Andrew | Half Hollow Hills High School East |
| Wynne | Scott | Commack High School |

| <u>Last Name</u> | <u>First Name</u> | <u>Grade</u> | <u>Team</u> | <u>Topic</u> | <u>Room</u> |
|------------------------------|-------------------|--------------|-------------|--|-------------|
| Candlewood MS | | | | | |
| Airen | Mansi | 7 | | Math in Music | R200 |
| Ju | Arra | 7 | | Origami | R238 |
| Lee | Seo Hyun | 7 | | Famous Mathematicians | R202 |
| McKinney | Marlene | 7 | | Probability in Genetics | R200 |
| Seid | Sydney | 7 | | Pi | R238 |
| Gupta | Yash | 8 | | Math in Tennis | R204 |
| Jones | Joshua | 8 | | Fibonacci Numbers | R205 |
| Pomerantz | Sarah | 8 | | Math in Rollercoasters | R207 |
| Clarke HS | | | | | |
| Panickssery | Arjun | 9 | | Algorithms in Gaming | R228 |
| Shah | Aashini | 11 | | Rube Goldberg Machines | I202 |
| Cold Spring Harbor HS | | | | | |
| Davis | Stephen | 10 | | Epsilon-Delta Proofs | I100 |
| Commack HS | | | | | |
| Robinson | Paige | 9 | | Math in Meteorology and Geology | R231 |
| Levine | Delina | 10 | | Resonance | I104 |
| Muthukumar | Pragati | 10 | | Math in Video game Graphics | I106 |
| Nieto | Jake | 11 | | Taylor Series Epansions of Trigonemetric Functions | I203 |
| Schuval | Cayla | 11 | | Transformations with Matrices | I208 |
| Copiague MS | | | | | |
| Ahmad | Kiran | 8 | | Pi | R208 |
| Antosiak | Adam | 8 | | Fibonacci Sequences | R210 |
| Bright | Sophia | 8 | | Dancing with Math | R214 |
| East Northport MS | | | | | |
| Masone | Valentina | 7 | | The Golden Ratio | R202 |
| McGlone | Shane | 7 | | Pascal's Triangle | R200 |
| Basrai | Soraya | 7 | Team A | The Four Color Map Problem | R224 |
| Cierski | Madeleine | 7 | Team A | The Four Color Map Problem | R224 |
| Code | Zachary | 7 | Team B | Fractals | R225 |
| Leonick | John | 7 | Team B | Fractals | R225 |
| Loring | Ester | 7 | Team C | Pascal's Triangle | R224 |
| Ryan | Audrey | 7 | Team C | Pascal's Triangle | R224 |
| Farrell | Patrick | 7 | Team D | Probability | R225 |
| Gilligan | Nicholas | 7 | Team D | Probability | R225 |
| Mescallado | Julia | 7 | Team E | Fibonacci Sequence | R224 |
| Urevich | Katelyn | 7 | Team E | Fibonacci Sequence | R224 |

| <u>Last Name</u> | <u>First Name</u> | <u>Grade</u> | <u>Team</u> | <u>Topic</u> | <u>Room</u> |
|----------------------------------|-------------------|--------------|-------------|--|-------------|
| Bell | Ryan | 8 | | Fibonacci Sequence | R204 |
| Boyle | Matthew | 8 | | Magic Sqaures | R205 |
| DellaMarco | Megan | 8 | | Pascal's Triangle | R207 |
| Kilroe | Kailyn | 8 | | Law of Sines and Cosines | R208 |
| Malon | Francesca | 8 | | Matrices | R210 |
| Mancino | Philip | 8 | | Imaginary and Complex Numbers | R214 |
| McDonagh | Thomas | 8 | | Special Relativity | R204 |
| Oliver | Madalyn | 8 | | Probability | R205 |
| Rosenzweig | Noah | 8 | | The Seven Bridges of Konigsberg | R207 |
| Stratton | Derek | 8 | | The Golden Ratio | R210 |
| Vozza | Isabella | 8 | | Game Theory | R208 |
| Frost MS | | | | | |
| Gutierrez | Celest | 7 | | Optical Illusions | R238 |
| Jiang | Jimmy | 7 | | Trigonometry, Trachtenberg Speed System | R202 |
| Min | Ryder | 7 | | The Golden Ration | R200 |
| Half Hollow Hills HS East | | | | | |
| Abrams | Sarah | 9 | | The Mathematics of Time | R232 |
| Gershovich | Mandy | 9 | | Population Growth | R234 |
| Gole | Megan | 9 | | The Koch Snowflake | I200 |
| Kugler | Calia | 9 | | Summations | R237 |
| Likos | Nicholas | 9 | | Imaginary and Complex Numbers | R228 |
| Strizik | Sari | 9 | | The Konigsberg Bridge Problem | R231 |
| Ye | Cassandra Tong | 9 | | Godels Incompleteness Theorem | R232 |
| Zhao | Jacqueline | 9 | | Paradoxes | R234 |
| Berkenfeld | Sydni | 10 | | Bubble Geometry | I108 |
| Blatt | Ashley | 10 | | Numerical Methods | I110 |
| Blumberg | Brooke | 10 | | Platonic Solids | I112 |
| Bordwin | Isabella | 10 | | Lobachevskian Geometry | I100 |
| Cherkin | Lauren | 10 | | Mathematics of the Airplane | I104 |
| Goldstein | Samantha | 10 | | Taxicab Geometry | I106 |
| Krasin | Marlee | 10 | | Pi | I108 |
| Krishnan | Shreya | 10 | | Math Behind Recommender systems | I110 |
| Lee | Jiachen | 10 | | Applications of the Brithday Paradox in math functions | I112 |
| Novikoff | Morgan | 10 | | Platonic Solids | I100 |
| Pisipati | Anish | 10 | | Usage of math to determine properties of stars | I104 |
| Raphaelson | Rebecca | 10 | | Pi | I106 |
| Rappaport | Cole | 10 | | Fibonacci Numbers | I108 |

| <u>Last Name</u> | <u>First Name</u> | <u>Grade</u> | <u>Team</u> | <u>Topic</u> | <u>Room</u> |
|---------------------------|-------------------|--------------|-------------|---|-------------|
| Rappaport | Cory | 10 | | Platonic Solids | I110 |
| Rothman | Samantha | 10 | | Pi | I112 |
| Schwarz | Alexandra | 10 | | Matrices | I100 |
| Weltmann | Matthew | 10 | | Riemann Sums and Definate Integrals | I104 |
| Wild | Leo | 10 | | Math in Outer Space | I100 |
| Winakor | Jessica | 10 | | Math in Dance | I106 |
| Azmoudeh | Yaas | 11 | | Matrices | I209 |
| Braun | Alexi | 11 | | Optical Illusions | I210 |
| Delouya | Lyndsey | 11 | | Optics | T111 |
| Feig | Joshua | 11 | | Finding the area under a curve using Riemann Sums and | I202 |
| Fogel | Lauren | 11 | | The traveling salesman Problem | I203 |
| Goldberg | Ben | 11 | | Newtons Method of Approximation | I208 |
| Goldstein | Casey | 11 | | Integral Calculas | I209 |
| Im | Jonah | 11 | | Riemann Sums | I210 |
| Luntz | Danielle | 11 | | Area under the Curve | T111 |
| Nelson | Sonia | 11 | | Math of lenses through the human eye | I202 |
| Patten | Sean | 11 | | Neural Networks | I203 |
| Reiffman | Lexie | 11 | | Steiners Tree and Square lattice | I208 |
| Rosenburg | Alix | 11 | | Nueral Networks | I209 |
| Samuel | Logan | 11 | | Konigsberg Bridge Problem | I210 |
| Waqar | Kasim | 11 | | Fuzzy Logic | T111 |
| Half Hollow Hills HS West | | | | | |
| Khan | Lamisa | 9 | | Matrices | I200 |
| Batkiewicz | Mia | 10 | | Infinity | I108 |
| Bender | Joseph | 10 | | Famous Mathematicians | I110 |
| Varma | Sunjana | 10 | | The Golden Rectangle | I112 |
| Antony | Irene | 11 | | Infinite Series & String Theory | I202 |
| Eichenstein | Brianna | 11 | | Math in Candy Crush | I203 |
| Eichenstein | Olivia | 11 | | Math and Space | I208 |
| Tucker | Lauren | 11 | | Mathematics in Art | I209 |
| Hauppauge MS | | | | | |
| Adobala | Snehal | 7 | | Algebraic Expression Expansions | R238 |
| Karthikeyan | Sreevarshini | 8 | | Statistical Epidemiology | R214 |
| Hicksville Schools | | | | | |
| Gupta | Sejal | 9 | | Sorting Algorithms | R234 |
| Jain | Viveka | 9 | | Business Management | R237 |
| Chowdhury | Nabil | 11 | | The Frog Puzzle | I210 |

| Last Name | First Name | Grade | Team | Topic | Room |
|------------------|------------|-------|------|--|------|
| Lingala | Navneet | 11 | | Traveling Salesman Problem | T111 |
| Mughal | Salaiha | 11 | | Prisoner's Dilemma | I202 |
| Raval | Priyansh | 11 | | Derivatives and Integrals | I203 |
| Tyagi | Srishti | 11 | | Four-dimensional Geometry | I208 |
| Huntington HS | | | | | |
| Sullivan | Foster | 9 | | Canator's Theorem and Cantonrian Set Theory | R237 |
| Clayton | Hadley | 10 | | Parabolas in Projectile Motion and Conics | I112 |
| Mortell | Haley | 10 | | Order of Operations Quadratic Equations | I104 |
| ICPS | | | | | |
| Leong | Trevor | 10 | | Fibonacci Sequences | I100 |
| Schwartz | Daniel | 10 | | Number Theory | I104 |
| Zhang | Albert | 10 | | Expected Value | I106 |
| Faughnan | Thomas | 11 | | Fibonacci Words | I209 |
| Joseph | Sonia | 11 | | Equidissection of Polygons | I210 |
| Wesselborg | Christian | 11 | | Geometric Modeling | T111 |
| Northport HS | | | | | |
| Judson-Teranishi | Keito | 8 | | Logarithms | R204 |
| Brummel | Alea | 9 | | Math in Tumor Growth | R228 |
| Cacic | Luke | 9 | | Matrices | R231 |
| Cammarasana | Simone | 9 | | Game Theory | R232 |
| Carire | Brandon | 9 | | The Trachtenberg Speed System | R234 |
| Caulfield | Olivia | 9 | | Codes and Ciphers | I200 |
| Donneruno | Isabella | 9 | | Optical Illusions | R237 |
| Guadagna | Anthony | 9 | | Complex & Imaginary Numbers | R231 |
| Guerrero | Marcos | 9 | | Using Mathematics to Create a Musical Chord Progressio | R228 |
| Guo | Emily | 9 | | Kepler's Laws | R232 |
| Krantz | Teddy | 9 | | Fibonacci Numbers | R234 |
| Levanti | Danielle | 9 | | Sine Waves in Music | I200 |
| Olivieri | Sophia | 9 | | Matrices | R237 |
| Patel | Harsh | 9 | | Famous Mathematicians | R228 |
| Penrose | Kevin | 9 | | Prime Numbers | R231 |
| Reynolds | Ryan | 9 | | Mathematics in Astronomy | R232 |
| Rizack | Venessa | 9 | | Fractals | R234 |
| Senior | James | 9 | | The Fibonacci Sequence | I200 |
| Stepanek | Chloe | 9 | | Probability in Genetics | R237 |
| Zulawski | Rachel | 9 | | Logarithms and the Logarithmic Slide Rule | R228 |
| Basel | Ashleigh | 10 | | Math in Music | I108 |

| Last Name | First Name | Grade | Team | Topic | Room |
|-------------------------|------------|-------|--------|---|------|
| Bica | Joseph | 10 | | Backwards Induction | I110 |
| Doyle | William | 10 | | Polar Coordinates | I112 |
| Jung | David | 10 | | Fractals | I100 |
| Krohn | Daniel | 10 | | Integrals | I104 |
| Lanzilotta | Mario | 10 | | Binary Calculators | I106 |
| MacLeod | Brian | 10 | | Math in Art & Architecture of the Renaissance | I108 |
| Holfester | Nicholas | 11 | | The Effect of a Shoe's Weight on a Racer's Time | I202 |
| Luft | Timothy | 11 | | Moore's Law | I203 |
| McDonagh | Brian | 11 | | Solar Panels | I208 |
| Muzyka | Stephen | 11 | | An Analysis of the Curve of the Abashi Kaikyo Bridges Sus | I209 |
| Starzee | Julianne | 11 | | The Relationship Between the Acidity of Water and the T | I210 |
| Northport MS | | | | | |
| Burk | Camden | 8 | | Complex and Imaginary Numbers | R205 |
| Connor | James | 8 | | Boolean Algebra and Mathematics in Progammng | R207 |
| Crafa | Griffin | 8 | | Permutations and Combinations | R208 |
| Giuliano | Elias | 8 | | Mathematics in Golf | R210 |
| Murdock | Gavin | 8 | | The Chinese Remainder Theorem | R214 |
| Schuvart | McKenzie | 8 | | Infinity | R204 |
| Oceanside HS | | | | | |
| Utrecht | Alex | 10 | | Analyzing the Foactors in a Home Run | I106 |
| Ross School | | | | | |
| Archambault | Andrew | 7 | | Logic | R202 |
| Rattray | Everett | 7 | Team A | Fibonacci Sequence & its Applications | R225 |
| Richter | Lilian | 7 | Team A | Fibonacci Sequence & its Applications | R225 |
| Teixeira | Maya | 7 | Team A | Fibonacci Sequence & its Applications | R225 |
| Hosey | Isabella | 7 | Team B | Probability in Genetics | R224 |
| Rice-Reeves | Zanzy | 7 | Team B | Probability in Genetics | R224 |
| Trinity Regional School | | | | | |
| D'Alonzo | Aidan | 7 | Team A | History of Numbers | R225 |
| Turner | Michael | 7 | Team A | History of Numbers | R225 |
| Whitcomb | Stephen | 7 | Team A | History of Numbers | R225 |
| Evans | Joseph | 8 | Team A | Fibonnaci's Numbers | R220 |
| Jacobs | Matthew | 8 | Team A | Fibonnaci's Numbers | R220 |
| Mazzucca | Joseph | 8 | Team A | Fibonnaci's Numbers | R220 |
| Udall Road MS | | | | | |
| Ostrove | Jenna | 8 | | Chaos Theory | R205 |
| Schuffenhaurer | Luke | 8 | | Theory of Relativity | R207 |

| <u>Last Name</u> | <u>First Name</u> | <u>Grade</u> | <u>Team</u> | <u>Topic</u> | <u>Room</u> |
|------------------|-------------------|--------------|-------------|--|-------------|
| Scourtos | Dorian | 8 | | Genetics | R208 |
| DiBenedetto | John | 8 | Team A | Pythagorean theorem | R220 |
| Veiga | Nicholas | 8 | Team A | Pythagorean theorem | R220 |
| Murphy | Jessica | 8 | Team B | Friendly Numbers | R220 |
| Rao | Margaret | 8 | Team B | Friendly Numbers | R220 |
| Ditaranto | Amanda | 8 | Team C | Criminology | R220 |
| Shanley | Ava | 8 | Team C | Criminology | R220 |
| West Hollow MS | | | | | |
| Curtis | Leila | 7 | | Fibonacci Sequence | R200 |
| Lerebours | Sophia | 7 | | Math in Medicine | R238 |
| Nambiar | Anand (A.J.) | 7 | | Fractals | R202 |
| Serlin | Dylan | 7 | | Cryptography | R200 |
| Zhang | Claire | 7 | | Euler's Identity | R238 |
| Kugler | Jolie | 7 | Team A | Euler and Hamiltonian Paths and Circuits | R224 |
| Woods | Grace | 7 | Team A | Euler and Hamiltonian Paths and Circuits | R224 |
| Dhanikonda | Sriya | 8 | | The Realtionship between Swimming and Math | R210 |
| Hoxha | Kevin | 8 | | Chaos Theory | R214 |
| Kampta | Seth | 8 | | Trigonometry | R204 |
| Moon | Elizabeth | 8 | | Chaos Theory | R207 |
| Sharma | Suraj | 8 | | Mathematics of Voting | R205 |
| Shetty | Sohan | 8 | | Kepler's Laws of Motion | R208 |
| Wu | Rachel | 8 | | Fibonacci Sequence | R214 |
| Keskinyan | Dylan | 8 | Team A | Pascal's Triangle | R220 |
| Peskin | Ben | 8 | Team A | Pascal's Triangle | R220 |
| Sahebzada | Tahmim | 8 | Team B | Binary Code | R220 |
| Sridhar | Neil | 8 | Team B | Binary Code | R220 |
| Wheatley School | | | | | |
| Shah | Diya | 9 | | Math in Crime Prevention | R231 |
| Sparacio | Rebecca | 9 | | Random Variables | R232 |
| Singh | Vedant | 10 | | Math in Basketball | I110 |
| Kumar | Abhishek | 11 | | Diophantine Equations | T111 |