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School of Theoretical and Applied Science Hosts 11th Annual Student Research Symposium

(MAHWAH, NJ) – The School of Theoretical and Applied Science recently held the 11th annual Student Research Symposium celebrating student-faculty scholarship and highlighting student research.

The event featured keynote speaker Senior Director of Vaccine Research for Pfizer Inc. Dr. Annaliesa S. Anderson, who delivered the lecture, “Anti-Bacterial Vaccine Development: Past, Present and Future.”

“The symposium is a demonstration of the extraordinary efforts of faculty and students working together, sometimes for two years, to add to the body of scientific knowledge,” said Dean Edward Saiff of the School of Theoretical and Applied Science. “The work that our undergraduates do is on a par with the work of seasoned graduate students. It is this high level of research experience that makes our students so attractive to the best graduate, medical, dental and veterinary schools.

The symposium allowed students the opportunity to discuss their research through oral presentations and poster sessions.

Oral presentations, with corresponding posters included:

- “Antiproliferative Activity of 2’-Hydroxychalcones,” by **Nicholas Kramer ’12 of Berlin, NJ**
- “Biochemical Studies of Oligomerization and DNA Binding Mechanisms of E. coli Recombination Protein RecR and its Interlocking Mutant Forms,” by **Sean Eccles ’14 of Millstone, NJ**
- “Bioinformatics Prediction Of Evolutionarily Conserved G-quadruplexes Involved In Post-Transcriptional Gene Expression In The PARK7 Gene,” by **Krysta Arbolino ’12 of Netcong, NJ**
- “Characterization of a Novel Gene Potentially Involved in Regulation of Bone Mass,” by **Kristin Holland ’13 of Union, NJ**
- “Going Green In The Organic Chemistry Teaching Laboratory,” by **Joanna Prumos ’13 of Edison, NJ and Mallory Coyman ’13 of River Edge, NJ**
- “Hydrogenation Without Hydrogen: Saturating Organic Compounds Using Hydrogen Transfer Compounds,” by **Danielle Mazza ’12 of Old Tappan, NJ**
- “Increasing Precision for Extended Reach 3D Manipulation,” by **Christopher Auteri ’13 of Franklin Lakes, NJ and Mark Guerra ’14 of Long Valley, NJ**
- “Kinetic Analysis of the Compression and Expansion of Monomolecular Films,” by **Melissa Ciandella ’13 of Maywood, NJ.**

- “Laser Spectroscopy of Carbon Dioxide Using Optogalvanic Method,” by **Lucas McCarthy ’14 of Randolph, NJ and Aaron Kerschner ’14 of Harrisburg, PA**
- “Manipulating the c-src Enzyme in Osteoblasts: Functional Consequences,” by **Joseph Tarr ’12 of Fords, NJ and Dana Branch ’12 of Fair Lawn, NJ**
- “Microhabitat use by songbirds on a capped landfill during four autumn migration seasons,” by **Mark Farrell ’12 of Westwood, NJ**
- “Productions and Biochemical Studies of Recombination Proteins Including RecR, RecO and their Complex from Deinococcus radiodurans,” by **Julie Truong ’12 of Mahwah, NJ**
- “QGRS-H Predictor: A Bioinformatics Tool for Prediction of Homologous Cis-Regulatory Motifs in mRNAs,” by **Camille Menendez ’13 of Hasbrouck Heights, NJ and Matt Crum ’14 of Mount Olive, NJ**
- “Solid/Solution Phase Peptide Synthesis of Novel Tris-Pegylated Reagents Using Aminocaproic Acid Spacers and Orthogonal Protecting Groups,” by Alicia Miller ’14 of Mahwah, NJ “Synthesis of Chalcones as Antioxidants,” by **Nicholas Kramer ’12 of Berlin, NJ**
- “The Effects of Prostaglandin Receptor EP4 on a Differentiation Marker in Osteosarcoma Cells,” by **Kathleen Carpio ’12 of Bogota, NJ**
- “Cyclic Voltammetry of Organometallic Complexes as Precursors for Molecular Jumper Cables,” by **Stephan Bien-Aime ’13 of Port-Au-Prince, Haiti**
- “The Effects of Emulsification and Viscosity on ¹H-NMR,” by **Zachary Cropley ’12 of Hillsborough, NJ and Jefferey Stellitano ’12 of Cinnaminson, NJ**
- “Quantization of Surface Area of Silica Particles Using Adsorption,” by **Steven Yourstone ’12 of Edison, NJ**

Poster presentations included:

- “Correlation of the sensitivity of oral bacteria to allicin and antibiotic,” by **Rick Caban ’12 of Holmdel, NJ and Tricia Mae Cueva ’13 of Dumont, NJ**
- “Drought Resistance of Tropical Maize (*Zea mays*) in the Presence of S-Abscisic Acid,” by **Minneh Oyas ’12 of Nairobi, Kenya**
- “Effects of Cooking Conditions on Nutritional Properties of Broccoli (*Brassica oleracea*),” by **Jillian Keough ’12 of Point Pleasant, NJ and Andrew Wong ’12 of North Brunswick, NJ**
- “Exploring the biodiversity mystery of South America,” by **Elizabeth De Smet ’12 of Lodi, NJ**
- “Growth inhibition of human and rat osteosarcoma cells by retinoic acid,” by **Michelle Favre ’13 of Saddle Brook, NJ**
- “Identification of Mitochondrial Gene Mutations in Individuals with Autism Spectrum Disorders,” by **Saba Shahamat ’13 of Wyckoff, NJ**
- “Is there a correlation between increasing Triclosan resistance and antibiotic resistance in normal human oral?” and by **Tricia Mae Cueva ’13 of Dumont, NJ.**
- “Isotope Dependency of the Optogalvanic Effect,” by **Lucas McCarthy ’14 of Randolph, NJ and Aaron Kerschner ’14 of Harrisburg, PA**

- “Python Implementation of Schoof’s Algorithm,” by **Corey Yuhas ’13 of Monmouth Junction, NJ**
- “Quantitation of Potassium-40 in environmental compounds with a scintillation detector,” by **Michael Carr ’12 of Dumont, NJ, Jillian Hauck ’14 of Hopatcong, NJ, and Amanda Skuriat ’14 of Linden, NJ**
- “Response of Low Marsh Cordgrass (*Spartina alterniflora*) to Various Levels of Salinity and Heavy Metals,” by **Wendy Castro ’14 of Perth Amboy, NJ and Pedro Flores**
- “The Potential Impact of Heavy Metal Exposure on Antibiotic Resistance of Bacteria from a Remediated Site Versus an Unremediated Site,” by **Paula Bohan ’13 of Williston Park, NY, Julia Mobilio ’13 of Saddle Brook, NJ, and Lina Damrah ’13 of Garfield, NJ**
- “The Role of SIT-1 in Osteoblast Differentiation,” by **Afzal Hussain ’13 of Paterson, NJ**
- “Trends in tree seedling abundance in a temperate hardwood forest following Tropical Storm Irene,” by **Stephanie Sinck ’12 of Bridgewater, NJ, Amanda Nesheiwat ’12 of Secaucus, NJ, and Mark Farrell ’12 of Westwood, NJ**
- “Understanding Malaria: Is the New Vaccine, RTS,S, the Current Solution?” by **Minneh Oyas ’12 of Nairobi, Kenya.**

Oral presentations included:

- Hybridization and species diversity in *Sphagnum* subgenus *Sphagnum*,” by **Elizabeth De Smet ’12 of Lodi, NJ**
- “Minimal Degree Parameterizations of the Trefoil and Figure-Eight Knots,” by **Samantha Pezzimenti ’12 of Wall, NJ**

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Ranked by *U.S. News & World Report* as fifth in the Best Regional Universities North category for public institutions, Ramapo College of New Jersey is sometimes mistaken for a private college. This is, in part, due to its unique interdisciplinary academic structure, its size of approximately 6,008 students and its pastoral setting in the foothills of the Ramapo Mountains on the New Jersey/New York border.

Established in 1969, Ramapo College offers bachelor's degrees in the arts, business, humanities, social sciences and the sciences, as well as in professional studies, which include nursing and social work. In addition, Ramapo College offers courses leading to teacher certification at the elementary and secondary levels. The College also offers five graduate programs as well as articulated programs with the University of Medicine and Dentistry of New Jersey, New York Chiropractic College, New York University College of Dentistry, SUNY State College of Optometry and New York College of Podiatric Medicine.