



NewsLetter

NEW JERSEY ACADEMY OF SCIENCE

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DR. MARIA AGAPITO, NJAS PRESIDENT, NAMED "I CAN STEM ROLE MODEL"

We are proud to announce that our very own NJAS President, Dr. Maria Agapito, was selected as the February inductee into the 2022 New Jersey Class of **I CAN STEM Role Models**.

Launched in 2020, the "New Jersey STEM Pathways Network: I CAN STEM" diversity and inclusion campaign aims to support an increase in the diversity of New Jersey's STEM workforce and academic pipelines. I CAN STEM highlights diverse STEM role models so that all students will be able to see themselves participating and succeeding in STEM courses and careers. Each month in 2022, a New Jersey inductee will be announced as part of the 2022 Class of I CAN STEM Role Models.

continued page 2

Did you watch the Olympics? The Physics of the 360 Cross- (Almost)



Herve, CC BY-SA 2.0 <<https://creativecommons.org/licenses/by-sa/2.0/>>, via Wikimedia Commons [https://commons.wikimedia.org/wiki/File:Chronophotography_sport_360_Cross-\(Almost\).jpg](https://commons.wikimedia.org/wiki/File:Chronophotography_sport_360_Cross-(Almost).jpg)

2021 -2022 NJAS Executive Board Members

President Maria Agapito, Ph.D.

Vice President Open

Director of the Junior Academy Brittany West, M.S.

Editor Newsletter Donna Leonardi, M.S.

Social Media Director Joshua Egwuonwu

Social Media/Newsletter VP Directors

Mehwish Mirza

Cynthia Jacob

Shreshth Rajan

Past President Eric Iannacone, Ph.D.

Treasurer Denise Gemmellaro, Ph.D.

Chairperson of the Science Program Agnes Berki, MSc Ph.D

Editor Bulletin Joseph Spagna, Ph.D.

Bulletin Co-Editors Kendall Martin, Ph.D.
Paul Bologna, Ph.D.
John Wnek, Ph.D.
Laura Lorentzen, Ph.D.

Program Development Coordinator

Kelly Reilly, Ph.D.

Executive Secretary Kiruthika Balasubramanian, Ph.D

Funding Program Development Coordinator Melisa Baralt, Ph.D.

Membership Program Development Coordinator Mohamed Mohamed, Ph.D.

continued... Dr. Maria Agapito, our NJAS President, Named I CAN STEM Role Model

continued from page 1

DR. AGAPITO EXPLAINS, "MY LONG-TERM GOAL IS TO CHANGE THE FACE OF AMERICA BY ENHANCING CURIOSITY; EDUCATING AND MENTORING STUDENTS TO ENTER STEM RELATED FIELDS. IN THIS WAY, WE CAN CREATE A DIVERSE POPULATION OF ROLE MODELS FOR THE NEXT GENERATIONS TO COME. FOR THIS REASON, I JOINED BARD HS EARLY COLLEGE (BHSEC). BHSEC ENABLES STUDENTS TO EARN A HIGH SCHOOL DIPLOMA FROM NEWARK PUBLIC SCHOOL (NPS) IN NJ AND A TUITION-FREE BARD COLLEGE ASSOCIATE'S DEGREE IN FOUR YEARS.



MODIFIED FROM PROJEKTIVEPLANE4BB.JPG, CC BY-SA 3.0 BY DARAPTI

NJ Academy of Science Announcements

- March 4, 2022** Junior and Senior Academy Abstracts Due for 67th New Jersey Academy of Science Virtual Annual Meeting: Information pgs. 5-6 of this Newsletter
- April 4, 2022** Junior and Senior Academy Videos Due for 67th New Jersey Academy of Science Virtual Annual Meeting ; Information pgs. 5-6 of this Newsletter
- April 4, 2022** Judge Interest form due: Information pg. 7 of this Newsletter
- May 14, 2022** 67th NJAS Virtual Annual Meeting

Check your email for STEM Month Seminars

Save the Date

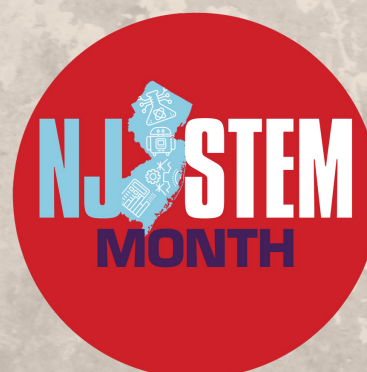
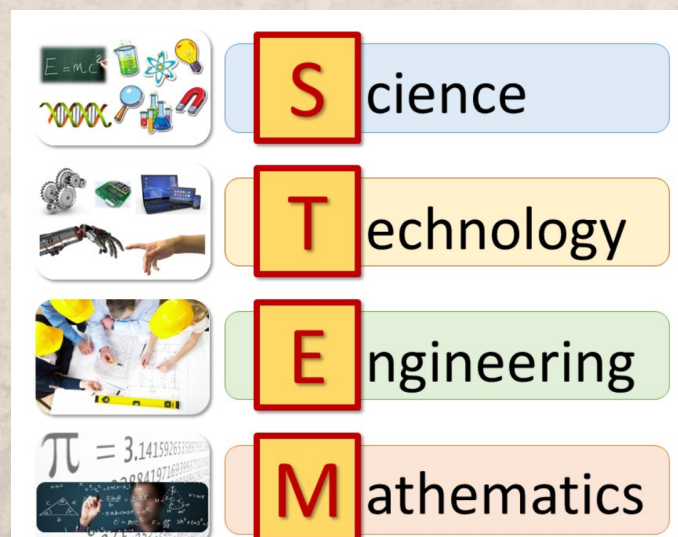
NJ Academy of Science Special Announcements

March is New Jersey STEM Month Sponsor and Event

NJ STEM Month celebrates the accomplishments of the STEM innovators of the Garden State. It is co-hosted by the New Jersey STEM Pathways Network and Research & Development Council of New Jersey and highlights accomplishments in science, technology, engineering, math and innovation.

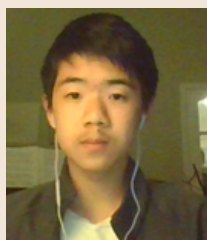
ALL organizations in the state are called to showcase and celebrate excellent work in STEM for NJ STEM Month by hosting/attending events and engaging on social media.

To learn more go to:
<https://njstempathways.org/njstemmonth/>
To sponsor and event go to:
<https://njstempathways.org/event-form/>
To see the full calendar of events go to:
<https://njstempathways.org/events/2022-03/>
Engage in social media through #NJSTEMMonth



NJ 2022 Delegates to the American Junior Academy of Science at the AAAS Annual Meeting "Empower with Evidence"

Biochemistry



Daniel Lin

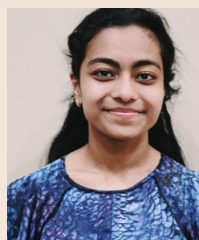
Cell/Molecular Biology



Myra Dhingra



Harnoor Sachar



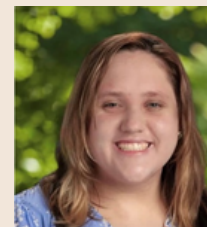
Sahashra Pokkunuri

Math



Grace Park

Earth Science

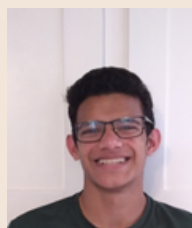


Emily Jones

Botany



Juliette Onofrietti



John Clausing



Aravind Krishnan

Engineering



Sidharth Srivastava



Anastasia Samets

Ecology



Kaitlyn Culbert



Rhea Raghu



Harrison Banks

Computer Science



Samhita Pokkunurii

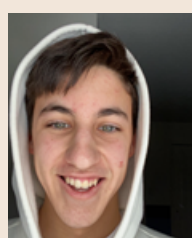
Microbiology



Katherine Fang

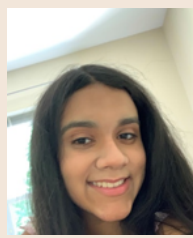


Rayan Jawa



Ryan Schagar

Health/Medicine

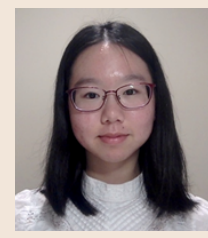


Neha Vazarkar



David Chang

Physics



Jue Gong



JUNIOR ACADEMY: JOIN US TO CELEBRATE THE 67TH NJAS VIRTUAL ANNUAL MEETING

- *Celebrated in a virtual format*
- *Scientific abstracts due March 4th*
- *Final video presentations (YouTube unlisted format) and NJAS registration due April 4th*
- *Virtual meeting May 14th with live presentations and an award ceremony.*

- **OPPORTUNITY TO PUBLISH ABSTRACT IN THE "NEWSLETTER"**
- **COMPETE IN 2022 NATIONALS "AMERICAN JUNIOR ACADEMY OF SCIENCE"**
- **ADD EXPERIENCE TO RESUME**



[Visit our website, njas.org, for more information.](https://njas.org)
[Rules & Registration may be found here.](#)



SENIOR ACADEMY: JOIN US TO CELEBRATE THE 67TH NJAS VIRTUAL ANNUAL MEETING

- *Celebrated in a virtual format*
- *Scientific abstracts due March 4th*
- *Final video presentations (YouTube unlisted format) and NJAS registration due April 4th*
- *Virtual meeting May 14th with live presentations and an award ceremony.*

- **OPPORTUNITY TO PUBLISH ABSTRACT IN THE "BULLETIN"**
- **SERVE AS NJAS DELEGATE AT THE 2022 "AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE"**

We are honored to host postdoctoral fellows and faculty who would like to present in this division and the registration fee will be waived. Visit our website, njas.org, for more information. Rules & Registration may be found here.





NEW JERSEY ACADEMY OF SCIENCE

CALL FOR JUDGES: JOIN US TO CELEBRATE THE 67TH NJAS VIRTUAL ANNUAL MEETING

We need assistance of our elite scientific community in New Jersey to serve as judges. We hope to count on you to help evaluate the work of our participants while awards are given for outstanding presentations. Science & Math & Technology professionals can volunteer as judges in the following fields:

**ENVIRONMENTAL SCIENCE /
ECOLOGY
CELL OR MOLECULAR BIOLOGY
HEALTH / MEDICINE
CHEMISTRY / BIOCHEMISTRY
PHYSICS / ENGINEERING
MATHEMATICS/COMPUTATION
AL SCIENCE**

**PSYCHOLOGY / ANIMAL
BEHAVIOR
MICROBIOLOGY
BOTANY
MARINE SCIENCE
SCIENCE OR MATH EDUCATION
EARTH SCIENCE / GEOLOGY /
METEOROLOGY
TOPICAL REVIEWS**

NJAS JUDGES RESPONSIBILITIES:

FILL OUT FORM TO BE CONSIDERED AS A JUDGE - APRIL 4, 2022

JUDGES WILL BE INFORMED OF CATEGORY AND # OF ABSTRACT/VIDEOS - APRIL 18, 2022

JUDGES EXPECTED TO FINALIZE PRESENTATION REVIEW BY MAY 6, 2022

JUDGES INVITED TO ATTEND THE LIVE AWARD CEREMONY ON MAY 14, 2022

For any questions please email: Junior Academy - Ms. West at bblackman86@gmail.com or Ms. Ariel Valverde at njas.gia@gmail.com. For Senior Academy - Dr. Agnes Berki at agnestberki@gmail.com. Visit our website, njas.org, for more information. Full meeting agenda TBA.

[NJAS Judge form: here](#)

NJAS WOULD LIKE TO CONGRATULATE NEW JERSEY'S 2022 REGENERON STS SCHOLARS

**THESE STUDENTS WERE AMONG THE TOP 300 STEM RESEARCH
STUDENTS FROM ACROSS THE UNITED STATES AWARDED THIS HONOR
BY THE JUDGES OF THE REGENERON SCIENCE TALENT SEARCH**

OUR FUTURE IS IN EXTRAORDINARY HANDS

JULIE ALAN, AGE: 17

BERGEN COUNTY ACADEMIES, NJ

**PROJECT TITLE: USING ANTIHISTAMINES TO TARGET A-SYNUCLEIN FOR THE
TREATMENT OF PARKINSON'S DISEASE**

NEHA AYYALAPU, AGE: 18

WEST WINDSOR-PLAINSBORO HIGH SCHOOL, NJ

**PROJECT TITLE: A MACHINE LEARNS TO PREDICT THE STABILITY OF HIGHLY
DIVERSE MULTI-PLANETARY SYSTEMS**

MULIN HUAN, AGE: 18

PRINCETON HIGH SCHOOL, NJ

**PROJECT TITLE: EFFECT OF TEMPERATURE ON ACTION POTENTIAL PROPAGATION
BY TRIGGER HAIRS OF THE VENUS FLYTRAP (DIONAEA MUSCIPULA) WHEN EXPOSED
TO MECHANICAL STIMULI**

SONYA JIN, AGE: 17

STUART COUNTY DAY SCHOOL OF THE SACRED HEART, NJ

**PROJECT TITLE: PNEUMOSTACK: A NOVEL APPROACH TO AUTOMATED PNEUMONIA
DIAGNOSIS WITH DEEP TRANSFER ENSEMBLE LEARNING VIA CONVOLUTIONAL
NEURAL NETWORKS AND STACKED GENERALIZATION**

RISHI KUMAR, AGE: 17

BERGEN COUNTY ACADEMIES, NJ

**PROJECT TITLE: CO-CULTURING S. CEREVISIAE AND K. MARXIANUS TO
BIOREMEDIATE COPPER FROM WATER**

SETON LIU, AGE: 17

BERGEN COUNTY ACADEMIES, NJ

**PROJECT TITLE: A NOVEL ROLE FOR FIS1-MEDIATED MITOCHONDRIAL FISSION IN
SENOLYTIC DRUG DEVELOPMENT**

NJAS WOULD LIKE TO CONGRATULATE NEW JERSEY'S 2022 REGENERON STS SCHOLARS

ROHIT MANTENA, AGE: 18

BERGEN COUNTY ACADEMIES, NJ

**PROJECT TITLE: THE CRITICAL ROLE OF GLUTAMINE TRANSPORTER ASCT2 ON
PARKINSON'S DISEASE PROGRESSION**

ADA METAXAS, AGE: 18

PRINCETON HIGH SCHOOL, NJ

**PROJECT TITLE: IMBALANCES IN COPPER OR ZINC CONCENTRATIONS TRIGGER
FURTHER TRACE METAL DYSHOMEOSTASIS IN AMYLOID-BETA PRODUCING
CAENORHABDITIS ELEGANS**

SURAJ ORUGANTI, AGE: 18

WEST WINDSOR-PLAINSBORO HIGH SCHOOL, NJ

**PROJECT TITLE: EARLY/LATE CHEMOTHERAPY: MATHEMATICALLY MODELING
PROSTATE-SPECIFIC ANTIGEN PARAMETERS AND INVESTIGATING THEIR EFFECTS
ON INTERMITTENT ANDROGEN DEPRIVATION**

HANNAH PARK, AGE: 17

TENAFLY HIGH SCHOOL, NJ

**PROJECT TITLE: ALTERED DEVELOPMENT OF THYMUS IN TMEM131 KNOCKOUT
MOUSE MODEL OF DOWN SYNDROME**

RYAN PARK, AGE: 17

MILLBURN HIGH SCHOOL, NJ

**PROJECT TITLE: V-BIND: SARS-COV-2 INHIBITOR DESIGN VIA GEOMETRIC
TRANSFORMER**

KANNAMMAI PICHAPPAN, AGE: 17

BERGEN COUNTY ACADEMIES, NJ

**PROJECT TITLE: A NOVEL, NON-INVASIVE, SCHWANN CELL SUPPORTING APPROACH
TO PERIPHERAL NERVOUS SYSTEM DEGENERATIVE DISEASE**

BRANDON RECCE, AGE: 17

NEWARK ACADEMY, NJ

**PROJECT TITLE: QUANTITATIVE ANALYSIS OF THE IMPACT OF HIGHLY SKILLED
IMMIGRANT WORKERS ON AMERICAN INNOVATION**

**NJAS WOULD LIKE TO CONGRATULATE NEW JERSEY'S
2022 REGENERON STS SCHOLARS**

**MAXWELL SELVER, AGE: 18
TENAFLY HIGH SCHOOL, NJ**

**PROJECT TITLE: EXPRESSIONAL CORRELATIONS BETWEEN SERPINA6 AND
PANCREATIC DUCTAL ADENOCARCINOMA-LINKED GENES**

**ISABEL SHI, AGE: 18
BERGEN COUNTY ACADEMIES, NJ**

**PROJECT TITLE: 5G NETWORK HIGH FREQUENCY RADIATION EXERTS BIOLOGICAL
EFFECTS ON THE HEALTH OF DIFFERENTIATED NEUROBLASTOMA CELL
AND SILKWORM MODELS**

**ALEXANDRA VOLKOVA, AGE: 17
BERGEN COUNTY ACADEMIES, NJ**

**PROJECT TITLE: THE POTENTIAL OF TGF-B AND STEROID-INDUCED OSTEOBLASTIC
TRANSDIFFERENTIATION OF HUMAN FIBROBLASTS IN REPLACING THE BONE GRAFT**

**ATTICUS WANG, AGE: 17
PRINCETON INTERNATIONAL SCHOOL OF MATH AND SCIENCE, NJ**

PROJECT TITLE: REPRESENTATION STABILITY AND FINITE ORTHOGONAL GROUPS

**DANIEL XIA, AGE: 18
RIDGE HIGH SCHOOL, NJ**

PROJECT TITLE: A MINKOWSKI-TYPE INEQUALITY IN ADS-MELVIN SPACE

**KATHERINE XIE, AGE: 18
THE PINGRY SCHOOL, NJ**

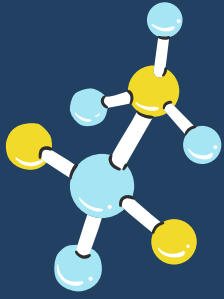
**PROJECT TITLE: THE IMPACT OF STRUCTURAL CHANGES ON LEARNING CAPACITY
IN THE FLY OLFACTORY NEURAL CIRCUIT**

**XINKAI YU, AGE: 18
PRINCETON INTERNATIONAL SCHOOL OF MATH AND SCIENCE, NJ**

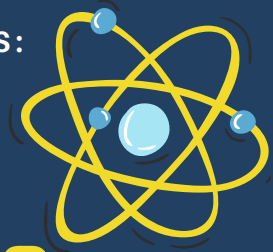
**PROJECT TITLE: MODELING AND MITIGATING INFECTION RISKS OF COVID-19 IN
AIRCRAFT CABINS**

**ZARA YU, AGE: 15
KINNELON HIGH SCHOOL, NJ**

**PROJECT TITLE: MANY-BODY QUANTUM STATE CONTROL IN THE PRESENCE OF
ENVIRONMENTAL NOISE**



BERGEN COUNTY ACADEMIES PRESENTS:



BERGEN SCI CHALLENGE 2022

A Competitive Science Fair for Students Grades 5-8

Do you....

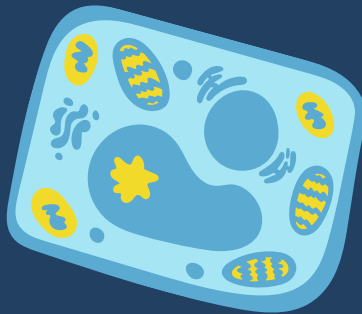
- HAVE A PASSION FOR SCIENCE?
- WANT TO LEARN AND CREATE?
- WANT TO BE MENTORED BY BCA RESEARCH
- STUDENTS?
- WANT TO WIN AWARDS?



THEN ENTER BERGEN SCI CHALLENGE!

HOSTED VIRTUALLY MAY 15, 2022

REGISTRATION: OPENS EARLY JANUARY, ENDS MARCH 15



SCAN THE QR CODE TO CHECK OUT OUR
WEBSITE OR USE THE LINK BELOW!

[HTTPS://SITES.GOOGLE.COM/BERGEN.ORG](https://sites.google.com/bergen.org/bergenscichallenge)
[/BERGENSCICHALLENGE](https://sites.google.com/bergen.org/bergenscichallenge)

NJ Academy of Science General Announcements

We Celebrate **Black History** We are Black History III



New Jersey Medical Association
is looking for students of color who have ideas about
how to combat health care disparities in communities
where they live.



Please help spread the Word

Our Scholarship Essay Contest Has begun:

scan the QR code below
and you can share the documents with your networks of NJ:

**high school seniors,
college seniors**

or

**1st, 2nd , 3rd year NJ medical
school matriculants**

who want to enter scholarship contest on how to combat health
disparities in communities of color.

Application and Essays must be submitted by March 16th 2022

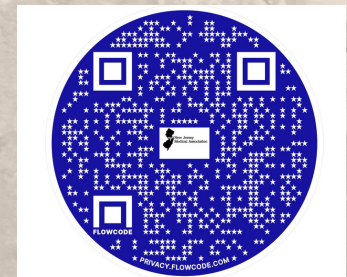
At our event in April 2022, we will honor all NJ medical school graduates
from underrepresented minority groups and Residency Program
graduates of underrepresented groups who have signed up with NJMA.

Have additional questions reach out by email to
njmapresident@gmail.com

scan code below for details on essay submission:

"If you see something
that is not right, not
fair, not just, you
have a moral
obligation to do
something about it."

- Rep. John Lewis



NJ Academy of Science General Announcements



ARE YOU A MIDDLE OR HIGH SCHOOLER OR RESEARCH SCHOLAR

LOOKING FOR SPEAKING OPPORTUNITIES
IN STEM FIELD
NEW JERSEY ACADEMY OF SCIENCE

PROVIDES YOU WITH AN OPPORTUNITY TO
SPEAK IN FRONT OF RENOWNED SCIENCE
PEOPLE.

OUR MISSION IS TO :

- BOOST YOUR CONFIDENCE IN PUBLIC SPEAKING
- INCREASE YOUR INTEREST IN SCIENCE
- PROVIDE OPPORTUNITIES TO NETWORK WITH RESEARCH PEOPLE
- TO GET MENTORS FOR INTERNSHIPS

FOR FURTHER DETAILS PLEASE CONTACT
SECRETARY, NJAS
medijoywithbk@gmail.com

"If you can't explain something simply, you don't understand it well. Most of the fundamental ideas of science are essentially simple, and may, as a rule, be expressed in a language comprehensible to everyone. Everything should be as simple as it can be, yet no simpler."

Albert Einstein



**ARE YOU A SCIENCE
LOVER?**

Are you a high or middle schooler

**NEW JERSEY ACADEMY OF
SCIENCE**

Accepts small writeups or
paper for our **NEWSLETTER**

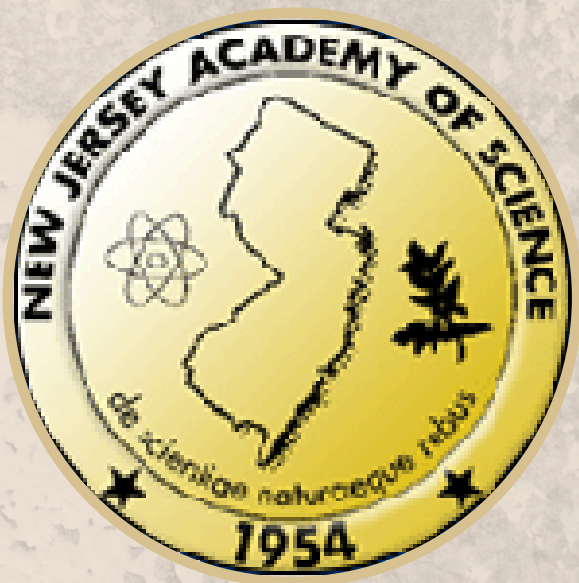
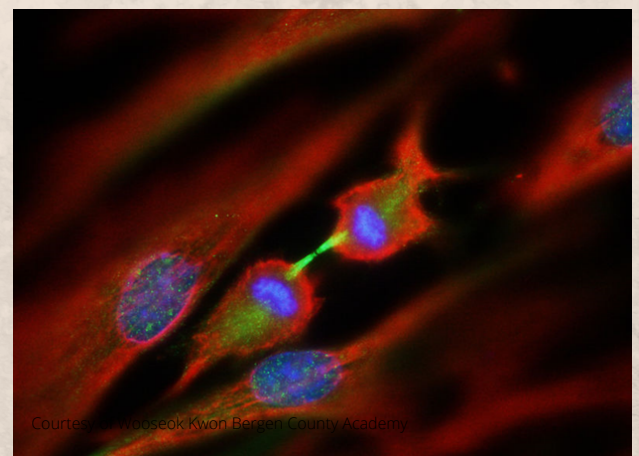
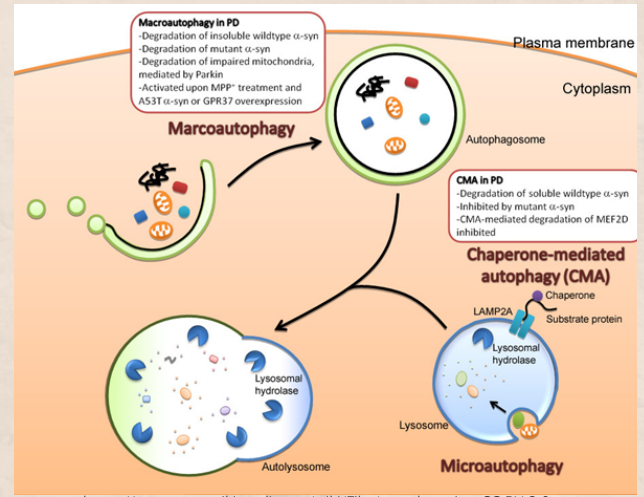
FOR DETAILS CONTACT
KIRUTHIKA BALASUBRAMANIAN
SECRETARY
medijoywithbk@gmail.com
+18482486347

Letters to the NJAS Newsletter Editor

We encourage a diversity of voices and views in our letters. Letters may include a review of a book, opinions about a movie as it relates to science, a scientific question posed to the NJAS community, or even a piece of art in relation to science (may serve as the front page picture!). Opinions on current science news or issues or reference to an article that has appeared within the last two issues of the NJAS newsletter are always welcome.

Letters should preferably be 150 to 175 words and must include the writer's address and phone number (only the name will be published). A *piece of art* may be submitted electronically in a JPEG format. *Letters* or *art* should be exclusive to the NJAS "Newsletter." To send a *Letter* or *Art* to the Editor: email letter/art to donleo54@gmail.com. Subject line must include "Letter/Art to the NJAS Newsletter Editor."

Aberrant autophagy is suspected in many disease states. Gene and protein expression of autophagy markers are frequently studied and immunofluorescent staining is often done.



Call for Manuscripts for the Bulletin

Please consider submitting your findings to the prestigious NJAS official journal. Peer reviewed and indexed in PubMed, this journal is the perfect location for your research. We are currently on a twice-yearly publication schedule, which consists of a Spring issue and a Fall issue.

Anyone having questions about the review and/or publication process should contact the Bulletin editor at NJAS.publications@gmail.com