

400 Cedar Avenue  
West Long Branch, NJ 07764  
[www.monmouth.edu/school-of-science/](http://www.monmouth.edu/school-of-science/)  
[science@monmouth.edu](mailto:science@monmouth.edu)  
732-571-3421



Summer, 2021

# ScienceBuzz

E-NEWSLETTER FROM THE SCHOOL OF SCIENCE

## A Message from Dean Bachrach

Friends and colleagues,

As we acclimatize to our new reality, brought on by the great scientific success of vaccine production, this Science Buzz offers some stories about how we in the School of Science at Monmouth University persevered during the pandemic. Though most of our classes were moved to a remote setting, I am very proud of the tremendous efforts our faculty took to create meaningful learning experiences with that special Monmouth touch. Despite the fact that ultimately this was a very successful year, I suspect that none of us wish to ever repeat the lifestyle we all just endured.

Looking to the fall, we anticipate resuming on-campus classes and activities. We have admitted a full incoming class with the highest GPA ever, and our residence halls will be close to capacity. Our Summer Research Program is in full swing. We look forward to launching our new MS in Data Science this fall. A number of faculty are pursuing their promotion this fall. Life is continuing in a more normal fashion. We still await final guidance from the Governor regarding what Covid precautions will remain in effect. But whatever are the conditions, I know that the School of Science will continue to deliver a top-flight education.

I hope that you are all well and if you are able to visit campus this fall, we will eagerly welcome you back, and look forward to hearing your stories of the pandemic year, and learning what's next in store for you.

All the best,

Steven Bachrach  
Dean, School of Science

# MONMOUTH UNIVERSITY

SCHOOL OF SCIENCE

## Featured Alumni



### DeMond Timmons '11

DeMond Timmons is a Project Lead/GIS Specialist at Mott MacDonald, a Global Engineering, Environmental Management, Consultancy and Development Firm. DeMond came to Monmouth University in 1994 and after two years interrupted his studies to pursue other challenges including serving in the Iraq war. He attributes much of his success to his volunteer work.

[DeMond, in his own words.](#)



### Roxy Nicoletti '20

Roxy Nicoletti is a graduate student in the Cancer Cell Biology Program at West Virginia University

[Roxy, in her own words.](#)

## Dr. Dmitri Kosenkov Earns NSF Award for “Advancement of Excitation Energy Transfer Modeling with Deep Learning Algorithms”



We are excited to announce that Dr. Dmitri Kosenkov was granted a National Science Foundation (NSF) award from the Chemical Theory, Models and Computational Methods program in the Division of Chemistry. His project is to develop computational methods for

modeling electronic excitation energy transfer dynamics in complex molecular systems by the incorporation of deep learning techniques. In addition to research experiences for Monmouth undergraduates in the Kosenkov laboratory, this generous award (\$265,000) will also support computational chemistry workshops for undergraduate and high school students at Monmouth University.

Excitation energy transfer is a fundamentally important process for light harvesting and utilization in natural and artificial systems. Modern technology, such as photovoltaics and molecular sensors, involve energy transfer. Of particular interest is to better understand excitation energy transfer mechanisms in molecular fluorescent probes for targeting specific proteins and DNA sequences, and sensing of intracellular environments. The challenges in modeling of the excitation energy transfer processes in complex molecular systems with currently available quantum chemical methods is associated with extremely high computational costs of such simulations due to the large size and complex structure of the systems. Dr. Kosenkov and coworkers are incorporating machine learning to overcome these obstacles. This approach dramatically accelerates computations, and thereby reduces computational cost. The scientific knowledge produced has a potential for advancement in the fields of chemical biology and quantum technology including artificial photosynthesis, organic photovoltaics, and phototherapy.

For more on [Dr. Kosenkov](#) or his [research](#) please see his websites.

You can read about DeMond and Roxy and their personal journeys on the Monmouth University School of Science [Featured Alumni and Graduates](#) page.

## The School of Science Proudly Presents The Class of 2021



The School of Science held its physical commencement on Thursday, May 20th at 2:00pm. Twenty-Four students graduated with Master of Science Degrees and 113 graduated with Bachelor's Degrees.

Please enjoy our [Photo Gallery](#) of the Class of 2021.

### Tell Us About You

We take pride in our science, engineering, and mathematics alumni, so please contact us. Update your profile via our [alumni survey](#) to tell us about your successes and help us serve you better as an alumnus. If you are interested in helping our current students via on- or off- campus interactions, we want to know!

If you would like to speak at our 2021-2022 Career Choices panel, please fill out our survey or contact Associate Dean Duckett at [cduckett@monmouth.edu](mailto:cduckett@monmouth.edu).

## Teaching Innovations in Pandemic



All of our faculty had to adjust and innovate in response to teaching in an online environment during the last two and a half semesters of this pandemic. Three faculty with three very different types of teaching challenges have generously shared their stories of making their classrooms engaging and effective for students during these challenging times. Professor Kate Gatto used Discord to meet the students in her IT classes where they are. Dr. Uzma Imtiaz reformed the Organic Chemistry lab for social distancing and Dr. Kayla Lewis relates her experiences researching online best practices and teaching Physics and Applied Rationality asynchronously. Learn more and read their stories in their own words on our [website](#).

## Annual Student Research Conference

The Annual Student Research Conference (SRC) featured “lightning talks” presented by students on our [School of Science YouTube Channel](#) and judged by faculty during the week of April 19<sup>th</sup>. Twenty-six student groups presented their research. To find out which four won the Dean’s award of Excellence in Undergraduate Research (including \$500 per presentation in prize money) and to see the winning you tube presentations click [here](#).



## Past Issues of theScience Buzz

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## Support the School of Science

Make a tax-deductible donation to the School of Science today! Your gift will make a difference in the lives of current School of Science students. Your gift can be designated to the area of your choice, including student scholarships, the Summer Research Program, and facilities improvements. [Click here](#) to make your gift.

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