Rider University’s Science Technology Engineering Mathematics (STEM) Teacher Academy

www.rider.edu/stemteacheracademy

Rider University's STEM Teacher Academy is made possible by grants from Janssen Pharmaceuticals and Bristol-Myers Squibb

In summer 2018, Rider University will host its ninth annual Science, Technology, Engineering, and Mathematics (STEM) Teacher Academy

Monday - Friday, July 16 - July 27, 9 a.m. to 3 p.m.

What is the STEM Teacher Academy?

STEM 2018 will focus on ecology and sustainability, helping students understand that we, as humans, are an integral part of the natural world. Decisions we make in our day-to-day lives can upset nature's balance, causing measurable and lasting impacts on the environment in which we all live.

Through generous funding from Janssen Pharmaceuticals and Bristol-Myers Squibb, academy students will become investigators, utilize hands-on field techniques and laboratory skills, and initiate Internet searches that rely upon numerous strategies to assist them in addressing complex scientific questions. Students in the 2018 Academy will work on ecology research teams, ask their own questions, plan and carry out investigations, analyze data, construct explanations and present their findings to an audience of peers, family, and staff.

Who should apply?

The Academy invites anyone who is 15 to 18 years old in fall 2018 and interested in teaching the STEM disciplines to apply. The application deadline is June 15, 2018.

What kinds of activities can you expect to do?

• Participate in STEM field-based excursions
• Build a skeleton from a collection of disarticulated bones
• Collect and analyze weather data
• Study the decomposition process with remote sensing equipment and digital/infrared imagery
• Document ecological succession through observation and species identification
• Identify common NJ mammals from skull replicas
• Analyze forest succession on Rider’s campus using Google maps
• Construct a class website for sharing research
• Present scientific outcome data and explanations to STEM team of professors, scientists and students
• Lead research studies, teach lessons and receive feedback from education and science faculty
ACADEMY GOALS

- Students will engage in a variety of educational endeavors, both at Rider University and in the community, immersing them in the Scientific and Engineering Practices, Core Disciplinary Ideas and Crosscutting Concepts that are central to the Next Generation Science Standards (NGSS).
- Students will conduct a multi-day carcass decomposition study that embodies principles of ecological succession and sustainability.
- Students will develop critical thinking skills as they identify, analyze and solve problems during a skeletal reconstruction exercise and skull identification lab.
- Students will learn the academic and professional requirements of becoming teachers, particularly in the STEM disciplines.
- Students will practice effective teaching through presenting results of their research to members of the Academy.

PROGRAM FACULTY & STAFF

Rider University’s STEM Teacher Academy Program Faculty and Staff consist of a combination of professors and staff from the College of Education and Human Services, College of Liberal Arts and Sciences, current K-12 teachers and education students. Faculty members conduct research in the STEM disciplines and hold advanced degrees in the sciences and education fields.

Dr. Peter Hester is a dynamic teacher with over thirty years of experience in science education. He helped create the Integrated Sciences and Math major at Rider University, contributed to New Jersey’s efforts to adopt and implement the Next Generation Science Standards, and is currently co-principal investigator on a 1.4 million dollar grant that aims to recruit, train and deploy highly qualified STEM teachers in high-needs school districts.

Sarah Schuller graduated from Rider University in 2013 where she studied Integrated Sciences and Math, Elementary Education and Middle School Mathematics education. Upon graduation, Mrs. Schuller worked as an eighth-grade math teacher at Fisher Middle School in Ewing and now is in her third year of teaching at Dundalk Middle School in Maryland.

Sven Strnad earned his Ph.D. in entomology from Purdue University and began his career as a research scientist at American Cyanamid’s Agricultural Research Facility. He obtained his teaching certificates through the Graduate Level Teacher Preparation program at Rider University and is currently a middle school science teacher in the West Windsor-Plainsboro School District. His passion for connecting students to the natural world outside of the classroom has earned him the Presidential Innovation Award for Environmental Educators from the U.S. Environmental Protection Agency and the President’s Prize for Outstanding Achievement in Primary Education from the Entomological Foundation of the Entomological Society of America.

Matthew Sisk attended New Jersey City University where he received a B.S. in Geological Sciences. His studies took him to San Diego State University where he participated in field research Paleoseismology, and Tectonic Geomorphology across south-western US, Mexico, and Turkey. He is currently an Earth and Space Science teacher at Ewing High School and a Google Certified Level 2 Educator.
ACADEMIC POLICIES

- Students are required to attend every class. It is the responsibility of students (or their parents/guardians) to provide daily transportation to and from Rider University. Carpooling is encouraged.
- Please contact Dr. Peter Hester at phester@rider.edu by 8 a.m. if you are unable to attend any part of a class session.
- Students are expected to be punctual for every class and program activity.
- Student attire is expected to be neat and appropriate in accordance with program activities. Unacceptable attire includes hats, flip-flops (between the toes), revealing clothing, and cut-off pants of any kind.
- Use of any alcohol or tobacco products is strictly prohibited.
- Electronic devices such as iPods, iPads, computers and tablets are not permitted. Cell phones are permitted but must be TURNED-OFF during all program sessions. Rider University is not responsible for any lost or damaged devices. Appropriate language is expected at all times.
- Throughout the program, students will maintain an Academy-issued science notebook, which they will use to take notes, record data and analyze results.
- Students are expected to participate fully in all Academy activities.
- Courtesy and kindness is expected from everyone.
- Students are to remain with our program at all times and are not permitted to wander the campus without the group.

Failure to comply to with the Academic Policies of the program will result in expulsion from the program.
ELIGIBILITY CRITERIA

What are the qualifications for participating students?

1. Anyone who is 15 - 18 years old in fall 2018 and has an interest in teaching or learning more about the teaching profession and STEM disciplines
2. An interest in and commitment to attending college after high school
3. Evidence of maturity, stability, responsibility, and commitment as demonstrated in the application and character references
4. Commitment to a two-week, 9 a.m. to 3 p.m. schedule at Rider University’s STEM Teacher Academy from July 16 - July 27; Special instances of attendance may be considered.

NOTE: An accepted applicant may be asked to leave the program after initial acceptance if it is determined that he/she no longer meets the program criteria, or is out of compliance with program rules and regulations.

www.rider.edu/stemteacheracademy
# STUDENT PARTICIPANT APPLICATION

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<th>Student Email Address</th>
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<th>Student Cell Phone Number</th>
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<th>Parent/Guardian Name</th>
<th>Parent/Guardian Cell Phone Number</th>
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<th>Student ID Number</th>
<th>Current School Attending</th>
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**Allergies** *(food and other- please list below)*

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**Reference** *(list the name and title of one school staff member, teacher, or counselor):*

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Please complete the following questions on a separate piece of paper and submit with your application. This should be typed and easy to read with no errors.

1. Describe how a teacher or counselor has helped to mentor and guide you through your academics. What teaching qualities does he or she have that you wish to learn?

2. Why do you want to become a teacher focusing on the STEM disciplines?

3. What skills and experiences can you contribute to the program? How will you benefit from participating in this Academy?

4. What science courses have you taken since entering high school and choose one that has had the most impact?

5. Elaborate on this sentence - I have an interest in the fields of STEM and education because…

I understand that:

1) The reference I listed may be contacted by telephone or email.
2) The process of selecting participants is being handled by Rider University staff.
3) The program is not obligated to choose me as a participant.
4) After thinking about my commitments and responsibilities and reviewing the academic policy for students in Rider University’s STEM Teacher Academy, I am confident that I will be able to participate consistently in the program.
5) The answers to my questions are authentic and relay my true feelings about education and STEM.

Signature Date
PERMISSION AND RELEASE FORM

For your child to be a participant in the
Rider University’s Science Technology Engineering Mathematics (STEM) Teacher Academy

I, ________________________________, give permission for my son/daughter, __________
______________________________, to be a participant in Rider University’s STEM Teacher
Academy. I understand that the program requires the following commitment:

Participation in the two-week summer program from July 16 - July 27 (Mondays through Fridays)
I have spoken with my son/daughter about his/her commitments, including work and extra-curricular
activities, and feel confident that he/she can fully commit to and be a consistent participant with
the program including field trips. I understand that my son/daughter will report to and maintain
communication with a teacher at Rider University during the summer session. I feel that this is a
good opportunity for my son/daughter and fully support and recommend his/her involvement with
the program. In addition, I understand that Rider University staff may photograph/tape/video some
STEM Teacher Academy events. By signing this form, I give my consent to the use of my child’s
appearance, voice, and picture in publicity and advertising, research, and reports, including
publications, concerning Rider University’s STEM Teacher Academy. Additionally, I assume
responsibility for transporting my son/daughter to and from the program.

__________________________________________      ________________
Parent/Guardian Signature                                            Date

If you have questions, please note that the application process is being handled by Dr. Peter Hester.
If you need to contact Dr. Hester for questions related to STEM Teacher Academy
or the application process, please email him at phester@rider.edu.
Please send applications to:
Rider University - College of Education & Human Services
Memorial Hall Suite 111, 2083 Lawrenceville Road
Lawrenceville, NJ 08648
or fax to (609) 896-5363