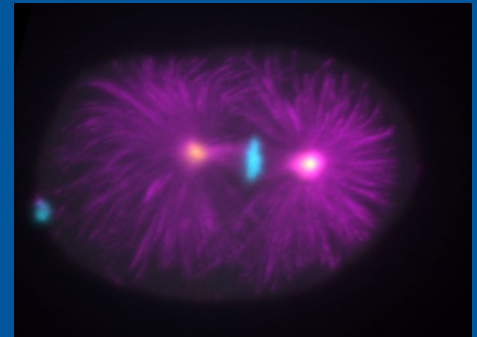
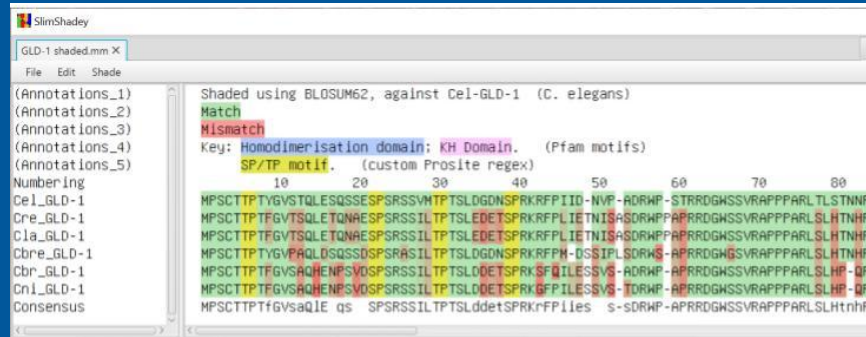


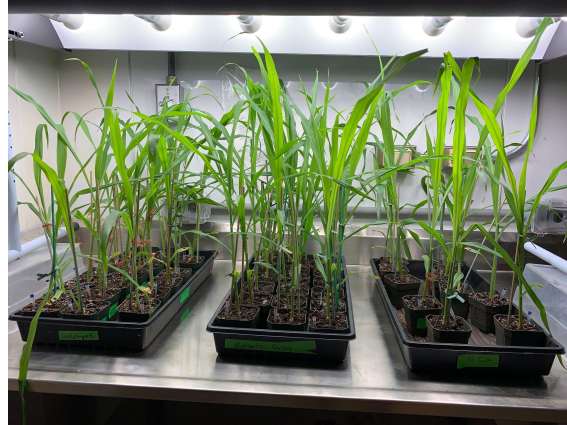
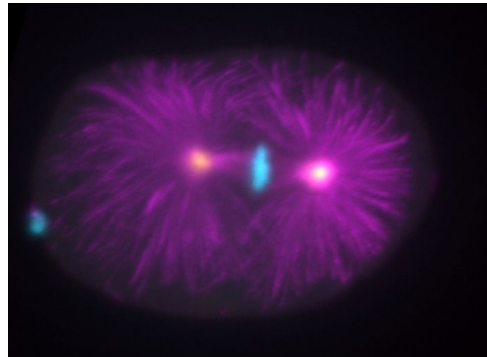
Research in Biology!





Research in the Biology department

- Behavior
- Cellular and Molecular Bio
- Ecology
- Evolution
- Genetics
- Physiology



#EditorsChoice

Quality of Life Changes during the COVID-19 Pandemic for Caregivers of Children with ADHD and/or ASD.

By Keith W. Pocar et al.
@RutgersU @Penn @VanderbiltU

#COVID19

Access for Free:
mdpi.com/1660-4601/18/7...

Quality of Life Changes during the COVID-19 Pandemic for Caregivers of Children with ADHD and/or ASD

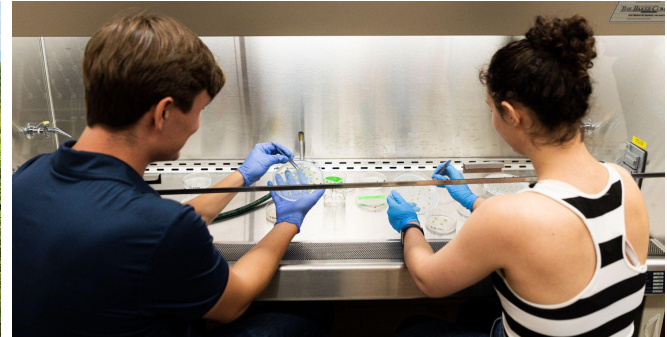
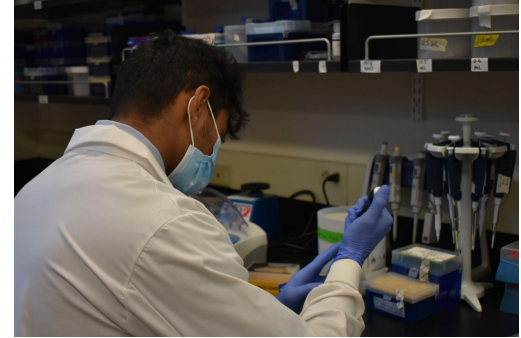
Study Sample & Methods	Findings	Implications
Comparison of caregivers of children with ADHD and/or ASD before and during the COVID-19 pandemic.	Before and during the pandemic, caregivers of children with ADHD and/or ASD reported lower quality of life.	Families of children with ADHD and/or ASD need support and resources to improve their quality of life during the pandemic.
558 caregivers	The pandemic resulted in a greater decrease in quality of life for caregivers of children with ADHD and/or ASD.	
Compared the Predictors of Quality of Life between Family Impact Methods		

From: <https://doi.org/10.3390/ijerph18071807>

Research settings in the Biology department

- Fieldwork
- Lab work
- Computational work

Note that some labs engage in more than one setting!



Independent Research Learning Goals

Biology Independent Research Learning Goals

- Students develop a plan with their research mentor that aligns with their semester goals
- Learning goals are for:
 - For all levels of research
 - Single or multi-semester experiences
- Continue to build on these skills each semester!

Learning Goals

1. Work with increasing independence in a research lab environment.
2. Work collaboratively in a research lab environment.
3. Accurately and precisely execute hands-on, biological research to investigate scientific questions
4. Contextualize how research relates to broader scientific questions.
5. Effectively communicate research goals and findings.

Learning goals and objectives

- Learning objectives build on your experiences
- **Learning goals for students engaging in 400 level research*

Learning goal: Accurately and precisely execute hands-on, biological research to investigate scientific questions.

Learning objectives

- Maintain an accurate, detailed laboratory notebook (physical or electronic)
- Responsibly maintain laboratory resources
- Demonstrate facility in required research techniques
- Contribute to experimental design, data analysis, and the evaluation of hypotheses*
- Precisely execute data collection, data maintenance, and data analysis methods*
- Revise and troubleshoot experiments*

**Engaging in
research as part of
your Biology degree**

—

*1 unit can count as a Biology options course

Shadow

Volunteer position

Repeating the course is allowed and will be considered elective credit

BIO 393*

Independent Research in Biology I

0.5-1 units course credit

BIO 493*

Independent Research in Biology II

0.5-1 units course credit

BIO 495

Independent Research in Biology Capstone

1 units course credit taken within two semesters of graduating

WAIT!

You can start and stop at any point in this trajectory - make a plan with your research mentor!

Pathways to engaging in research in Biology

Biology Research Courses

BIO 393

Independent Research
in Biology I

- Skills based research focused on learning lab techniques, data analysis, and reading the scientific literature relevant to the subdiscipline of the research lab
- Students can register for
 - 0.5 units ~ 7 hours per week
 - 1 unit ~ 15 hours per week
- Course attributes
 - 1 unit can be applied as Biology option credit (one semester of 1 unit, or two semesters of 0.5 units)
 - Can be repeated for elective credit

Biology Research Courses

BIO 493
BIO 494 (honors)

Independent Research
in Biology II

- Project based research working toward addressing a question or hypothesis, often a multi-semester experience
- Students can register for
 - 0.5 units ~ 7 hours per week
 - 1 unit ~ 15 hours per week
- Course attributes
 - 1 unit can be applied as Biology option credit (one semester of 1 unit, or two semesters of 0.5 units)
 - Can be repeated for elective credit
 - 494 can be applied to the Honors Program and requires an additional assignment

Biology Research Courses

BIO 495
BIO 496 (honors)

Independent Research
in Biology Capstone

- Senior capstone
 - Write a paper, modeled after a journal article, on your novel research
 - Present your work at COSA
- Students can register for*
 - 1 unit ~ 15 hours per week
- Course attributes
 - 496 can be applied to the Honors Program and requires an additional assignment (different from Departmental Honors in Biology)

*prerequisite is 1 unit of 400 level research with the same professor

What are the next steps?

Independent Research Interest Form - Spring 24

This form is intended to communicate your interests in research in biology, determine your eligibility to participate in research, and potentially match you with a research mentor. If you are interested in being considered for a research experience starting in the Fall 24 semester, **please complete this form by Wednesday, March 20th for full consideration of a research experience the following semester.**

Biology Independent Research Interest Form

Filling in this form will ensure you meet the requirements to participate in research for credit

Interest Form Questions

- Provide information including name, email, year in college, major, etc
- Asks you information about minimum requirements to participate in research
 - a. Completed units earned (not including current semester)
 - b. GPA > 3.0
- Type of research experience
 - a. Shadowing or research for credit
 - b. Single or multi semester experience

Biology Independent Research Interest Form

It is ok to say you are not sure (there's a checkbox for that!) or choose multiple answers.

Please note that filling in this form does not guarantee you will be assigned to a particular lab.

Interest Form Questions

- Asks you about areas of research you are interested in:
 - a. Behavior
 - b. Cellular and Molecular Bio
 - c. Ecology
 - d. Evolution
 - e. Genetics
 - f. Physiology
- Asks you about research setting:
 - a. Field work
 - b. Lab work
 - c. Computational work

Biology Independent Research Interest Form

Please note that filling in this form does
not guarantee placement in a lab.

For full consideration, complete the
form by March 20.

Interest Form Questions

- Asks for 1-2 sentences about why you are interested in getting involved in research.
- Asks for any other information you might want to share!

How can I learn about ongoing research at TCNJ?



Check out the new Biology Dept research page!

- Learn about professor's research interests!
 - This session!
 - Biology faculty website
 - Posters in the hallway by our labs
 - Current research students in their labs
- Reach out to talk to a professor!
 - Email us about your interests
 - Set up an appointment or come by office hours to talk

**Is research at TCNJ the only
way to get independent
research experience?**

Biology Research Courses

Biology Internship

BIO 390

- Off-campus internship
 - Participate in a semester-long class following an off-campus internship experience
 - Present your work
- Course attributes
 - 1 unit can be applied as Biology option credit
 - Must have approval prior to registering for the class
- Coordinator: Dr Pecor
 - Reviews and approves class registration
 - Instructor for BIO 390

Biology Research Courses

Biology Research Internship

BIO 399

- Off-campus research
 - Participate in a semester-long class following an off-campus research experience in the fall semester
 - Present your work
- Course attributes
 - 1 unit can be applied as Biology option credit
 - Must have approval prior to registering for the class
- Coordinator: Dr Erickson
 - Reviews and approves class registration
 - Instructor for BIO 399



What about research during the summer?

MUSE: *Mentored undergraduate summer experience* (happens here at TCNJ!)

8 week funded experience with a Biology faculty member (stipend + housing)

Professional development workshops throughout the summer

Applications due in February and must have a faculty member sponsor

REUs: Research Experiences for Undergraduates (off-campus research experience)

8-10 week funded experiences in many areas of Biology!

Search for opportunities at NSF using the QR code but there are many other sites!

Look to social media

Look at Biology and the TCNJ Career websites

Applications often due starting in December/January through early spring

