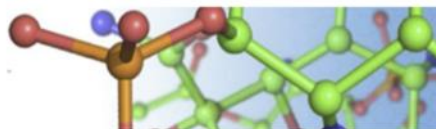


Research Opportunities for Science Educators (ROSE)

ROSE engages science teachers (Scholars) in ongoing research projects during an intensive summer session at UNM. The Scholars return to the classroom with greater enthusiasm for and understanding of the scientific enterprise, and they report significant changes in what and how they teach their students.

ROSE began as pilot program supported by NM PED and UNM in summer 2021 and will host its third cohort of Scholars in summer 2023.



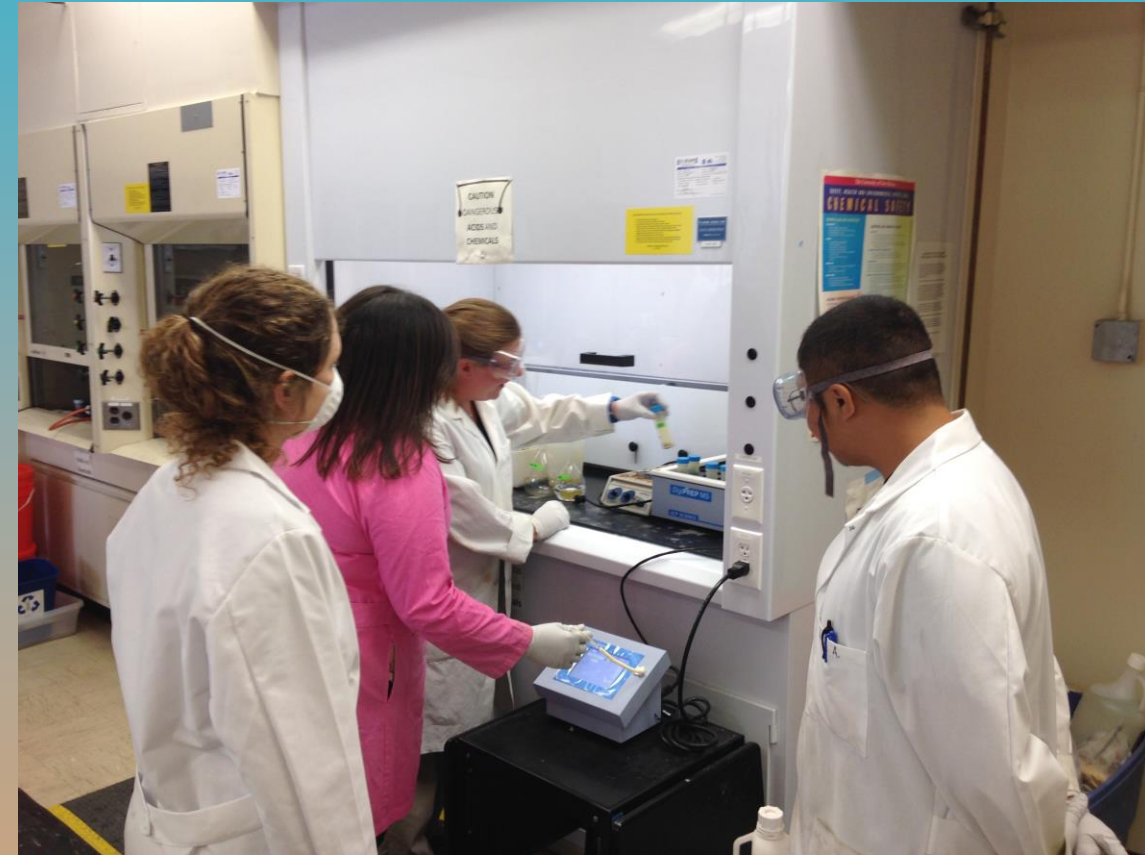
How can ROSE help improve middle and high school STEM education?

**Engagement,
Excitement
and
Enthusiasm
!!**

**Improve
content
mastery &
confidence**

**Leverage
UNM
research
resources and
expertise**

**Focus on
schools with
economically
challenged &
URM student
bodies.**



“... just being able to get in the labs gives you that confidence back in your content area.”

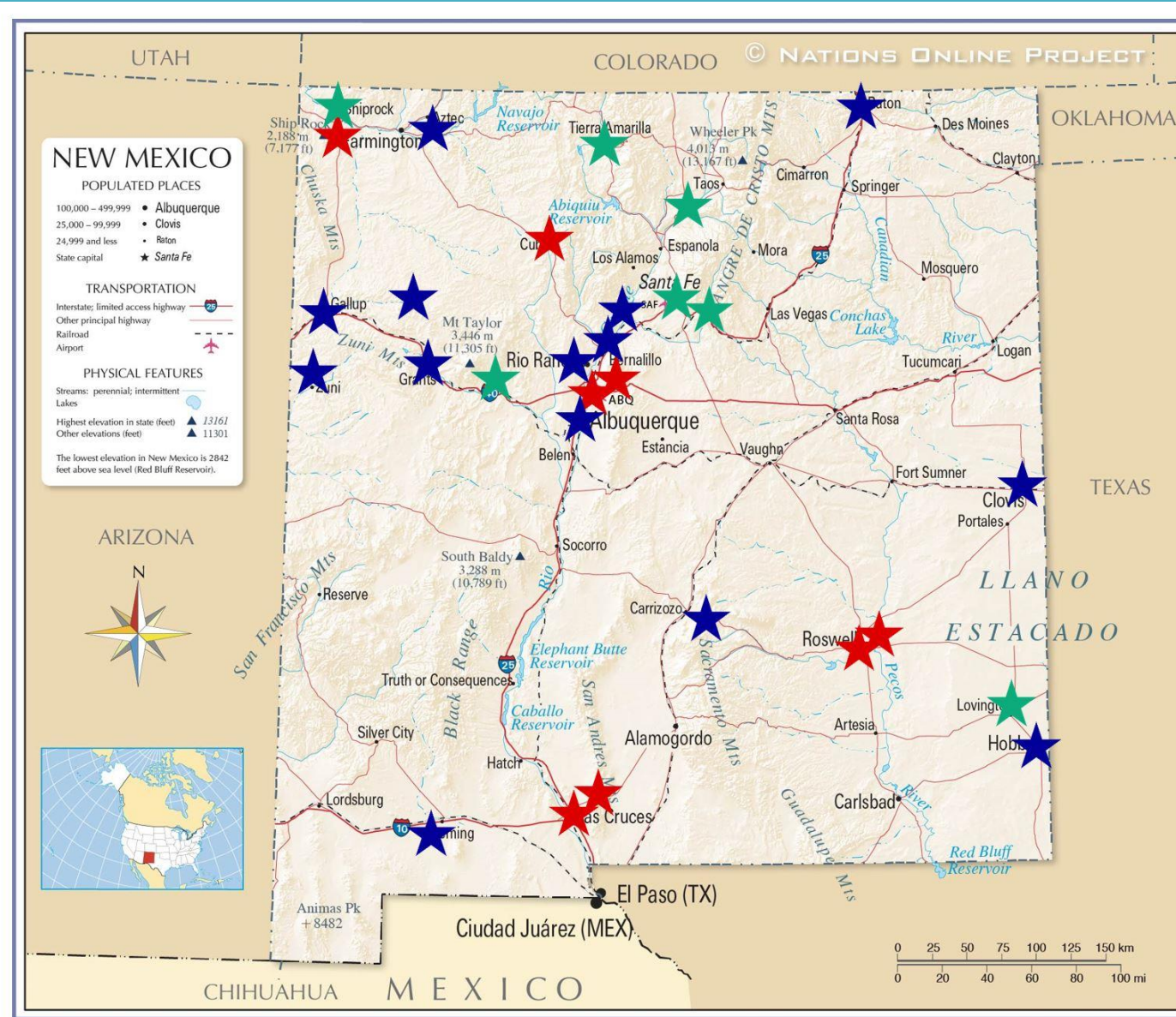
January → advertising starts in January to superintendents & teachers. Faculty mentors recruited from science and engineering departments.

March → Applications due (> 50 in 2022 and 2023)

April → Scholars accepted and matched with mentors (23 and 15 for 2023)

June → Scholars arrive on campus and spend ~1 month working on research projects with UNM scientists.

How does ROSE “work” ?



How does ROSE “work” ?

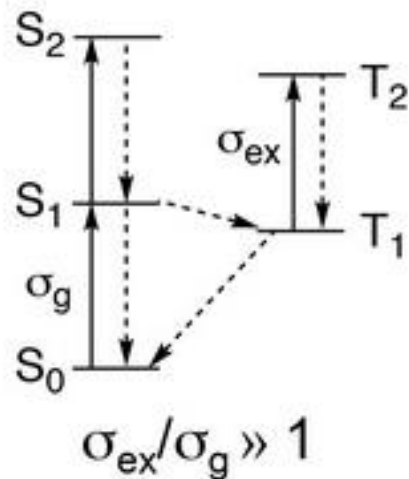


Rack research group in summer 2021 w/ROSE Scholars June Abergos and Maggie Romero

Once the summer session is underway, Scholars spend most of their time (35+ hours a week) on research projects, typically working closely with students and faculty in their research group.

Weekly workshops and panel discussions on special topics vary with Scholar interest and suggestions.

Informal social interactions- coffee and lunch breaks- help build relationships among the Scholars and UNM scientists.



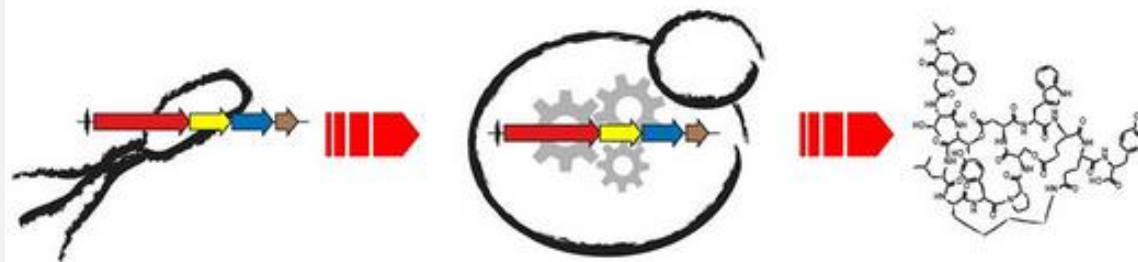
What **Research** do
Scholars work on?

Margarita Romero,

Las Cruces

PI: Jeff Rack

**Development of
Photoactive
Materials**

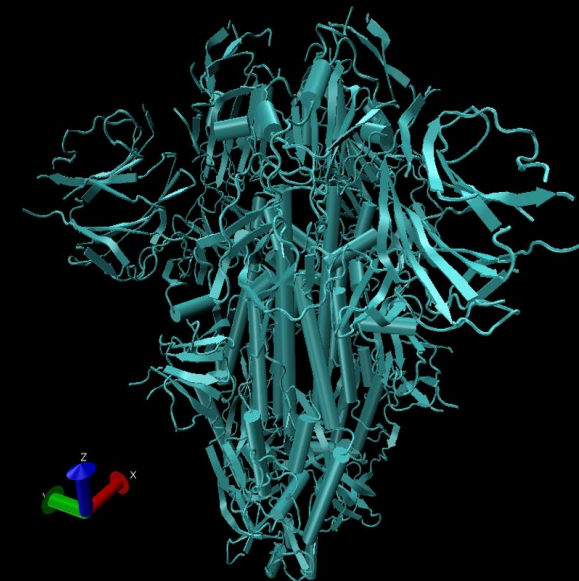


Inez Jacobs, ABQ;

Rito Escareno, Deming

PI: Mark Walker

**Making Unnatural
Natural Products**



6VXX – COVID 19 SPIKE PROTEIN

Daniel Delgado, Cuba

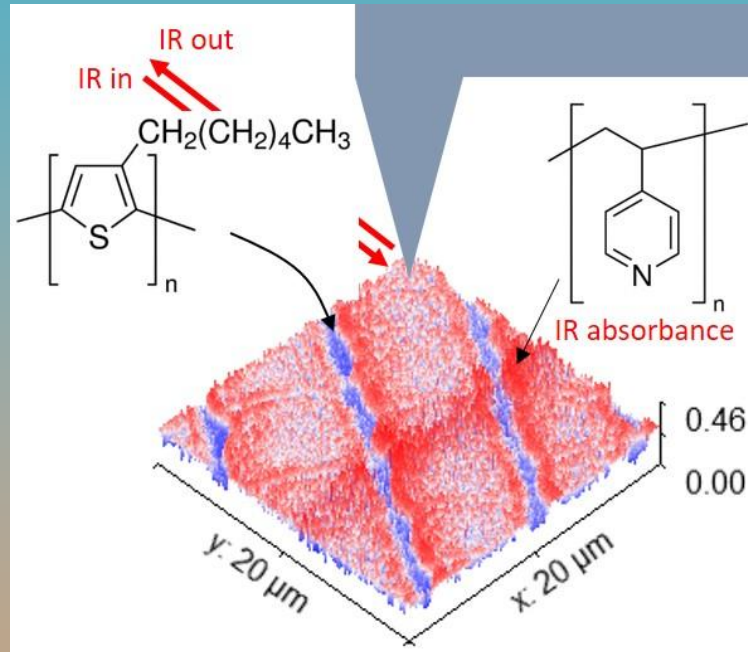
Shigang Liu, Las Cruces

PI: Susan Atlas

**Atoms in Molecules;
Modelling the Covid
“Spike” Protein**

ROSE Impact on Scholars: Enthusiasm and confidence

“The opportunity to be in a research lab that’s doing ground-breaking current research. The hands-on opportunity is invaluable. We got not just to read about it, but to be a part of it. That’s amazing!”



“So there's a lot of takeaways I can bring, ... share to my colleagues to my school and to the district. Number one is the practice of research itself. ... somehow, Research is going to be incorporated in our curriculum. When they go back to school, I would like to share my whole journey...”

Students need to know there is great value in learning how to think ... I try to model this periodically by reference to the ROSE poster on my classroom wall."

"I am very grateful for this opportunity. It reignited my passion for science and teaching."

ROSE Impact on Scholars: Changing the classroom

Using the research experience
as examples in class
presentations **80%**

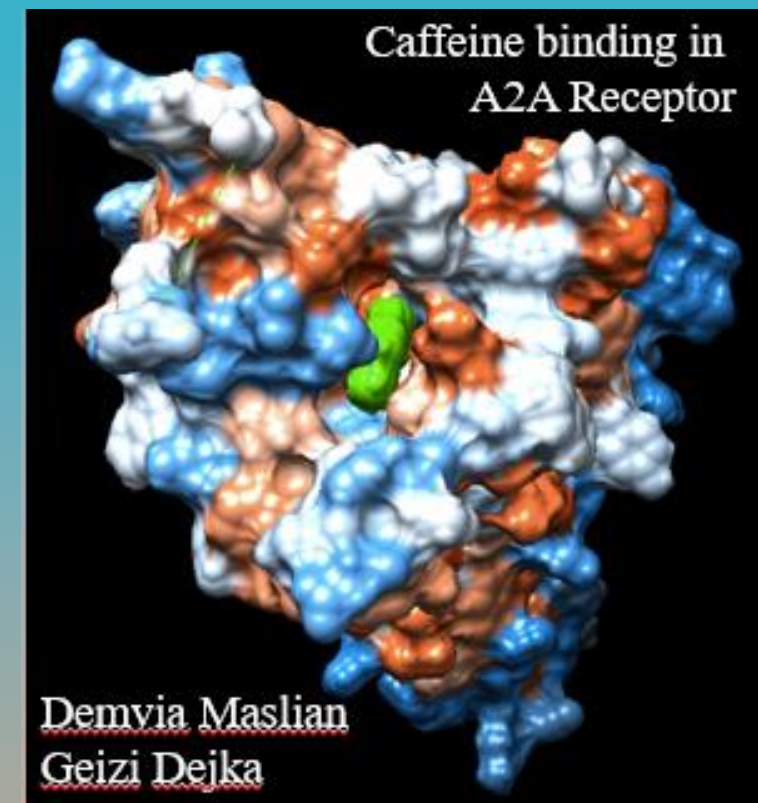
Greater confidence when
talking with students about
research **90%**

Implementing research tools
into lesson plans **95%**

Better feedback to students on
their own research **65%**

*"now when I develop a
lesson plan I can rely
on my experience
about how these things
are studied."*

*"...(my teaching) is more inquiry based and I use
more research in my lessons and examples.
Students are more engaged when I talk about my
lab and research experience."*



What do we want to accomplish with ROSE?



- 1) Help science teachers expand their content knowledge, practical experience, and understanding of the scientific enterprise.**
- 2) Raise the level of science instruction statewide & prepare students for university STEM classes.**
- 3) Create a community of science teachers across New Mexico.**

Our goals today:

**Share our vision and enthusiasm for ROSE
with the LESC & Legislature**

**Ask for your suggestions and assistance
in recruiting Scholars statewide**

Build support for recurring funding (RPSP)

Answer your questions and hear your suggestions

