Student Research League: AMATYC’s Modeling and Research Contests

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Goals

- To provide an opportunity for two-year college students to compete in a national mathematical modeling and research contest.
- To encourage research problem solving and to motivate an interest in extracurricular mathematics activities among two-year college students.
- To reward outstanding student research problem-solvers and math modelers through a scholarship and prizes to be given to the top participants, both individual and team.
- To recognize colleges with outstanding mathematics students through national awards.
The competition requires students to prepare a thesis defense for an open-ended STEM challenge problem.

The problem allows for multiple approaches and includes links to two-year college mathematics.

Students perform research on the topic of the problems as well as research of careers tied to the topic.

Students write a formal paper (using APA guidelines) which may include additional content such computer programs they have written or spreadsheets generated, etc.
Students interested in exploring mathematics through research and modeling.

Two-year colleges in any of the eight Regions of AMATYC may enter either an individual student or a team of two or three students.

Each student is eligible to compete if they have not earned a two-year degree (or higher) and if they have not achieved junior standing. Part-time and dually-enrolled students are eligible.
When

- The competition is held during the spring.
- 2022 SRL dates: Friday, March 18th - Monday, April 4th
- The SRL will be scheduled to try to avoid Spring Break for most schools.
- The SRL will be scheduled to accommodate quarter and semester systems as best as possible.
- The First Round of Evaluations is done over the summer by faculty members from each of the AMATYC Regions.
- The Final Round of evaluations is done by professionals in STEM fields.
- Regional Winners are announced in the fall and awards for the National Finalists are presented at the AMATYC conference.
Your role would be:

- discussing the aspects of effective research
- ensuring they are familiar with APA guidelines
- working on team building and productive team dynamics
- registering the team
- making sure they receive the competition problem and their entry is submitted properly and in the required time frame
- insuring they have access to approved assistance during the competition.
Professor Karen Gaines

Professor Emeritus - St. Louis Community College

Past SRL Coordinator
Get Involved!!!
Become an Evaluator

- Great way to get your ‘feet wet’
- Evaluate 5-10 entries from your AMATYC Region to determine the top three from your Region
- April-June to complete evaluations
- Fill out a form for each review
1. Problem Research
Each Challenge will be designed to involve the individual/team student(s) in an Internet search to understand the Challenge Problem, collect data on the Challenge Problem, and determine its mathematical characteristics. All forms of Problem Research are needed to support the following elements: scientific inquiry, experiential learning, and understanding the Challenge Problem, proposing hypotheses, testing hypotheses, and stating the results.

1. Mathematics Tools
Individual/team student(s) will be required to select the Mathematics Tools that best fit the Challenge Problem and use them to understand the problem, create a mathematical model that approximates the data collected, and design a potential solution that can be defended in the individual/team student(s) Thesis Defense.

1. Job/Career Research
Individual/team student(s) will be required to research two STEM individuals who are tied to the field or theme of the Challenge Problem and develop a Case Study showing how these STEM individuals used mathematics in their work on the Challenge Problem. Each Case Study will use Inquiry-based learning and include the following Job/Career information about the individual occupation: Identify Job/Career, Job Academic Background, Job Environment, Job Average Yearly Pay, Job/Career Outlook, and Similar Jobs/Careers.

1. Thesis Defense (Solution)
The Thesis Defense is an organized, coherent synthesis of information based on the Challenge Problem, Problem Research, Job/Career Research, and Mathematics Tools. The Thesis Defense will use experiential learning and include data collected with reference citations, a mathematical model with a discussion of the mathematical tools used and the rationale for the chosen model, implications and predictions, the design of a possible solution to the Challenge Problem, and recommendations for further research.
2021 SRL Reviews - Round 1

Please complete by June 15, 2021

Evaluator Name

SRL Team Identifier

Evaluator Region

Select or enter value

Research

- A
- B
- C

Math Analysis

- A
- B
- C

Job & Career

- A
- B
- C

Solution

- A
- B
- C

Overall Score

- A
- B
- C

Positive Comments

The creative use of mathematics in this thesis is excellent. Your work shows deep understanding of the challenge and the mathematics necessary to answer such a question.

Suggestions for Improvement

(This feedback will be sent to the team.)

You could improve this thesis by developing the career exploration more fully. It would be nice to see what academic requirements are in place for those who intend to work in related fields.
2021 Grand Prize Winner

Team Members
Maximus Cisneros
Noah Robles
Talal El Zeini

Faculty Mentor
Prof. Serkuang Chen

West Valley College
Strategies and tips to be successful in SRL

What advice do you have for students who would like to participate in SRL?
Strategies and tips to be successful in SRL

What motivated the students to participate in SRL?
Strategies and tips to be successful in SRL

How does student feel about the time commitment (three weeks) of the SRL?
Strategies and tips to be successful in SRL

What did you learn from the SRL participation experience?
Strategies and tips to be successful in SRL

What would you do differently next time?
Strategies and tips to be successful in SRL

What is your advice to someone who is going to participate in the SRL?
Professor Pat Riley
Hopkinsville Community College
Tips on recruiting/encouraging students' participation in SRL
Q & A