Mentor Matching Engine

Presented by Jacki Naughton and Carl Heine, 2/27/15
What is the MME?

The Mentor Matching Engine is an invitation-based platform to bring together Mentors, Students and Teachers for personalized inquiry-based learning in science, technology, engineering and mathematics (STEM) fields. By connecting mentors and students electronically, we are able to offer high-quality mentoring experiences for students and mentors alike in a safe and secure environment while eliminating geographic barriers.

The electronic platform offers learners access to mentors from industry, universities and colleges and federal laboratories to collaborate on high-quality research and development projects.
Features

Teachers can:

- Invite students
- Invite mentors
- Review and approve the student research question(s)
- Monitor communication between the student and mentor
- Manage all projects on a single page
- Assist students with mentor selection, and approve the mentor match

Students can:

- Create a project
- Develop a research question
- Provide an optional Letter of Introduction
- Find a mentor
- Communicate with the teacher and mentor within the MME
How We Work

The Mentor Matching Engine is an invitation-based platform to bring together Mentors, Students and Teachers for personalized independent student research projects in science, technology, engineering and mathematics (STEM) fields.

Community Building
By connecting mentors and students electronically, we are able to offer high quality mentoring experiences for students and mentors alike in a safe and secure environment while eliminating geographic barriers.

Mentor Matching
Each participant will design his or her own guiding research question and will be able to find mentors on this platform to guide them in conducting their research.

Collaborating
We offer students access to mentors from industry, universities and colleges and federal laboratories to collaborate on high-quality research and development project and mentors the opportunity to work with Illinois’s brightest future scientists.
<table>
<thead>
<tr>
<th>Year One</th>
<th>Year Two</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 schools invited by ISTC</td>
<td>~ 99 teachers representing 32 schools</td>
</tr>
<tr>
<td>~ 118 students invited, 59 approved</td>
<td>~ 711 students invited, 441 approved</td>
</tr>
<tr>
<td>~ 200 mentors invited, 70 approved</td>
<td>~ 316 mentors invited, 242 approved</td>
</tr>
</tbody>
</table>

- Argonne National Lab
- Baxter Healthcare
- Bristol Community College
- Fermilab
- IBio
- IIT
- IMSA
- Institute for Science Education and Technology
- ISU
- Los Alamos National Laboratory
- Loyola University
- MIT
- NIU
- New York University
- Northwestern University
- Shedd Aquarium
- SIU Carbondale
- Worcester Polytechnic Institute
### Projects

<table>
<thead>
<tr>
<th>Student Name</th>
<th>Project Name</th>
<th>Status</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kruti Sutaria</td>
<td>The Effect of Acid on Cell Membrane</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Roshana Krishnappa</td>
<td>DNA Damage Caused by UV Radiation</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Keshav Kapoor</td>
<td>Biodiesel from coffee and tea</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Theresa Do</td>
<td>Artificial Intelligence to Increase Productivity and Effectiveness of Insulin Pumps for Diabetics</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Simon Su</td>
<td>The Effects of Algae on the Remediation of Oil Spills in Aquatic Environments</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Paulina Kulyavtsev</td>
<td>Effectivity of Acne Medication</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Vandana Ravi</td>
<td>How does Sodium Benzoate effect the Catalyst Enzymes in the Liver?</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Arthur Migdal</td>
<td>Computerized Solution and Generation Puzzles</td>
<td>Awaiting Mentor Request</td>
<td></td>
</tr>
</tbody>
</table>
The Effect of Acid on Cell Membrane (Ongoing)

Project Name (Required)
The Effect of Acid on Cell Membrane

Guiding Question (Required)
Does exposing cells to various levels of acidity affect the number of vacuoles formed?
Project Categories

- Biology (1)
- Chemistry (1)
- Engineering (0)
- Mathematics
- Physics
- Behavioral and Social Sciences (0)
- Computer Science
- Consumer Science
- Earth Science (0)
- Nanotechnology
- Material Science

Teacher

Jacki Naughton

Student

Kruti Sutaria

Mentor

Jeffrey Liu
Calculating mM concentrations of salicylic acid

1/8/14 6:22 PM
Hi Kruti If you are starting from a solid form of the salicylic acid, start at the second paragraph. If you are started from a liquid form with a known molarity, you can skip to the fourth paragraph. Molarity is a unit of concentration that reflects the amount of solute (chemical being dissolved) in moles per amount of solvent in Liters. mM or millimolar is simply 10⁻³ M ....

The Effect of Acid on Cell Membrane

12/27/13 12:12 AM
Does exposing cells to various levels of acidity affect the number of vacuoles formed?

Showing 2 results.
I suggest you ask your mentor about how to make the mM concentrations of salicylic acid.

Hello Mr. Liu,

I am going to expose the cell membranes to acid, which will be measured in terms of mM. How would I make the mM concentrations of salicylic acid?

Hello Mr. Bubley,

In order to conduct my experiment, I need to grow yeast and Tetrahymena cells. I have a "Tetrahymena medium" to grow the Tetrahymena, but how exactly would I grow both types of cells?

Hi Kruti!

My name is Jeff Bubley and I am a first year medical student at the Technion Israel Institute of Technology. I have previously done research on the effects of melatonin on phagocytosis in Tetrahymena. I am currently beginning research regarding the effect of certain toxins on the retina. If you have any questions about your project, please feel free to contact me!

I'm a bit confused as to what you are doing with the yeast cells. For my project, I mixed 1 part 2% india ink and 1 part Tetrahymena solution (a 1% india ink/tetrahymena solution). After various time points (0 min, 5 min, 10 min, 15 min, 20 min) I took a drop from the solution and fixed it on a slide. To do this I used "protoslo." For me the yeast cells were not necessary. Is there a particular reason that you are using them?
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For more information contact Emily Cooper at ecooper@istcoalition.org
Q&A
You have Questions
We have Answers