The Math Modeling Hub:

a New Online Community of Practice for Educators

Math Modeling
HUB

Connecting educators with mathematical modeling
through mentoring, resources, and community.

Presented by
Jason Douma
University of Sioux Falls

SIAM ED18 Minisymposium on
Communities of Practitioners for Math Modeling Education
9 July 2018

It All Started When…

The seeds of the Math Modeling Hub can be traced back to 2012, when SIAM sponsored an NSF-supported *Modeling Across the Curriculum (MaC)* workshop, designed to improve STEM education by promoting mathematical modeling across all grade levels.

Principal Investigators
James Crowley and Peter Turner

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COMAP NCTM siam.

It All Started When…

Among the four major recommendations from the 2012 *MaC* workshop was the following:

> **"Develop a repository of materials for all aspects and levels of math modeling instruction and understanding. To include but not limited to: course lesson plans, articles, books, web sites, videos, contests, problems and solutions" (Modeling Across the Curriculum (2012), p. 4).**

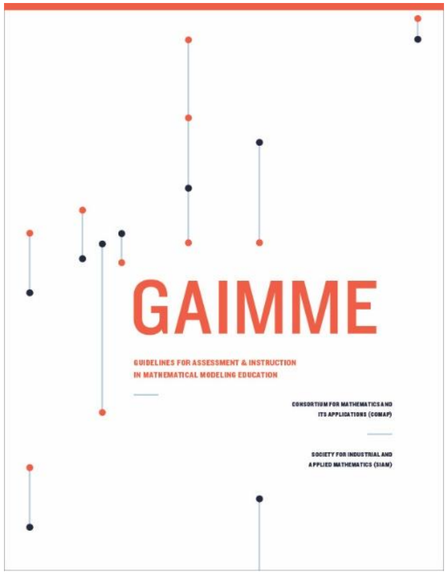
It All Started When…

In 2014, SIAM convened the NSF-supported *MaC II* workshop. Its recommendations included:

> **"[Create] peer-networks and social networking sites for teachers to share ideas, and locate materials that have been class tested," and**
>
> **"Develop a curated Repository of peer-reviewed and tested materials covering projects, curricular components, career and public awareness (Modeling Across the Curriculum II (2014), p.23).**

It All Started When…

The report from the *MaC II* workshop also recommended the development of Guidelines for Assessment and Instruction in Mathematical Modeling Education (GAIMME). Work on this project commenced immediately after *MaC II* and was completed in 2016.



GAIMME

GUIDELINES FOR ASSESSMENT & INSTRUCTION IN MATHEMATICAL MODELING EDUCATION

CONSORTIUM FOR MATHEMATICS AND ITS APPLICATIONS (COMAP)

SOCIETY FOR INDUSTRIAL AND APPLIED MATHEMATICS (SIAM)

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It All Started When…

As the GAIMME report was disseminated, a common response was "great ideas, but we will need sustained access to mentors and materials in order to make them stick."

Do you see a recurring theme?

Connecting educators with mathematical modeling through mentoring, resources, and community.

It All Started When…

In November 2016, a group led by Rachel Levy developed a proposal for “an online community and repository focused on the teaching and learning of mathematical modeling education.”

The proposal received startup funding (jointly) from SIAM, COMAP, and the NCTM.

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In January 2017 a steering committee was formed, and we were on our way!

Why me?

I am not one of those great luminaries in applied mathematics education. I’m actually a (very abstract) group theorist and philosopher of mathematics in most of my previous scholarship.

***But*…I have seen the power of mathematical modeling to cultivate interest in and a more authentic understanding of mathematics, especially among my students.**

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Why me?

Therefore, I want to become a better math modeling educator. And I want to participate in a community that works together to support this goal.

And that is exactly what the Math Modeling Hub (MMHub) is designed to be. I belong on the MMHub because we *all* belong on the MMHub, regardless of our backgrounds, expertise, or notoriety.

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What is the MMHub?

- **The MMHub is an online repository of information, seeking to provide educators with resources for classroom use such as lesson plans, instructional guides, and worksheets.**
- **The MMHub supports “sandbox" areas where educators can collaboratively develop, edit, and test modeling ideas.**
- **The MMHub is a community of practice, bringing educators into conversation and collaboration.**

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Where is the MMHub?

The MMHub lives on the QUBES platform, an NSF-funded framework created for sharing resources and engaging in collaboration.

The MMHub may be found at mmhub.qubeshub.org

Membership is free.
(You just need a QUBES account.)

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When is the MMHub?

Now! (Sort of.)

Today marks the transition of the site from an initial small group of project developers to a public beta-testing phase.

The MMHub is a work in progress, but real progress will only come from real users!

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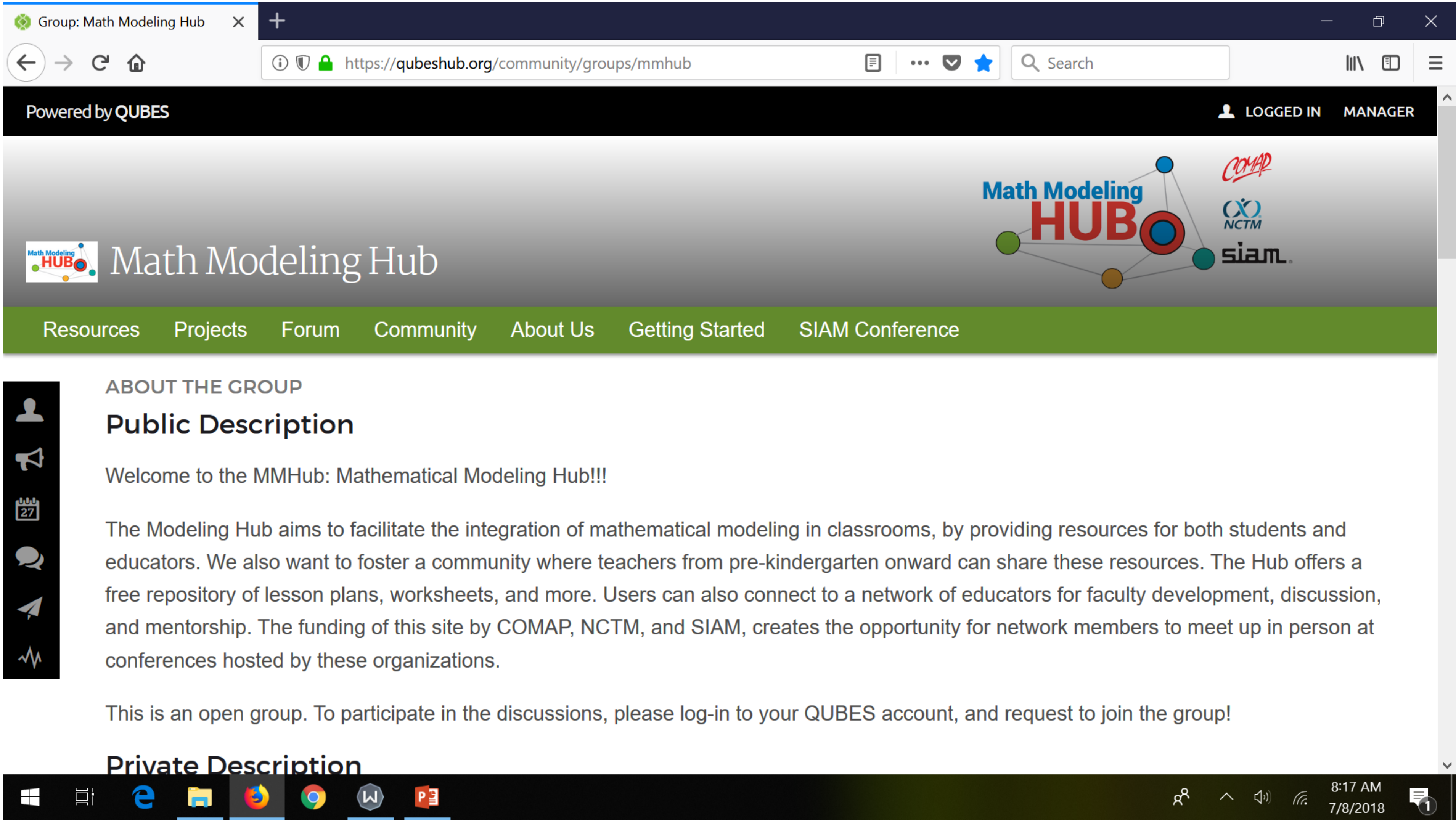
MMHub Overview



ABOUT THE GROUP

Public Description

Welcome to the MMHub: Mathematical Modeling Hub!!!

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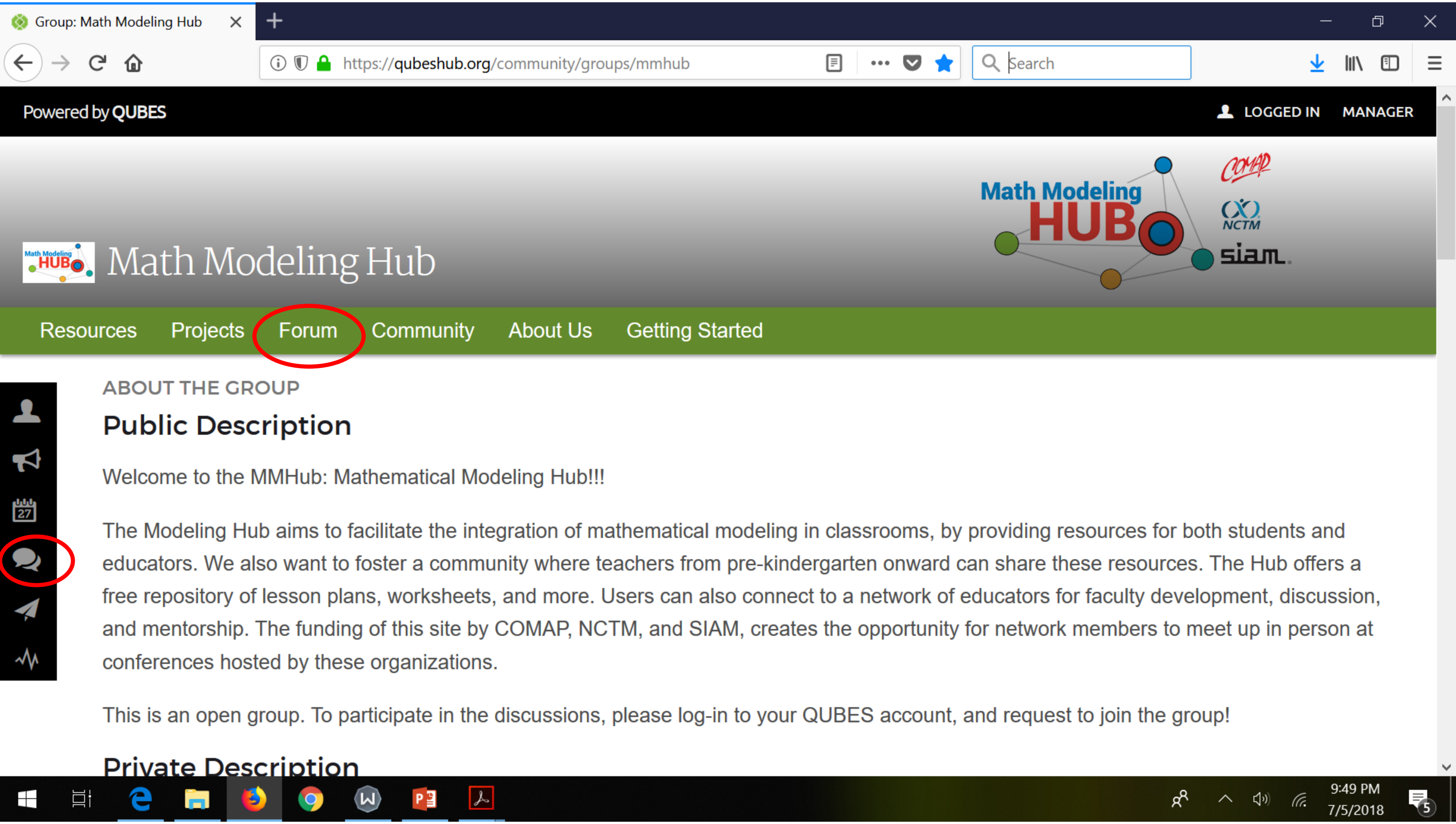
This is an open group. To participate in the discussions, please log-in to your QUBES account, and request to join the group!

Private Description

MMHub Overview: Forums



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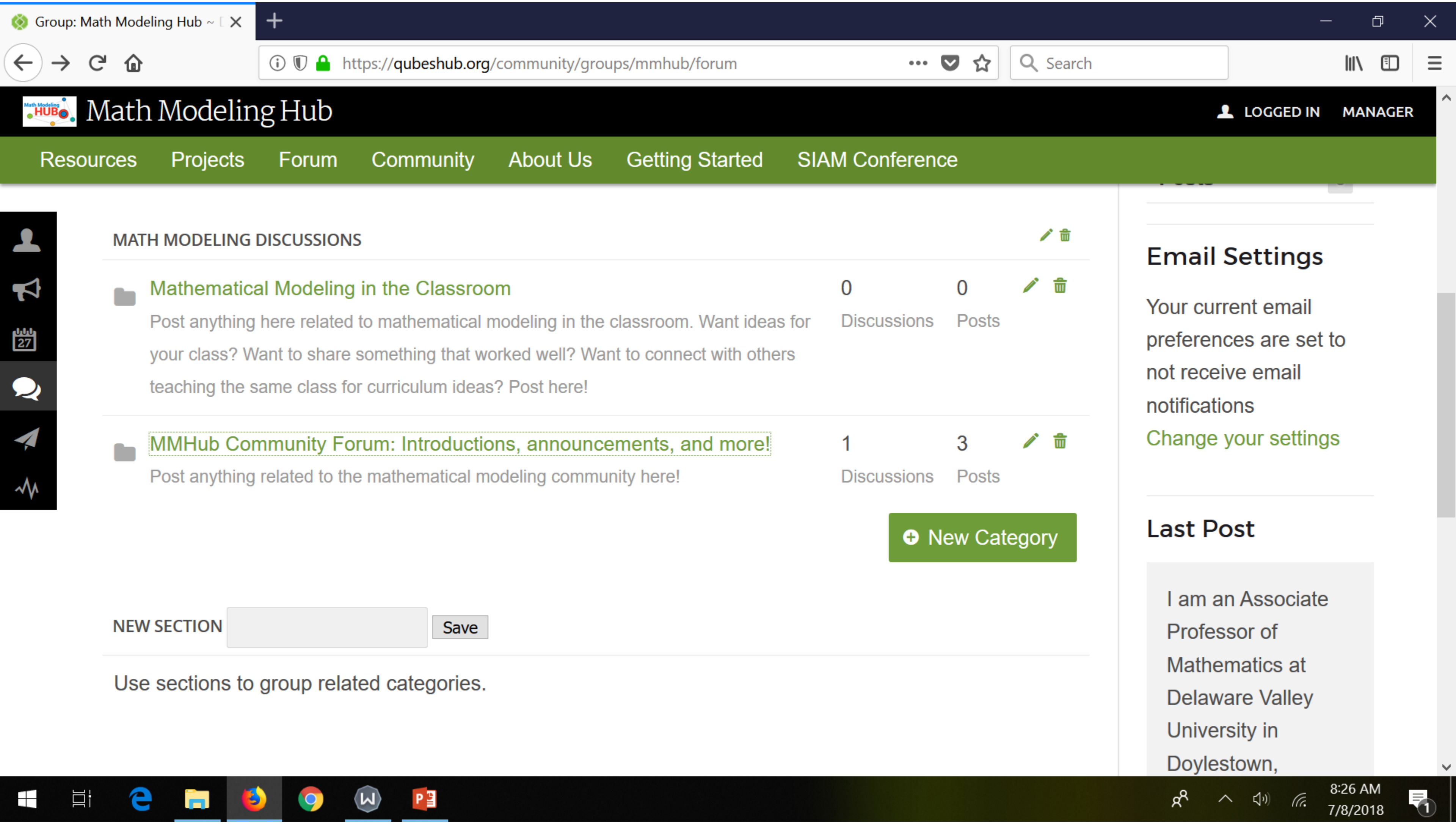


MATH MODELING DISCUSSIONS

Mathematical Modeling in the Classroom Post anything here related to mathematical modeling in the classroom. Want ideas for your class? Want to share something that worked well? Want to connect with others teaching the same class for curriculum ideas? Post here!	0 Discussions	0 Posts
MMHub Community Forum: Introductions, announcements, and more! Post anything related to the mathematical modeling community here!	1 Discussions	3 Posts

NEW SECTION ☐ Save

Use sections to group related categories.

Email Settings

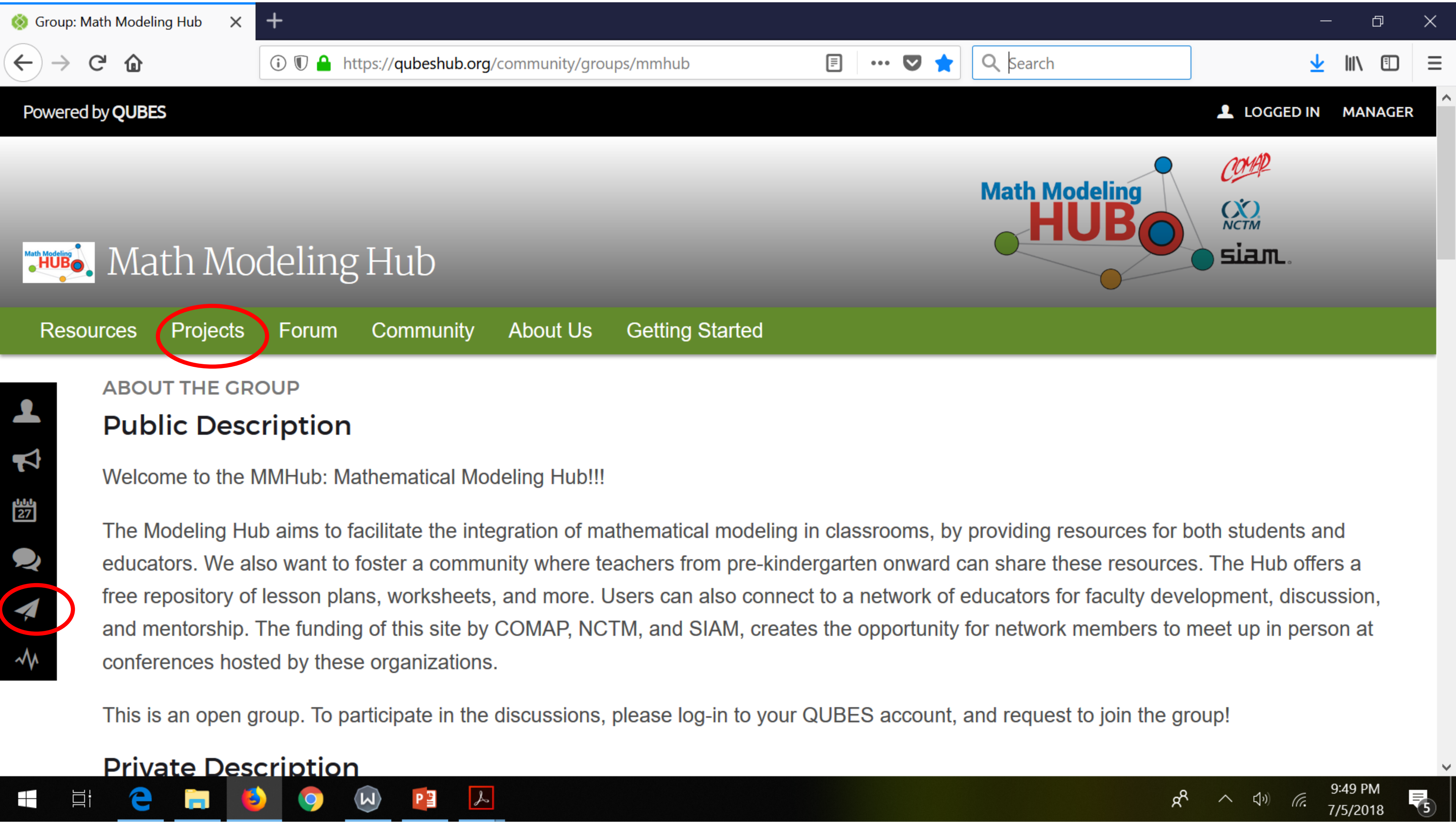
Your current email preferences are set to not receive email notifications

Change your settings

Last Post

I am an Associate Professor of Mathematics at Delaware Valley University in Doylestown,

MMHub Overview: Projects



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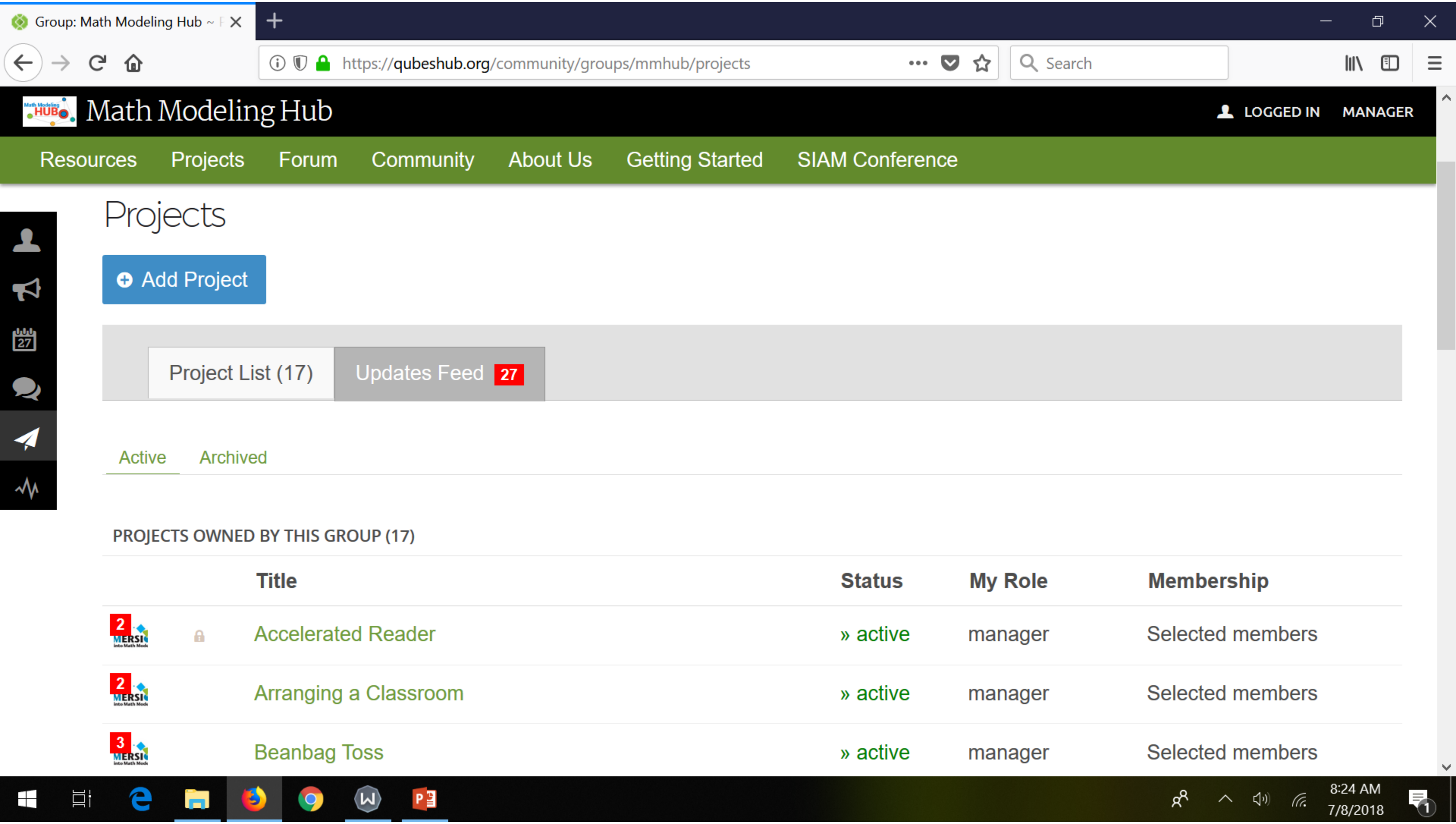
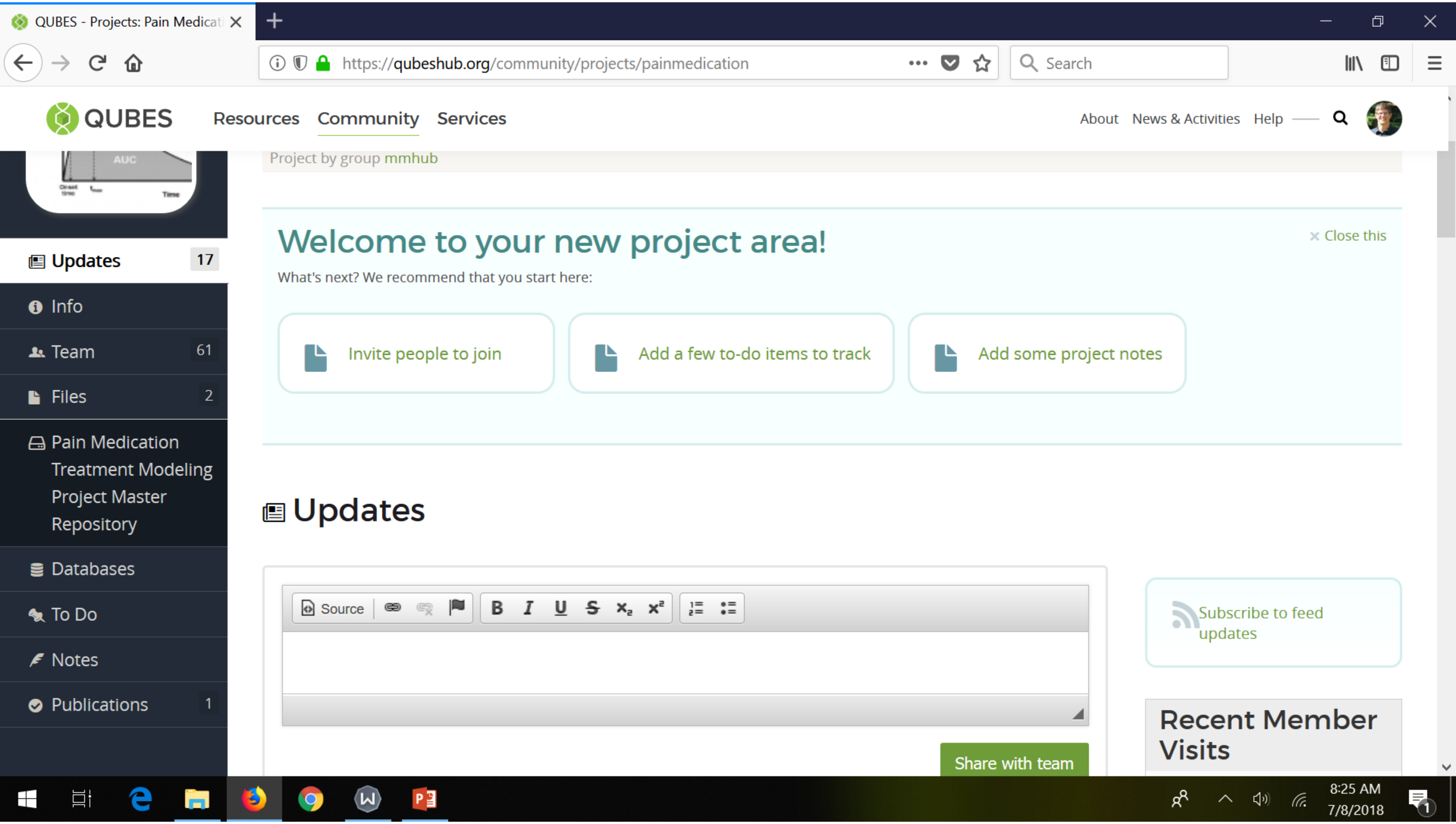


Projects

PROJECTS OWNED BY THIS GROUP (17)

	Title	Status	My Role	Membership
2	Accelerated Reader	» active	manager	Selected members
2	Arranging a Classroom	» active	manager	Selected members
3	Beanbag Toss	» active	manager	Selected members

MMHub Overview: Projects



QUBES - Projects: Pain Medicat

https://qubeshub.org/community/projects/painmedication

Project by group mmhub

Welcome to your new project area!

What's next? We recommend that you start here:

Invite people to join

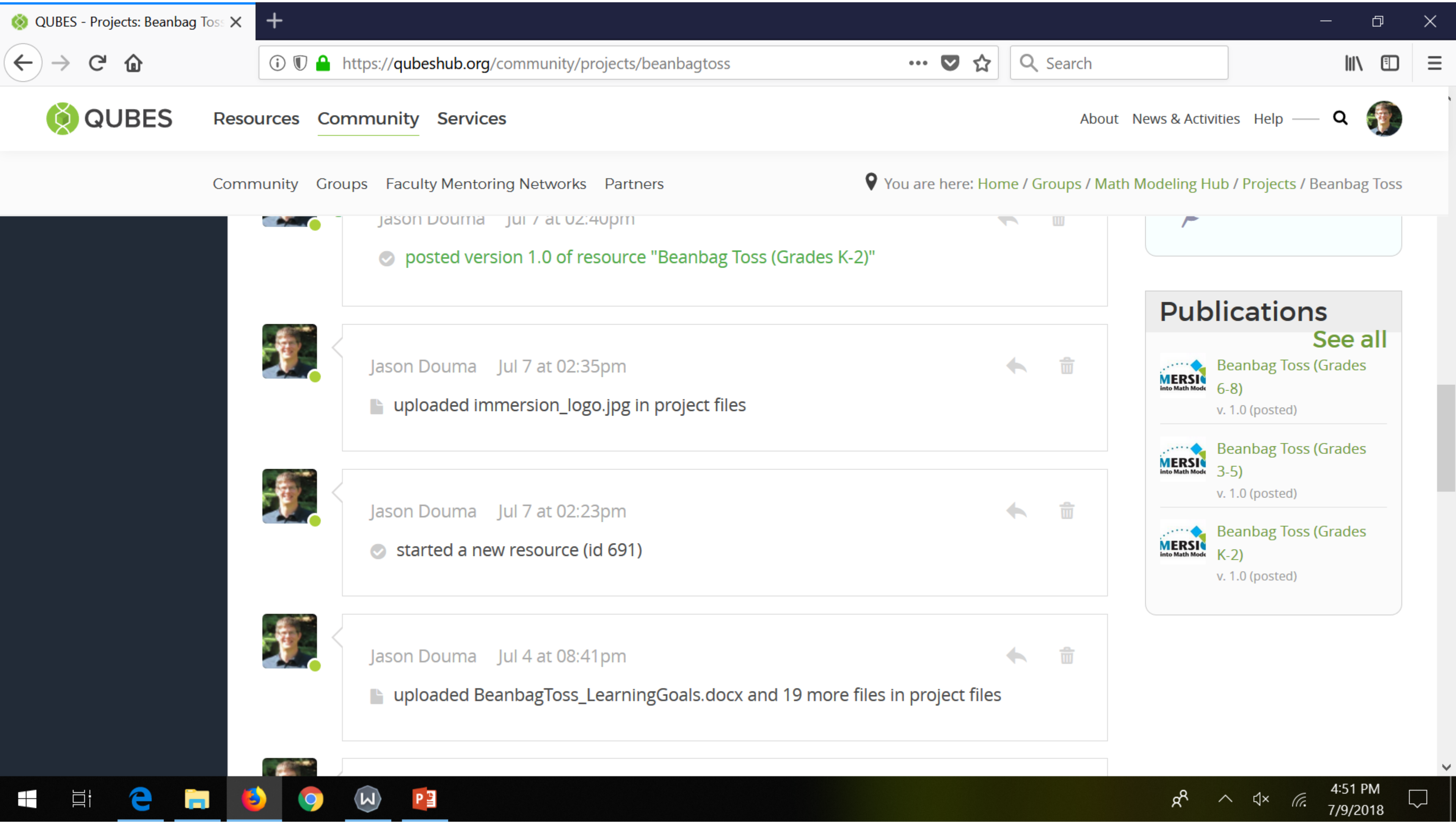
Add a few to-do items to track

Add some project notes

Updates

Recent Member Visits

MMHub Overview: Projects



QUBES - Projects: Beanbag Toss
https://qubeshub.org/community/projects/beanbagtoss

Faculty Mentoring Networks

You are here: Home / Groups / Math Modeling Hub / Projects / Beanbag Toss

Jason Douma Jul 7 at 02:40pm

posted version 1.0 of resource "Beanbag Toss (Grades K-2)"

Jason Douma Jul 7 at 02:35pm

uploaded immersion_logo.jpg in project files

Jason Douma Jul 7 at 02:23pm

started a new resource (id 691)

Jason Douma Jul 4 at 08:41pm

uploaded BeanbagToss_LearningGoals.docx and 19 more files in project files

Publications

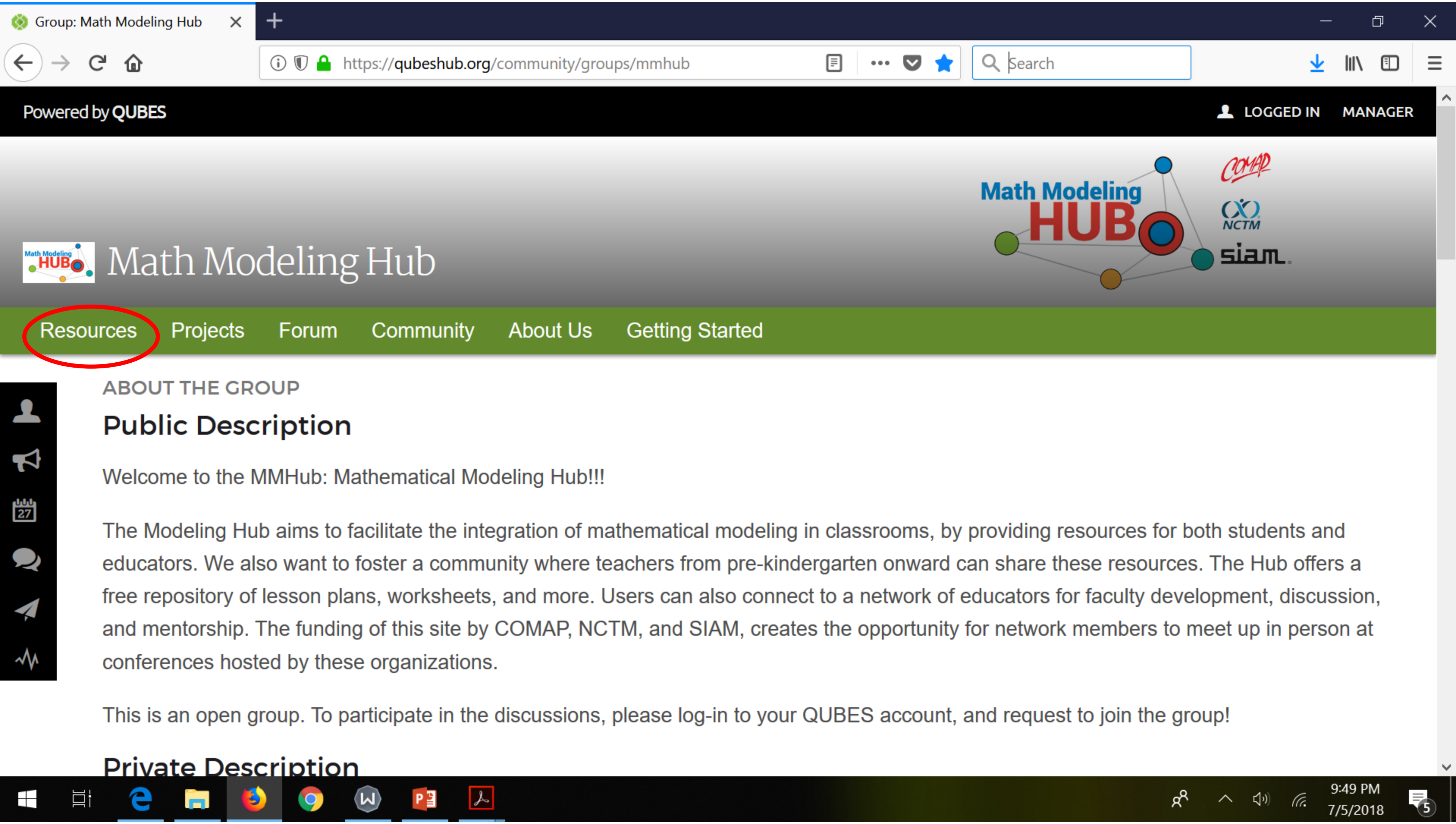
See all

Beanbag Toss (Grades 6-8)
v. 1.0 (posted)

Beanbag Toss (Grades 3-5)
v. 1.0 (posted)

Beanbag Toss (Grades K-2)
v. 1.0 (posted)

MMHub Overview: Resources



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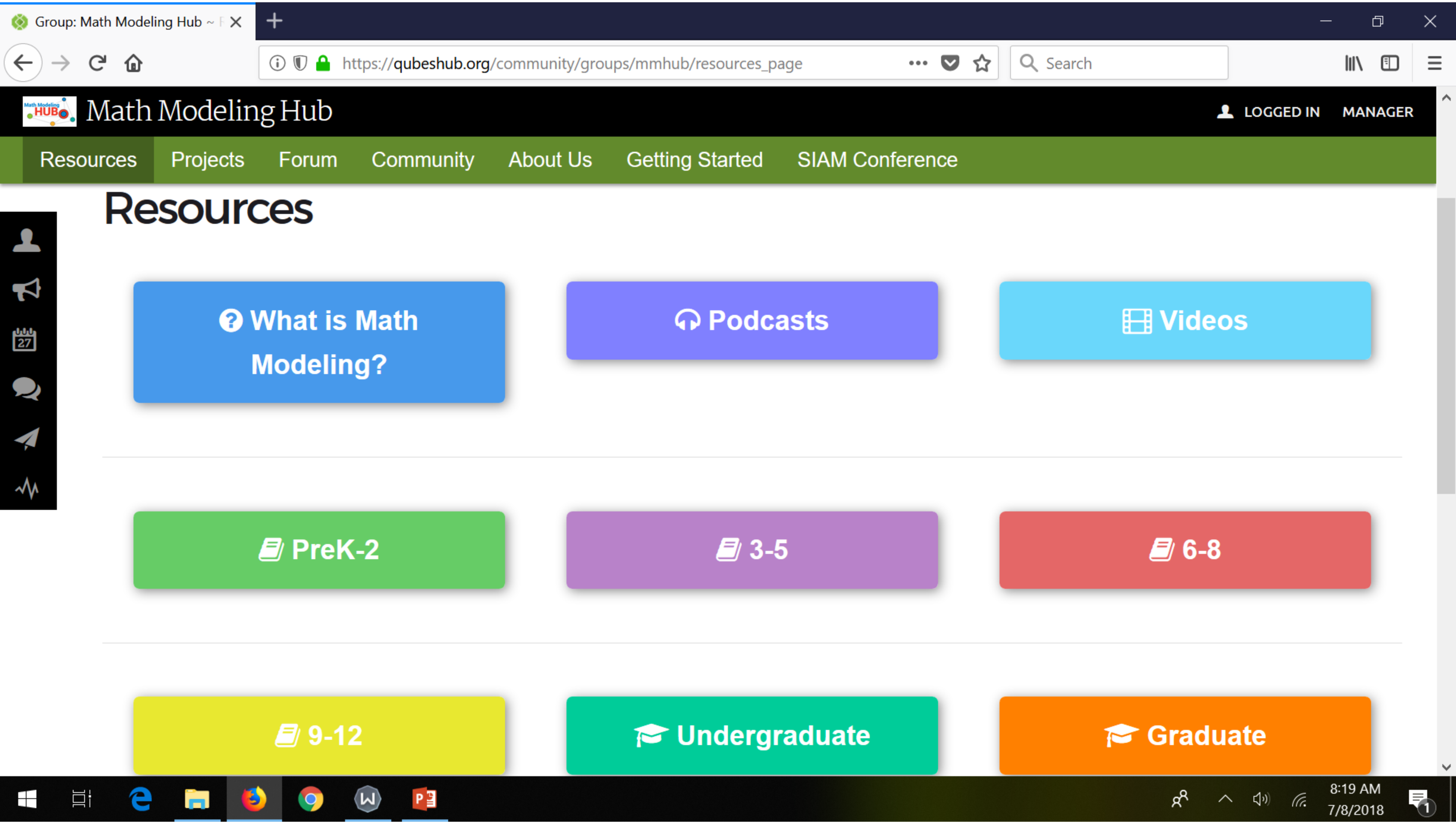

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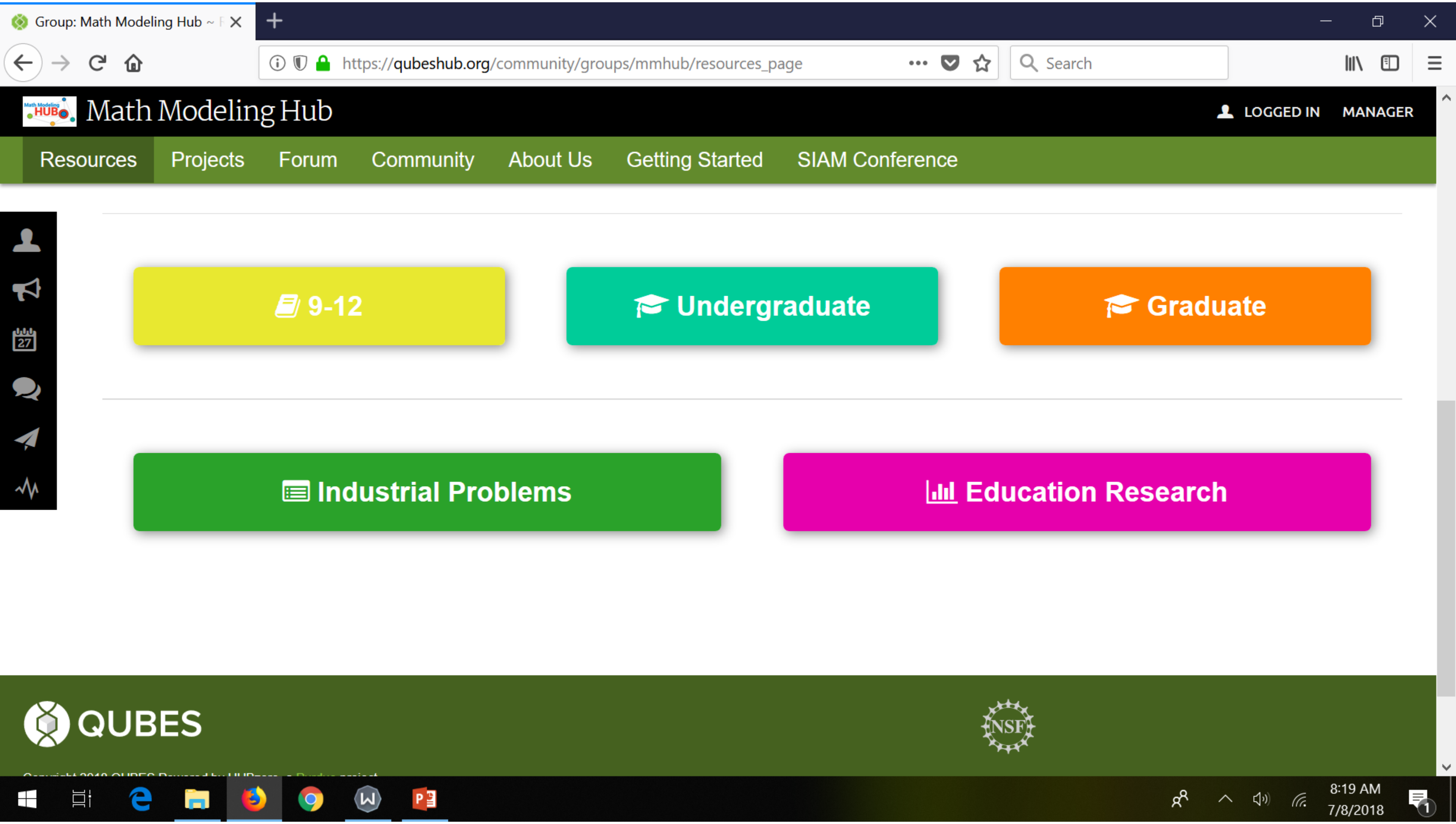

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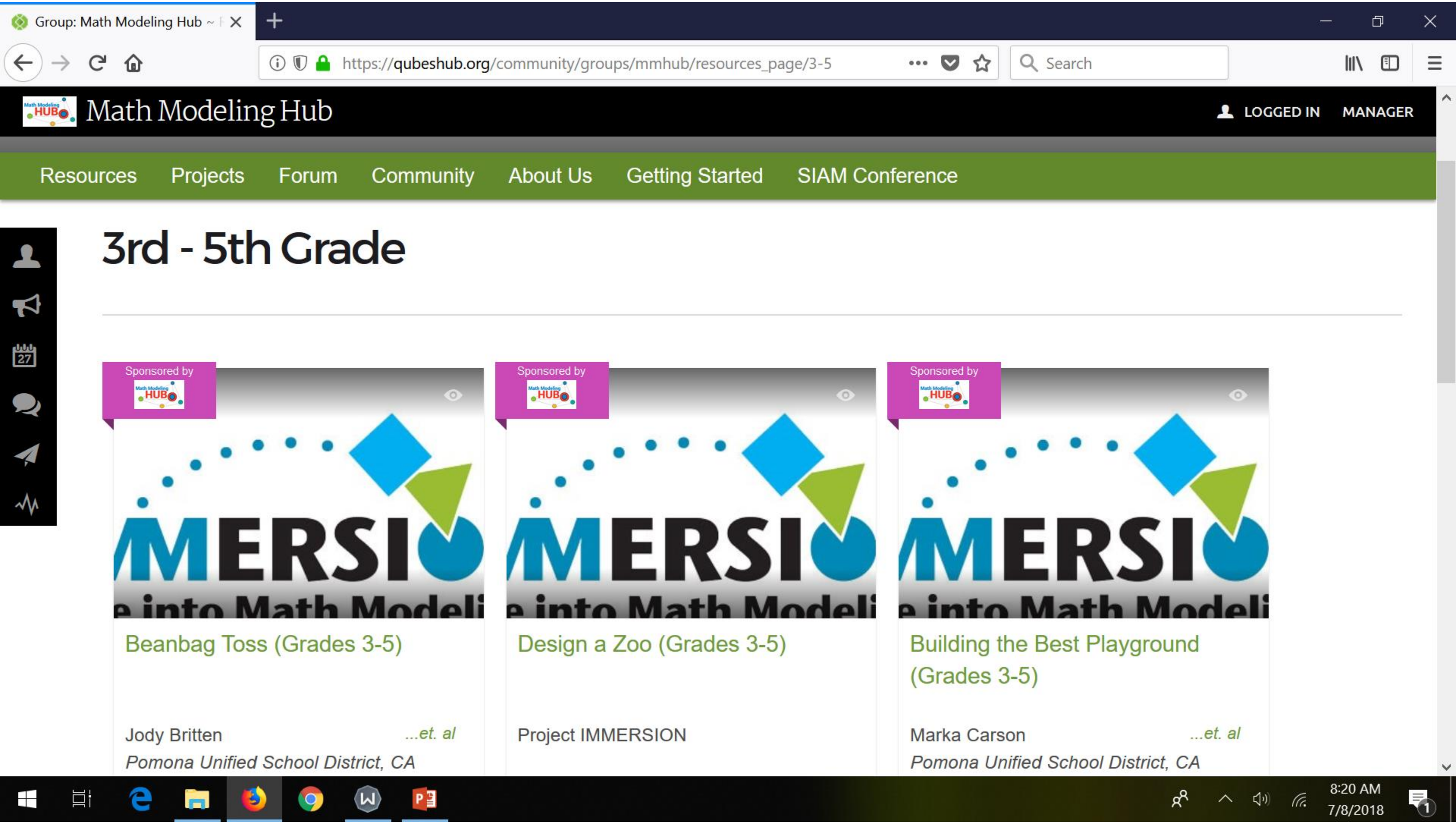

3rd - 5th Grade

Beanbag Toss (Grades 3-5)

Jody Britten ...et. al

Pomona Unified School District, CA

Design a Zoo (Grades 3-5)

Project IMMERSION

Building the Best Playground (Grades 3-5)

Marka Carson ...et. al

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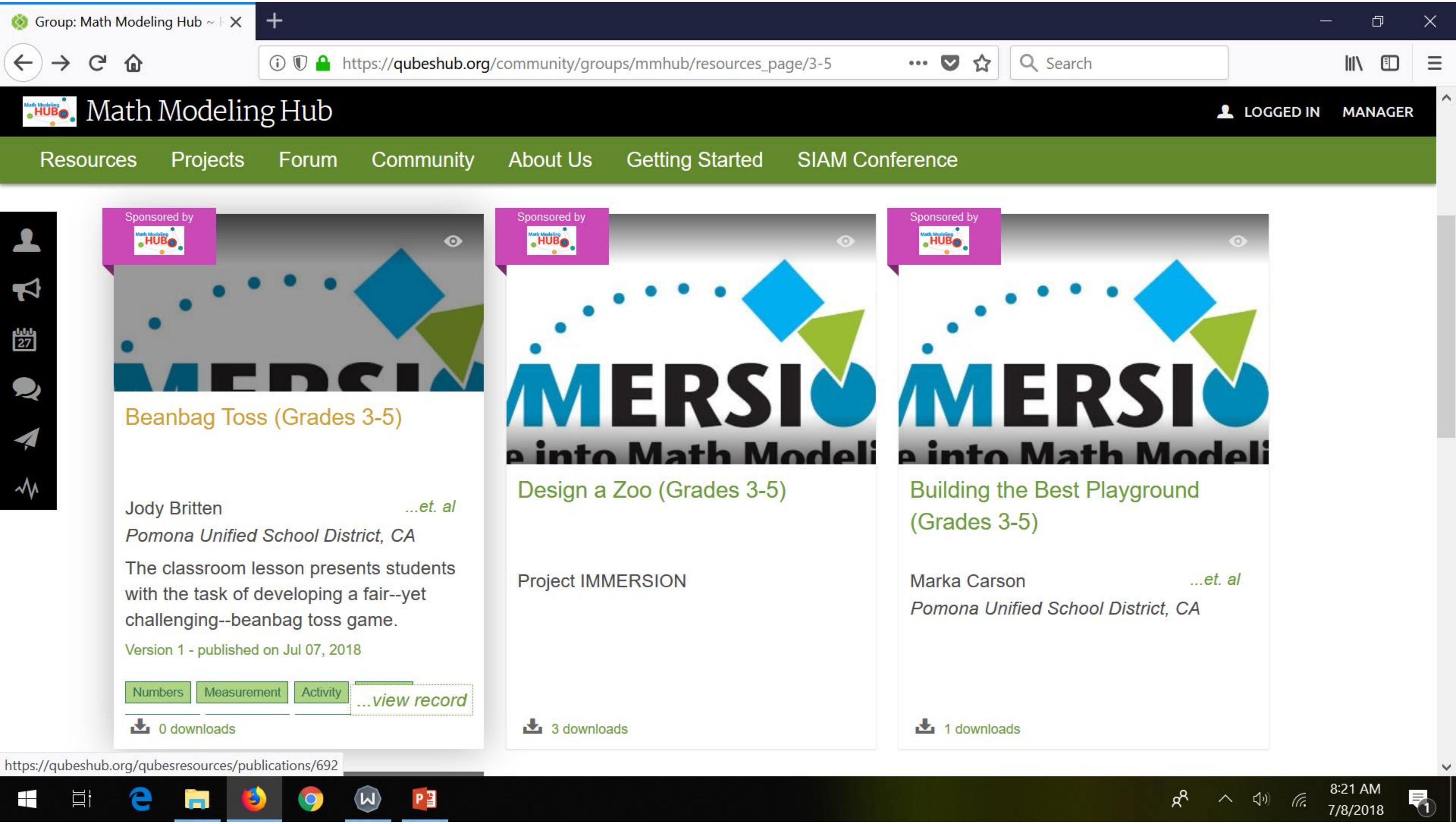


Beanbag Toss (Grades 3-5)

Jody Britten ...et. al

Pomona Unified School District, CA

The classroom lesson presents students with the task of developing a fair--yet challenging--beanbag toss game.

Version 1 - published on Jul 07, 2018

Numbers Measurement Activity ...view record

0 downloads

Design a Zoo (Grades 3-5)

Project IMMERSION

3 downloads

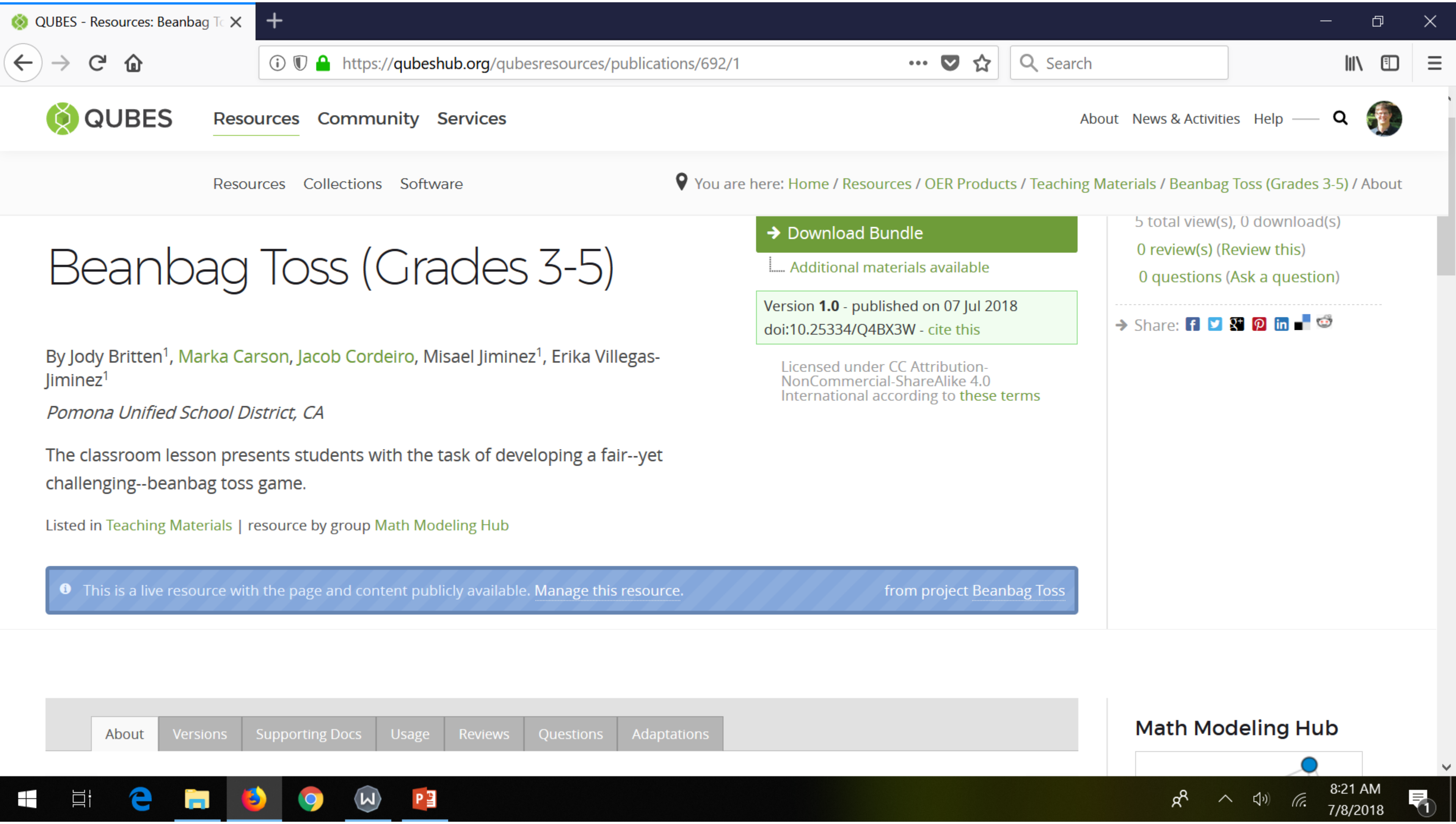
Building the Best Playground (Grades 3-5)

Marka Carson ...et. al

Pomona Unified School District, CA

1 downloads

MMHub Overview: Resources



You are here: Home / Resources / OER Products / Teaching Materials / Beanbag Toss (Grades 3-5) / About

Beanbag Toss (Grades 3-5)

By Jody Britten[1], Marka Carson, Jacob Cordeiro, Misael Jiminez[1], Erika Villegas-Jiminez[1]

Pomona Unified School District, CA

The classroom lesson presents students with the task of developing a fair--yet challenging--beanbag toss game.

Listed in Teaching Materials | resource by group Math Modeling Hub

This is a live resource with the page and content publicly available. Manage this resource. from project Beanbag Toss

Version **1.0** - published on 07 Jul 2018
doi:10.25334/Q4BX3W - cite this

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5 total view(s), 0 download(s)
0 review(s) (Review this)
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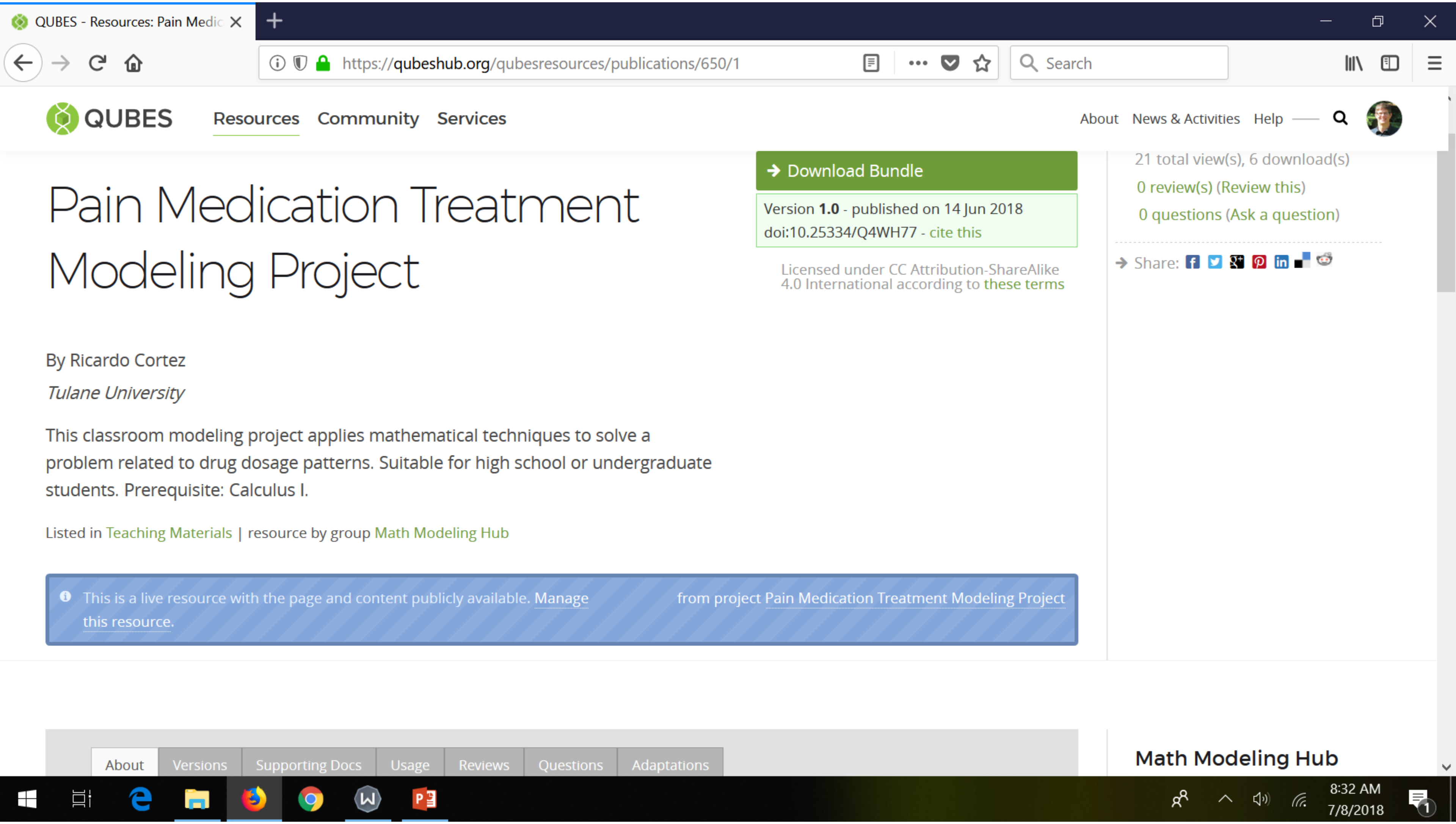
Math Modeling Hub

MMHub Overview: Resources



Pain Medication Treatment Modeling Project

Version **1.0** - published on 14 Jun 2018
doi:10.25334/Q4WH77 - cite this

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21 total view(s), 6 download(s)
0 review(s) (Review this)
0 questions (Ask a question)

By Ricardo Cortez
Tulane University

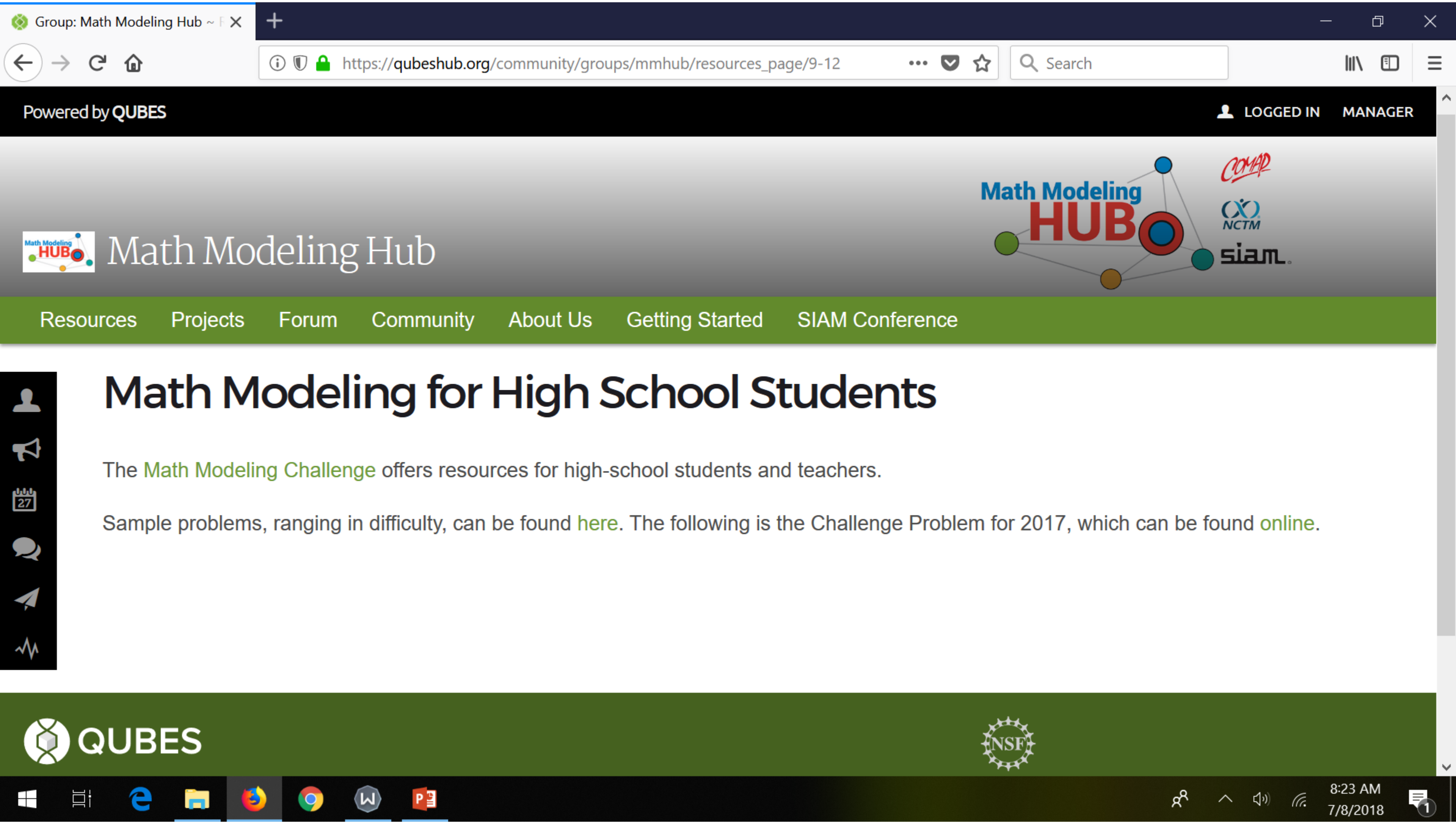
This classroom modeling project applies mathematical techniques to solve a problem related to drug dosage patterns. Suitable for high school or undergraduate students. Prerequisite: Calculus I.

Listed in Teaching Materials | resource by group Math Modeling Hub

This is a live resource with the page and content publicly available. Manage this resource. from project Pain Medication Treatment Modeling Project

Math Modeling Hub

MMHub Overview: Resources



Math Modeling for High School Students

The Math Modeling Challenge offers resources for high-school students and teachers.

Sample problems, ranging in difficulty, can be found here. The following is the Challenge Problem for 2017, which can be found online.

Future Plans

- **Add videos and podcasts to the MMHub resources.**
- **Integrate teacher mentoring networks into the life of the MMHub.**
- **Encourage regular activity on the forums and in the project sandboxes.**
- **Establish a MMHub Editorial Board.**
- **Enhance curation of the repository.**

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Who is the MMHub?

The Math Modeling Hub is a community of people like *you*.

I hope you will join us!

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