SIMIODE EXPO 2021, 12-13 February 2021
c. 8:30 Eastern US Time Post MathBowl

Breakout Social Groups - opportunities to gather for informal discussions on issues of interest

B3 - Discussion group on where to get ideas and sources for modeling activities.

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www.simiode.org
SIMIODE
A SYSTEMIC INITIATIVE FOR MODELING INVESTIGATIONS & OPPORTUNITIES WITH DIFFERENTIAL EQUATIONS

We are not recording these Breakout Social Groups so you can send your ideas to me at **Director@simiode.org** now or any time during the conference and we will assemble them into this Beamer file to post in this session's listing on the program as well as internal to SIMIODE as a Resource.

Sharing ideas and sources for modeling activities

- Your students' texts, e.g., chemistry text for kinetics data in problems OR physics texts with data.

  Kotz, J. C. and KF. Purcell. 1987. *Chemistry and Chemical Reactivity*. Philadelphia: Saunders College Publishing used in Modeling Scenario **1-011-T-Kinetics**.

- Online (YouTube or other sources) videos which feature data or data collection
  Tutorials on data collection, e.g., **Simple Harmonic Motion - Data Collection**.

  OR actual data **Radioactive Half-life Experiment - Part 2 - Collect the Data! - Data Run 1**.

- Your students' data they collected for experiment in your class or other class.

  Or perhaps a student might have found a data set from economics class studying economics of health issues on number of hospitals in US with MRI CatScan Units over time - a growth problem.

- Articles from journals, e.g., an article might be about terminal velocity and have position time data whicc interests us for the full modeling activity and value, whereas in the article they merely went after terminal velocity.

  Peastrel, M., R. Lynch, and A. Armenti, Jr. 1980. **Terminal velocity of a shuttlecock in vertical fall**. *American Journal of Physics*. 48(7): 511-513. 48(7): 511-513.

- Over 500 **Project Ideas and Resources** consisting of citations and abstdract and sometimes the pdf of the item itself.

  Rothermel, R. C, 1972. **A Mathematical Model for Predicting Fire Spread in Wildland Fuels**. *Intermountain Forest and Range Experiment Station*. Ogden UT USA. 44 pp. Pamphlet. Research Paper INT-116 1972.

- Expository and source laden articles. For example:

  Winkel, Brian. 2013. **Browsing Your Way to Better Teaching**. *PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies*. 23:3: 274-290.

  The journal *PRIMUS* I founded(!) is now freely available to all Mathematical Association of America members through he **MAA Portal**.

- **Online FREE Differential Equations Texts** - see SIMIODE for over two dozen of these.

- The CODEE Journal is a peer-reviewed, open-access publication, distributed by the CODEE (Community of Ordinary Differential Equations Educators) and published by the Claremont Colleges Library, for original materials that promote the teaching and learning of ordinary differential equations
- Other repositories such as **The Ordinary Differential Equations Project—A Work in Progress** so ably built and curated by Tom Judson, Stephen F. Austin State University, Nacogdoches TX USA.

- Software specific web sites with applications to feature products or their use, e.g., Maple, Mathematics, SAGE, R.

- Journals which address teaching of mathematics, e.g., **International Journal of Mathematical Education in Science and Technology**.

  Select MAA journals as well as SIAM Journals, AMATYC journals, and NCTM journals, among many others.

- Your own imagination and the world around you:

  spread of children's slime,
  osmosis - blue ink rising in dipped napkin,
  battery life in some device, and
  time it takes for some process you set out.

There are many more YOU know, indeed, some you produce.

Please share now and send to **Director@simiode.org** when you can - during the Conference and beyond.

We will add them to this presentation and post the presentation in both SIMIODE and in the Conference Program.