

## Volume I Number 1

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### WELCOME TO SIMIODE AND OUR NEWSLETTER

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We welcome you to our first Newsletter - Volume 1 Number 1 - December 2015 - and hope that this will help to keep you informed about SIMIODE activities. We hope you will give us a look and consider receiving news of SIMIODE in this manner, even contributing items by sending them to [Director@simiode.org](mailto:Director@simiode.org). Thank you.

Of course, we provide the option NOT to receive future Newsletters below, but we hope you try us for the several issues we plan for 2016 before exercising that option.

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### REGISTERING IN SIMIODE

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If you have not registered in SIMIODE please go to our [Home Page](#) and do so to benefit from the rich resources in the SIMIODE community.

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### ANNOUNCING SIMIODE MINICOURSE AT MATHFEST 2016

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SIMIODE received approval for an MAA Minicourse at MathFest 2016, 3-6 August 2016 in Columbus OH. The workshop will be led by Therese Shelton, Southwestern University, and Brian Winkel, Director SIMIODE. Below are the available details. Complete details and registration information will be in the spring copy of MAA's FOCUS magazine. Consider joining us and put the dates in your calendar.

**Title:** Teaching Modeling First Differential Equations – Building Community in SIMIODE

**Abstract:** This minicourse permits participants to experience SIMIODE - Systemic Initiative for Modeling Investigations and Opportunities with Differential Equations, an online ( [www.simiode.org](http://www.simiode.org)) community of teachers and learners of differential equations who use modeling and technology throughout the learning process. Participants do modeling scenarios from the student perspective, discuss pedagogical and content issues that might arise in such teaching, and initiate the development of their own modeling scenario contributions to SIMIODE through partnering with other participants during and after the minicourse. The minicourse is appropriate for all interested in teaching differential equations in a modeling first approach.

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### NEWS OF AND FROM MAA-PREP WORKSHOP SUMMER 2015

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We had a great week at Carroll College, Helena MT USA, with workshop leaders, Karen Bliss, Jessica Libertini, and Brian Winkel; local coordinators Eric Sullivan and Ted Wendt; and student associates, Elizabeth Carlson, Roger Dempsey, and Nick Lumetta.

Jessica and Karen did a terrific job of inspiring and engaging participants with very intriguing Modeling Scenarios they have used. Participants had a chance to discuss how they would incorporate a modeling-first approach into their teaching with specific details of how to use SIMIODE materials in their syllabi.

Participants got a chance at leading a Modeling Scenario and gaining experience and feedback, which all agreed would be helpful to them when they get back home. Even our three students got to lead a Modeling Scenario.

John Sieben gave a detailed talk on how to produce videos with lots of examples. We appreciate John's contribution very much.

Participants took an afternoon hike up Mt. Helena, led by Eric Sullivan, and all enjoyed a Wednesday afternoon boat ride on the Missouri River during which we experienced the first views of the Rockies that Lewis and Clark saw over 200 years ago as their (and our!) boat moved through the high-cliffed Gates of the Mountains where we saw eagles and Rocky Mountain sheep. John Sieben offered a very nice Blog posting about this [SIMIODE boat ride on the Missouri River](#).

Fishery Harvesting: Atlantic Cod which has now made its way through our review system. Thank you Wandi.

We encourage you to consider writing up any projects, small or big, which you have used in your coursework and submitting them for double-blind, peer-reviewed publication process in SIMIODE. Just go to [Material Submission Process](#) after logging in for instructions.

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### SIMIODE AT JOINT MATHEMATICS MEETINGS, SEATTLE WA USA, JANUARY 2016

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SIMIODE will have a strong presence at the JMM. Come join us at these events and activities and read about our work in our meeting flyer from your registration packet.<

**SIMIODE Flyer in Registration packet** Be sure to check your registration packet for news of SIMIODE events at JMM 2016. **SIMIODE Exhibit Hall Booth** As we did at MathFest 2015 in Washington DC SIMIODE will host a booth in prime display territory in the Exhibit Hall, Booth 420. Stop by and register for chance to win a cool SIMIODE T-shirt, sample

literature, and take home examples of Modeling Scenarios for colleagues. Better yet, bring along a colleague so we can help share the news.

**SIMIODE Open House** We will host an Open House Friday, 8 January 2016, in the Willow Room of the Sheraton Seattle Hotel with tasty refreshments for attendees of JMM and there will be an announcement in the program for this event. We will have more opportunities to win a cool SIMIODE T-shirt. This will be a chance to network and meet others who are interested in teaching differential equations using modeling. We plan several discussion/focus group tables in which you can join the conversation to make SIMIODE a better offering. We will have a simulation table to experience a death and immigration model similar to an [m&m simulation model in SIMIODE](#).

**SIMIODE Workshop Attendees and Others Giving Talks** At least seven members from Summer 2015 MAA-PREP Workshop on SIMIODE approaches will be giving talks on their understanding and application of the SIMIODE approach. See the [Calendar](#) for details of places and titles.

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## MODELING SCENARIOS OF THE FUTURE COMING TO SIMIODE

A good number of Modeling Scenarios developed during summer of 2015 SIMIODE Developer Workshops held at Carroll College, Helena MT and Virginia Wesleyan College, Norfolk VA, are working their way through the referee and editorial process and should soon be "hitting the newsstands" as modeling scenarios at [www.simiode.org](http://www.simiode.org). Among them are such title as, "Trajectory of a Bouncing Ball," "Feral Cat Control," "Barging Ahead: Optimizing a Trip Upriver," "Propagation of the Word Jumbo," "Fish Mixing," "Variable Ascent Rate and Air Management in Scuba Diving," "Neutral Buoyancy Point for a Weight/Lift Bag System," "Algae Population Self-Replenishment," "Ranking Chess Players Using Elo's Method," "Comet Orbital Mechanics," "Combating the Ebola Epidemic," "Modeling the Smoking Process of Southern Barbecue," "A Comparison of Numerical Techniques Through the Study of the Nonlinear Pendulum," "Single Mass-Spring System," and "Predator-Prey: Blue Whales Love Krill."

That is quite a rich list and there are more coming! The diversity of applications of differential equations and hence teaching modeling first differential equations is richly displayed in these titles. We are pleased at these developments.

Remember, your ideas from your own class projects or activities would make good Modeling Scenarios and we encourage you to submit your materials for publication in SIMIODE. You can find out how to do this at [Material Submission Process](#).

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## INDIVIDUAL MEMBER ACTIVITIES

**Dina Yagodich, Frederick Community College, Frederick MD** -- Dina teaches her differential equations course with one of many free on-line differential equations texts, *Notes on Diffy Qs: Differential Equations for Engineers*, by Dr. Jiri Lebl, of Oklahoma State University, which was published in 2014 at [Dr. Lebl's website](#) and annotated in our rich [Resource Listing](#). She does ask class to purchase a *Schaum's Outline of Differential Equations* - less than \$20 - for technique study, uses SIMIODE materials, and blogs about her course. You can follow her at [her Blog](#).

**John Thoo, Yuba College, Marysville CA** -- John gives a talk, "Teaching Differential Equations the SIMIODE Way," at the California Mathematics Council, Community Colleges 2015 Fall Conference held Dec 11--12, 2015, in Monterey CA at the Hyatt Regency Monterey Hotel and Spa. The talk is at 2:30 PM, Saturday (12 Dec) in Regency 4. If you are lucky enough to be in Monterey CA (any time you are in Monterey you are lucky!) stop in and hear John's story.

**Brian Winkel, Director SIMIODE, Cornwall NY** -- Brian gave a talk, "Biology-Driven Approaches to Teaching Differential Equations," at Symposium on Biomathematics and Ecology Education and Research (BEER-2015), 9-11 October 2015, Illinois State University, Normal IL USA, 11 October 2015. His talk slides are [here](#).

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## WORDS OF ENCOURAGEMENT FROM THE DIRECTOR

SIMIODE is a community which is alive, vibrant, and rich in resources and individual talents to assist colleagues who wish to teach differential equations using modeling to motivate students.

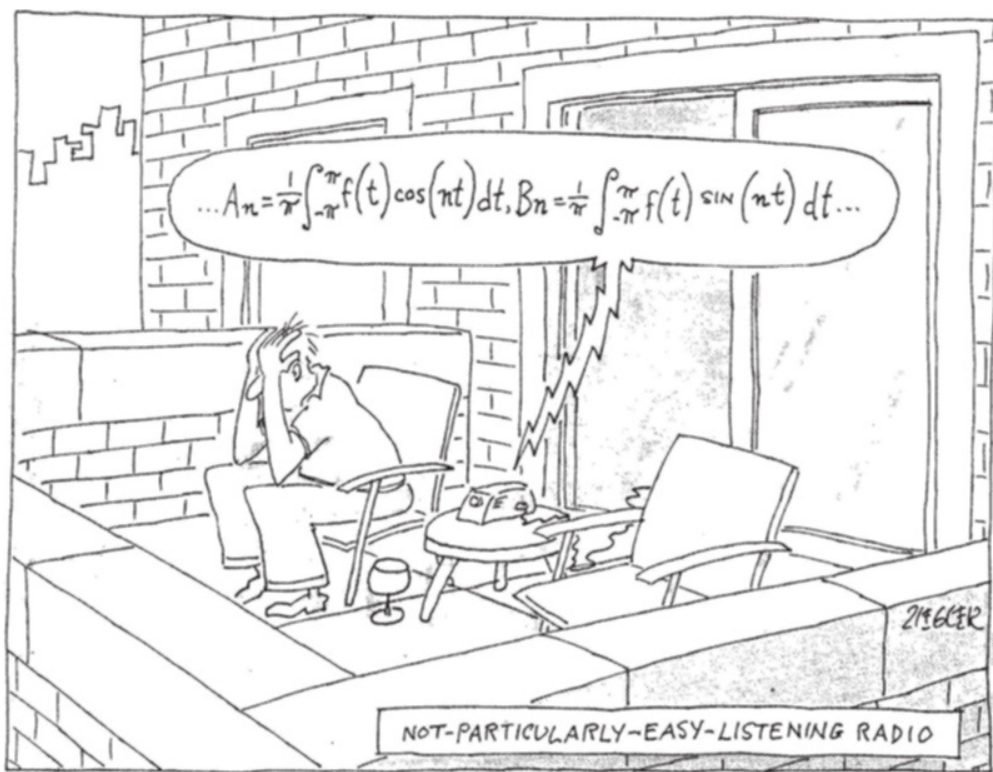
There are a number of ways you can add to the community: **Contribute materials** -- You can do this at [Resources: New](#). There you will find types of materials and instructions on how to contribute and being the process leading to publication in SIMIODE.

**Register to referee and review submitted materials.** -- Good scholarship merits attention and our double-blind, referee system affords quality reviews of submitted materials. Please, visit our [Manuscript Management system](#) and register as a referee.

**Post slides from your presentations or talks.** -- When you give a talk locally or beyond you can post your slides, details of the talk or meeting, and comments at [Resources: Presentations](#). Now that you have spread the word beyond the SIMIODE community bring it back home for your fellow SIMIODE members to see.

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## SOMETHING FOR FUN



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