

Student Chapter of SIAM at ASU: Final Report



2009-2010

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1 Chapter Objective

The SIAM (Society for Industrial and Applied Mathematics) Student Chapter of Arizona State University at Tempe was created six years ago in order to motivate, appreciate and to promote among the students and surroundings communities the applications of Mathematics in different areas.

The objective of this organization is to advance the application of mathematics and computational science to engineering, industry, science and society as well as to promote research and to facilitate the exchange of ideas in those areas. The student chapter aims to invite prominent speakers, highlight the research of ASU students in mathematics, engineering and science, and promote mathematics, science, education and diversity at ASU and the surrounding communities.

2 2009-2010 Officers

2.1 Officers

- **President:** José M. Vega Guzmán

- **Vice President:** Kamal Barley

- **Treasurer:** Kehinde Salau

- **Secretary:** Mayteé Cruz Aponte

2.2 Faculty Advisors

- **Advisor:** Carlos Castillo Chávez

- **Co-Advisor:** Sergei Suslov

2.3 Student Chapter Website

This year we improve dramatically the Chapters website. The website of SIAM student chapter of ASU is http://mathpost.asu.edu/siam/ASU_SIAM/Welcome.html. Most of the information presented in this report can be found in the chapter website. The main person in charge of the webpage was the vice president, Kamal Barley. Basic information of the Organization and its events can be found in the website. The set of events planned for the next semester should be posted soon.

3 Chapter Events

3.1 Fall-2009 Semester

3.1.1 Activity 0: Organization Meeting (6 attendees)

Date: October 2, 2009

Objective: To discuss with previous SIAM at ASU former Presidents the rules to follow and to discuss different ideas about the chapter for the Spring-09 Semester.

Summary: The current Officers of the Chapter met with two former SIAM at ASU Presidents (David Murrillo, Daniel Rios-Doria) to discuss the situation of the Chapter, the invitation to the organization of new students and to point out the duties of each of the Officers. There were several advices from the two former presidents about activities that should be performed in order to preserve the Objective of the Chapter. Additional events to the Chapter were proposed by the current committee.

3.1.2 Activity 1: First Official Meeting (27-30 attendees)

Date: October 7, 2009

Objective: Presentation of new Committee, Presentation of new student members, Discussion of Possible Activities for this Fall 2009, Use of funds, Discussion of possible activities for the Spring 2010.

Summary: The first meeting was primarily to present the committee, to discuss the sources of

funding and the use of it, and to discuss possible events for the semester. A friendly and professional environment prevailed through all the conversation. The assistance to the event was as follow: 21 students, 1 postdoc and 3 professors. Flyer for this activity can be found in Appendix 1.



3.1.3 Activity 2: Dr Huang Talk from University of Alabama, Huntsville (20-25 attendees)

Date: October 30, 2009

Objective: To interchange ideas about the analysis of dynamical systems and its use towards better understanding different phenomena in our society.

Summary: We have for this activity an invited speaker, Prof. W. Huang from University of Alabama at Huntsville. Dr Wenzhang Huang is Professor in the Department of Mathematics in UAH. His main contributions has been in the area of travelling wave solutions for Reaction-Diffusion Equations with time delay and Nonlocal response, and in the area of Dynamical systems. The activity consisted of the lecture Comparison Method and its application to population biology. Several students were present including visiting graduate students. Also, a considerable amount of faculty members from the School of Mathematics and Statistical Sciences assisted to the event. After the talk, there was a set of questions where the invited speaker answered questions from students and from the faculty members. Flyer of this activity can be found in Appendix 2.



3.1.4 Activity 3: Dr. David Bortz Talk from University of Colorado (18-20 attendees)

Date: November 5, 2009

Objective: This will be an informal talk with the purpose of interchanging ideas and concerns about modeling biological phenomena using mathematical tools. The idea is to expose undergraduate members to links between Mathematics and the Life Sciences.

Summary: We invite Prof David Bortz from University of Colorado at Boulder to network with us. His main research relies in the applications of Dynamical System to biology at cellular level. Student members, ASU faculty members and visiting faculty were networking during the time he spent with the Chapter. Most of the conversation was centralized in the life experiences he realized to obtain higher degrees, and in topics he has been recently researching about applied math in biology. Flyer of this activity can be found in Appendix 3.



3.1.5 Activity 4: Christmas SIAM @ ASU Breakfast (20-25 attendees)

Date: December 8, 2009

Objective: To create a discussion between the student members and the faculty advisors about the activities of the fall 2009. Also, this activity will be used to develop the activities calendar for the spring 2010.

Summary: In this activity we discuss our the entire dynamic of the Chapter during the Semester. Several activities were proposed for the Spring-2010 semester including a possible job meeting with a job recruiter from the industry in Arizona. Some students proposed activities to impact the high school population of the county.

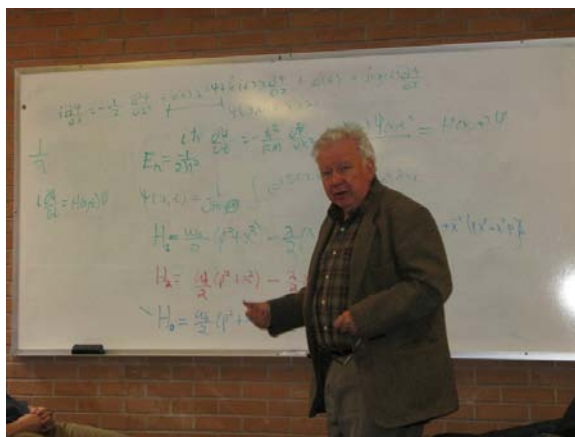


3.1.6 Activity 5: Networking with Dr Zakharov (19-22 attendees)

Date: November 14, 2009

Objective: This will be an informal talk with the invited Professor with the purpose of interchanging ideas and concerns about the foundation of different theories behind all the mathematics applied mathematicians typically use. The idea is to expose undergraduate and graduate members to international researchers that work most of the time in the foundations of the process that follows applied mathematicians.

Summary: We invited Dr Zakharov to spend some time with the chapter members. Professor Vladimir Zakharov is a Regents Professor in the Department of Mathematics in Arizona State University at Tucson. His main contributions are in the areas of applied mathematics and Physics. He made fundamental contributions in turbulence, theory of nonlinear waves, inverse scattering, theory of solitons, nonlinear optics, numerical and statistical descriptions in hydrodynamics, plasma physics and Bose-Einstein condensate. Among many prizes, he received the Dirac Medal in 2003. There was a very productive conversation between the invited and the members of the chapter. In sum, he discussed some of his steps that he followed to reach the position he has actually in the international scientific community. Flyer of this activity can be found in Appendix 5.



3.1.7 Additional Activity: Fred Brauer (14 attendees)

Date: October 16, 2009

Overview: We encouraged the students of the chapter to assist the MathBio seminar where Dr Fred Brauer gave a talk. After, he joined us for dinner at UNO. He talked us about his experiences teaching math and the importance of publish papers when pursuing a faculty position. He also share with us his experiences when dealing with policymakers and workers from the industry. The dinner was paid with ASU funding (external to the chapter).



3.2 Spring-2010 Semester

3.2.1 Activity 6: Sonia Kovalevsky Day (12 attendees)

Date: February 27, 2010

Objective: To serves as volunteer in the activity helping the staff with their different duties and the high school students with their questions. Serve as a volunteer to Maricopa High School student community.

Summary: The Sonia Kovalevsky High School Mathematics day was an activity day in which different components of our society fuse to highlight the important role of women in mathematics and its applications. The activity was build so that young women, their peers, mentors, parents, and friends engage in a day of mathematics activities. Chapter member were involved voluntarily in the activity as usher, grader, and discussion panel of women in mathematics.

3.2.2 Activity 7: Post Spring Break SIAM Meeting (17-21 attendees)

Date: March 24, 2010

Objective: To create a discussion between the student members and the faculty advisors about the activities for the rest of the semester. It was a joint meeting with the math physics club. Also, this activity will be used to nominate the Officers of the SIAM Student Chapter for ASU (2010-2011).

Summary: In this activity we discuss the way in which the members can shape the rest of the academic years through the Chapter's activity. Different activities were proposed to celebrate the Math Awareness month, but finally prevail the appreciation of a movie that involve mathematics. We also ask for nominations to occupy the positions of the officers for the academic year 2010-2010.



3.2.3 Activity 8: Advantages of the Professoriate (21-26 attendees)

Date: April 15, 2010

Objective: To discuss the individual and common advantages of the Professoriate career with the hosted visiting scholar Dr Fred Brauer.

Summary: We performed this activity with the aim of encourage those students pursuing a Professoriate career. Dr Fred Brauer share with the Chapter members, and other students part among the audience, his amazing experiences teaching mathematical courses at different levels. His experience, advice and good sense of humor made this activity one of the best of the chapter.

Fred Brauer also pledged to return next semester to keep supporting the chapter events.



3.2.4 Activity 9: Movie and Debate Night (27-30 attendees)

Date: April 22, 2010

Objective: To celebrate Math Awareness Month with students of Mathematics, Engineering, Physics and others of the ASU community.

Summary: Since the theme of the celebration of the math awareness month was *Mathematics and Sports* we decided to host a movie screening incorporating the theme and made it open to the ASU community. A discussion-debate environment about the math content of the film prevailed after the movie ended. Students and Professors from different areas and levels assisted to the event.



3.2.5 Activity 10: Chapter Elections (15 attendees)

Date: May 7, 2010

Objective: To select the Officers that will be in charge of the management of the Chapter during the academic year 2010-2011.

Summary: Elections were performed by the selected members as our Chapter Constitution dictates. Every vote was in secret and the results were revealed to the rest of the members. We created this time the position of *Special Representative*, who have the purpose of attract and recruit the undergraduate population to the SIAM chapter.



3.2.6 Activity 11: Officers Celebration (8 attendees)

Date: May 7, 2010

Objective: To inform about the duties of each to the new officers for the dynamic of the chapter in ASU and surrounding community.

Summary: Current administration of the SIAM at ASU chapter met with the incoming administration to discuss the various roles and responsibilities which should be taken up to foster success and popularity of the chapter.

The results were as follow:

- President: Mayteé Cruz Aponte
- Vice President: Romarie Morales
- Secretary: Karl Ballard
- Treasurer: Kehinde Salau
- Special Representative: Anarina Murrillo

4 Funding

Table 1: *Summary of all funding sources of the Student Chapter for the 2009-2010 academic year.*

Funding Sources	Quantity	Availability
SORC, ASU	\$300.00	September 2009
MTBI, ASU	\$500.00	August 2009
SIAM	\$500.00	February 2010

Table 2: *Overview of the funding's usage of the Student Chapter for the 2009-2010 academic year.*

Activity	Funding Source	Amount Used
Activity 0	MTBI, ASU	\$42.27
Activity 1	MTBI, ASU	\$103.80
Activity 2	SORC, ASU	\$103.91
Activity 3	SORC, ASU	\$143.42
Activity 4	SORC, MTBI	\$52.67 / \$20.07
Activity 5	MTBI, ASU	\$62.51
Activity 6	SIAM	\$25.05
Activity 7	SIAM	\$112.62
Activity 8	SIAM	\$194.63
Activity 9	SIAM / MTBI	\$167.7 / \$61.94
Activity 10	MTBI, ASU	\$141.57
Activity 11	MTBI, ASU	\$67.84

5 Appendix

5.1 Appendix 1: Activity 1



5.2 Appendix 2: Activity 2

SIAM CHAPTER COLLOQUIUM

SIAM STUDENT CHAPTER @ ASU

Welcomes



Dr. Wenzhang Huang

Department of Mathematical Sciences, UAHuntsville

Comparison method and its application
to population Dynamics

Friday, October 30

9:15 A.M

PSA 206



Breakfast will be
provided

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Arizona State University, Tempe

5.3 Appendix 3: Activity 3

SIAM CHAPTER COLLOQUIUM

SIAM STUDENT CHAPTER @ ASU

Presents A Meeting With



Dr. David Bortz Talk

Department Applied Mathematic University of Colorado

Thursday, November 5

9:15 A.M

PSA 546



Breakfast will be
provided

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5.4 Appendix 4: Activity 4

SIAM CHAPTER EVENT

SIAM STUDENT CHAPTER @ ASU

Present



Purpose: To discuss the dynamic of the Chapter during Fall 2009 and to discuss possible events for the next semester.

When: Tuesday 8 (tomorrow)

Where: PSA 546

Time: 12:00 M

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5.5 Appendix 5: Activity 5

SIAM CHAPTER COLLOQUIUM

SIAM STUDENT CHAPTER @ ASU

Presents A Meeting With



Vladimir E. Zakharov, Regent's Professor

Applied Math University of Arizona and
Russian Academy of Sciences

Saturday, November 14

12:00 pm

PSA 206



Light Lunch
Provided

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5.6 Appendix 6: Activity 6

SIAM STUDENT CHAPTER @ ASU

Sonia Kowaleusky Day



Sonya Kovalenskaya.

*Serve as a volunteer to Maricopa
High School students community*

Saturday, February, 27th, 2010
@ ASU-West Campus

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5.7 Appendix 7: Activity 7

SIAM STUDENT CHAPTER @ ASU

Post Spring Break SIAM Meeting

Meeting agenda:

- **To discuss activities for the remainder 2010 academic year**

When: Wednesday March 24, 2010

Time: 12 noon

Where: PSA 546

Lunch will be provided



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5.8 Appendix 8: Activity 8



Advantages of the Professoriate



*Join us for lunch and a conversation with
Dr Brauer about Academia*

Thursday, April, 15th, 2010
PSA-546 @ noon

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5.9 Appendix 9: Activity 9



Presents
A Movie and a Debate

In Celebration of Math Awareness Month,
The SIAM@ASU chapter will be Hosting a
Movie Screening Related to Mathematics
and Sports.

When: April-22-2010
Where: PSA 206
Time: 5:45pm



Refreshments will be provided

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5.10 Appendix 10: Activity 10



SIAM Election



**Friday May 7, 2010
at
12 noon**



PSA 546

Refreshments will be provided



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