

The Reactor



New Orleans Section, American Institute of Chemical Engineers

Volume 12, Issue 6, March 2000

Sixth Meeting of the 1999-2000 Year

This month we have a very different and exciting program planned. Greg has arranged for us to take a tour of the **Laser Interferometer Gravitational-Wave Observatory** or LIGO Plant in Livingston, LA. The tour is scheduled to start at 6:00 p.m. After the tour a buffet style dinner catered by Desiree's Fine Dining will be held on site starting at 7:00 p.m.

The Dinner menu will feature:

- Caesar Salad
- Angel hair pasta with tomato pesto sauce
- Boneless chicken breast w/proscuitto
- Steamed vegetables
- Garlic potatoes
- Desert tray
- w/ tea, coffee, water

Total cost will be \$19 payable at the door.

See Page 6 for directions to LIGO.

It will be very important that you contact **Keith Henderson at 846-6407 {Albert-Garudy}** or your Company Contact **BEFORE MARCH 17th** to reserve a place.

Future and Proposed Meetings	
April 11	- Jim Dean, Entergy "New P.E. Exam"
Recognition of New Orleans Local Section Fellows Presentation of Engineer of the Year Local Section Elections	

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Meeting March 23, 2000 at LIGO Plant, Livingston, LA (See Map on Page 6 for Directions)

Cost is \$19/person

6:00 - 7:00 P.M.	Tour of LIGO Plant
7:00 - 8:00	Dinner

What is LIGO?

The Laser Interferometer Gravitational-Wave Observatory (LIGO) will be a facility dedicated to the detection of cosmic gravitational waves and the harnessing of these waves for scientific research. It will consist of two widely separated installations within the United States, operated in unison as a single observatory. When it reaches maturity, this observatory will be open for use by the national community and will become part of a planned worldwide network of gravitational-wave observatories.

What are gravitational waves?

Gravitational waves are ripples in the fabric of space and time produced by violent events in the distant universe, for example by the collision of two black holes or by the cores of supernova explosions. Gravitational waves are emitted by accelerating masses much as electromagnetic waves are produced by accelerating charges. These ripples in the space-time fabric travel to Earth, bringing with them information about their violent origins and about the nature of gravity.

Albert Einstein predicted the existence of these gravitational waves in 1916 in his general theory of relativity, but only now, in the 1990s, has technology become powerful enough to permit detecting them and harnessing them for science. Although they have not

(See WAVES on page 3)

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New Orleans Section, American Institute of Chemical Engineers

A.I.Ch.E. New Orleans Section - Local Officers

Chairman

Linda Bergeron **OxyChem** **783-7365**

Vice-Chairman

Greg Tragitt **KBC** **837-9228**

Secretary

Keith Henderson **Albert-Garudy** **846-6407**

Treasurer

Dr. Brian Mitchell **Tulane** **862-8257**

Membership Chair & Director

Bill Boutall **Wink** **243-4539**

Finance Chair & Director

Tom Brumfield **Shell** **465-7125**

Professional Development

Dr. J.B. Phillips **Eng. Dev. Inst.** **825-7046**

Several positions are open within the section for those who would like to take on a leadership role within the section. Please contact, the Section Chair or Vice-Chair listed above if interested in serving.

A.I.Ch.E. on the Internet

Visit the New Orleans Section Home page at:

URL:<http://www.tulane.edu/~bmitche/aiche.html>

Also check out the National AIChE Home page at:

URL:<http://www.aiche.org>

Anyone interested in this activity, please contact

Dr. Brian Mitchell (AIChE Webmaster) at

862-8257, brian@che.che.tulane.edu or

Anthony Fregosi, Anthony_Fregosi@fo.cyttec.com

If your company does not have a contact, please contact **Jim Dean at 576-7174**

Company contacts act as a contact for AIChE inside their own company.

New Members are always welcome at A.I.Ch.E. New Orleans, local dues are only \$12 per year and includes this newsletter.

Please call **Bill Boutall at 243-4539**

COMPANY CONTACT LIST

These people are aware of our activities. If you think you have missed a newsletter, activity date etc., please contact them.

<i>Company/Person</i>	<i>Phone</i>
<i>Chevron Chemical</i>	Contact Needed
<i>Cytec Industries</i> Anthony Fregosi	431-6598
<i>DEQ Baton Rouge</i> Freddie Touro	504-765-0199
<i>Entergy</i> Jim Dean	576-7174
<i>EDG, Inc.</i> Leon Barnett	445-0858
<i>KBC Advanced Technology</i> Don Hoppens	837-9228
<i>Monsanto - Luling</i> Mike Valentine	785-4511
<i>Nalco/Exxon</i> Joy Usener	1-800-366-2526 Ext. 1556
<i>Occidental Chemical</i> Linda Bergeron	783-7365
<i>Petro- Marine Engineering, Inc.</i> Robert Brown	364-4257
<i>Shell Chemical</i> Tom Brumfield	465-7125
<i>Steimle & Associates</i> Dr. Steve Steimle	831-2574
<i>Tulane University</i> Dr. Brian Mitchell	862-8257
<i>Union Carbide</i>	Contact Needed
<i>Walk, Haydel & Assoc.</i> Jasper Westbrook	586-8111
<i>W. H. Linder & Associates, Inc.</i> Herb Roussel, P.E.	835-2577 Ext. 3143
<i>Wink Engineering, Inc.</i> Bill Boutall	246-7924

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WAVES

yet been detected directly, the influence of gravitational waves on a binary pulsar (two neutron stars orbiting each other) has been measured accurately and is in good agreement with the predictions. Scientists therefore have great confidence that gravitational waves exist. Joseph Taylor and Russel Hulse were awarded the 1993 Nobel Prize in Physics for their discovery of this binary pulsar.

What are LIGO's scientific goals?

LIGO will be used for research into the nature of gravity, and it will open up an entirely new window onto the universe. It will thus be a scientific tool both for physics and for astronomy.

When will LIGO be built?

Construction of the facilities is scheduled for completion in 1998, with initial operation of the detectors scheduled for 2000.

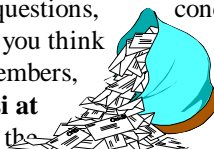
Why are two installations necessary?

At least two detectors located at widely separated sites are essential for the unequivocal detection of gravitational waves. Local phenomena such as micro-earthquakes, acoustic noise, and laser fluctuations can cause a disturbance at one site, simulating a gravitational wave event, but such disturbances are unlikely to happen simultaneously at widely separated sites.

Where are the two installation sites?

After a nationwide open competition, NSF selected

(See SITES on page 4)

If you have any questions, information that you think interest to the members, **Anthony Fregosi** at have it placed in the  concerns or would be of please contact **431-6598** to newsletter.

Editor's Soap Box

Can you believe it, the section year is almost at an end. April will be the last meeting before we break for our summer recess.

How about ending the year on a high note, and come out for our plant tour of the LIGO plant or attend our April meeting.

The April meeting will see us select the officers for next year, recognize the section fellows (the list is growing), award the Engineer of the Year and hear a presentation from Jim Dean on the "New P.E. Exam". It is shaping up to be a very full and interesting event.

Of course, just because your local section will not be meeting for a couple of months, does not mean that AIChE events are not happening. Don't forget to check out the "Other Meetings" section on the next Page for several upcoming events being held around the world.

Now is also the time to begin thinking our events you would like the section to sponsor. If you have any ideas for programming, please let Keith Henderson know. His number may be found under the "Local Officers" section on Page 2. Keith will be advancing to the position of Vice-Chairman and Program Chair for next years term.

Also, should you have any material for this newsletter, please do not hesitate to forward the information to me. My address, phone number and email are all listed within this newsletter.

Hope to see you at our next meeting.

Tom Marrero, Mentor and Inspiration to University of Missouri Students

Tom Marrero, a professor of chemical engineering at the University of Missouri at Columbia, was recently profiled in the Columbia Missourian. In the article, Marrero spoke of how "education is an investment in your future." To that end, Marrero has been very

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SITES

sites near Livingston, Louisiana, and at Hanford, Washington, for the LIGO installations. The sites, which are separated by nearly 2,000 miles, are both flat and large enough to accommodate the 4-kilometer interferometer arms. Both are also far enough from urban development to ensure that they are seismically and acoustically quiet, but still within convenient distance of housing for resident and visiting staff. NSF selected the sites after a nationwide open competition, which included a thorough evaluation of 19 proposed LIGO sites in 17 states, the endorsement of that evaluation by a national review panel, and an internal NSF review.

Check out the following WEB site for more information: www.ligo.caltech.edu.



Other Meetings

2000

45th Safety in Ammonia Plants & Related Facilities Symposium - [Tucson, AZ](#)
September 11 - 14, 2000

CCPS Conference 2000: Process Safety Incidents—Investigation Technology, Case Histories, and Lessons Learned - [Orlando, FL](#)
September 19 - 22, 2000

Engineering & Construction Contracting Conference (ECC) - [Colorado Springs, CO](#)
September 28 - 29, 2000

AIChE Annual Meeting - [Los Angeles, CA](#)
November 12 - 17, 2000

2001

The 6th World Congress of Chemical Engineering - [Melbourne, Australia](#)
September 23 - 27, 2001

HAPPY MARDI GRAS — THROW ME SOMETHING MISTER!!

Newsletter Advertisement Charges

Size	\$/Issue	9 Issues	\$/Year
Business Card (2" x 3.3")	\$ 16.00	\$ 100.00	
1/4 page (5" x 3.5)	\$ 40.00	\$ 250.00	
1/2 page (10" x 7.5")	\$ 80.00	\$ 500.00	
Full Page (10" x 7.5")	\$ 160.00	\$ 1000.00	

To order an advertisement, send the original of the advertisement (e.g. business card) and a check made out to "AIChE" New Orleans Section to Anthony Fregosi, Cytec Industries 10800 River Road Westwego LA 70094

N. O. Section Finances 1999-2000 (As of February 23, 2000)

Beginning Balance	\$ 6,716
Income	
Dues/LES Proceeds	\$ 24
Section Allowance/Award/Misc.	
Meals	210
Total	\$ 234
Expenses	
Meals	\$ 200
Newsletter	272
LES MathCounts Donation	100
Fees, Checks	55
Total	\$ 627
Ending Balance	\$ 6,323
Net Gain/(Loss)	\$ (393)

Humor

You might be a chemical engineer if....

- You Pick your girlfriends or boyfriends by their gpa.
- You refer to your wife or husband as my.spouse@home.com
- You have ever thought about how coffee changes color in the body.
- You read this page for the first time on a Saturday night.
- You try to explain entropy to strangers at your table during casual dinner conversation.
- You actually use FORTRAN...
- And LIKE it.
- You have a psychrometric chart from a major HVAC vendor hanging above your mantel.
- You refer to instruction manuals as "correction" manuals.

You might be an engineer if....

- Choosing between buying flowers for your girlfriend or upgrading your RAM is a moral dilemma.
- You take a cruise so you can get a personal tour of the engine room.
- In college you thought spring break was metal-fatigue failure.
- The sales people at the local computer store can't answer any of your questions.
- At an air show you know how fast the skydivers are falling.
- You bought your wife a new CD-ROM drive for her birthday.
- You can type 70 words/min but can't read your own handwriting.
- You window shop at Radio Shack

[Ed—If you have any material for this column you would like to share, please send it to me. My email address is Anthony_Fregosi@fo.cyttec.com]

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MENTOR

active at the University of Missouri in his mentoring activities. He has served as the AIChE Student Chapter advisor for the last 5 years.

Most recently, Marrero assumed the position of advisor for the university's student chapter of the Society of Hispanic and Professional Engineers. This highlights Marrero's commitment to diversity in the profession.

Eric Netemeyer, one of Marrero's students at the University of Missouri, spoke effusively about Marrero's impact on his studies. "I will be going to graduate school for chemical engineering, and I have Tom to thank for that. He really encourages us to go after the things we are interested in. Tom pointed out that graduate school was an option for me and explained why it would be a good fit."

Marrero took some time to speak with AIChExtra about mentoring. Here is what he had to say.

What was your first experience with being mentored? Did you have a mentor in college who you still remember today?

The answer is definitely yes. I went to Brooklyn Polytechnic, where Paul Bruins, who passed away recently, was my mentor. He was an excellent professor; he was voted one of the three best Polytechnic professors of all time about 10 years ago. He also gave me my first exposure to AIChE, as he was the school's student chapter advisor. I should point out that he was interested in polymers, a field of research that I am very interested in as well.

He really worked us hard; his favorite quote was "we worked you very hard, but you didn't notice it." We went on many field trips. One trip, we went to Niagara Falls, stopping every four hours to check out a plant, go on a tour, and see how processes worked. In this way, he mixed in fun with the exposure to chemical engineering that we needed to be successful later in life.

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Laser Interferometer Gravitational-Wave Observatory — LIGO

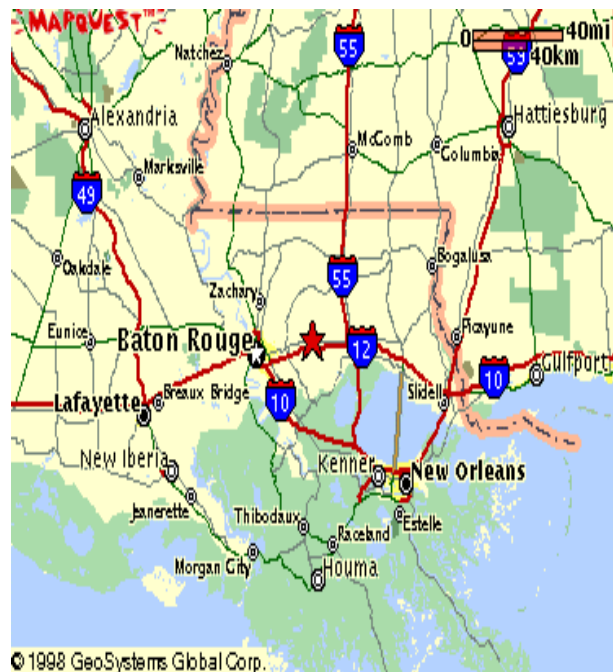
DIRECTIONS FROM THE AIRPORTS:

From New Orleans:

1. At New Orleans airport, get on I-10 going west.
2. Exit I-55 (North to Hammond).
3. Exit I-12 (West to Baton Rouge).
4. Get off interstate at Livingston/Frost (Exit 22).
5. Go right (north) on Highway 63 to the "T" at Highway 190.
6. Turn left (west) on Highway 190 (~1/4 mile).
7. Turn right (north) on Highway 63 by the hardware store (~ 3 miles).
8. Look for the LIGO sign and road on the left. Turn and follow the road to the observatory (~ 1 1/2 miles).

From Baton Rouge:

1. At Baton Rouge airport, get on I-110 going south to Baton Rouge.
2. At the Mississippi River bridge, I-110 turns into I-10.
3. Follow I-10 to the 10-12 split. Take I-12 towards Hammond.
4. Get off interstate at Livingston/Frost (Exit 22).
5. Go left (north) on Highway 63 to the "T" at Highway 190.
6. Turn left (west) on Highway 190 (~1/4 mile).
7. Turn right (north) on Highway 63 by the hardware store (~ 3 miles).
8. Look for the LIGO sign and road on the left. Turn and follow the road to the observatory (~1 1/2 miles).



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MENTOR

You have had an extremely diverse career. What are some of the different fields you have worked in?

I have had the chance to work both in industry and in academia. I've been involved with chemical physics, nuclear engineering, and recently with the effort to find or create polymers that conduct electricity.

The reason for this variety is that, when you work for a company, the company has an objective that you are there to meet. I worked for General Electric's nuclear division in San Jose, at a start-up nuclear power plant for whom I spent one year in Antarctica, for Martin Marietta—each of these employers had their own specific objectives.

What kind of career advice do you find yourself giving your students?

I try not to steer people away from something that they like and will be good at doing. If it's a positive chemical engineering position, whether in industry or academia, I really encourage it, with the advice that they will have to continue to learn throughout their careers.

Some people are definitely super "salesmen." Now that is one job that is probably very challenging. However, I have some students who would be very good at it. And there is definitely a market for it.

What other important factors come into play as a mentor?

Two things. It is important to be a good example to your students. This is a little different from the corporate work environment, where the focus is on finishing projects in which the company has a considerable investment. In academia the focus tends to be more on interpersonal relationships.

Second, it's important to be flexible. Sometimes, students can "get religion overnight," so to speak. What I mean is that just because a student is underperforming does not mean that he or she does not have potential. I've seen students go from grades that

were barely acceptable to marks that put them near the top of their class.

Being flexible allows you to recognize this capability.

How do you think AIChE can help members who are interested in mentoring and promoting professional diversity?

AIChE has done some very good things. These have developed presentations [including the CD-ROM and video, "Careers for Chemical Engineers"] that encourage minorities to enter the profession.

The best thing about this is that the presentations have used real people as examples. This is very important. Say you have someone who was born and raised in a certain place—New York. They do not think they have what it takes to become a chemical engineer. If they see a video with chemical engineers where one of them says something as simple as "I was born and raised in New York," this instantly gives them hope that they can do it too. It makes the idea that "I can be a chemical engineer" credible.

Now, substitute "New York" for anything—say being a minority. We then see the good that these efforts can do.

[Ed. — Our Local Section participates in a mentoring program with the Tulane Chemical Engineering Department. The program was developed by Garnett Bedenbaugh and Dr. Brian Mitchell. For more information on this program, contact Garnett at (504) 345-1566 or garnettb2@aol.com or Brian at (504) 862-8257 or brian@che.che.tulane.edu.]



**AIChE.....
Serving Chemical
Engineers
Who Serve the World**

Look What's Coming!

Future issues of the *The Reactor* will feature articles on several topics of interest.

Along with our regular sections on Humor, Meeting updates and more!

The Reactor



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New Orleans Section, American Institute of Chemical Engineers

Anthony F. Fregosi
Cytec Industries
10800 River Road
Westwego, LA 70094

Dated Material Do Not Delay

To:

New Orleans Section, Winner of:

**1995 “Randall D. Sheeline Award”, for excellence in public relations activities.
1999 “Catalyst Grassroots Award”, for support of the grassroots advocacy program.**

Meeting Notice!

Date: March 23, 2000
Time: 6:00 P.M.
Place: LIGO Plant
Livingston, LA
(See Map Inside for Directions)



“There is no job, no service and no customer order so urgent that we cannot take the time to do our work in a safe and healthy manner.”

— **Policy statement printed on business cards issued by IBEW Local 73 and PACE locals 608 and 712**