Volume 1., No. 5
September 1993

The Pulse

For the Personnel of the Laboratory for Nuclear Science

LNS

welcomes

Dr. Patrick Dreher

the New

Associate Director

New Appointments

Gregory Anderson is a Postdoc working in the Center for Theoretical Physics with Prof. Lisa Randall.

Virginia Bullard is the new voice at Bates. Ginny is taking the place of Chris Twiss who has been put on long term disability.

Sean Carroll will be working with the researchers in the Center for Theoretical Physics as a Postdoctoral.

Barbara Corbisier joined the Heavy Ion Group as the group's secretary.

Robert Edgecomb is the Welding Specialist in the LNS Machine Shop.

Valery Egorov will be working with Prof. Min Chen as a Visiting Scientist.

Eleanor Judd is a Postdoctoral Fellow working with the Heavy Ion Group.

Christoph Mertz will be a Research Affiliate working with the Bates research staff.

Gunther Roland is a Postdoc working with the Heavy Ion Group.

Bernd Schreiber is now a Postdoc working with the researchers in the Center for Theoretical Physics.

Khaja Subhani is joining the LNS Electronics Facility to work on development of Custom Integrated Circuits for PHOBOS Detector Front-End Electronics.

Evgeni Tsentalovich is a Postdoc with the Bates Linear Accelerator.

Obituary

Word has been received that Phil Zlochiver passed away on June 11. Phil retired from LNS in 1986.

What's inside

Science Questions

Questions below are taken from the National Science Bowl. See if you can guess the answers.

1. The complex compound (dichlorodiammineplatinum (IV) chloride) exists in both cis and tran isomers. Its geometry must be:
a. linear
b. tetrahedral
c. square planar
d. octahedral

2. Two players A and B play a game where they take turns tossing a fair coin and the first to get "heads" wins. If player A goes first, what is the probability that she will win the game?
a. 1/2
b. 3/4
c. 2/3
d. 1

3. A fair die is rolled repeatedly until a six appears. What is the probability that the game will end in 3 or fewer tosses?
a. 1/3
b. 1/2
c. 91/216
d. 31/216

Questions are needed for the U.S. DOE Science Bowl.

Please submit questions to Betty Sapp at Bates by Friday, September 17, 1993.

The National Science Bowl is modeled on the College Bowl format with questions comprised of a toss-up question and a related bonus question.
•Questions should follow the format below
•abbreviations should be used as follows: ASTR, BIOL, CHEM, COMP, ERSC, GENR, MATH, and PHYS
•true/false questions should not be used
•multiple-choice questions must have four possible choices
•phonetic spelling should be included in parentheses for words not commonly known
•if possible, develop questions in pairs, linking a more difficult bonus question to a toss-up in the same category

(ans. to questions on page 4)

Crime Prevention

Several instances of letter bombs have been in the news lately. The campus police recommend the following:

While the likelihood of your ever receiving a bomb in the mail is remote, in light of the two recent letter bomb incidents at the University of California and Yale, we are advising the community to be cautious when examining incoming mail. Keep in mind that a bomb can be enclosed in either a parcel or an envelope, and its outward appearance is limited only by the imagination of the sender.

Since mail bombs have some unique characteristics, the following information is being provided to help assist you in identifying a suspect mailing. This information has been compiled with information obtained from the U.S. Postal Inspection Service and the International Association of Bomb Technicians and Investigators.

LETTER AND PARCEL BOMB RECOGNITION POINTS

• Mail bombs may bear restricted endorsements such as "Personal" "Private." This factor is important when the addressee does not usually receive personal mail at the office.
• Addressee's Name/title may be inaccurate.
• Return address may be ficticious.
• Mail bombs may reflect distorted handwriting or the name and address may be prepared with homemade labels or cut and paste lettering.
• Mail bombs may have protruding wires, aluminum foil, or oil stained and may emit a peculiar odor.
• Cancellation or postmark may show a different location than the return address.
• Mail bombs may feel rigid, or appear uneven or lopsided.
•Parcel bombs may be unprofessionally wrapped with several combinations of tape used to secure the package and may be endorsed "Fragile-Handle With Care" or "Rush - Do Not Delay."
• Package bombs may have an irregular shape, soft spots or bulges. There may also be excessive or uneven weight distribution.
• Package bombs may make a buzzing or ticking noise or a sloshing sound.
• Pressure or resistance may be noted when removing contents from envelope or parcel.

IF YOU ARE SUSPICIOUS OF A MAILING AND ARE UNABLE TO VERIFY THE CONTENTS WITH THE ADDRESSEE OR SENDER:

1. Do not open the article.
2. Isolate the mailing but DO NOT place it in a confined space such as a desk drawer.
3. Notify the MIT Campus Police immediately: DIAL "100" from an MIT phone or 253-1212 from a pay phone.

If you have any questions concerning the above guidelines or suspicious mail, please contact the MIT Campus Police Special Services Division at 253-9724.

Bates News

The MIT Bates Linear Electron Accelerator Center was pleased to host the "Accelerator Instrumentation and Beam Measurement Laboratory" course of the 1993 U.S. Particle Accelerator School sponsored by Harvard University from June 21 to July 2. The School was a two-week program of six graduate level credit courses in beam physics and accelerator technologies.

The Bates accelerator was used as a tool for the students who were immersed in various aspects of linear beams. Thirty-six people enrolled in this hands-on course and gained some experience in running the Bates linear accelerator and storage ring as well as doing associated bench experiments using equipment loaned to the School by Hewlett-Packard. Instructors for this course were: J. B. Flanz, Bates; G. P. Jackson, Fermilab; and R. H. Siemann, Stanford. Bates personnel also involved were S. Bradley, K. Dow, M. Farkhondeh, E. Ihloff, K. Jacobs, B. McAllister, W. Sapp, C. Sibley, and D. Tieger.

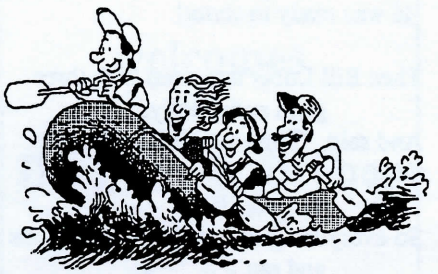
This is the first time such a laboratory course has been given since the School was established in 1980. The course proved its need and value and will be offered again in June 1994 at Indiana University.

Funding for the school was provided in part by the Department of Energy, the National Science Foundation, and a consortium of U.S. national laboratories.

Bates Cookout

The traditional Bates Fourth of July cookout was held on Friday July 2. This year's event was special because the U.S. Particle Accelerator School attendees were invited to attend and it was also the first "Homecoming Day" for the Bates retirees. Fifteen retirees and many spouses attended. A plaque dedicated to the retirees and listing their names was unveiled. Each retiree was given an individual framed certificate of appreciation, a Bates cap, and Bates decals.

Members of the cookout committee were Ignacio Diaz, Sheila Dodson, Karen Dow, Franklin Frias, Clark Johnson, Anne MacInnis, Anne Maloney, and Wade Sapp and David Scoggins. They did a really first-class job of planning and cooking. The menu was skewered chicken, marinated kielbasa, salads, Boston baked beans, watermelon and ice cream Hoodsies.



Bates Boat Outing

The first Bates Boatfest was held on August 20 at Misery Island off Manchester Harbor. The all day affair included boating, games, hiking, swimming, and a cookout. The event was organized by David Lations and Hamid Moazeni. It is planned that this will be an annual affair and open to all. If you wish to participate, contact Dave, 183-342 or Hamid 183-287 at the Bates Center.

Degrees Awarded

The following Doctoral Degrees in medium energy physics have been received in 1993 to date.

• Paul Rutt of William and Mary for "The Recoil Momentum Dependence of the d(ee'n)p Cross Section."

• William Schmitt of MIT for "Threshold Disintegration of the Deuteron at High Momentum Transfer."

• Mark Yuly of MIT for "Inclusive Measurements of Pion Double Charge Exchange and Inelastic Scattering on ^{3}He."

Changes in the Harassment Committee

Several changes in the LNS Committee on Harassment Issues have been made, in line with the plan for three-year terms on the Committee, Sheila Dodson and Bob Bruen have completed their terms and will be replaced by Anne MacInnis and Dave Woodruff. The new Chair is Donna Henderson. If you have any comments, questions or would like to discuss any issues with regard to harassment of any kind, please feel free to contact Committee members.

Karen Dow	183-312	Bates
Donna Henderson	8-5448	26-505
Anne MacInnis	183-285	Bates
Marge Neal	3-4332	26-552
Wade Sapp	183-319	Bates
Dave Woodruff	3-6943	26-407

"The true value of a human being is determined by the measure and the sense in which he has attained to liberation from the self."

--Einstein

Marianne's View of TRAC*

This spring, when thinking of summer
to come,
I thought it would be just another
ho-hum
Then Dr. Betty Sapp from MIT-Bates
gave a ring
And asked if I'd like to do this TRAC
teacher thing.

Yes, indeed, I replied with no
hesitation,
I'd be honored to summer in your
prestigious location,
And learn all I can while I'm there,
by the way...
And share with my students the results
of my stay.

July 1 I arrived at the linac front door...
Wondering what in the world lay in
store.
The Wade Sapp appeared, with
surveying in mind...
And proceeded to the SHR tunnel with
me right behind.

I learned how to use the N3 and,
oh yes...
The metric conversions made my
mind a REAL MESS.
Next in line for my extraordinary talent
was Ken[1],
Who asked if I'd ever had FORTRAN
and Then...

When told "No", did not hesitate for a
sec...
"I've a program for you to do", so I said
"What the heck"...
(HOW HARD CAN FORTRAN BE
TO DO ANYWAY???)

So I got a book, and tried, but my
program just crashed,
And Ken tore his hair out, and my
programs got trashed.

Well, I finally got something to work
(with much help from Betty!)
And felt I wasn't a TOTAL washout,
My program was ready.

So Ken got it moving,
And Karen[2] refined it,
And charge density at Z (min.)
I hope we'd defined it!

And Tom Provost, God bless him,
Kept bailing me out,
Though I think there were times
He was ready to shout!

Then Bill Lobar appeared with three
guys and a dolly,
And said, "Time to shuffle the desk
deck,
by golly!!!"
So everyone grabbed their possessions
and ran,
And relocated according to Bill's new
floor plan.

Each day that I spent here I learned
something new,
And saw the different jobs you all do.
You've given me much more than I can
explain,
And I hope in some small way, I've done
the same.

I most certainly will be back;
I'll keep in touch,
And to all of you from me:

"THANKS SO MUCH!!!!"

Marianne Moran

*DOE Summer Teachers Research
Associates Program
1) Ken Jacobs
2) Karen Dow

Answers to science questions on page 2
#1. C, square planar
#2. A, 1/2
#3. B, 1/2

Some important dates to remember:

October is IAP Planning month.

Friday, October 29, 1993 --
All Personnel Meeting
3:00 pm -- 6-120

Sunday, December 5, 1993 -- Holiday
Reception -- more details later

Saturday, February 12, 1994 -- U.S.
Department of Energy New England
Regional Science Bowl

If you have any ideas and/or suggestions for new features in the ***Pulse***, please send them in to Jean Flanagan, 26-540. We are always eager to hear from our readers and would like to know what you want to see in upcoming issues. The ***Pulse*** is for the employees of the Lab, so let us know what you want!!

Inquiries and submissions may be addressed to ***Pulse,*** 26-540.

Pulse is a publication of the Laboratory for Nuclear Science for the LNS Community.

Director: R.P. Redwine
Editor: J.P. Flanagan
Managing Editor and Contributing
Editor: D.M. Henderson
Contributing Editor: Bill Lobar