



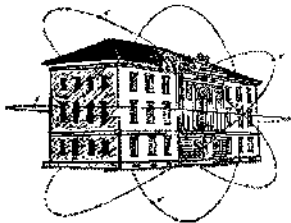
# Physics & Astronomy Alumni Newsletter



Issue 2

Colgate University, Lathrop Hall, 13 Oak Drive, Hamilton, NY 13346

Spring 2000



## Department Highlights:

- Ranked among the top ten of all U.S. colleges and universities in sustained growth in number of majors, with an average of fourteen graduating majors (25% women).
- 50 Years of Foggy Bottom Observatory.
- Astronaut F. Story Musgrave touches down at our weekly seminar.
- Modern Introductory Physics now in publication.

## Inside this issue:

What's new....	2
In hard cover....	2
Symposium News....	2
Foggy Bottom.....	3
Faculty Updates....	4
Alumni Updates....	7
Seminar Schedule....	24

## Greetings from the chair....

We finally made it! I apologize for the delay in this long awaited newsletter. Simultaneous changes in chair and secretary slowed us down a bit. I hope you find here news about the friends you have not seen in a long time and about your old department. Lots of compliments for the making of this newsletter must go to our super secretary Diane Janney. She put this all together.

From my end I can say that your alma mater is doing great. The maturing of the renovation to the intro sequence, led by our dear Phys120..., plus changes in the curriculum instituted in the early-mid 90's have resulted in a steady growth of number of majors. Now we average graduating classes in the low teens. We have been featured as a success story in curriculum innovation. We are not gloating though, growing pains there are..., but we are happy to be where we are. Since our last newsletter we have been joined by a new member, Beth Parks, following the retirement of Jim Lloyd. We have a two-year appointment, Stephen Slivan, a planetary astronomer, and Stacey Davis '97 is the astronomy lab instructor/coordinator. As for the rest, all growing more white hair (some a lot faster than others...). We are all very productive: some have been in the news, all have been writing books and articles, and reinventing teaching.

We are also proud to continue our traditions: physics and astronomy seminars, 410 symposium, cold and rainy picnics,

summer research, Rochester symposium, astrolab... Our seminar series is the most ambitious and consistent on campus: last year we had 22 outside speakers! We routinely have alumni come and give a seminar. Do not hesitate to come! We would love to hear you. Two years ago a generous graduate of our department, Justus H. ('43) and Jayne Schlichting donated an endowment for four student research fellowships for the summer. We have also been host to professional meetings of the Keck Northeast Astronomy Consortium and the New York State Section of the American Physical Society.

The 90's has been an era of growth in undergraduate research, with Phys 410 entering a stage of maturity. Many projects have resulted in conference presentations and publications. Among them have been publications where student co-authors did not know each other (!) and a recent one where a co-author is in his junior year! However, the ever increasing research keeps demanding more lab space, and now we are filled to capacity in our traditional space in Lathrop. A new computer classroom will become a reality this fall. In the horizon is a full renovation or expansion of Lathrop and perhaps a new building. If you want to be a benefactor we can greatly use your help!

I hope you enjoy the newsletter.

Best Wishes.

Kiko Galvez, Chair



Symposium News....	2
Foggy Bottom.....	3
Faculty Updates....	4
Alumni Updates....	7
Seminar Schedule....	24

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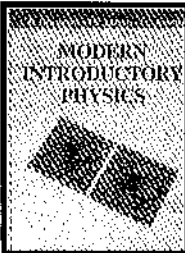
Symposium News....	2
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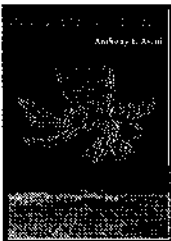
ing. If you want to be a benefactor we can

## What's new ....

Now in hard cover...



For those of you who survived the Physics 120 era...the unthinkable finally happened. The course textbook is finally out! Modern Introductory Physics, by Charlie Holbrow, Joe Amato, and Jim Lloyd appeared in the press (Springer Verlag) in 1998. Other departments across the country are creating similar courses and using our textbook.



After years of research on the Nasca lines, our own Tony Aveni writes a comprehensive monograph on the topic plus his own theories on them. Between the Lines: the Mystery of the Giant Ground Drawings of Ancient Nasca, Peru, by Anthony F. Aveni is presently in press by the University of Texas Press.



After many years of work on the topic, Shimon Malin presents thoughtful discussions and insight to fundamental paradigms of quantum mechanics and relativity in Nature Loves to Hide: Quantum Mechanics and Reality, a Western Perspective, currently in press at the Oxford University

Congratulations to recent PhD's:

**Harri M. Latvakoski '91**  
received his Ph.D. in Astronomy  
from Cornell University last year.

**Mark Dalberth '90**  
received his Ph.D. in Physics  
from the Univ. of Colorado,  
Boulder in February.

**Jennifer Lewis '93**  
just received her Ph.D. in  
Biophysics from the  
University of Virginia in  
April.



Can you guess what  
year ????

### 310/410 Project Symposium 1998 - 1999



Eleven students enrolled in the junior/senior research courses presented the results of their work in a professional-style symposium:

Timothy Bramfeld	"Pinning Forces in Superconducting Thin Films"
Laurel Brown	"The Quasar 3C 279: Observations and Variability Analysis"
Matthew Cheyne	"Microwave Excitation and Ionization of Na Rydberg Atoms"
Kelli Corrado	"The Optical Variability of Quasar 1156+295"
Robert Damico	"Artificial Pinning of Magnetically Induced Vortices in a Superconductor"
Christopher Eger	"The Application of Corner-Cubes in the Michelson Interferometer Experiment"
Carol Ann Finn	"Electro-Optic Detection of THz Spectroscopy"
Lara Northrop	"Terahertz Spectroscopy: The Generation and Detection of a Terahertz Pulse"
Jonathan O'Brien	"Modeling the Absorption of Optically-active Acoustic Phonons in Semiconducting Nanocrystals"
Yvonne Okoh	"Laser Induced Vibrational Emission in Molecular Iodine"
Ben Rich	"Variation of Grain Size in Niobium Thin Films"

### 310/410 Project Symposium 1999 - 2000



Ten students enrolled in the junior/senior research courses presented the results of their work in a professional-style symposium:

Christopher Barrett	"Observations of 7 Iris to Determine its Magnitude Dependence on Solar Phase Angle"
Dennis Bauer	"Excitation and Ionization of Rydberg Atoms using Microwave and Static Fields"
Jessica Frank	"Incorporating a Fast Scan Unit into Terahertz Spectroscopy"
Patrick Heaney	"Electron Beam Vacuum Deposition: The Clean Way"
Andrew Hock	"Straight-Up G: Determining the Solar Phase Coefficient of 462 Eriphyla"
Kevin Kaczmarek	"1/f Noise Reduction in Terahertz Spectroscopy"
Marko Krco	"Period Determination for 202 Chryseles"
Jay Paquette	"Implementation of the Electro-Optic Effect of a ZnTe Detector in THz Spectroscopy"
Jason Stewart	"Anodization of Niobium Thin Films for Studies of Vortex Motion"
Henry Sztul	"A New Manifestation in Geometric Phase: Gaussian Beam Mode Transformation Phase"

Missing: Dennis Bauer, Marko Krco, Henry Sztul

# 50 Years of



# Foggy Bottom

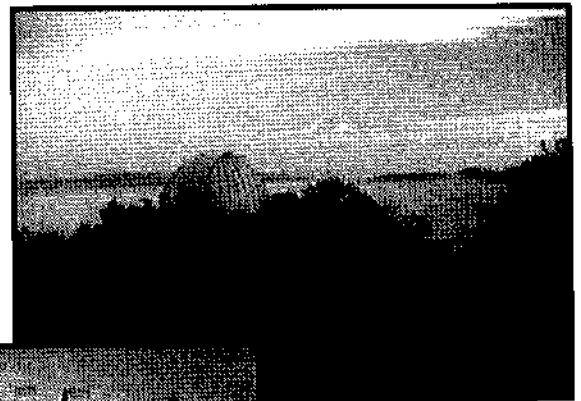
Where did the name "Foggy Bottom" originate?



In the previous issue of the Physics & Astronomy Alumni Newsletter (Spring 1995, page 4, "The Observatory"), we described how the name "Foggy Bottom Observatory" came to be used for the Colgate Observatory. Dale Smith (CU'70; visiting faculty member 1981-83) provides further information on the origin of the Foggy Bottom

I can tell you the about the origin of the name "Foggy Bottom Observatory." It dates from the early 80's when I was a sabbatical replacement for Vic Mansfield in 81-82 and 82-83. During that biennium, I taught one cycle of the observing course (the number has slipped my mind). Three superlative students made up the class: Jim Bollinger and Dan LaCroix (both majors in the dept) and Bob Austrian (an econ major). I had them work as a team with the old photometer to make UBV observations of the Hyades. So they spent many nights at the "16". Of course, many of the hopeful nights were lost to clouds and a persistent bank of fog that seemed to rise (wraithlike if you will) from the little valley northeast of the observatory. As we muttered, mused, and mulled about the fog, the name Foggy Bottom Observatory materialized from the mists, at once in honor of the fog and in equal recognition of appellation Foggy Bottom for the location of the State Department in Washington DC. I think that Bob was the artist of the drawing you found. If not Bob, it would have been Jim.

We also hatched the revolutionary Duck theory of the Universe. It revealed itself in a most peculiar way, through the medium of the HR diagram. When the guys made a V,B-V plot of their observations, the locus of points formed the visage of a duck. But the visage, like the fog, was ephemeral. When an error in the photometer's gain table was corrected, the Duck vanished from sight and was replaced instead by an impressive main sequence and giant branch. But we knew the truth, that the Duck had used this opportunity to manifest itself to the chosen three and their leader. Yet somehow, we suspected that ApJ would not believe it, so it was never published. But we did celebrate with a meal at Quack's Diner. So if the drawing you contains a duck, you now know why. Read Dan Lacroix's entry in the newsletter, and now you will understand the mysterious reference to the Duck!



Alumni Reunion is  
June 1 - 4, 2000.

#### Observatory Alumni Events:

Friday, June 2-2:00pm, 209 Lathrop, A. Aveni "How I Survived 30 Years in the Field with Colgate Students & Lived to Tell About It"  
Friday, June 2 - 10:00pm - midnight: Observatory Open House  
Saturday, June 3 - 3:00pm, 217 Lathrop Hall, T. Balonek, "Colgate's Foggy Bottom Observatory: Fifty Years in Retrospect"  
Saturday, June 3 - 10:00pm - midnight: Observatory Open House

# What the faculty has been up to.....



## Joseph C. Amato

It's a sincere pleasure to read this newsletter and find that your former students are doing so well! I'm still pumping energy into teaching, research, and administration, although I admit that it seems a little harder to juggle all three activities lately. I've been the chair of the CORE-Scientific Perspectives program (older alums: read "GNED") for several years now, providing me with the opportunity to bring world-class scientists/spokespersons to campus for lectures. I'm also a councilor for the physics program of the Council for Undergraduate Research, a Washington-based organization which promotes research in undergraduate institutions. In my own research, I've recently finished work on the magnetoresistance of tantalum thin films, a project which several of you are listed as co-authors. I've now launched a new project on vortex motion in superconductors, using my atomic force microscope to "write" patterns onto thin niobium films. That low temperature and vacuum apparatus you guys helped me build is still in heavy use, only now there's a little more of it. In the classroom, I'm still inflicting heavy psychological damage in Thermodynamics and Solid State. On the personal side, I'm still commuting from Ithaca. My children have all finished college, allowing my wife and me to do some long-awaited traveling. I also find time for a few personal passions: amateur radio and music. I'd love to hear from you. Be sure to stop by if you're in upstate NY.

## Anthony F. Aveni

The last two years have seen the publication of my Between the Lines: the Mystery of the Giant Ground Drawings of Ancient Nasca, Peru with the University of Texas Press, along with several articles in the professional journals on Maya and Aztec calendrics and astronomy (three joint publications were with students). My newest teaching experience is in the Core Science Program ("Science Confronts the Paranormal") and the archaeoastronomy field study program in Mexico continues into its 30th year. My 36th Colgate year begins with a southeast U.S. lecture tour and a sabbatical in South America.

## Thomas J. Balonek

My research activities continue to concentrate on the study of the optical variability of active galaxies and quasars with the Foggy Bottom Observatory's 16-inch Ferson telescope and Photometrics CCD electronic camera. About half a dozen students work with me each year during either the summer or academic year on this project. Most productive (and exciting) has been an ongoing collaboration with astronomers who observe with NASA's Compton Gamma Ray Observatory satellite. We have studied the short and long timescale variations at optical and gamma ray wavelengths in several quasars. In several instances, observations of flaring quasars by students

and me at FBO (with a modest annual budget) have resulted in the GRO (with a multi-billion dollar price tag) being re-scheduled to look at these objects. In the last newsletter, I mentioned that I had discovered an asteroid (1991 HA) at FBO. That asteroid now has the official name #6452 Johnneuller, in honor of my high school physics teacher. So now, in the asteroid belt between Mars and Jupiter, along with asteroids named after famous scientists such as Einstein, Hubble, Bohr and Eddington, forever orbits the ten mile rockpile known as Johnneuller. Colgate is still active in the eight college Keck Northeast Astronomy Consortium. This is our consortium's eleventh (and last) year of funding from the W.M. Keck Foundation. [We are looking for donors to assist in continuing this consortium!] As part of the consortium, each year several Colgate students have worked with astronomers at other consortium colleges on projects including the structure of spiral galaxies, elemental abundances in planetary nebulae, cosmic deuterium abundance, eclipsing binary stars, and solar eclipses. Along with Colgate students, students from the other KNAC colleges have worked with me at Colgate during the summer, cheerfully observing all night and reducing data all day! These students present their results at the consortium's annual student research symposium and publish short papers in the conference proceedings. Two years ago Colgate was invited to join the NASA New York Space Grant Consortium. As the institutional representative to the consortium, I have been responsible for planning public outreach programs for Hamilton Elementary School teachers and research experiences for undergraduates (as well as filling out piles of government forms!). One benefit of our college's participation in this program is that our students are eligible for summer research opportunities at Cornell University and for the NASA Academy program. On the teaching front, I continue to teach the introductory survey astronomy courses, alternating years with Tony Aveni, and the majors' astronomy courses. For the past three semesters I have also taught a popular course on "Life in the Universe" in the new Core - Scientific Perspectives program. After seven years of teaching without a break, I am looking forward to a full year sabbatical which will begin this May. I plan to spend the time writing up results from my FBO research, as well as taking long quiet walks with my golden retriever, Cassi (named for Cassiopeia, of RZ fame).

## Stacey M. Davis ('97)

After graduating, I accepted a job at the Darlington School, a small boarding school in Rome, GA. In addition to teaching high school math, I was a cheerleading coach and duty teacher in the junior/senior girls' dorm. Besides doing 'duty' in the dorm, I lived there! At the same time, Dave Berger ('97) moved to Atlanta. He'll probably kill me for saying this (and many of you won't believe me anyhow), but we become pretty good friends down there. In fact I spent this

past New Years with some 'Gate friends, including Dave and Gary Rubin ('97). Although I truly enjoyed my job, I left after two years. I am now back at Colgate working as the astronomy lab instructor - the Super-Sam position we always heard Balonek dreaming about. I spend a lot of time working with community groups and school children of all ages. In my spare time I travel with the Colgate cheerleaders. Being on campus is a great way to run into people when they return for different events like Homecoming and recruiting. I've run across Chris Bender ('97) and several from the class of '98 this fall. When Colgate football played in CA, I bumped into Dave and Carrie Work ('96). I am a single mom...raising my now 2 year old Weimaraner Otto from the age of 7 weeks. Have no fear, I still frequent the country bars in search of that 2-steppin' cowboy - some things never change. This summer I am taking a two week vacation in Europe with Courtenay Brooks ('96) before I start an intensive summer sign language class at RIT. In the fall, I will begin a masters program in secondary education for deaf students there. In two years I will be certified to teach math and physics, and hopefully be much more fluent in ASL (American Sign Language). Please stop by if you come back to visit our alma mater before July.

#### Enrique J. "Kiko" Galvez

On my end, those who have worked in my lab can probably guess: the apparatus to study Rydberg atoms is a monster! We are now studying the ionization of Rydberg atoms with microwave fields, and the microwave setup has added a huge number of knobs to the already large number. I have cut down on the all-nighters... but still find myself changing cables to that old Molelectron nitrogen laser. Some things will never change...I have stumbled over a delightful problem in optics known as geometric phase. It has produced some applied research, including two inventions! It has been lots of fun. So now I have two research projects, and the lab (room 5) is insanely congested. Just the way I like it! I am happy to say that it has been a very productive lab - publications are coming and I just heard from two funding agencies, NSF and Research Corporation, that they are approving the respective grant proposals I submitted. Only with very good students have I been able to keep up with the research. The chair's office is a black hole which exerts its pull constantly! Hopefully soon I will hand over the chair's baton and stop rising to my highest level of incompetence.....

#### Charles H. Holbrow

My sabbatical in '94-'95 strongly influenced my scholarly and teaching activities since then. I split the sabbatical into two parts. First, I was in Germany learning German for two months and then for six months at GSI, a large heavy-ion accelerator facility in Darmstadt. Second, I was at Harvard for five months as a visiting scholar in The History of Science Department. After some initial difficulties, our experiment at GSI flourished. We were able to do fundamental atomic spectroscopy on lead atoms with all but one of their electrons removed. In such a state of high

ionization - technically very difficult to achieve - the ions resemble hydrogen atoms in that they have only one electron. However, the electron of hydrogen-like lead experiences an extremely intense electric field produced by the high charge of the lead nucleus. Our results, reported in the November 30, 1998 issue of Physical Review Letters, have pushed atomic spectroscopy to the threshold of exhibiting previously undetectable effects of quantum electrodynamics. Last June I presented an invited poster on our work at the International Conference on Laser Spectroscopy in Innsbruck, Austria. At the end of my sabbatical, Joe Amato, Kiko Galvez, Jim Lloyd, and I published a long article on Physics 120, Colgate's innovative first-term physics course that emphasizes atoms. The article summarized the results of nearly a decade of development in that course. The article along with other material we published brought our work to the attention of Springer Verlag New York, and they asked to publish the book that we developed to go along with the course. *Modern Introductory Physics* by C. H. Holbrow, J. N. Lloyd and J. C. Amato came out in December 1998. This was a great relief, for its preparation was the major focus of my effort and attention for several years. Those of you who took Physics 120 from 1985 on, may remember the thick book of notes from which the book has descended. My stay at Harvard introduced me to contemporary history of science, and I have since pursued several related projects. On return to Colgate I taught a first-year seminar on Richard Rhodes's *The Making of the Atomic Bomb*. It was very successful and enjoyable, and after teaching it a second time as a first-year seminar, I have converted it into a regular course that I am teaching this spring. (You can get a taste of this course by logging into our course as a guest - ID name: guest, password: guest - at <http://blackboard.colgate.edu/courses/core113A>.) I greatly enjoy the blend of history and nuclear physics that goes into this subject. Several other faculty share my interest in the subject and we are hoping to offer a large multidisciplinary version of the history of the atomic bomb in the spring of 2001. I have some other history projects underway. One is an exploration of how Caltech's Kellogg Radiation Laboratory came to concentrate on the nuclear physics research that is pertinent to astronomy and astrophysical processes such as how stars burn and how the chemical elements are produced in stars. This project enables me to use my contacts with Caltech, and I have already spent several weeks visiting their archives. When Guy Stever (CU '38) visited Colgate last year, I plied him with questions about the people and physics he met during his years at Caltech. During much of 1998 and 1999 I prepared an exhibit on the historical evolution of the introductory physics textbook over the past century. The exhibit was shown at the Centennial Meeting of the American Physical Society held in Atlanta, GA in March 1999. It was a big deal (for me at least), and at <http://hull.colgate.edu/introphystext/> there is a somewhat ratty website that gives the idea of the exhibit. In addition to preparing the exhibit itself, I prepared and gave a seminar and wrote an article "Archaeology of a Bookstack," published in the March 1999 issue of *Physics Today*. I was also invited to speak

at the APS Forum on Education's centennial symposium. My talk "Changing Content and Form in Introductory Physics Texts" is available live on the web at [http://www.apscntalks.org/pres\\_masterpage.cfm?nameID=150](http://www.apscntalks.org/pres_masterpage.cfm?nameID=150). I taught junior-senior mechanics last fall making extensive use of Mathcad's powerful computer tools for numerically solving differential equations and displaying their results graphically. Recently I discussed some results of this heavy use of computation in a departmental seminar "Classical Mechanics: Three surprises and a puzzle." The students did some very interesting projects. For example, Fermilab plans to send a beam of neutrinos through the Earth from Illinois to northern Minnesota. Jessica Frank (CU'01), Mensur Serifovic (CU'00), and Jay Stewart (CU'00) calculated the path the neutrinos will take as they pass 10 km underneath Wisconsin. Jessica contacted Fermilab about the project and Fermilab published her correspondence in their Jan. 14, 2000 newsletter with the Colgate shield prominently displayed. There is no doubt that student projects are one of the most enjoyable aspects of teaching. This is particularly true for the senior projects course, Physics 410. In 1997 Deep Gupta (CU'97) downloaded and got operational a major software package for analyzing gamma rays from highly excited nuclei. This was a big task, but Deep's success left us with a research-grade facility for analyzing data from large off-campus research facilities. The next year Cheryl Meltz (CU'98) significantly extended our use of the software. Recently our hardware has been upgraded by installation of a Dell Precision 410 with a Linux operating system. At the same time we were establishing a capability to analyze gamma-ray data, Chris Bender (CU'97) and Sabina Bucher (CU'98) did interesting examinations of the naturally occurring radon gas in the basement of the Lathrop Hall Link. I suppose all of us who have spent countless hours in Lathrop's basement should be glad that the radon level is so low, but it would have made Chris's and Cheryl's experiments a lot easier if it weren't. Looking ahead, Tom Tucker (Dept. of Mathematics) and I are planning a special course focused on J. L. Lagrange's eighteenth century *Analytical Mechanics*. This work is a mathematical completion and generalization of Newton's mechanics. It is a brilliant combination of mathematics and physics while at the same time it exemplifies broader ideals of the Enlightenment and Enlightenment philosophy. To help bring all three aspects to life for our students, we will have some important scholars of the Enlightenment participate in our course via the WorldWideWeb. One of the more exciting initiatives in the Department is a plan to develop some laboratory experiments for quantum mechanics. Progress in laser physics and quantum optics now makes it possible to turn thought experiments into real ones that can be done in the undergraduate laboratory. Some of the bizarre effects of quantum mechanical superposition can be produced experimentally. Kiko, Beth, and I have written a proposal to NSF to fund this undertaking. We think that the set of experiments we propose to develop can contribute significantly to all levels of undergraduate physics education – general interest, beginning, and advanced.

### Shimon Malin

In the past few years I have continued teaching both physics and Scientific Perspective courses. The latter include one course on space and time and another, "Why Things Happen," on causality. I have also continued doing research in the areas of General Relativity and the foundations of Quantum Mechanics. My most exciting project was the writing of a book, "Nature Loves to Hide: Quantum Mechanics and Reality, a Western Perspective." The book is aimed at the general readership. Its subject is the contributions of the quantum physicists and other thinkers to the emergence of a new world-view. It includes enlightening and entertaining conversations between two fictional characters, conversations which help clarify difficult issues. To be published by Oxford University Press, it is due to be released either late this year or early next. I am also a co-author of another book, "The Theory of Spinors," written in collaboration with Prof. Carmeli of Ben-Gurion University in Israel. This rather technical, graduate level book will be published by World Scientific.

### Victor Mansfield

In the last few years, I have been writing interdisciplinary papers and lecturing widely across the country. This spring break I will be in Phoenix and Tucson and in May I will spend one week in London and one in Amsterdam giving lectures and workshops. More details can be found at [www.lightlink.com/vic](http://www.lightlink.com/vic). I expect to submit my next book to publishers early this summer. In addition to the usual P&A courses, I have been teaching a Core Cultures course on Tibet and a Science Perspective course entitled "Mind and Matter." As part of the Tibet course, Tibetan monks will be building a sand mandala at Colgate this spring. Details on this project and a live web cam on the mandala can be found at [payne.colgate.edu/vmansfield/tibet.html](http://payne.colgate.edu/vmansfield/tibet.html). Finally, over the last two years I have secured a grant from the Infinity Foundation for a major collaboration with the Cornell Program in Religious Studies on the subject of religion and human rights. Details can be found at [lightlink.com/vic](http://lightlink.com/vic).

### M. Elizabeth "Beth" Parks

It's great to have been at Colgate long enough to have some alumni who I know reading this update! For those of you who are not recent alumni, let me introduce myself. This is my third year teaching at Colgate. Before coming here, I did post-doctoral research at MIT, and before that, I did my Ph.D. work at UC Berkeley. My family and I have been enjoying life in Hamilton. We recently finished renovating a house on Payne St. and moved into it in August 1999. Some may remember it as the "mushroom house." You would not recognize it now! (The mushroom was long gone before we bought the house.) For those who worked in my laboratory, you may be pleased to hear that the laser is reliably producing 70 fs pulses, the antennas are working, the cryostat is in place, and we're generating and detecting terahertz radiation. This spring I'm measuring the energy level splitting in a high spin system, Mn12acetate. Next year I'll have sabbatical leave, which I'll be in my lab in the basement of Lathrop, hopefully taking lots of data.



## Updates from the Alumni....

Thank you to all who sent us your updates, both professional and personal. For those of you that sent your updates last summer when we attempted our newsletter but did not hear from this year, we have included your update (denoted with an "\*" before your name). We included your pictures if they were available; sorry to those who we couldn't find a picture.

**Robert J. Bamford** ('87) 215 Stoney Creek Road Clarks Summit, PA 18411 email: [Marpaul2@aol.com](mailto:Marpaul2@aol.com). Currently a Project Manager for a construction company; married to a Colgate Alumni ('87) and have two children.



**Albert A. Bartlett** ('44) Professor Emeritus of Physics, University of Colorado, Boulder, 80309-0390; (303) 492 7016 Office: (303) 492 6952; FAX (303) 492 3352, Home; 2935 19th Street, Boulder, CO, 80304-2719; (303) 443 0595, email: [albert.bartlett@colorado.edu](mailto:albert.bartlett@colorado.edu). Here is a brief run-down of my physics since Colgate. After having dropped out of an Ohio college and working on iron ore freighters on the Great Lakes, I applied for and was granted admission to Colgate in the summer of 1942. I hitch-hiked, arriving in Hamilton in September 1942. I studied night and day, summer and winter and graduated in June of 1944. The Faculty of Physics at that time consisted of Professors Gleason, Henshaw, Berkey, and Rinewald, who was shared between Physics and Psychology. In my last academic year, I was a teaching assistant, helping with the laboratories in the elementary courses. The Navy had taken over the entire campus, and there was only a handful of us civilians left to go to school in the normal or conventional way. All of the Navy cadets had to take physics, so the Department was overloaded and so faculty from other departments were recruited to help teach physics. They even hired a few of the remaining undergraduate majors, and that is how I became involved. After graduation I took a position, sight unseen, at P.O. Box 1663, Santa Fe, New Mexico. To get there I hitch-hiked, drove trucks, and hopped freight trains. The position turned out to be at Los Alamos, and I worked on a mass spectrometer, studying the isotopic constitution of the first Plutonium that was coming down from Hanford, Washington. I believe these were the first ever measurements of the isotopic constitution of Plutonium. Immediately after the war I went to the weapons test at Bikini. I left Bikini after the first test, to come home to be married to Eleanor Roberts in the First Baptist Church in Hamilton. Her father was Professor Chester Roberts of Chemistry at Colgate. Shortly thereafter, I started graduate work at Harvard. The work at Harvard was finished in the late summer of 1950 and then Eleanor, our daughter Carol, and I came to Boulder to take a position as an Assistant Professor of Physics at the University of Colorado, where I stayed until retirement in January of 1988. With our four daughters, I spent the academic year 1963-64 as a visitor at the Nobel Institute of Physics in Stockholm. In the two academic years 1969-70 and 1970-71 I was the elected chair of the Faculty Council for the four campuses of the

University of Colorado. This was at the height of the campus turmoil over the war in Vietnam, and it was quite an experience to be working night and day to keep open the lines of communication between the students and the University so that impending troubles could be anticipated and dealt with before they exploded. In 1978 I was national president of the American Association of Physics Teachers. In September of 1969 I gave a talk on the arithmetic of growth for a student group. As of September 1999, I have given the talk 1,333 times. It now has the title, "Arithmetic, Population, and Energy." A related paper was published in the September 1978 issue of the American Journal of Physics. More recently I have published in population journals as well as in the American Journal of Physics and The Physics Teacher. I am the editor of the monthly feature, "Etcetera" in The Physics Teacher. Sustainability is a current concept of interest. But the term seems to be badly misused. I wrote a paper, "Reflections on Sustainability" which was published in Population & Environment, Vol. 16, September 1994, pp. 5-35. In the paper, I give what I believe to be the Laws of Sustainability. The First Law is, "You cannot sustain population growth or growth in the rates of consumption of resources." This upsets people who feel that is necessary to have growth continue forever. From this definition, it follows that the term, "Sustainable growth" is an oxymoron. In 1997 I received a call from the editor of the Journal of Renewable Resources, asking permission to republish the article. They also asked if I wanted to revise it. So I revised it and they devoted their entire winter issue to this one article. (Vol. 15, No. 4, Winter 1997-98, pp. 6-23.) I was very pleased that the article was so well received. A more recent publication is "Malthus Marginalized" which is in a special issue of The Social Contract. The issue commemorates the 200th anniversary of the publication of the first version of the famous essay by Thomas Malthus. I have an article in press in the journal Mathematical Geology on world and US petroleum production patterns. I will forever be thankful for the wonderful start that I had at Colgate. I still have my first college physics text that I used in the first-year physics course that was taught by Professor Gleason. In addition, I have a lifetime's collection of physics texts, which I will have to reduce significantly as I no longer use most of them. Thanks for your interest.

**Dave Berger** ('97) Center for High Angular Resolution Astronomy Georgia State University, University Plaza, Atlanta, GA 30303, email: [berger@chara.gsu.edu](mailto:berger@chara.gsu.edu), web page: <http://www.chara.gsu.edu/~berger>. I am a third year graduate student in Astronomy at Georgia State University in Atlanta, GA. My dissertation research involves the CHARA Array on



Mount Wilson, located 30 miles northeast of Los Angeles. It is an array of six telescopes which uses the principles of interferometry to achieve high resolution measurements such as stellar diameters and binary star orbit parameters. Last year I received a M.S. in Physics with a concentration in Astronomy from GSU. My project was to design a three dimensional computer model of the CHARA Array (called the Astrometric Model) which is used to compute many of the parameters for several of the array subsystems. Now I am working towards a Ph.D. in Astronomy designing the longitudinal dispersion and atmospheric refraction correction systems for the CHARA Array. Other side projects include working at GSU's Hard Labor Creek Observatory helping to maintain a small arsenal of research telescopes. I offer the opportunity for school children to spend an evening at HLCO learning observational skills in Astronomy and becoming familiar with research level instrumentation. Give my best to the faculty and students (those that remember me!).

**Monica Berrien** ('90) 185 Mills Rd. North Salem, NY



10560 914-276-7642 Email: [tomhousen@aol.com](mailto:tomhousen@aol.com)

Since the last newsletter, I accepted a year Fulbright scholarship to teach in Riga, Latvia. I went to teach Math and English, and a Latvian woman exchanged with me to cover my math classes back in NJ. With 3-day weekends, I traveled to places such as Russia, Estonia, Poland, Sweden, Germany, Greece, and Austria... to name a few! I learned a lot about Eastern Europe, WWII and life in the former USSR. I returned to my private high school in NJ in June, 1998, to accept a Director of Admissions position. Summer of 1999 found me leading a trip I'd been planning all year: I bicycled with 3 students from Seattle, WA back to the Atlantic Ocean—68 days, 3500 miles, carrying 50 pounds of gear, camping, the whole bit. We raised money for a children's AIDS charity in New York City. It was an incredible experience! I moved to Westchester County in November and am currently enjoying my "first retirement." I am considering a career change, but can't seem to kick this travel bug; a possible 5-week trip to Japan is just around the corner and may put my job plans on hold for the time being.

**\*Carl F. Blackman**, ('63) 3413 Horton St., Raleigh, NC 27607 (919\_787-6509, email:



[cfb705@compuserve.com](mailto:cfb705@compuserve.com). I received a Ph.D. in Biophysics from Penn State Univ in 1969, and after a post-doc at Brookhaven Natl Lab I took a job as a principle investigator with a precursor agency to the US EPA. I was placed in the EPA at its creation (1970) and have been there ever since. My major expertise is in the biological effects of electric and magnetic fields, yet in the recent past I've studied gap junction communication between cells and how that communication can be affected by various chemicals and by melatonin and magnetic fields. ...Yes, due to some of our laboratory results I take a melatonin pill almost every night just before going to sleep.

**\*Jeff Blanchard** ('96) #2/79 Shore Drive, Winthrop, MA 02152 email: [jeffblanchard@erols.com](mailto:jeffblanchard@erols.com)



I am working as a chemist and a salesman for the rubber industry. We manufacture quick release coating. I am into research and development as well as sales. In October I will be taking on most of the responsibilities because I will soon be taking over the company. I have been over seas for the past two years. I worked in London for awhile and traveled around Europe and then I spent four months in Africa.

**Douglas Bly** ('48) 9541-1 Veirs Dr., Rockville, MD 20850-3478; (301) 340-9541 (same number as street address--an extra added service from the phone company for forgetful elderly) email: [cmoredoleess@worldnet.att.net](mailto:cmoredoleess@worldnet.att.net). I retired almost six years ago after spending the previous 25 years in health care. At retirement I was director of management systems for the medical center of Delaware--at its maximum a 1050 bed acute care hospital in Wilmington DE. Previously I was associated with RCA, Atlas Chemical industries and Texas Instruments in operations research departments. Also taught O.R. in the engineering grad school at Drexel for several years. This past year I passed the critical longevity test and my wife and I entered the independent living program of the National Lutheran Home for the aged in Rockville MD. After Colgate and marriage (50 years this past summer) the retirement home is one of my better decisions! There is so much to do here. Only a mile from the U of MD shady grove campus, two miles to Johns Hopkins, all of the attractions of DC (the beltway is NOT an attraction but it has to rain). More cars are registered in Montgomery County MD than in the state of DE. Believe it! Four children; six grandchildren, from Virginia to California.

**\*Mark F. Bocko** ('78) Superconducting and Quantum Electronics Group, Department of Electrical Engineering, P.O. Box 270126, University of Rochester, Rochester, New York 14627 (USA) email: [bocko@ee.rochester.edu](mailto:bocko@ee.rochester.edu) Phone: (716) 275-4879 Fax: (716) 473-0486. I live in Fowlerville, NY near Rochester, NY and I am a Professor of Electrical and Computer Engineering at the University of Rochester. I have been teaching in the E.CE dept. here at Rochester for 14 years. I am married, my wife's name is Kim, and we have three children Amy, Jason and Gregory, ages 14, 11, 7. At Rochester I teach courses on Circuits and Solid State devices as well as courses in digital technology in music at both the University's River Campus and the Eastman School of Music. See <http://www.ee.rochester.edu:8080/courses/EE140/> to learn more about my electronic music course. My research is centered on superconducting digital electronics for high performance digital signal processing and presently we are trying to develop a superconducting Schroedinger's Cat and to lay the foundations for building a superconducting quantum computer. Visit <http://henry.ee.rochester.edu:8080/users/sde/index.html> to learn more about my research group. If any old classmates want to see how little hair I have left they can visit <http://henry.ee.rochester.edu:8080/users/sde/research/group/mbocko.html>.

**\*David Borton** ('65) 7 Hilltop Road, Troy, NY 12180, (518)272-7863, email: [bortond@rpi.edu](mailto:bortond@rpi.edu), [www.rpi.edu/~bortond](http://www.rpi.edu/~bortond) As Sustainable Energy Systems, Inc. I am transferring solar energy concentrator technology to India. As an adjunct at Rensselaer Polytechnic Institute I teach a 400 level course in solar energy engineering and a 200 level course in environmental studies. Personally I am concerned about human impacts on our only environment, especially climate change. We have two sons, Alex, Colgate '91 (I think) and Chuck who will inherit a less viable planet than we did.

**\*Jim Boutelle** ('85), [jboutell@mailier.transdev.com](mailto:jboutell@mailier.transdev.com). My major news is that I'm moving to China in about a month to start up a new factory for my company, Transistor Devices Inc. I'll be living in Shenzhen, which is just over the border from the Hong Kong New Territories - about 45 minutes by train from Hong Kong city. I plan to be there for about three years, give or take. Visitors are welcome!



**Tim Bramfeld** ('99), 26-1A Fischer Graduate Residences Notre Dame, IN 46556 (219) 634-4463 [tbramfeld@hotmail.com](mailto:tbramfeld@hotmail.com). I'm currently pursuing a doctorate in Physics from the University of Notre Dame, and am now entering my second semester of classes. I'm adjusting to a massive workload, both from classes and from teaching-assistant duties, and don't really have much time on my hands these days.



**David E. Breen** ('82) Assistant Director, Computer Graphics Laboratory, 348 Beckman Institute, MS 348-74, California Institute of Technology, Pasadena, CA 91125, Office: (626) 395-2866, Voice-Mail: (626) 395-2820, FAX: (626) 793-9544, Email: [david@gg.caltech.edu](mailto:david@gg.caltech.edu) <http://www.gg.caltech.edu/~david>. I went to Rensselaer Polytechnic Institute (RPI) after Colgate. I was there for 11-1/2 years! I started out as a grad student, but most of the time I was a research staff member at the Center for Interactive Computer Graphics. I also spent one year at the Fraunhofer Institute in Darmstadt, Germany during my RPI years. I finished my PhD (in which I developed a model for draping cloth behavior) and was laid off from my job at RPI in July 1993. I then went to work at the European Computer-Industry Research Centre (ECRC) in Munich, Germany, where I was part of a research group exploring a sub-field of virtual reality called augmented reality. ECRC was shutdown in March 1995. After that lay off (research seems to be quite an unstable and insecure profession) I came to the California Institute of Technology, where I work with a former RPI housemate as the Assistant Director of the Computer Graphics Lab. My activities are split between administrative and research tasks. My research activities are primarily focused on advanced methods for scientific visualization, computer animation and geometric modeling. I have just been awarded my first big grant from the National Science Foundation to develop new visualization techniques. My family (wife Cyndi Skripak '82, sons Stefan Skripak and Ryan Breen) and I



have become adjusted to Southern California life. I do miss the green, open spaces of Upstate NY though. Life at Caltech is great. I'm thoroughly enjoying my job and the working environment at Caltech. I'm thrilled to be part of such a great organization.

**Laurel Brown** ('99) [lbrown@colgatealumni.org](mailto:lbrown@colgatealumni.org). Things are going pretty well in Mlalo (the Tanzanian town I'm living in working for the Peace Corps). I'm teaching now, something which took awhile. Students here have a tendency not to show up for school until a few weeks in, mostly because they don't have the money for school fees. But most of the students seem to be here now. I'm teaching Physics and English to 90-something Form III (the rough equivalent of 10th or 11th grade, although the students range in age from 16 to 22) students, who don't really speak English. Well, some do, but they rarely understand my accent. I do a lot of writing on the board and running around looking like an idiot to keep them amused. Actually, I think they're learning a bit, although not as much as I think they should. Otherwise things are doing good. I'm more or less used to living without electricity, although I still do miss it. Candles are nice and all, but it's difficult to read. Or do anything. I don't have too many bugs, which is wonderful. I do have 2 dogs, who generally exist to cause me trouble in a culture where dogs are seen as vicious and unclean. I've been travelling around a little, as evidenced by the fact that I can write e-mail. I don't think any chickens were on the bus this morning, but it was a crowded, 8 hour trip, so I feel like it was in fact truly Tanzanian. Of course, I lost the Tanzanian feel by eating my lunch in the only Subway franchise in the whole country. Just like home... :) Kwa heri and all!



**\*Christopher Bunn** ('86) work: Donaldson, Lufkin & Jentette Securities, 600 California Street, San Francisco, California 94108, phone: 415/249-2275, Fax 415/249-2226, email: [CBunn@DLJ.com](mailto:CBunn@DLJ.com) I live and work in San Francisco. I am a semiconductor equity research associate analyst at DLJ Securities. We keep tabs on technical and business developments in the semiconductor industry with the intent to provide institutional and individual investors with investment guidance. We are also responsible for steering our investment bankers toward or away from candidates for initial public stock offerings, secondary stock offerings, and unusual or structured financial products. I enjoy my ongoing education in engineering, accounting, and finance. I do a lot of writing and publishing. I do a fair amount of traveling, but most of the semiconductor manufacturers in the US are based in Silicon Valley, a short drive from here. San Francisco is also close to Lake Tahoe, Napa, Carmel, and Pebble Beach, so I find that a New Yorker can persevere. I have been doing a lot of skiing and a little golfing. I have a few Colgate friends in town, and the alumni club is small but active. I occasionally meet with recent grads who are thinking of relocating near here. I would be very pleased to contact or meet with Colgate pals in the area or passing through. Be sure to get in touch with me if you need a few million to get your Silicon Valley dreams rolling. I'm sure we can work something out.



**David Burgoyne** ('80) 1722 Cambridge Road, Ann Arbor, Michigan 48104-3647 Home Phone 734-996-0689 Work Phone 734-996-1485 Cell Phone 734-516-2610 Fax 734-996-8662 email: [vade@voyager.net](mailto:vade@voyager.net). I am a commercial real estate appraiser specializing in litigation, right-of-way acquisition, and expert testimony. I own my own company called Burgoyne Appraisal Company. It is based in Ann Arbor, but my appraisers (independent contractors) all telecommute from home offices in different counties, including one near Charlotte NC. I am married to Cynthia Bowman Burgoyne since July 12, 1997 and have a step-daughter Brittany (Age 12, 7th Grade) and two daughters from my first marriage. Madeline (Age 13, 7th Grade) and Adrienne (Age 11, 5th grade). They live in Santa Fe. Cynthia and I have built a home near Quepos/Manual Antonio on the central Pacific Coast of Costa Rica and I have taught myself how to speak Spanish, with a lot of help from my Costa Rican friends. I haven't really seen anybody from the Department in many years except for Tony Aveni when I visited Colgate in the Spring of 1998.



**Mike Capuano** ('87) [Mike\\_Capuano@wink.com](mailto:Mike_Capuano@wink.com). I was recently married in June 1999 to Tanya Pine (Stanford '93). We are living in San Francisco and enjoying a nice blend of city life and access to the great outdoors. I am currently working at Wink Communications as VP of Product Marketing and Internet Services. Wink is a recently public company that builds software components and processes to enable the creation and delivery of e-commerce on TV applications to the consumer marketplace. Today our client software is deployed in approximately 150,000 homes and by the end of 2000 we expect that to be about 3 million. If you buy a RCA/DirecTV receiver this Christmas, you should see Winkstarting in the June 2000 time frame. So go buy one!



**\*Roger Case Jr** ('64) 4404 Magnolia Dr NE, Albuquerque, NM 871114232, Home #: 505 299 4775 W#: 505 844 5139 email home: [rcase@rt66.com](mailto:rcase@rt66.com) work: [rscase@sandia.gov](mailto:rscase@sandia.gov) or [roger.case@tmc.sprint.com](mailto:roger.case@tmc.sprint.com) Graduated in 1964 (one of Tony Aveni's two first special study students, along with Bob Reidy, now at LANL) 64 - 66 grad school in USAF --MSc in Nuclear Engineering and Space Physics 1966. 66-69 - 3 years working space program (primarily solar physics, computer modeling of Van Allen belts and radiation effects. 69-71 grad school -- Plasma physics. 71-75 plasma diagnostics of precursor to "Z" machine (see Sci Am next month -- at that time Gerry Yonas was just a (flaky) scientist like the rest of us working on plasma implosion devices). 74 Phd Physics -- Naval Postgraduate School. 75-86 -- USAF working primarily nuclear weapon design, effects, development, etc. ( at LLNL, Pentagon) worked on special project "Operation Morning Light" where Russian's dropped a nuclear powered cosmos ocean surveillance satellite in Northern Canada in the middle of winter and we had to find the pieces!! 86-89 retired USAF, joined



Sandia National Laboratories, Albuquerque, NM work was radiation effects on semiconductors and radiation detection equipment development which is presently used to ensure that DOE stockpile surveillance tests don't mistakenly use real weapons! 89-91 special assignment at Hq DOE, Washington, D.C. working International Safeguards cooperative activities with International Atomic Energy Agency, Vienna Austria and bilateral cooperative activities with Japanese nuclear industry. 91-94 --more of the same back at SNL. 94 -- special assignment with IAEA Action Team in Iraq conducting nuclear inspection activities (one of very few Americans who have stood on the only two bombed out nuclear reactors in the world) 95 - transferred to conduct MPC&A projects in nuclear facilities in FSU (in specific, in Minsk, Belarus) MPC&A -- this is DOE program using Nunn-Lugar funds to enhance material protection control and accounting in FSU countries at facilities with HEU and plutonium resources) 96 -- special assignment as HEU blend Down inspector for the US DOE in Sverdlosk 44, Russia (transparency inspector for HEU blend down purchase of 500 metric tons of weapons grade uranium that the US Enrichment corporation purchased from the Russians) 94 - 98 -- project leader physical protection at two major Kazakhstan nuclear facilities (BN-350 LMFBR at Aktau and VVR-K research reactor outside Almaty, former capital of Kazakhstan); project leader for future Kazakhstan activities Personal: presently divorced. two kids (NAU, and UT-Galveston grads), brother of Rich Case, 66, living in Albuquerque, New Mexico; job title: Senior Member of Technical Staff, Sandia National Laboratories Hobbies: hiking (live within 500 yards of mountains here in Albuquerque), bonsai (member of national board directors of American Bonsai Society), soccer (played up to last year when knee injury has temporarily sidelined me) Pro associations: senior member of Institute of Nuclear Material Management (IN MM), former member of ANS, Sigma Xi publications: several journal articles and a couple of other things, but all very boring misc: work with Mike Ehinger (math/68) who is at ORNL, have seen Bob Reidy (physics/64), who is at LANL, and another physics grad from 68 who is at LLNL but for the life of me I can't remember his name -- he's a Cal Tech grad Former NM alumni rep for Colgate.

**Jennifer Christensen** ('90) I am currently working for Kitt Peak National Optical Astronomy Observatory in Tucson, Arizona, as a research assistant to Dr. Abi Saha. I'm working on NOAO and HST data looking for variable stars. Prior to this job I worked at the Space Telescope Science Institute for eight years as a data analyst for the FOS and STIS instruments. Any students wishing to discuss career options requiring bachelors or masters degrees in astronomy can feel free to email me at [christen@noao.edu](mailto:christen@noao.edu).



**A. Danforth Cope** ('38), 1C Belmar Road, Monroe Twp, NJ 08831, passed away on October 31, 1999 of complications of multiple heart attacks and strokes. His daughter, Terry Dudley, submitted the following obituary as run in Trenton Times: A. Danforth Cope, research engineer at David Sarnoff Laboratories, age 82, died Sunday at Cranbury Center, Monroe. Born in



Philadelphia, he spent part of his childhood in north Burma with his parents, who were missionaries for the Second Baptist Church of Germantown, PA. He lived in Hightstown almost 50 years before moving to Clearbrook in Monroe Township. He worked 45 years as a research engineer with RCA, retiring in 1984 from David Sarnoff Laboratories, West Windsor. His work for RCA earned many patents, including several related to television camera miniaturization. After retirement, Mr. Cope was a consultant with Princeton Scientific Instruments. He was on the East Windsor School District's board of education from 1953 to 1972 and was board president for four years. He helped lead Hightstown Troop 59 of the Boy Scouts of America many years. He was also a foster parent with the state Division of Youth and Family Services, opening his home to foreign exchange students and refugees. He graduated Phi Beta Kappa from Colgate University in 1938 and did graduate work in physics at Yale University. He is survived by his wife of 58 years, Jane Walz Cope, 3 sons, 2 daughters, and 2 grandchildren.

**\*Don Court** ('65) 502 Magnolia Ave, Frederick, MD 21701 (301) 694-9417 (H) (301) 846-5940 (W) Bldg. 539 Rm 243, ABL-Basic Research Program, NCI-FCRDC, P. O. Box B, Frederick, MD 21702 tel: (301)846-5940 fax: (301)846-6988 email: [Court@ncifcrf.gov](mailto:Court@ncifcrf.gov) <http://nmrweb.ncifcrf.gov/abl/> I am a research scientist at the National Cancer Institute of the NIH where I have been since 1972. My specific research interest is in the area of gene regulation and genetics in general. I have been in Frederick, Md. since 1983 when I moved from the main NIH campus in Bethesda. I am married to Carolyn McGill and have three children (Dan, Nisa, & Sara). Sara is a senior in high school, Nisa is a vet intern in Boston, and Dan is a research Tech at NIH.



**Lathrop Craig** ('90) Email: [bc6@cornell.edu](mailto:bc6@cornell.edu). I have spent nine years in the Navy as a submarine officer, serving on two Los Angeles class submarines in Groton, CT, and also as an instructor and electronics maintenance division officer at Naval Submarine School. While at submarine school I completed a MSEE at RPI. I left the Navy this last May, and started business school at Cornell. My wife, Serafin Hume Craig - Colgate '90, and two daughters, Hannah and Julia, and I recently spent the day in Hamilton watching the Red Raiders thoroughly trounce the Big Red football team. It was great to be back in Hamilton again, and we introduced our daughters to "taters and wings" at Ye Old Pizza Pub before heading back to Ithaca. We hope to make at least one more trip to Hamilton for the Colgate - Cornell hockey game this winter. My career focus has changed a bit since I last wrote for the newsletter, specifically I am now looking for a job in high tech marketing and am interviewing with lots of computer and telecommunications companies.

**Frederick P. (Fred) Cranston** ('44)—(degree May 43 because of WW2), PO Box 767, Trinidad, CA 95570, Email: [cranston@northcoast.com](mailto:cranston@northcoast.com). After Colgate (in brief): US

Army, '43-'46, Stanford University, '47-'53, MS, PhD in Physics Los Alamos National Lab, '53-'62, Humboldt State University, Arcata, California, '62-'86. There were only two Physics majors in my class, the other was Doug Venn. I have no idea where he is. One of my roommates in Andrews Hall was Stanley North '43, a Physics major. My research at Los Alamos involved: weapons for 3 years, then 6 years in beta and gamma ray spectroscopy. Decided I would like to try teaching in a non-publish or perish institution for a year or two to see if I liked it. I guess I did because I have been here 36 years. Even though I have been retired for 12 years, I still am teaching one course each term. My friends ask me "Why?" My response is that I would rather be with 30 college students than with three old men on a golf course. My wife and I travel to some strange place every summer, recently traveling to the Outback of Australia and the Hill Tribe area of Thailand. I like the idea of a newsletter as I would like to know what's going on in Physics at Colgate. In the early '40s the main research was on the Aurora in conjunction with someone at Cornell. One of my main memories of the Physics Department was the day Professor Clem Henshaw didn't show up for class. Snow prevented him from getting his wife to a hospital and he delivered his baby in his home in Hamilton.

**Alex W. Dalgleish** ('48) AWDCO, INC, 645 Persons Street, Box 637, East Aurora, NY 14052, Tel: 716-655-2700, Fax: 716-655-2701, email: [awdco@bluemoon.net](mailto:awdco@bluemoon.net). I recently relocated back to my home area in Western New York following residence in Florida and North Carolina. I continue to be involved with my company, AWDCO, Inc., a manufacturer's representative type company started in 1965 to serve the plastics processing industry. Our office is in East Aurora, New York. My hobbies include reading and the study of scientific articles, publications and papers with emphasis on Astronomy. Current specific interests involve "light", "color" (or "colour", if you prefer) and "time". I recently completed my own Theory on "How-Why the Green Flash". I know I presume much. I expended the effort because I could not find any satisfactory (correct, in my opinion, or complete enough) explaining the "How" of the Flash. I admit I had limited access to research material. I reasoned that if Faraday can do it, so can I.

**David A. Damari** ('83), O.D., FCOVD, FAAO. Email: [ddamari@sco.edu](mailto:ddamari@sco.edu). Assistant Professor; Chair of Optometry Department, Southern College of Optometry; Chapter on Visual Disabilities in Test Accommodations in Higher Education under the Americans with Disabilities Act, Gordon M and Keiser S, Guilford/GSI 1998 (<http://www.guilford.com/framepp.html>, click on "law"); independent consulting on visual disabilities for testing and educational institutions, especially as related to the ADA or the Individuals with Disabilities Education Act.

**Robert Damico** ('99) 3275 S. Dexter St. Denver, CO 80222, 303-759-4209 email: [robdamico@yahoo.com](mailto:robdamico@yahoo.com). I am currently living in Denver with a couple of friends. For the past three months, I have been working on a Y2K project with TCI Communications.



The project ended this past Friday. I have recently received an offer from Raytheon as a Test Engineer, and will be starting with them on December 6. Raytheon is an aeronautical/electronic defense company that does a variety of projects for the government. I am unsure of the specific project I will be working on, but am looking forward to the high-tech experience.

**Stacey M. Davis** ('97) - Presently employed at Colgate University, refer to the Faculty section for her update.



**\*Anthony (Tony) Demetriades** ('51) 147 Hitching Post Rd., Bozeman, MT 59715, email: [t-demetriades@montana.campus.mci.net](mailto:t-demetriades@montana.campus.mci.net) Was in the Physics dept. from 1949-1951, during the years of Professors Paul Gleason, Clem Henshaw and Don Berkey. Taught mechanical engineering at Montana State Univ. (Bozeman, MT) up until my partial retirement in 1995. Still dabble in research at the U. Also do some ranching in the mountains of the Yellowstone country.



**Glenn Egelman** ('87) 8 Blueberry Lane Stony Brook, NY 11790-2516, (631) 444 - 5344 email: [gegelman@notes.cc.sunysb.edu](mailto:gegelman@notes.cc.sunysb.edu) After being graduated from Colgate, I attended the University of Rochester, where I obtained my MD degree. Further training took me to St. Louis for a brief stint, and then back to Rochester, where I became a Primary Care Internist. After several years working for the University of Rochester in a clinical and teaching position, I moved to the State University of New York at Stony Brook, where I work in the Student Health Service, seeing patients, and teaching at the level of Assistant Professor of Clinical Medicine. I married Mary Ellen Natale (Colgate '87) in 1994. We spend our free time caring for our canine and feline friends, seeing our human friends and loved-ones, and exploring different parts of our country & the globe.



**Chris Eger** ('99) 420 W. Fullerton Prky. #522 Chicago, IL 60614, 773-404-5249 email: [chrisleger@yahoo.com](mailto:chrisleger@yahoo.com) I am currently working and living in Chicago. I work for a Venture Capital Company called BP Capital Management.



**\*Randi Rothman Eisen** ('78) 114 Morningside Drive, Cherry Hill, NJ 08003, tel 609.751.0934, fax 609.751.4373, email: [r.eisen@erols.com](mailto:r.eisen@erols.com) I graduated from Colgate in 1978 with a double major in Math & Physics. From Colgate I had a number of jobs, none of them in the field of Physics. I was first a math teacher, then a programmer/system analyst for SMS, a company that sells computer systems to hospitals. After being there for 3 years I joined the world of consulting as a information systems/healthcare consultant with a large consulting firm in Philadelphia. In 1984 I left this job to return start business school and to raise my family. I graduated from Temple University (in Philadelphia) in 1987 with an MBA in Health Administration. Business classes were easy compared to Physics courses!



After this I began to work for a major teaching hospital in the area as a department manager. I stayed in this job for nearly 8 years, but then left because I needed a change, and wanted more family time. I now am working out of my home as a consultant to hospitals and physicians on business issues. I am married to Morris Eisen, who is a cardiothoracic surgeon, and have two sons ages 13 and 11. We live in Cherry Hill, New Jersey. I'd love to know what happened to some of my classmates from Colgate, especially Les Button and Mark (whose last name I can't remember right now, but he was another member of the class of '78).

**\*Gordon Estabrook** ('72) email: [gllsharon@top.monad.net](mailto:gllsharon@top.monad.net)



Married to Lois (Gigliotti) Estabrook '74, 2 children, Linda 19 Studying Dance at SUNY Purchase, Loren 15 ConVal High School with main interest Soccer. Wife is Corp Account Manager at PC Connection (Stock market PCCC). I am Quality Manger and ISO Rep at Hendrix Wire & Cable a Member of the Marmon Group of companies. Been there for over 20 years. Hendrix supplies medium voltage cable to electric utilities worldwide, producing both underground systems and a unique overhead system. Currently in an expanding mode, employing approximately 200 people and gross sales in excess of 80 million. I also run the Hendrix Golf league. Outside of work I golf, direct the marching unit of the oldest town band in America, The Temple Band, founded in 1799. We are looking forward to a grand celebration next year, our 200 anniversary. My wife, daughter, son, mother and father ('38) join me in the band. I am a board member of the Souhegan Chamber of Commerce, and Chair the Industrial Committee. Lois & I celebrate our 25th wedding anniversary on July 21, 1999.

**\*Robert H. Fay** ('42) - P O Box 414, Greenville, NH 03048, 603-878-0582 email: [pegasus@tellink.net](mailto:pegasus@tellink.net). I have been retired for about 14 years after careers as educator, photo-optical engineer and rural carrier in New York, Connecticut, and New Hampshire. At present, my house-mate Gail and I are staying at my residence in Greenville while visiting our families in New Hampshire and Vermont. We essentially are full time RVers who spend the winter months in northern Florida at Alligator Point Campground. We travel extensively but leisurely, enjoying ourselves along the way.

**\*David Feinbloom** ('84) 30605 Squires Trail, #5821, Farmington Hills, MI 48334, email: [hearshey@email.msn.com](mailto:hearshey@email.msn.com). I'm living in Farmington Hills, MI with my wife Lisa and son Daniel (who just celebrated his first birthday) and working at Ford Motor Company, in Dearborn. It's a busy year for us, with work, baby, and plans for a new house. We're also squeezing in some travel, including trips to Virgin Gorda and the French and Italian Rivas.



**Bob Ferina** ('87) 284 Melody Lane, Fairfield, CT 06430 Ph: 203-368-9570 E-mail: [bandkf@aol.com](mailto:bandkf@aol.com) From Colgate, I went on to do my own version of the "4-2" engineering program. Three, not two, years later I left Rutgers with an MS in mechanical



engineering and began work in R&D of fiber optic connectors and splices for a French company, Radiall, just outside of Paris, France. Three years later I was transferred to the RF coaxial connector engineering department near Grenoble. In 1994 I returned to the US to work as quality manager at Radiall's Stratford, CT, coax connector assembly plant. A year and a half ago I changed gears yet again and managed a project to implement a new ERP (enterprise resources planning) information system. This past summer I was promoted to operations manager, but I'm still doing as much touch-up work in the ERP system as manufacturing management. It's challenging but interesting. On the personal side, Karen Heltman '87 and I got married over in France. Our family recently expanded as 2-month-old Rachel joined Jennifer, age 3. Karen is enjoying full-time mothering.

**Carol Finn ('99)** I was hired in June by PAR Government Systems Corporation as a programmer.



They are linked to Rome Research Corporation, where I worked the previous summer. My project involves translating GPS coordinates into different types of map projections. Maps are inaccurate. Thus the coordinates that a GPS unit produces do not literally match the position on a flat map. I've been working on the user interface for this program. I've been considering the idea of Grad school, but I have to admit it's nice to have a break!

**Jeff Fischbeck ('71)** Captain, USN, 987 Point Street, San Diego, CA 92106-2038, tel: (619) 224-7471, email: [jfisch7777@aol.com](mailto:jfisch7777@aol.com) The Navy transferred the Fischbeck family back west in July, after living in Pittsburgh while I was stationed there as the Professor of Naval Science at Carnegie Mellon University for 3 years. The current tour of duty is in San Diego as the Director of the Navy's Arctic Submarine Laboratory. (OK. Before you ask, where would YOU establish an Arctic related facility, if given a choice?) In retrospect, it's truly amazing to see where a BA in Astrogeophysics from Colgate can lead! Who would have guessed at graduation back in 1971 that it would have ultimately opened up doors such as command of a nuclear powered Los Angeles class fast attack submarine such as USS LA JOLLA (SSN 701) from 1988 to 1991, and positions like the current one. It is heartening to see the creation of this newsletter, in that it will make an excellent supplement to the updates on Colgate friends previously provided through the all-too-infrequent visits to Lorraine and Tony Aveni.



**\*Russell L. Frank ('70)** 27 Mountain Blvd. Suite Five, Warren, New Jersey 07059, tel:908-769-9400, email: [frankrl@erols.com](mailto:frankrl@erols.com). Since leaving Colgate many years ago, did pursue a career in the sciences. Received a M.S. in physics at Princeton, '72 and taught physics at the Univ. of Amsterdam in the Netherlands. Came back to the states and received an M.B.A. and Ph.D. in Finance from Georgetown. Left physics and began consulting in the finance area. Moved to

New Jersey and received a J.D. at Seton Hall and an L.L.M. at N.Y.U. in taxation. Passed the bar and practiced in several states. Consultation practice continued in tax law as a tax attorney and consultation practice continued in finance. Taught tax law at the Univ. of Arizona law school and opened an additional office for tax practice in Tucson, AZ. as well as maintaining the New Jersey office. Retired five years ago, but became bored. Have taken astronomy courses at various universities, traveled, taught, consulted and practiced tax law part time. Still have a love of physics and astronomy. Colgate provided a good basis for the life of a continual student. Have not returned to the campus since graduation, but I am sure the school is as beautiful as ever (except for the snow storms).

**Louis B. Freeman ('55)** 388 Cavan Dr. Pittsburgh, PA 15236 PH: 412-653-1705. I am still employed at the Bettis



Atomic Power Laboratory. Bettis does design and development of naval reactors. Bettis used to be a part of Westinghouse Electric Corporation, but thanks to the management skills of its recent CEO's, that corporation no longer exists. Bettis is now part of Bechtel. Our two children moved out some years ago. One is an attorney and the other works for a publishing company.

**Gordon Gaylord ('49)** 5412 Elgin Ave., San Diego, CA



92120-1837 tel: (619) 583-0055 There are a few things I intend to accomplish some day, such as: Drive on all the streets in Hamilton. Drive all over the Campus including the road up to the Colgate Cemetery ( to verify that the "big" rock is yet there). Visit Lathrop to verify that the dinosaur egg is yet on display on the stairway landing. Check to see if the brick water storage tower is yet on the hill to the west of the village. Walk up to the Colgate quarry from which the rock came that built most of the Colgate buildings. Check to see if Colgate Lake is NOT full of growth (always a problem). Attend Sunday worship service in the Baptist church that is (was once) Colgate's Mother church. Visit the current equivalent of the "Sugar Bowl" for a vanilla ice cream cone. Inquire if summer band concerts are yet in vogue. Knock at the door of our former Hamilton Street residence, and impose on current owners for a walk through! Observe if the elm tree and the rock (which used to serve as a ski jump) is yet there! Swim in Lebanon Reservoir AND Lake Moraine ( IF the water is not too cold) or rent a sailboat on Lake Moraine once more. There are not many of us left that swam the length of Lake Moraine from the cross road down to the dam. Nor many of us who used to swim around that lake stopping to dive off floats and piers until the owner came down to the shore line to chase us away. Confirm that traffic is yet TOO FAST down Hamilton Street (it needs speed bump at the bottom). See if the archaic lab equipment in Lathrop ever got updated. Ask if Colgate yet plays football with Syracuse, probably not because entering freshmen class would have to be all football candidates (not a realistic goal for a GOOD school). Check out Hamilton "International" (airport). Bug "The Scene" for more campus pictures! Visit relatives in the area. It is always nice to hear from Colgate (and Hamilton). Hang onto Lathrop Hall! Here is my present location and circumstances: Retired

since 1974, and loving it; have not earned a "productive dollar" since then; serving as a role model retiree; busy doing important things. Retired Systems Analyst specializing in threat analyses (Russia) to the USN; I must have done well because the Russians never attacked the US during my career (a little humor, here). I was employed at a local USN R and D facility starting in Feb '49. Grabbed my diploma, hopped on a plane and flew here to the promised job. Married 59 years to a girl from Lebanon, NY (Emma Bastian). Three children, 8 grandchildren, 3 greats. What did I learn at Colgate? Answer: There are two kinds of laws; social and scientific. Break either and unhappiness results. I got that from Dr. Gleason who must have a picture on the wall there somewhere!

**\*Robert (Rob) Giering**, ('85) 173 Town Garage Road, East Nassau, NY 12062, Ph. 518-766-6424 email: [RWgiering@aol.com](mailto:RWgiering@aol.com). The past couple of years have represented a significant time of change for me. In 1995 I started Medical School at The Albany Medical College, after a number of years as a bioengineer at the Dartmouth Med School. In a week's time I will start the fourth year, and applications for residency programs. I have decided to pursue Physical Medicine and Rehabilitation, and have an active interest in both rehab device design, as well as viable neuro-electric interfaces. The next year should bring still more change! (and hopefully graduation) In the summer of 1996 I was married to Theresa Catherine Craven (Davis, Ca. 84', Berkeley, 87'). Theresa has worked as a research nutritionist, and currently is a medical writer here in Albany. She has weathered my medical school days well, and I am aware that in some ways they have been tougher for her than they have for me. On November 3, 1997 we had our first child, John William Giering. He is now a curious and precocious 8 month old, well prepared to hit the town.. Those are the big highlights.. otherwise, time is a valued commodity in between marathon study sessions.....yes, I am the perpetual student...though that should end soon! I hope to hear from my old Colgate pals I have fallen out of touch with..I trust everyone is as successful as would be expected of Colgate Physics grads!

**Jeff Goldman** ('89) Email: [jeffg@mjr.com](mailto:jeffg@mjr.com). I'm still living in the Boston area and my professional life is as turbulent as ever. I was working with a company doing laser ultrasonics research. Now I am focusing on biomedical companies looking to build the next new thing. The start-up I was most recently involved with, Gamera Bioscience, hit the wall earlier this year. Since then I joined MJ Research as an engineering project director. We primarily make DNA lab instruments.

**Jon Habif** ('98) Dept. of Elec. and Comp. Engineering, Hopeman Engineering Building, University of Rochester, Rochester, NY 14627, (716) 275-5930 email: [habif@ece.rochester.edu](mailto:habif@ece.rochester.edu). Web address: <http://www.ece.rochester.edu/~habif/>. I am a PHD student in the department of electrical and computer engineering at the University of Rochester.

**Jen Heldmann** ('98) [jheldmann@mail.arc.nasa.gov](mailto:jheldmann@mail.arc.nasa.gov). (650) 604-2111 After graduating from Colgate, I went on to the University of North Dakota and graduated with a Master's of Science in Space Studies (Dec 1999). After graduation I moved to California where I now work at NASA Ames Research Center, conducting research in the field of Astrobiology and concentrating on the study of Mars. This fall (2000) I intend to resume my academic studies and have been accepted to begin work on a PhD in Planetary Science at the University of Colorado at Boulder. For the past two summers I have held internships at NASA Ames working through the NASA Astrobiology Academy (summer 1998 = student participant, summer 1999 = Academy Staff), a program committed to showing students the interactions of government, academia, and industry in the space program while pairing each student with a NASA mentor to conduct research on a specific project.

**Stephen Hewitt** ('67) [[HEWITT\\_STEPHEN\\_M@lilly.com](mailto:HEWITT_STEPHEN_M@lilly.com)]. After finishing Colgate (years ago) went on the Columbia for a Masters in Chem. Eng. Finally had to get out into real world and work - which I did for 5 years at DuPont. Then, once again, back to school for an MBA at Harvard. From there went to work at Eli Lilly where I've been ever since - working in a variety of jobs and functions. Along way managed to get married to Connie in 1974 - (25th wedding anniversary next year - -- wow). Same company and same wife after more than 20 years!! Have two great daughters in high school, one of which will be going to college next year - back East - but couldn't interest her in Colgate. Have lived in and around Indianapolis for the last 20 years plus. Indianapolis has developed into a great place to live and work and my wife and I have turned into true "midwesterners".

**Andy Hill** ('86) 20351 NE 61st Ct. Redmond, WA 98053, 425-868-2230 email: [andyhi@microsoft.com](mailto:andyhi@microsoft.com). Since departing from the lovely Chenango Valley, I spent a few years at a small software firm, went off and got my MBA, moved to Seattle to work for Microsoft, got married, and had two daughters. I've been in Seattle for the last 8 years, where I manage design & development of new software products--things like MS-DOS, Windows, and most recently Web Publishing Systems. An interesting piece of Microsoft trivia: I believe that we have more people working here with PhDs in Physics than in Computer Science. I've been married for six years, and have two daughters, Katie, 3.5 years and Allison, 1.5 years.

**\*Brandon Himoff** ('95). I live in New York City at 40 East 78th Street, New York, NY 10021, phone: (212) 288-0614 home and (212)677-5381 work, email: [bhimoff@pipeline.com](mailto:bhimoff@pipeline.com). I am working for IBC Oppenheimer Corp in New York for their Investment Banking Department, as Associate in the Technology Banking Group, advising and raising money for technology companies. I specialize in semiconductor devices, especially in the computer graphics area, but also have done a significant amount of work with Internet companies. My

physics background has been helpful not only with problem solving, but is critical in explaining and positioning sophisticated technology to potential investors. I have found my junior and senior thesis project lecturing extremely helpful in this regard. I also have to keep up with the latest scientific developments to get to companies early, so I have been reading about current research in both physics and semiconductor engineering. I find my field to be an interesting practical combination of satisfying my curiosity, funding discoveries and business, and I think my physics background has been a serious advantage. I particularly have to thank Prof. Amato for his guidance on experimental technique and good presentations, which I use every day. I know that my not going on to a Ph.D. program in physics bothered him, but this application of my education has been an extremely interesting one for me. I am happy to see Scanning Probe Microscopy work continuing at Colgate. I saw the pictures on the website. I think the decision to buy an AFM rather than build something was wise. The Scanning Tunneling Microscope I attempted to build pales in comparison.

**\*Jay Holman ('96)** email: [jason.holman@alliedsignal.com](mailto:jason.holman@alliedsignal.com) I am in Parsippany, NJ and working as a Scientist in the Advanced Technologies sector of AlliedSignal in Morristown, NJ. Our group is making components for the telecommunications industry, such as wavelength division multiplexers, out of optically conductive polymers. My specific project is a micro-opto-electromechanical switch, which has future applications in optical crossconnects. Overall things are going well, & I look forward to hearing what other graduates are up to.

**\*Alan C. Johnson ('67)** 22481 Deerbrook Street, Mission Viejo, CA 92692, tel:(949) 454-8315. For the last 12 years I've enjoyed working for a small company in Southern California which makes integrated circuits principally for avionics applications. Currently I'm the Quality Assurance Manager. I have no doubt that my Colgate education (and later my PH.D in physics from Tulane University) help me in my day to day tasks. In 1981, while in Costa Rica, I married a lovely woman in her home town of Esparza. We are still on our honeymoon and have been blessed with a very intelligent son, Alan Antonio, age 13.

**\*Jeff Kern ('95)** 1212 El Camino Real #28, Socorro NM 87801, email: [jkern@nrao.edu](mailto:jkern@nrao.edu). I recently finished my Masters Degree in physics at the University of Vermont, and working on a Ph.D. at the New Mexico Institute of Mining and Technology. I am still working in astrophysics (pulsar emission in particular).

**Russell King ('80)** Tech Consultant, Marblehead, MA - office 781-639-2465 cell:781-254-2793 [russell.king@flashcom.net](mailto:russell.king@flashcom.net). Nancy (Therm) Burnham, PhD ('80 physics) and Fred Hutson, her husband, dined with me (also '80 physics) and my girlfriend Mary (Hamilton '85) at Anago in Boston's Back Bay recently. Therm and Fred returned to the US after 6 yrs in Germany and 3 in Switzerland. Therm is now an associate professor at Worcester Polytechnic Institute in Worcester, MA and Fred is avidly investing in the

stock market and has an office at WPI from which he carries out his own studies (not sure what). Both are in good spirits and stressed by buying a house as well as learning to live in New England after so many years abroad. I must report that Therm has more gray hair than me at this point (maybe don't print that!). She is very professorial now and really comes across as the true and accomplished world-class scientist that she is. I'd swear that some of Charlie Holbrow has rubbed off on her! Best parts of our gourmet meal were two bottles of French wine (Fred's a bit of a connoisseur) and tarts made by my former neighbor (she is the best pastry chef in Boston!).

**Carl E. Kinnunen ('79)** [cemilkin@aol.com](mailto:cemilkin@aol.com) I'm presently living in Springboro, Ohio, a small town between Dayton and Cincinnati. I've been married for 15 years to Shelley A. Reed, who works as an attorney for NCR. I have two children, Laura, age 9, and Patrick, age 5. I have been unemployed since September of 1998. I bailed out of the workforce to stay at home with the kids. Upon graduation from Colgate in 1979, I went to work for Turner Construction Company in their Cincinnati office. I left Turner in 1995 for a job with Mound Steel Corp., a medium sized steel fabricator located in Springboro. When I left Mound in 1998, I was a Vice President in charge of pre-production. Presently I do some consulting/estimating work for Mound. When Patrick enters 1<sup>st</sup> grade this fall, I will return to the work force.



**Sin Mei Ko ('85)** IS Project Manager, Field Data Capture, Boston Gas Company 201 Rivermoor St. West Roxbury, MA 02132, 617-723-5512, ext 4577 email: [sko@bostongas.com](mailto:sko@bostongas.com). Happily married with two adorable children (Christopher, 4; Zachary, 1.5 years), and still managed to have a full-time job. I am a IS Project Manager at Boston Gas Company, and I am in charge of a most exciting project called Field Data Capture. We are deploying mobile devices to our field operations personnel enabling them to receive work, communicate completion information, and get reference materials, real-time and all through a wireless infrastructure. Like millions of parents with small children, we wonder what we used to do with our free time!



**\*Daniel T. Kowalewski, ('88)** 47720 League Court, Sterling, VA 20165, tel: 703-404-3834, email: [daniel.t.kowalewski@ac.com](mailto:daniel.t.kowalewski@ac.com). Since Colgate I have completed my MBA at the University of MD (1990) and started working at Andersen Consulting. I am part of the Strategic Services practice focusing on Information Technology Strategy and Business Strategy in the Travel Services industry. I am married (Laura M. Kowalewski - Mary Washington College class of 1990) and have a nine month old daughter (Allison Marie Kowalewski).



**\*Gary Kuehn ('85)** PO Box 970, Sandy Bay, Tasmania 7006, AUSTRALIA, phone/fax 61 362 254023, email: [gkuehn@h130.aone.net.au](mailto:gkuehn@h130.aone.net.au). G'd day. Hello to all the P&A Staff and hearty welcome to contact me if coming to Tasmania. My wife, Vicky Lytle,



and I moved to Australia in 1992. We thought we would stay ~ 2 years - now we are dual citizens. I will begin building a house that we have designed in the next month. I work as a training and logistics consultant for remote area and emergency service operations. It usually entails the planning, training and assisting scientists in Antarctica in conjunction with the Australian Antarctic program. Last year I was with geologists 700 km inland in the Southern Prince Charles Mountains. We travelled over 2000 km, mapped over 60 km or outcrop and collected a ton of metamorphic samples for further testing in Australia. Within Tassie, I train guides and emergency service personnel in outdoor skills and do some independent guiding and vertical access work. The methods developed through physics are still with me -- in my training, the content is built and taught from "basic principles"!

**Dan Lacroix ('85) and Penny (Kirkwood) Lacroix ('84)**



20 Village View Rd., Westford, MA 01886 Phone: 978-692-5198 e-mail: [dpl@colgatealumni.org](mailto:dpl@colgatealumni.org), [penny@colgatealumni.org](mailto:penny@colgatealumni.org). Greetings to all. We are doing well. We have two (usually) delightful children: Catherine, age 8, and André, age 5. We also have a dog named Worf, who is quite funny looking as he's a mix between a Corgi and a Black Lab (think about it!). As a family we've been sharing some fun activities. Our biggest family hobby is Revolutionary War reenacting, where we participate in weekend encampments with other "living historians". It has helped us learn to simplify a bit, and it is teaching our kids some great history lessons. (André's biggest lesson to date is "Don't climb on cannons because you can fall off and break your arm.") We also spend time with visits to/from Penny's family in Nevada and Colorado, and Dan's family in Canada and New York. Dan is currently working with a small company as an analog integrated circuit designer. The company, Aura Communications, develops short range wireless communications devices. Penny is still a systems engineer with MITRE, working a 3-day week so as to have more time to dedicate to Catherine and André. We fondly refer to her ties to this job as "The Golden Handcuffs". It is time, after 14 years, that Dan reveal his identity as the person who, inspired by the early morning, rolling fog of the Chenango Valley, provided the Colgate Observatory with the name "Foggy Bottom Observatory". We would elaborate on the beginnings of "The Duck", but that's a really long story. Whoever is interested in that particular history lesson can contact us! We'd love to hear from Jim Bollinger!

**Tom Lamme ('69), 50 Pennicott Circle, Penfield, NY**



14526. Email: [tj23601@aol.com](mailto:tj23601@aol.com). I am a science teacher at Rochester's "troubled" Franklin High School, an inner city school. I teach the one and only section of Regents Earth Science and spend each year trying to convince skittish guidance counselors that the course is not an impossible challenge for inner city kids. I also teach whatever else they give me, which is usually two or three other courses, usually new preparations, designed to give high school science credits to students who do not attend often enough to be able to earn

high school credits in science. The 23601 in my e-mail address is my PR in the marathon, run in 1985 at the Mohawk-Hudson River marathon in the Capital District. I have been competing in running events for well over 20 years and am still very active. On the 22nd of this month, I will run in the US Masters 5 km Cross Country Championship race in New Jersey. I will compete with a team, the Genesee Valley Harriers and am still quite competitive, in spite of a heart attack in January which included ventricular fibrillation, a truly "drop-dead" scenario. I ran a race on New Year's Day, 1999 and noticed some weakness as I fell from 8th to 9th place in the last two miles. Unaware that this painless condition was a heart attack in progress, I ran a short "warm down", jumped into my car, and began the drive home. About two miles later, I blacked out. I managed to stop my car, turn off the ignition, set the brake, and turn on the emergency flashers. According to what I was told, it was no more than 2 minutes later that a passerby stopped, investigated, and checked for and found no pulse. It seems that she happened to be a cardiac nurse and she knew to pull me out of the car, giving me a whack ("percardial thump") in the chest that got things into working order again. Four days in the hospital revealed that a heart attack had indeed occurred, although no underlying heart disease was found. I was running again within 2 weeks with the blessings of my doctor. In spite of a beta blocker drug which slows my maximum heart rate, I remain a typical Colgate overachiever and continue to compete. I have a son, 24 this month, who works odd jobs so he can live in Colorado and climb. In October, he completed a climb of El Capitan at Yosemite. My 21 year old daughter is a student at SUNY Utica Tech and plans to become a teacher. My 19 year old daughter is a perpetual student... in high school. I look up and check out the sky every time I walk Fred the Schnauzer. I have a small collection of rocks I have picked up from interesting places I have visited in the US and Canada. I attended the reunion in June of 1999 and was thrilled to see Dr. Aveni and to look through the same telescope I used in the 60's. Both appeared to be in excellent condition.

**\*Harri Latvakoski ('91) 66 Sugar Hill Rd, Tolland, CT**




06084, tel: 607-896-0524, email: [harriandjulie@erols.com](mailto:harriandjulie@erols.com). In May 1997 I got my Ph.D. in Physics from Cornell. My thesis research involved infrared instrumentation and observations of the Galactic Center.

Within the next few months I got married, found a job, a new place to live and moved. A little stress was incurred. I am currently working for Advanced Fuel Research in East Hartford, Connecticut, and so far the job is going well. AFR is a small research and development company which doesn't really do much fuel research. I'm working on designing and building various infrared instrumentation. It's very different from academia in a lot of ways. In other news, we recently had a house built, and we moved into it in June. This is my fourth address in a little more than a year. All that moving is a pain especially since the amount of stuff you have continues the exponential growth after college. It does let you avoid junk mail though. We both like the house and hope to spend at least a few years in it.

**Jennifer Lewis** ('93) [jrl3m@virginia.edu](mailto:jrl3m@virginia.edu), University of Virginia, Graduate Biophysics Program, 112 B Chelsea Dr., Charlottesville VA 22903(W) 804.924.7688(H)804.296.3239 Good news, I successfully defended my dissertation last week. It was actually a very pleasant experience. I was well-prepared and excited to talk about my work. My committee was very interested in my results also. I hope to get 2-3 more papers out of the work.

**\*Douglas V. Lowry** ('78), 1012 San Jose Court, Virginia Beach, VA 23456, Tel: (757) 721-2724, email: [dvlowry@yahoo.com](mailto:dvlowry@yahoo.com) (home), [dlowry@manta.nosc.mil](mailto:dlowry@manta.nosc.mil) (work) Spouse: Nancy Ehrhart Lowry (Colgate '78, Economics & English), Children: Elizabeth (b. 1986), Alexander (b. 1988), Employer: US Navy. Graduate Education: Master of Science, Systems Engineering (Electronic Warfare), US Naval Postgraduate School, Monterey, CA, 1987. Yes, I am still in the Navy, and will probably be on active duty for a few more years. I have served onboard seven different ships ranging in size from a small, wooden minesweeper to an aircraft carrier. Those ships have taken me everywhere from the Ukraine to Hong Kong, Portugal to Australia, Japan to Saudi Arabia and lots of points in between. I have gotten familiar with what it's like to be in the middle of the ocean. The Navy has also given Nancy and me to live in lots of places: Newport RI(3 times), Charleston NC, Monterey CA, Long Beach CA, Pearl Harbor HI, and Norfolk VA. I am finishing up a shore tour on the staff of Commander-in-Chief, US Atlantic Fleet, in Norfolk, VA where I provide policy and oversight for the Atlantic Fleet's "Live Training Support Infrastructure." In other words, I set requirements for and oversee use of training ranges, tactical training range instrumentation systems and training targets. (I get to make things blow up!) I will detach from this duty station in October 1998 and report in December to Riyadh, Saudi Arabia as part of the US Military Training Mission in that country. I will be assigned to Riyadh for a year before returning to the Norfolk area.

**Christopher MacGregor** ('95) [MacGregor@qtera.com](mailto:MacGregor@qtera.com)  
 I am working for a company called Qtera Corp. We make "ultra-long haul," ultra-high capacity WDM fiber optic transmission equipment (kind of a mouthful). Which means we send, on a single fiber, on the order of terabits of information per second over repeaterless fiber lengths of 4000 or so kilometers. Most WDM systems capable of sending similar volumes of information can only reach distances of about 600 km or so. (So we think we're pretty darn good here.) It's really very interesting work. I'm an Electro-optics engineer for the Active Sub-systems group here at Qtera. I'm the principal design engineer for our transmitter and receiver modules. It's really a lot of fun, and a LOT of work. I'm living in Boynton Beach which is a far cry from the brutally cold Hamilton winters, but that is balanced by equally brutal summers and hurricane season, which is no day at the park. (Floyd scared the heck out of me, and Irene happened to pass right over my town....not fun.)

But I guess you take the good with the bad. I'll tell you what, I knew I enjoyed that optics course at Colgate, but I didn't think I'd end up here. I look back on that semester when I was trying to decide between Optics and some humanities course, and man am I glad I took the optics course.

**Julie Williams Meder** ('82) (aka Julie B. Williams) M.S. Chemical Engineering, Univ of Virginia ('84), J.D. Univ of Pittsburgh ('93). Currently employed at the Webb Law Firm (aka Webb Ziesenheim Logsdon Orkin and Hanson, P.C.). We are a boutique intellectual property law firm. See our website at [www.webblaw.com](http://www.webblaw.com) which also contains my professional biography. Love my work and have a flexible schedule to spend time with my children. Married to Albert K. Meder (Penn State '85) with 3 children: Ryan (7), Carolyn (5) & Stephanie (3).

**Elizabeth Mellor** ('95) 289 West 5th St, Apt #2, South Boston, MA 02127; Phone (617) 464-4434. [[elizabeth.mellor@crbard.com](mailto:elizabeth.mellor@crbard.com)]. I am currently living in Boston and working outside of Boston as a chemist in the medical device/pharmaceutical business, where I was recently promoted to Senior Chemist.

**Cheryl Meltz** ('98) 11911 Winterthur Lane #106, Reston, VA 20191 Home phone #: (703)648-1692; business phone #: (703)707-6785 e-mail: [cheryl.e.meltz@lmco.com](mailto:cheryl.e.meltz@lmco.com). Currently I am living in Reston, VA and working for Lockheed Martin as a Systems Engineer. I also coach a High School Diving Team (Oakton High School) in Oakton, VA.

**John L. Metz** ('93) 2311 Walnut Street, Apt. # 4 Boulder CO 80302, 303-546-6586 Email: [John.Metz@colorado.edu](mailto:John.Metz@colorado.edu), Webpage <http://www-ocs.colorado.edu/~metzj/Home.html>. The year 2000 finds me finishing my Ph.D. at the Univ of Colorado at Boulder. My research focuses on using optics and electronics to rapidly locate suspicious cells from cervical smears. I'm hoping to graduate in May 2000 and find gainful employment. I'm playing socce and getting in some mountain and road biking around the thesis research.

**\*Dave Miller** ('52) 2633 Summit Ridge Rd., Roanoke, VA 24012, tel: 540-977-3142, email: [dmliller@rev.net](mailto:dmliller@rev.net). In another month, it will be fifty years since I started, as a freshman, in the beginning physics course, taught by Dr. Gleason. It was a great eye opener. Since finishing at Colgate and graduate studies, I have spent about twenty years teaching electrical engineering, at Purdue and Mississippi State, and fifteen in industry, with GE and Brown Boveri. Although most of my career has been spent as an engineer, I have never drifted too far from my Colgate physics roots. As a senior project I believe that Drs. Henshaw and Berkey had me working on a microwave generator, and then with GE and Purdue my research was primarily into microwave plasmas. Later, I went into high voltage devices and testing, again involving applications of physics. For the last five years my wife, Ann, and I have been retired in Roanoke, VA,

enjoying hiking in the Blue Ridge Mountains, ham radio operating and visiting kids and grandkids scattered around the country.

**\*William F. Morrison** ('59) email: [duke-jupiter@msn.com](mailto:duke-jupiter@msn.com), 405 Gardner Court, Marion, IN 46952 765-664-3078 (home), 765-664-0104 (office), 765-662-3516 (fax) Here goes. I graduated in 1959 and was definitely not the top student. Without the patience and understanding of Dr. Clem Henshaw and Dr. Berkey I probably wouldn't have made it to graduation. I have an AB degree with physics as my major. Upon graduation, I went to work for the Anaconda Co. where I spent 19 years working as an engineer, in marketing, and finally general management. During my time at Anaconda, I received three patents, published several articles in trade publications, and gave a couple of papers before engineering groups. Following Anaconda I spent some time as a senior executive with United Technologies, participated in a successful LBO, and now at the age of 60 I am semi-retired, own several small businesses, and spend 6 months in Palm Beach, FL. It was good to be reminded of my time at Colgate and I wish all of you well. Hope the department has grown since I was there. I like to tell current friends that I graduated fifth in my class of Colgate physics majors. After receiving all of their sincere compliments, I tell them that the other four went to graduate school.

**Andreas Nonnenmacher** ('86) 41 Blueberry Hill Rd. Redding, CT 06896 203-544-1227(home) or Raytheon Electronics Co. 100 Wooster Heights Rd. Danbury, CT 06810 203-797-5248 (work). Email: [andreas\\_nonnenmacher@raytheon.com](mailto:andreas_nonnenmacher@raytheon.com). My wife, Amy, and I just moved this summer to Redding, CT and on August 19, 1999 our first child was born. Nicholas is doing quite well and we have managed to adjust pretty much everything in our lives accordingly.

**Sumner Northcutt** ('57) Born July 24, 1935; majored in Physics with Berkey, Gleason, Henshaw, earned BA - cum laude with highest honors. Schleissheimerstr 188/Apt 327, 80797 Munich, Germany Tel: 49/89/3084 889 Email: [sumnernor@hotmail.com](mailto:sumnernor@hotmail.com). I am a computer programmer. Since the late '50's I have resided in Germany (at first for 2 years in Karlsruhe and then Munich). I returned for a short time (big mistake!) in 1985 for circa 18 months and then returned back to Munich. I am currently receiving my German pension ("Rente" - like US Social Security). A few years ago I lost my job during the recession in Germany and the Arbeitssamt (unemployment office) eventually told me to start my German pension as I was over 60 at the time. While I am currently not working, I do expect to work again - I do not really consider myself "retired". Most of my programming experience was using assembly language with mainframes and maintaining and correcting programs. I have a knack in finding errors. I am not a "quick and dirty" programmer. A couple of years ago, I got myself a PC and am saving many things from the web - modifying them so graphics will be loaded offline and in many cases

improving or correcting (there are many, many errors on the web) for my purposes as well as combining webpages. In the process I am learning the HTML language. I might note that the PC world has NO standards!!!! (shame on Bill Gates!) As I like classical music, Munich is a very good location with the Bayrische Staatsoper (Bavarian State Opera) and 2 very good orchestras - the Bayerische Rundfunk Orchestra (under Lorin Maazel) and the Munich Philharmonic (Under James Levine). I enjoy walking in the mountains particularly in Zermatt where the Matterhorn is.

**\*Robert O'Brian** ('79) 19A The Albany - #1 Albany Road - Hong Kong, phone: 2521 1537 (852 is the country code), Fax is 2521 4896, email: [Bridgeio@att.net.hk](mailto:Bridgeio@att.net.hk). This is Rob's wife, responding for him as he is traveling for work. He is from the class of '79. He has achieved two degrees after Colgate. One from MIT (masters in Marine Engineering and Naval Architecture) and one from UC Berkeley (MBA in manufacturing strategy). He worked at Clorox in manufacturing, then the Boston Consulting Group in Los Angeles, and now works for the Franklin Mint. The company is based in PA, but we live in Hong Kong. Rob is the VP of manufacturing and trading. We have been in HK for 1 and 1/2 years and have one more to go. Rob is married and has two children (Conor is 5 and Meg is 3).

**\*Eric Pinaud** ('89) 12105 Joslin Lake Rd., Gregory, MI 48137, email: [eric@cbpinaud.com](mailto:eric@cbpinaud.com), <http://www.cbpinaud.com>. I have been working in computer software ever since I graduated from Colgate, and now work for myself as a Computer Consultant, under the name of TechSoft.

**\*Paul Raeder** ('73) 250 West 103rd Street, Apt. 8D, New York, NY 10025, tel: 212-663-3068, email: [Paul-raeder@aol.com](mailto:Paul-raeder@aol.com). I have lived in New York City for about 20 years, and run my own financial consulting and investment banking business for media and communications companies. Recently, I've been to Russia working with several television stations with their financial plans.

**\*Arvind Rajpal** ('94) 2220 Westcreek Lane, # E44, Houston, TX 77027, Ph:713 767 5317, email: [arajpal@coral-energy.com](mailto:arajpal@coral-energy.com). I am working with Bankers Trust in the area of risk management, using commodity derivatives to manage energy risk. I have completed my MBA (in Finance and Accounting), my CPA and almost done with my CFA. I am getting married on December 26th and gunning for the Astros.

**\*Jake Rasweiler** ('92) 417 East Beech Street, Long Beach, NY 11561, tel: (516) 897-5981, email: [jake.rasweiler@nextel.com](mailto:jake.rasweiler@nextel.com). I married Claudia J. Akson (Villanova '92) on 5/3/97. Education: M.S. Electrical Engineering, 1995 Polytechnic University, Brooklyn NY, MBA Management, 1997, Fordham University Graduate School of Business. Currently I work for Nextel Communications, Inc. in White Plains, NY. I am the RF Engineering Senior Manager for New York City with a staff of six engineers designing, building out and maintaining the wireless "cellular telephone" network. I currently hold two patents for antenna designs from previous work at AT&T.

**\*Stan Reeser ('90)** 6215 N. 18th Road, Arlington, VA 22205, (703) 626-6218, *email: sreeser@aol.com*. Personal circumstances: I have been living in the Washington DC area for 5 years. I have taken up golf and racquetball and I am getting involved in polo. Over the past 5 years, I have had the good fortune to be able to visit most major cities in the US (the down side is that it is mostly on a hectic business schedule). World events permitting, I will be traveling on safari in Kenya and other (unsafe) places in East Africa! My professional circumstances: After working for First Chicago, Turner Construction Company, and General Electric Capital, I started my own consulting practice. My firm works with companies of various sizes with a major focus on management, information technology and marketing consulting particularly in the areas of process innovation, change management and technology design.



**Jonathan Rill ('80)** *Email: jrill@primary.net*. I was a physics major in the class of 1980. Vic Mansfield was my advisor and Charlie Holbrow was the Department Chairman. I went to Dartmouth the next year and graduated with a BE in Engineering. Still looking for a career, I went on to Medical school at University of Missouri and residency at Washington University in St. Louis. Since finishing my residency in 1988, I have been practicing Emergency Medicine here in St. Louis. My background in physics comes in handy in understanding medical technologies such as ultrasound, MRI, CT scan, radiation therapy, PET scans, and digital signal processing. Computers and information technology has taken over the billing office and the laboratory and someday soon we will have paperless charts. I live in St. Louis with my wife Cynthia and my daughters Elizabeth (age 5) and Katherine (age 3). I hope to see Rus King, Phil Arcuni, Alice Cooper, Jane Van Doren and others at our 20th reunion next summer.



**\*Scott E. Ritter ('86)** Let's see - it's been four years since the last letter. Workwise, I remained at BBN for another three years, continuing to design & build real-time DSP & data acquisition systems, and taking the occasional Trident submarine ride. About a year ago, BBN became a piece of GTE. At that point, I was wooed away (or was it shanghaied?) by a good friend from graduate school (Tufts) to take over the ASIC verification department at a little computer graphics company called Number Nine Visual Technologies. In any case, I'm still there. I suppose it's worth telling what the work actually is - ASIC verification is the testing of Application Specific Integrated Circuit designs before they are ever fabricated in silicon. This involves building and exercising the designs on software simulators and hardware emulators, diagnosing defects, and making sure they get fixed. As the field is still quite immature, there's much to be done in the design of the verification system itself. This is what is technically referred to as "the fun part". The holy grail is to automate the system to such a degree that there's nothing left to do. It may sound suicidal, but given the demand for automated verification systems, it is anything but. My own



company, Ritter Signal Processing, continues to do the odd "gig" when possible. The last was a data acquisition software front-end for a DSP stethoscope company. Their product passively detects and analyzes acoustic signatures that indicate specific diseases of the chest cavity. By using multiple transducers, it localizes the "trouble spots" as well. On the domestic front, my wife Janice (Wasylenki '86) and I have just celebrated our seventh wedding anniversary - that was quick! Since the last newsletter, we have been joined by our second German Shepherd (a hyperactive but very endearing bitch named Kaylie), a minivan (dog-mobile), and a turbocharged Eclipse (my modifications to which have brought delightful new meaning to PV=nRT). I've been doing some physics tutoring at the local high school, too. Very refreshing!

**Jim Robyn ('72)** PO Box 13, Chester, NJ 07930 *Email: 75206.1065@compuserve.com*. My wife (Hae-Sun) and I have two girls: Karli and Misha. We own Rin Robyn Pools, a swimming pool business in Northern New Jersey with two locations. We build custom in-ground residential swimming pools. Our pools were featured in an article in New Jersey Country Roads magazine this summer. Misha attends The Pingry School in Martinsville, NJ. She is a Cheerleader and a Fencer (foil). She has recently received her Student Pilots License and soloed an airplane. She plans on attending college in the Fall and will be applying to Colgate and other schools. Karli is a Sophomore at UPENN and a Political Science major. She spent last summer working in the family business, and a few weeks in Scotland (bicycling around Loch Ness, etc.). Last winter our family toured much of Costa Rica and spent Christmas Day hiking the slopes of Arenal, an active volcano!

**\*Gary Rubin ('97)**, 2110 N. Pierce St. #1, Arlington, VA 22209, 703-465-1811 (H), *email: grubin@sysplan.com* I'm living and working in Arlington, Virginia. I work for a company called System Planning Corporation in the Radar Physics group. Our main product is diagnostic radars which are used to look at the radar signatures of stealth aircraft. I'm in the Advanced Projects group and am currently involved in a couple interesting projects: one where we're using radar to look for rocks, logs, and other obstacles hidden in grass and weeds; another where we're using radar to observe the re-entry of the booster stage of a rocket to find out the altitude at which it breaks up. In the fall, I'll be starting to take classes toward a MS in Applied Physics at George Mason Univ.



**\*Thomas M. Ruffle ('67)** 361 Flynn Ave., Burlington, Vt. 05401, 802-864-2528, *email: Tru2834849@aol.com* I am currently a Developmental Pediatrician working for the state of VT and a Clinical Assistant Professor of Pediatrics at UVM Medical School. Our youngest child, Richard, graduated from Colgate in 1997.



**Ralph Schlieff ('87)** 214 East Squire Dr. #6 Rochester, NY 14623 716-424-6281 Presently enrolled in my second year in the MS Imaging Science Program at RIT.



**David Shapiro** ('98) 127 North Country Rd. Port Jefferson, NY 11777 516-476-9880 Email: [dshapiro@grad.physics.sunysb.edu](mailto:dshapiro@grad.physics.sunysb.edu). I am now working on my PhD at SUNY Stony Brook. This is my second year here and I recently joined the X-ray Microscopy group with whom I plan on doing my thesis research. I am currently working on a project at the National Synchrotron Light source which aims at extending the methodology of x-ray diffraction to non-crystalline materials (mostly biological material). My thesis will probably be a continuation of this project. I am presently living in Port Jefferson, NY on the north shore of Long Island.



**Russ Sharples** ('82) email: [rsharples@att.com](mailto:rsharples@att.com) BA Physics, ME Systems Engineering from UVA in 1985. I now live in East Windsor, NJ and work for AT&T doing systems engineering for telecommunications network evolution. Much of my job is sorting out complex problems with many interrelated issues - physics provides a great foundation for this kind of problem solving (many of my co-workers also have physics degrees). I am married to Pam and have two kids: David (6) and Will (3). I have a rather poorly maintained home page at: <http://members.aol.com/russbag1>. When I was up last year for my 15 year reunion I had a great time visiting with Dr. Lloyd and looking around the building. It's too bad the Foucault Pendulum display in the front hall didn't survive.



**Michael Siegal** ('82) 421 Live Oak Ct, NE, Albuquerque, NM 87122, email: [mpsiegal@sandia.gov](mailto:mpsiegal@sandia.gov), Sandia National Laboratories, P. O. Box 5800, M.S. 1421, Albuquerque, NM 87185-1421, Project Leader - Advanced Thin Film Growth and Applications Physics & Chemistry Directorate, 505845-9453(o), 505-821-576(h) I am a scientist at Sandia National Laboratories, currently the principal investigator on two research projects. (1) High-temperature superconductivity. I have been studying thin film growth and characterization of both YBaCuO and TlBaCaCuO materials since 1989. I have over 50 publications in this area, including an invited review article on the TI-superconductors published in the Nov. 1997 special issue of the J. Mater. Res. To commemorate the 10th anniversary of High Tc. I have organized international conferences and given numerous invited presentations around the world on this work. My research involves studying the thermodynamics and kinetics of epitaxial film growth of these complex oxide materials, and optimizing film quality for fundamental studies of superconducting behavior. Superconducting thin films are used as detectors of electro-magnetic radiation for non-destructive evaluation of materials, sensors, and magnetic resonance imaging (MRI). They also have great potential for replacing large metal components for microwave communications, such as those used in cellular telephone bay stations, satellites, and radar. Thick film superconductors are also being developed for use as high current-carrying wires for applications like powerful electro-magnets and low loss high-power cables. (2) Amorphous Carbon. This project is about 5 years old, and I recently organized the



first international symposium ever held on the subject at a meeting of the Materials Research Society. I have given numerous invited presentations and published ~ 20 papers on this subject. Highly disordered forms of carbon such as "amorphous diamond" and carbon nanotubes have fascinating properties. While amorphous carbon films grow at room temperature, they are stable to temperatures approaching 800C. The energetics of the process used, such as pulsed-laser or ion beam deposition, controls the ratio and bonding topology of 3-fold to 4-fold coordinated carbon atoms. The most diamond-like films are atomically smooth, optically transparent, and have hardness and stiffness ~ 95% that of diamond! Films grown with mostly 3-fold coordinated, or graphitic-like, bonding demonstrate interesting morphologies such as nano-coralline and nanotubes. These novel forms of carbon have many intriguing properties, including the ability to emit electrons in low electric fields at room-temperature: cold-cathode field emission. This property is under study for use in new flat-panel display configurations (imagine hanging your television set on the wall, with all of the brightness, clarity and viewing angle of your existing set). Cold cathodes may also enable a new form of devices called vacuum microelectronics (vacuum tubes on-a-chip, mass spectrometers on-a-chip, etc.).

**\*Ron Sinek** ('83) 16 West Myrtle Street, Alexandria, VA, 22301 tel: (703) 548-4687 mail: [ronsinek@aol.com](mailto:ronsinek@aol.com). I have been working for the Department of Defense since graduation (now 15 years!). I am currently conducting analyses for the U.S. military in support of information operations - a field which applies new technologies to the planning and execution of military operations. It's interesting work, and one of the few growth areas in a generally downsizing DoD. I've been married for 9 years to Jennifer (Wilson '84), and we have 2 dogs.



**Dale W. Smith** ('70) (PhD Univ. of Washington '78), 135 Crim, Bowling Green OH 43402 Home: (419) 352-1210 Office (419) 372-8666 Fax (419) 372-9938; email: [dsmith@newton.bgsu.edu](mailto:dsmith@newton.bgsu.edu). At <http://physics.bgsu.edu/dept/planetarium/dws.html>. I'm in my 17th year in the Physics and Astronomy Dept. at Bowling Green State University in Ohio. From Colgate, the roads took me west to a decade in Seattle for graduate school at the Univ. of Washington. A short post-doc and a stint of community college teaching led to visiting faculty positions at Western Washington Univ. for a year and then back home at Colgate for two years. In 1983, I came to Bowling Green and have remained here since, primarily teaching astronomy and running our planetarium. It's been a trade of one kind of dome for another. Research on asteroids and the atmosphere of Jupiter has given way to interpreting the universe to college students, school kids, and the general public. We do public planetarium programs in the evening throughout the academic year; these are multi-media productions, some produced here and some purchased. During the daytime, I do programs for visiting school classes on some days, and along with BG's other astronomers teach university courses on the other days. I've also been very active in the professional planetarium



societies-hosting conferences, editing directories and conference proceedings, serving as president of the Great Lakes Planetarium Association-and am now President of the International Planetarium Society with a term of office covering 1999 and 2000. Travel has also beckoned often, and living on the academic schedule gives the luxury of several weeks a year on the road. Grad school days saw me all over the US and Canada. During the past decade the arctic-especially Alaska, arctic Canada, and Greenland-has claimed much of my travel attention, though now more temperate destinations are moving to the fore and planetarium-related travel is frequent. Footfall in Australia in '97 secured my 7th continent a few months before turning 50. Kodak hasn't yet given me any free stock, though they should after nearly 75,000 images shot on their film. I'll close with a brief but more serious thought, and that is to recognize the quality of learning environment the Department has maintained through all the 30+ years I've known it. The mentoring, scholarship, and friendship of people like Tony Aveni and many others has been foundational in shaping my career, and I'm grateful for that.

**\*Robert J. Snell** ('95) 15604 North Platte Drive, Bowie, MD 20716, (301) 249-5997, email: [rsnell@smart.net](mailto:rsnell@smart.net), <http://www.smart.net/~rsnell> I am currently living and working in Bowie, Maryland for a very small aerospace firm. We specialize in satellite and launch vehicle command and control solutions. I work in the Engineering Branch mostly helping out Flight Operations Teams in satellite state modeling and analysis. Lately, I have been writing a lot of custom code in C++ and tcl/tk for Landsat 7, the successor to Landsat 5, and on the MDEX class missions at NASA's Goddard Space Flight Center. On the personal side, I will be getting married to my longtime college sweetheart, Jacqueline Maldonado (class of '96), in October of this year. I welcome email at my home address [rsnell@smart.net](mailto:rsnell@smart.net). It is always good to hear from alumni.



**H. Guyford Stever** ('38) (W) 588 Russell Avenue, Gaithersburg, MD 20877; Tel (301)216-5689; Fax (301)216-5345; Email: [HStiver@ibm.net](mailto:HStiver@ibm.net), (H) RR 1, Box 1335, Randolph Hill Rd, Randolph, NH 03570; Tel (603)466-3841; Fax (603)466-3841. After statutory retirement eleven years ago at age seventy two, I have kept busy combining pro-bono-publico activities in science and engineering, including Trusteeships of the Universities Research Association, which operates Fermilab, of Woods Hole Oceanographic Institution, and of Science Service which publishes Science News and operates the Intel International Science and Engineering Fair and the Intel (formerly Westinghouse) Science Talent Search; also, I participate in a number of the science policy studies of the Policy Division of the National Research Council. This year I have chaired the committee on NSF's 50th year anniversary. Washington is a lively place for professional and honorary societies, with many programs available to the interested. I often thank my lucky stars that I got a broad introduction to physics and other sciences at Colgate, a liberal arts college, and a total immersion in physics re-



search at Caltech for my Ph.D. And I am pleased that I am a professional who can continue work well after normal retirement age. Good wishes in your important endeavors.

**John Sullivan** ('93) [sullivanj@foxinternet.net](mailto:sullivanj@foxinternet.net). After graduating from Rensselaer Polytechnic Institute in 1995 (Colgate's 3/2 program with Rensselaer) with a masters in mechanical engineering I went to work for Delphi Automotive (parts division of GM, though not for long.) in Rochester, NY as a tooling/project engineer in their diecasting operations. The job had long hours and was very stressful, but paid well. In my free time, I played bass and guitars in two local rock bands. I met my wife, Anne Flewelling (Wooster '95, Physics) through a blind date set up by people who didn't know us at all but thought we'd work out because we were both 'smart'. After dating for 11 months, we eloped on August 22nd, 1997. Shortly afterwards, we moved to Minneapolis, MN because of a job offer. Yes, it is much colder than Hamilton, as was soon learned. I now work as an applications engineer for Tool Products - a small diecasting job shop. I model the diecasting process for new parts using computational flow and thermal finite elements solvers. I actually use some of the things I learned in grad school! (if I can remember them.) Recent highlights include buying a house, settling in, and realizing how much furniture it takes to fill it. The living room is still empty. Part II - A year and a half later. The living room is no longer empty, it has filled up nicely. And the spare bedroom is not empty anymore either - it has a crib, dresser, diapers, etc! On 9/28/99, Anne gave birth to Samuel Alexander, 7lb 3ozs, our first born. Life has changed considerably since then. Sammy loves attention (and cries if he doesn't get it!) I have the same job and have become more knowledgeable in the casting process modeling field. Anne will be working part time at CyberOptics (an industrial measurement equipment producer.) The past year was spent fixing up the house. Now we will just kick back and enjoy the spit up!

**Dr. Robert J. Sullivan** ('62) Associate Professor of Community and Family Medicine at Duke University Medical Center in Durham, NC. Home address: 294 Highview Drive, Chapel Hill, NC 27514-7911. Phone: (919) 660-6808. Email: [Robert.Sullivan@Duke.edu](mailto:Robert.Sullivan@Duke.edu) I am currently the Director of the Duke Center for Living, with the responsibility for developing programs that enhance the health and well being of individuals cared for by the Duke Health System.



**\*G. Jeffrey Taylor** ('66) Director, Hawai'i Space Grant Consortium, Hawai'i Institute of Geophysics and Planetology, University of Hawai'i, 2525 Correa Rd, Honolulu, HI 96822, voice:(808) 956-3899 fax: (808) 956-6322, email: [gjtaylor@pgd.hawaii.edu](mailto:gjtaylor@pgd.hawaii.edu); <http://www.pgd.hawaii.edu/~gjtaylor> Cool Web Site: <http://www.soest.hawaii.edu/PSRdiscoveries/> I am a professor at the University of Hawaii, in the Hawaii Inst. Of Geophysics and Planetology, and also Director of the Hawaii Space Grant Consortium. I mostly work on the nature of the Moon, Mars, and asteroids, through studies of meteorites and lunar sam-



ples, combined with remote sensing. Since coming to Hawaii eight years ago, I have done some volcanology, including advising two students in their PhD research on volcanoes and lava flows (here, and on the Moon, Mars, and Venus). A physics major was the best for following these pursuits. I also see another Colgate grad, Bob Reedy (Chemistry, 1965, I think), who works on cosmic ray exposure of extraterrestrial materials at Los Alamos National Labs. One of my master's students, Janet Cushing, was a geology major at Colgate (a 1991 graduate). It is warmer here in January than it is in Hamilton. Nevertheless, my wife and I don't go to the beach very often. We hike instead, and there are great places to hike, even on crowded Oahu. We only go to the beach when we have visitors, and usually say, "Gee, we ought to do this more often." Then we don't! Aloha.

**Yvonne Taylor Ph.D.** ('75) PCV, Kiatineni Secondary School, Box 10, Iani-Machakos, Kenya, Africa  
 Email: [yvonnetaaylor53@hotmail.com](mailto:yvonnetaaylor53@hotmail.com). Yvonne's parents, Arthur and Reta Taylor, write that she is now a permanent resident of Kenya, after three years of working there with the Peace Corps. Yvonne has built a three-bedroom house of cut stone. The third bedroom is on the second floor. All doors are steel as is the roof. A solar powered generator gives lights and a hot water bath. She graduated from tin pans and pails to porcelain. In her spare time she is teaching the natives the techniques of sound effects with music and plays guitar with their groups at special events. She still oversees a project she started with the Peace Corps. She has a bus transportation service and is teaching Chemistry and Physics at a brand new school approximately two miles from where she began. She runs two miles to and from school each day. In August, she moved into her new home, next to the school that she taught in while in the Peace Corps. Awaiting a telephone line to be installed, we should soon be getting e-mail from her. In April the Peace Corps will be flying her back to the States for more surgery on the injuries sustained on her hand as a result of the attack that took place on her last year. Three top teachers in Kenya were honored for outstanding work; Yvonne was one of the three.

**Christy Tremonti** ('94) Dept of Physics & Astronomy Johns Hopkins University 3400 N. Charles St. Baltimore, MD 21218 (410) 516 - 5169 email: [cat@pha.jhu.edu](mailto:cat@pha.jhu.edu) Webpage: [www.pha.jhu.edu/~cat/](http://www.pha.jhu.edu/~cat/). I'm currently a 5th year graduate student at Johns Hopkins pursuing a Ph.D. in Astrophysics.

**Bill Underhill** ('81) 1703 Wind Trace Cove, Sugar Land, TX 77479 After Feb, 2000: 7402 Rustling Oaks Dr., Richmond, TX 77469, 281-343-9594 Office phone: 281-285-4719 Email: [bunderhill@slb.com](mailto:bunderhill@slb.com). My growing family and I are currently living in Sugar Land, Texas. We have a 19-month-old son, Will, who is into everything but learning to control it. He has just started Montessori school, and he loves the unique learning environment. My wife Jill is using her talents to teach musical concepts to children through the Kindermusik

program. She will have to slow down for our expected second baby, due in March 2000. To add to our frenzied lifestyle, we are in the middle of building our custom dream home and keeping our current home in shape to sell. Life is good!! Professionally, I am in my tenth year with Schlumberger and have been recently promoted to Section Manager at the Schlumberger Sugar Land Product center. This is the R&D center where I began my professional career, however I was fortunate to spend 5 years at a Schlumberger engineering center in Germany, which has provided a very stimulating intellectual environment and a very diverse cultural experience.


**Paul B. Van Nostrand** ('49) 3725 Lifford Circle, Tallahassee, FL 32308-2637, (850) 893-4309, Email: [van-nostr@freenet.tlh.tfn.us](mailto:van-nostr@freenet.tlh.tfn.us). I retired as a Computer Systems Analyst with the State of Florida in 1989. My wife Jean and I have 3 children and 5 grandchildren. I spend time traveling in our RV (visited 47 states so far), working on my computer, photography and am an active amateur radio operator (W4HVD). The photography course I took at Colgate fifty years ago has resulted in several pictures published in calendars and some lighthouse pictures reproduced on coffee mugs.


**Jim Washburne** ('78) GLOBE Soil Moisture Scientist, Department of Hydrology and Water Resources Harshbarger Bldg. #11, Rm 238 P.O. Box 210011 University of Arizona Tucson, AZ 85721-0011 520-626-4107 (Office); 520-621-1422 (FAX) Email: [jwash@hwr.arizona.edu](mailto:jwash@hwr.arizona.edu). After multi-year careers as an exploration geophysicist and as a research hydrologist, where I looked into ways to use the next generation of Earth-observing satellites to study regional water balance issues (and about 9 more years of school), I now call myself an educator. I am on the faculty (Asst. Adj. Prof. - soft \$) of the Department of Hydrology and Water Resources at the University of Arizona in sunny Tucson (current temp. ~90 degrees Fahrenheit). I have been a science PI in the international K-12 Global Learning and Observations to Benefit the Environment (GLOBE) program for 5 years (developing and overseeing soil moisture and temperature measurements - see them on the web at [www.globe.gov](http://www.globe.gov)). I also teach a sophomore-level general education course called Arizona Water Issues ([www.hwr.arizona.edu/hwr203](http://www.hwr.arizona.edu/hwr203)). Most recently, I coordinated the education and outreach component to a successful proposal to NSF for a Science and technology center promoting water sustainability in arid and semi-arid regions, particularly the Southwest.


**\*Adrian G. Weaver** ('42) email: [a1g2w3@epix.net](mailto:a1g2w3@epix.net) The head of the department of Physics when I matriculated was Paul Gleason, and I worked closely with Clem Henshaw, whom I considered the greatest teacher and friend I ever had. Two of my three sons also graduated in Physics from Colgate - Tom, now a geophysicist at Los Alamos National Laboratory, in 1967 and Bob, an astro-physicist also at LANL, in 1974. Both earned their doctorates. I retired from IBM in 1984 and

moved to Wellsboro, PA. My current activities involve working as secretary of the Wellsboro Rotary Club and vice president of the Tioga County Historical Society.

**David Weeks** ('83) 2370 Donamere Circle, Centerville OH 45459, (937) 439 - 0362, E-mail: [zap@erinet.com](mailto:zap@erinet.com) Web site: <http://en.afit.af.mil/enp/Faculty/weeks.html>. I'm currently an Associate Professor of Physics at the Air Force Institute of Technology (AFIT). I've been at AFIT for nearly seven years now with a research effort focused primarily on theoretical molecular reaction dynamics, and more recently on modeling the electronic and optical properties of quantum well heterostructures. Over the past few years I've been able to work with a number of very good students, serving as Ph.D. advisor for two of them, and M. S. thesis advisor for six others. Their dissertations and thesis have covered a wide range of topics including reactive scattering, non-adiabatic molecular dynamics, quantum electrodynamics, quantum wells, and the near earth space environment. In addition to working with several good students, I have been able to collaborate with a very motivated postdoc on the development of computer code to model the optical absorption spectra of quantum well heterostructures. My wife Susan helps keep me on an even keel and works as an academic instructor in allied health, I swim at least once a day, I'm still playing the drums (electronic ones now), and I take my telescope (meade LX200 8") out to look at the heavens.

 **John C. Wells** ('37) 125 Port Republic Road, Harrisonburg, Virginia 22801, tel: (540) 434-6283, email: [finnegan@cfw.com](mailto:finnegan@cfw.com). I graduated from Colgate in 1937 with a major in physics. At that time the physics department consisted of Dr. Cox and Dr. Gleason. My career started as a high school physics and science teacher in Tennessee and New York. Starting in 1942 during World War two I was ballistic supervisor in the Radford, Virginia Hercules Ordinance Plant. In 1947 I started teaching physics and astronomy at James Madison University, a state supported university, in Harrisonburg, VA. During my tenure at J.M.U. I served as head of the Physics Department for 17 years. In 1976 the planetarium which I established in 1950 was named the John C. Wells Planetarium in my honor. Now retired, my wife Jackie and I spend time traveling and, when at home, gardening. I also volunteer at the Emergency Room at the local hospital. At 84 my health is excellent.


 **Vance Wilber** ('89) 19 Hoyt Court, Darien CT 06820 H (203) 323-4228 W(203) 618-2029, [vancew@iname.com](mailto:vancew@iname.com). After working for five years in Minnesota, I've moved to Connecticut with my wife Karen (Kelly, also CU '89), where I work for Greenwich Capital Markets in Greenwich CT as an Managing Analyst in their IT Dept. Karen works for Kraft as Senior Brand Manager for Maxwell House coffee."


 **David R. Williams** ('63) Home: 31649 South Woodland Road, Pepper Pike, OH 44124, Phone: 216.591.0724, Employer: TRW Inc. (Senior Counsel-Litigation), 1900 Richmond Road, Cleveland,

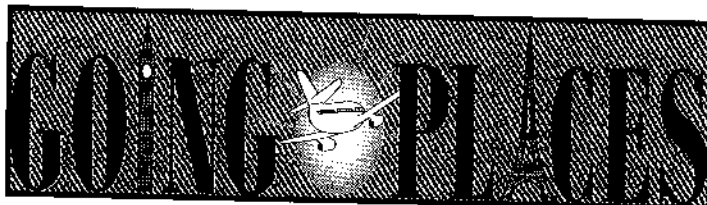
OH 44124 Ph: 216.291.7702, email: [daver.williams@trw.com](mailto:daver.williams@trw.com). TRW is a multinational company which provides high technology products and services in the automotive, space, defense, electronics and information systems markets. I manage product liability and commercial litigation involving TRW products, such as seat belts, air bags, ABS brakes, steering and electrical components and systems for motor vehicles, & various electronic components to name a few. Training in physics and chemistry at Colgate has been extremely helpful in dealing with fascinating issues in litigation involving accident reconstruction, mechanics, biomechanics, occupant kinematics, metallurgy, electricity, electronics, chemistry, etc.

**Jonathan B. Whitcomb** ('85) 10 Cypress Road Milford, NH 03055 603-672-3292 Email: [whitcomb@xtdl.com](mailto:whitcomb@xtdl.com). I'm living in Milford, NH with my wife, Sarah-Elizabeth and my 1 year old son Samuel. I've been working as a software engineer for Cisco Systems in Chelmsford, MA since December 1998. I've also produced a CD of my own music and am about to record another with my new band.

**Bill Wood** ('83) Corning Incorporated Sullivan Park R&D Center SP-TD-00-02 Corning, NY 14831 607-974-0476 (no solicitations please) Email: [woodwa@corning.com](mailto:woodwa@corning.com) This year I changed jobs, leaving Indiana after 16 years. I am now a senior scientist with Corning. I am doing specialty optical fiber design, and enjoy it very much.

 **David Work** ('96) 1063 Morse Ave. #5204 Santa Clara, CA 408-744-0377 (H) 408-765-9527 Email: [david.f.work@intel.com](mailto:david.f.work@intel.com) or [dwork@stanfordalumni.org](mailto:dwork@stanfordalumni.org) My life is full and moving oh so fast. After Colgate, I spent a year and a half at Stanford getting a masters in Manufacturing Systems Engineering (a mix of management, product design, factory design, inventory and supply chain management). I became engaged during the Spring of '97 and married the Summer of '98 to Carrie (Lergerg), also Colgate '96. After a year of working as a line supervisor at Intel in Santa Clara, CA, I took on a new role as TD Operations Manager, facilitating the movement of low volume, labor intensive inventory through our high volume environment. Now after a second year with Intel, I'm looking for new challenges and opportunities to apply my trades. Carrie and I ran into Stacey Davis at the Colgate-St. Mary football game in the East Bay this fall. What a surprise! What great fun to catch up on Colgate "stuff!"

 **Henry Yamamoto** ('74) PO Box 3564, Augusta, GA. I'm currently an engineer for Westinghouse Savannah River Co. (SRS). SRS, owned by the Dept. of Energy and located near Aiken, SC, is a facility that decontaminates and rebuilds equipment for re-use.



## Physics & Astronomy 1999 – 2000 Seminars....

- ◆ August 31: Enrique Galvez, Colgate University. *An Overview of the Physics and Astronomy Department.*
- ◆ September 7: Dennis Bauer '00, CU, *Terahertz Reflection Spectroscopy*; Joe Loomis '01, CU, *Terahertz Spectroscopy at Cryogenic Temperatures*; Eliza Michiels '02 CU, *Rapid Data Acquisitions for Noise Reduction in Terahertz Spectroscopy*
- ◆ September 14: Prof. Anton Zeilinger, University of Vienna, *Quantum Teleportation and Other Fundamental Experiments in Quantum Mechanics: What They Tell Us About Reality and About Information*
- ◆ September 28: Meredith Tanguay '02, CU, *"Photometric Observations of Classical- and Beta- Cepheids"*; Michael Fine '02, CU, *"Deep, Wide-field, Color Mosaicking and Analysis of the Virgo Cluster of Galaxies"*; Andy Hock '00, CU, *"Thunderstorms on Jupiter: Analysis of Galileo's Newest Images"*
- ◆ October 5: Lauren Heilig '01, CU, *"Modeling Terrestrial Asteroid Impacts"*; Mariah Lyndaker '01, CU, *Variability of the Quasar 3C279*; Jennifer Ward '01, CU, *Data Reduction and Methods of Analysis of Main Belt Asteroid Images*
- ◆ October 19: Prof. Joe Veverka, Cornell University, *"Galileo's Voyage of Discovery: Still Going On!"*
- ◆ October 26: Dr. Richard Lyon, NASA/Goddard Space Flight Center, Center of Excellence in Space Data and Information Sciences, University of Maryland, *"Computational Optics and Imaging"*
- ◆ November 9: Yuri Suzuki, Cornell University, Dept. of Materials Science and Engineering, *"Magnetism at the Nanometer Length Scale"*
- ◆ November 16: Dr. Martin Wybourne, Dartmouth, *"Single Electron Effects in Tunnel Junctions and Metal Nanoparticles"*
- ◆ November 23: Colgate Faculty, Colgate University, *"Preparing for the Afterlife"* (an informal discussion about careers, graduate study, and preparing for either option, after they leave Colgate).
- ◆ November 30: Jim Cordes, Cornell University, *"Searching for Fast and Exotic Neutron Stars and Signals from Extraterrestrial Intelligence"*
- ◆ December 7: Gordon Jones, Hamilton College, *"Spin-Polarized 3He: lung images, computer hard drives, & a side order of electro-weak symmetries"*
- ◆ February 1: Charles Holbrow, Colgate University, *"Classical Mechanics: Three Surprises and a Puzzle"*
- ◆ February 8: Donald Holcomb, Dept. Physics, Cornell University, *"Quantum electrical transport in one- and two-dimensional materials"*
- ◆ February 15: Colgate Student Research Talks, *"Spherical Pendulum Pandemonium"* & *"Golf in Space: Can we all be like Tiger Woods?"*
- ◆ February 22: Thomas J. Balonek, Colgate University, *"Foggy Bottom Observatory: Fifty Years in Retrospect"*
- ◆ February 29: Bruce Selleck, Geology Department, Colgate University, *"Tiny Bubbles in the Rocks: Pressure and Temperature of Mineral Precipitation from Fluid Inclusion Microthermometry"*
- ◆ March 7: Astronaut F. Story Musgrave, NASA, *"Hubble Space Telescope Repair Mission"*
- ◆ March 21: Christy Tremonti ('94), John Hopkins University, *"Starburst Galaxies: Windows on the High-Redshift Universe"*
- ◆ March 28: Mark Chance, Albert Einstein College of Medicine (Biology/Physics joint seminar), *"The Structural Biology of RNA Folding"*
- ◆ April 4: Dan Ralph, Cornell University, *"Spin-tronics: Using Spin as Well as Charge in Electronic Devices"*
- ◆ April 11: Charles Holbrow, Colgate University, *"How the A-Bomb Violates Murphy's Law"*
- ◆ April 18: Rich Mallozzi, GE Corporate Research & Development, *"The Physics and Technology of Magnetic Resonance Imaging"*
- ◆ April 25: Basudev Chaudhuri ('95), Cornell University, Physics Dept, *"A Dynamic Model for Charge Transfer in Ion-Metal Scattering"*

Weekly seminars are held every Tuesday  
while classes are in session  
at 11:30am in 217 Lathrop Hall.

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