Welcome back from your holidays and a belated Happy New Year! I hope that everyone managed to get to some place warmer than Pittsburgh for a few weeks.

It has now been a year since I took this position as department head. Who knew that time could pass so quickly? Firstly, I should thank all of you - faculty, staff and students - who have made everything run so smoothly during my first year as department head. I now have a vague (and probably misguided) sense of knowing what I am doing. Fortunately, there are many things that I still have to figure out, so life in the front office won’t be boring.

The coming semester promises to be an interesting one. We have just said goodbye to Spyros Pandis who is returning to Greece to take a position at the University of Patras. It is unfortunate that he has left us; however, I hope that he will be able to maintain his research program here and that he will be visiting us frequently. With a little bit of help and encouragement, I am sure that this can be accomplished; and that as a result, we will all have a place to visit in Greece. Equally unfortunate is the imminent departure of John Anderson to become provost at Case Western University. John has been a member of the department for the past 27 years and was my first contact with the department when I was hired. He has done a lot for us and we’ll have to try to convince him to return once he has finished his gig as provost. My guess is that our odds of getting John back from Cleveland are much higher than those of getting Spyros back from Patras.

So, what’s next? We will certainly be trying to hire some new faces into the department and you’ll be seeing a number of the candidates visiting over the next few weeks. Filling John’s and Spyros’ shoes is a tall order; however, there are many excellent young people who have applied for our positions. Now it is up to us to be sure that they get a great impression of our department and of Carnegie Mellon once they visit. At the same time the University will, of course, be trying to identify a new Dean for CIT. If anyone is interested or would like to express their opinions on the subject, please feel free to let me know.

One of the other significant events has been the publication of Mike Domach’s textbook *Introduction to Biomedical Engineering*. This is one of the first of its kind at the introductory level and ought to have a significant impact on bioengineering curricula around the country.

Lastly, we should all congratulate Jim Schneider and Steinar Hauan who have now been promoted to Associate Professor. Congrats!

Andrew J. Gellman
Department News

Engineers' Week at the Carnegie Science Center
The National Engineers' Week celebration at the Carnegie Science Center is Friday and Saturday, February 20 and 21. Chemical Engineering will again sponsor a table. We need volunteers for both days. Please contact Annette Jacobson or Rose Frollini if you can participate.

Open House -March 5, 6 & 7, 2004, the Department will host an open house weekend for prospective graduate students, which includes visits with individual professors and group meetings detailing the Department’s research areas and interests, as well as informal tours and dinners with faculty and current graduate students.

CAPD Annual Meeting. This year the Annual Review Meeting of the Center for Advanced Process Decision-making will take place on March 8 and 9.

Distinguished Research Lecture will be presented by Professor Manfred Morari, of The Swiss Federal Institute of Technology on Wednesday, May 5, 2004. Professor Morari’s presentation is entitled "Hybrid Systems.” The lecture is at 4:45 p.m. in the Singleton Room, (Roberts Hall).

AIChe Annual Meeting – The AIChe Annual Meeting will be held on November 7-12, 2004 at the Austin Convention Center, Austin, Texas. For more information concerning sessions and deadlines see http://www.aiche.org.

Faculty News

Mike Domach has published the Introduction to Biomedical Engineering textbook. The first copies are now available. Congratulations to Professor Domach.

Art Westerberg and Emeritus Professor and former CIT Dean, Herb Toor are authors of four of the top 100 most highly cited papers of all time published in the American Institute of Chemical Engineering Journal. The top 100 most highly cited papers are listed in the January 2004 issue of the AIChe Journal. Art Westerberg is the author of the 51st most highly cited paper and Herb Toor is author of the 58th, 82nd, and 93rd.

Ignacio Grossmann gave the 10th Roger Sargent Lecture at Imperial College on December 4, 2003, "Future and Scope of Mathematical Programming in Process Systems Engineering."

Professor Grossmann will spend the second part of his sabbatical leave at ETH in Zürich with the group of Manfred Morari (Insitut für Automatik).

Congratulations to Ignacio Grossmann who received the INFORMS Computing Society Prize at the Annual Meeting in Atlanta on October, 2003.
**Bob Tilton** accepted a 50:50 position between Biomedical Engineering and Chemical Engineering. Professor Tilton will be teaching one ChE and one BME course each year.

**Undergraduate News**

**Congratulations** to **Steve Back** who received the 2003 AIChe Othmer Award.

**Congratulations** to **Baris Polat** who has been chosen as the "Dow Outstanding Junior." As part of the fellowship program, Baris will do an internship with the Dow company this summer.

**Congratulations** to **Kris Howard**, who is this year's recipient of the AIChe Professional Promise Award from the Pittsburgh Section of AIChe. Kris will receive his award at the AIChe Student Night (February 11th).

**Congratulations again** to **Kris Howard** who was selected as an Andrew Carnegie Scholar.

**COMMENCEMENT 2004!**

Get ready for Commencement 2004! Mark your calendar for the big weekend of May 15th & 16th. Preliminary Commencement guides were distributed to parents of seniors at the beginning of December. If you’d like additional copies, email commencement@andrew.cmu.edu or call 412-268-5052. The Doctor’s hooding ceremony will take place at 8:00 p.m. on Saturday, May 15th in the Wiegand Gymnasium, University Center. Doctor’s candidates, participating faculty and other ceremony participants will robe in Rangos Hall (second floor, University Center) at 7:15 p.m. Candidates and faculty members will need to confirm their participation by March 25th through Cindy.

The university and Chemical Engineering ceremonies will take place on Sunday, May 16th. The university ceremony starts at 11:00 a.m. on Sunday with the Chemical Engineering ceremony immediately following (approximately 12:30 p.m.) at the Carnegie Lecture Hall. Specific and detailed information for the Chemical Engineering ceremony will be distributed in April.

If you plan to graduate this May, you should follow the schedule of events and latest news at the commencement website http://www.cmu.edu/commencement/. This site will also refer you to the Graduation Online Service so that you can confirm that your diploma information is correct.

**Important deadlines:**

**April 2** Diploma, name and address confirmation at www.cmu.edu/hub

**April 9** Deadline for ordering cap and gown. Note: the bookstore does not extend this deadline so don’t miss it. You can place your order online at the commencement website or at the bookstore.
March 25 Deadline for Doctor’s candidates and faculty members to confirm their participation in the hooding ceremony. Confirm with Cindy at cp32@andrew.cmu.edu.

See the commencement website for information on deadlines for special rates on hotel reservations. The cut-off date for the Hampton Inn-University Center is April 23rd.

If you have any questions about the university commencement ceremony, send an email to commencement@andrew.cmu.edu. If you have questions about the departmental ceremony, contact Cindy at cp32@andrew.cmu.edu or stop by to see her in DH 1101.

UNDERGRADUATE NEWS

Dean’s List Fall 2003

**Seniors**
Ashraf Abu-Akeel
Gregory Allen
Benjamin Anderson
Lisa Campus
Eveline Chao
Michael Danielson
Daisy Digmanese
Rebecca Gerard
Mark Goldman
Matthew Helgeson
Bri-Mathias Hodge
Kristopher Howard
Brendan Mack
Chelsea Monty
Michelle O’Malley
Parag Shah
Mithun Kumar Shenoi
Adam Welander

Karoline Evans
Andrew Ferguson
Nicole Gartner
Pierre Guimard
Qiaoling Loh
Jessica Melanko
Claas Michalik
Timothy O’Dowd
Gene Pan
Baris Polat

**Sophomores**
Derrick Chan
Hanish Dayal
Eva Goellner
Kenneth Hu
Lara Kovell
Mary Mack
Joseph McDermott
Alyse Prince
Sunil Raman
Robert Russell
Thomas Sabram
Nicholas Scocozzo
Anita Shukla
Mitchell Tai
Jordan Umeda
Sebastian Vega-Fuentes

**Juniors**
Steven Back
Aaron Beaber
Matthew Dalka
Senior and Junior students interested in the MChE program should talk with Professor David Sholl. Applications are currently being accepted by Linda Dorsey in DH 3114.

Congratulations and good luck to our undergraduate students who graduated in December 2003:

Matthew Cook – CPS minor

Morris L. Tharps

AIChE Student Night
The Pittsburgh Chapter of AIChE will once again be sponsoring its annual Student Night program on Wednesday, February 11th from 6pm -9pm at the William Pitt Union in Oakland. Bill Byers, the National President of AIChE (CH2M HILL) will speak on "The Employee as Entrepreneur - A Marketing Approach to a Successful Career." Students, this is a great chance to meet your colleagues at other institutions and network with local industry. Students involved with undergraduate research are also encouraged to present a poster at the poster session. Please contact Jim Schneider (schneider@cmu.edu) if you are interested in presenting a poster or just attending. Additional information on AIChE Student Night can be found at www.aichepgh.org. See you there!

Lunch with Department Head
Beginning in mid-February, the department head will again be meeting with select groups of the seniors, juniors, and sophomores to gather suggestions and ideas for the department and university. If you happen to be invited (this is done in a purely random manner), please try to attend as these meetings are important and do produce tangible results.

GRADUATE NEWS
Good luck to our first-year graduate students who have joined the following professors in their research efforts.

<table>
<thead>
<tr>
<th>Student</th>
<th>Class</th>
<th>Advisor(s)</th>
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<tbody>
<tr>
<td>Sudhakar Alapati</td>
<td>Ph.D.</td>
<td>Professor Sholl</td>
</tr>
<tr>
<td>Layton Baker</td>
<td>Ph.D.</td>
<td>Professor Gellman</td>
</tr>
<tr>
<td>Haigang Chen</td>
<td>Ph.D.</td>
<td>Professor Jhon</td>
</tr>
<tr>
<td>Stephen Craig</td>
<td>Ph.D.</td>
<td>Professor Ydstie</td>
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<tr>
<td>Travis Crites</td>
<td>Ph.D.</td>
<td>Professor Schneider</td>
</tr>
<tr>
<td>John Dawson</td>
<td>Ph.D.</td>
<td>Professor Pandis</td>
</tr>
<tr>
<td>Eduardo Dozal</td>
<td>Ph.D.</td>
<td>Professor Ydstie</td>
</tr>
<tr>
<td>Muge Erdirik</td>
<td>Ph.D.</td>
<td>Professor Grossmann</td>
</tr>
<tr>
<td>Shaun Ferchak</td>
<td>Ph.D.</td>
<td>Professors Pandis &amp; Donahue</td>
</tr>
<tr>
<td>James Hoggard</td>
<td>Ph.D.</td>
<td>Professor Sides</td>
</tr>
<tr>
<td>Ye Huang</td>
<td>Ph.D.</td>
<td>Professor Gellman</td>
</tr>
<tr>
<td>Joanna James</td>
<td>Ph.D.</td>
<td>Professor Sholl</td>
</tr>
<tr>
<td>JaeGun Jung</td>
<td>MS</td>
<td>Professor Pandis</td>
</tr>
</tbody>
</table>
Welcome to Andy Kusumo who joined the department this semester. Please say hello to Andy and welcome him to our department.

Congratulations to Danilo Pozzo, Susan Daly and Ijeoma Nnebe who were awarded the PPG Industries graduate fellowships for this academic year. The PPG Fellowship recognizes excellence in research and professional promise.

Congratulations and good luck to our graduate students who graduated in December 2003:

Chang Hoon Lee – MS
Robert Miller, MS-CPS
Wai Yip, MChE

Congratulations to the following students who recently presented their research proposals:

Michael Gerber
Advisor: L. Walker. Title: "Characterization of Polymerized Rod-like Surfactant Micelles"

Sartaj Ghai

Qian Guo
Advisor: M. Jhon. Title: "Nanostructure and Dynamics of Lubricant Nanofilms"

Shiva Kameswaran
Advisor: L. Biegler. Title: "Large-scale Optimization of Complex Dynamic Systems"

Donggun Kim
Advisor: A. Gellman. Title: “Fundamentals of Vapor Phase Lubrication”
Soumitra Ghosh  
Advisor: M. Domach & I. Grossmann. Title: “Integrated Strain Design And NMR Experimental Verification For Metabolic Engineering”

Marvi Matos  
Advisor: R. Tilton & L. White. Title: “Electric Field Driven Internal Pumping Strategies to Improve Response Dynamics of Gel-Based Biosensors”

Anton Pfeiffer  
Advisor: S. Hauan. Title: “Toward a Synthesis Method for the Optimal Design and Layout for Lab-on-a-Chip Devices”

Danilo Pozzo  
Advisor: L. Walker. Title: “Templating Ordered Nanoparticle Arrays Using Soft Colloidal Crystals”

Albert Presto  
Advisor: N. Donahue. Title: “Smog chemistry in the presence of NOx: Radical generation and particle formation in the gas-phase ozonolysis of alkenes”

Gita Seevaratnam  
Advisor: L. Walker & S. Garoff. Title: “The Influence of Elasticity on Dynamic Wetting”

Yang Yun  
Advisor: A. Gellman. Title: “Oxidation of a-CHx Overcoats and Its Effect on Vapor Phase Lubrication of Data Storage Media”

We wish the best of luck to all of our graduates.

5th Year Masters in Chemical Engineering

Senior and Junior students who are interested in participating in the MChE program for Spring 2005 should apply to the departmental Graduate Admissions Committee by October 15, 2004. Contact Professor David Sholl or Linda Dorsey (DH3114) if you have questions.

CHEGSA Officers - 2004 Congratulations to the new officers:

President: Anjanette Koritnik
Treasurer: Alapati Sudhakar
Communications: Eduardo (Wayo) Dozal
              John Siirola
External Affairs Representatives: Ramkumar Karuppiah
                                Jeffrey Pierce
                                Muge Erdirik
**Visiting Scholars – Welcome!**

**Dr. Daeho Ko** from Yonsei University is a visiting researcher working with Professor Larry Biegler.

**Mohammed Sajjad Mayeed** from NAIST, Japan is working for Prof. Myung Jhon.

**Prof. Antonio Flores Tlacuahuac** is a Fulbright Scholar from the University of Iberoamericana, Mexico. He is spending his sabbatical in the department working with Professor Larry Biegler.

**Dr. Andrea Walther** from the University of Dresden, Germany is a visiting researcher in Professor Larry Biegler's group

**Visiting Scholars News**

**Veronique Bizet**, visitor from France working with Ignacio Grossmann, received an honorable mention as the best poster from the CAST Division for the paper "Optimization Model for the Production and Scheduling of Catalyst Changeovers in a Process with Decaying Performance" by Bizet, V.M., N. Juhasz and I.E. Grossmann.
Faculty profile: Bob Tilton

Most of the undergraduate students in our department will not know me beyond my outdated ChE website picture (I have new glasses and less hair now). This is because a few twists of scheduling fate have led to a situation in which I have not taught a class to any of the current undergraduate population. That may not be a very big deal for you, but it’s strange for me. So, let me introduce myself. I have been at Carnegie Mellon for my entire academic career, having arrived here in 1992 as a coastal transplant. I grew up in New Jersey, went to Delaware for my Bachelor’s degree, then jumped cross-country to Stanford for my Ph.D.—always within an hour’s drive of an ocean.

I became hooked on the perfect weather of the sort that you find in places that are like the San Francisco Peninsula and unlike Pittsburgh, so the fact that I decided to move here came as a bit of a surprise to me. I was drawn to this department by its strong collegiality and the outstanding research reputation that it has long held in the complex fluids engineering field that interests me. So, here I am, sun-deprived but enjoying an exciting intellectual environment. My own research mainly emphasizes interfacial phenomena that control a number of biotechnological, pharmaceutical and environmental remediation technologies. I enjoy several active collaborations with other ChE faculty as well as faculty and students from Physics, Civil & Environmental Engineering, Chemistry and Mechanical Engineering. As of September 2003, I now hold a 50:50 joint professor position in the Biomedical Engineering and Chemical Engineering Departments. I am looking forward to helping the BME Department establish a novel and productive curriculum, while I teach and advise students in both departments. I am also adapting to splitting my time between Doherty Hall and our nice new lab and office space at the Pittsburgh Technology Center. I feel like a real commuter, even when I am at work.

My wife, Julie, and I have two sons, Ian (5) and Aaron (2), and we try to spend as much time as possible with them—although a break every now and then doesn’t hurt. Babysitters are wonderful people. We saw The Return of the King recently. Before that, I think the last movie we saw was The Two Towers. Maybe we need to get out more.

My family and I were fortunate to spend the first half of 2003 on sabbatical in Stockholm, Sweden. I returned to the same lab at the Royal Institute of Technology where I did my postdoc in 1991/92. This was an unforgettable experience. I have a particular affinity for the Swedish culture. They are a very calm people (maybe my Norwegian colleagues will disagree?), who seem to like nothing better than drinking a cup of coffee while sitting next to a lake on a sunny day. That’s my kind of place! Maybe I have a low excitement threshold. Stockholm is below the Arctic Circle, so they don’t get Midnight Sun, but they come pretty close. It’s wonderful, although some of us had a problem waking up to loud bird chirping for the 2 AM sunrise. Living overseas for even this short time has given us a new perspective that is hard to come by otherwise. I highly recommend the experience. In fact, one of the perks of the academic life is the opportunity to work closely with people from all around the world.

For those of you whom I have yet to teach in a class, I hope that we will be able to change that soon.
The Need for Closer Integration of Measurements and Models: Results from Modeling Aerosols and Trace Gases in the East Asia Outflow

January 22  Professor Gregory Carmichael
University of Iowa

A-Priori Prediction of Protein Retention, Displacer Efficacy and Preparative Chromatographic Behavior in Ion-Exchange Systems

February 3  Professor Steven Cramer
Rensselaer Polytechnic Institute
(Seminar co-sponsored by Department of Biomedical Engineering)

Multicomponent Space-Charge Ion Uptake and Transport Models for Naftion Membranes

March 16  Professor Peter N. Pintauro
Case Western Reserve University

On the Rheology of Solids with Nonuniform Size and/or Density

March 25  Professor Christine Hrenya
University of Colorado

Colloidal Microrheology and Micromechanics

April 15  Professor Eric Furst
University of Delaware

How Eucaryotic Cells Sense the Direction of External Gradients: Mechanisms and Spatiotemporal Dynamics

April 22  Professor Atul Narang
University of Florida

Hybrid Systems

May 5  Professor Manfred Morari
Swiss Federal Institute of Technology
The Distinguished Research Lectureship in Chemical Engineering
4:45 pm in the Singleton Room, Roberts Engineering Hall

All seminars (unless noted) begin at 10:45 a.m. in Doherty Hall 1112. Coffee and doughnuts are served at 10:30 a.m. in the Conference Room, Doherty Hall 1102.