Course X News For May, 1998

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Faculty Distinctions

Prof. Paul Laibinis has been selected for the Camille Dreyfus Teacher-Scholar Award for 1998. This is a great honor and distinction for Paul, for which he is very deserving.

Hearty congratulations to Paul on receiving this prestigious award!

Prof. Robert S. Langer, author of 550 research papers, editor of 12 books, inventor on 320 patents and
a pioneer in biomedical and chemical engineering, was recently named the winner of the $500,000 Lemelson-MIT Prize for 1998, the world's single largest cash prize for American invention and innovation.

Professor Langer is the first MIT-affiliated recipient of the Lemelson-MIT Prize, which annually honors Americans who demonstrate excellence in medicine and health care; energy and environment; telecommunications and computing; or consumer products, durable goods and industrial products.

Langer, whose discoveries are at the heart of the emerging technology of tissue engineering and the multibillion-dollar controlled-drug-delivery industry, was named the winner in New York after an intensive, year-long process by the Lemelson-MIT Awards Program and three review panels of leading experts --independent of MIT -- from a range of scientific, engineering and medical disciplines in academia and industry.

Hats off to Prof. Douglas Lauffenburger, whose contribution as one of the speakers at the American Association for the Advancement of Science's recent symposium, "Challenges for the Chemical Sciences in the 21st Century" was the focus of an article entitled "The Engineering Approach to Molecular Biology" that appeared in the March 30th edition of Chemical & Engineering News. In the article by CE & N Managing Editor Rudy Baum, Lauffenburger remarks, "..engineers bring a new set of tools to molecular biology -- tools that have the potential to transform genetic engineering. And that transformation holds the promise of dramatic changes in drug discovery and medicine".

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Department News

New Joint Computing Support For ChemE/DMSE

by Michelle Shippie

Effective Monday, April 27, 1998, a new shared computing support structure for ChemE and DMSE was implemented, in an effort to maximize the utilization of resources of both departments, under the umbrella of the A.S.O.

As part of this change, we welcome new support staff Ms. Susan Midlarsky, who assumed the new position of Technical Assistant to Peter Maloof on Monday April 27th. She will be a valued asset to both departments.
Susan comes to us from Earth, Atmosphere and Planetary Science. She is familiar with SAP and is well-versed in the use of both PC and Macintosh operating systems. In addition, she has a training background in FORTRAN and Pascal programming. She is comfortable with major software packages such as Microsoft Word, Excel and Powerpoint; WordPerfect; Adobe Photoshop and Pagemaker; QuarkExpress; Filemaker Pro; and Eudora.

Under the new computing support structure, computing staff will provide training, workshops and support for technical and administrative software used in both departments including database management and SAP. They will also work with faculty to develop Web-based and other software for classroom use, as well as developing hardware solutions for classroom implementation.

Currently, you can contact both Peter Maloof and Susan Midlarsky at Peter's office (66-0052). DMSE folks will soon have easy access to computing support services, as well, through a new office, which will be located in Room 8-433. Susan's phone number is x8-0804; Peter can be reached at x3-0088. E-Mail inquiries may be directed to Peter at pjm@mit.edu or Susan at susanrm@mit.edu.

ChemE Welcomes Ortega and Alamaro

By Liz Webb

Professor Greg McRae's group recently welcomed two new visitors to the Department, Dr. Jose Manuel Ortega and Mr. Moshe Alamaro.

Dr. Ortega is a visiting REPSOL Fellow from Vitoria, Spain. During the time Jose is at MIT (12/15/97 - 12/14/98), he will be working with Prof. McRae on chemical process and product design and specifically, towards the goal of developing new methods for process debottlenecking that will both improve performance and minimize environmental impacts. His campus address is 66-060, x3-0285, jmortega@mit.edu.

Mr. Alamaro is a graduate of the Technion and has worked in industry as an engineer for several years before coming to MIT. Currently, he is a D. Eng. candidate in the Department of Mechanical Engineering, and is working with Prof. McRae to develop his thesis concerning ice manufacture as a water storage concept. His campus address is 3-335, x3-2223, alamaro@mit.edu.

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ChemE’s Annual Departmental Awards presentations will be made next Monday, May 11th at 3:00 PM in 66-110.

Help celebrate this year's exemplary achievements by students, faculty and staff in the Course X community. See you there!

Reception to follow in Walker Lounge (66-201).

Post-Doctoral Opportunities

**Pulp & Paper Engineering:** Postdoctoral Fellow position is available immediately for research in pulp and paper engineering. Ph.D. in chemical engineering or pulp and paper engineering with a strong background in process control, instrumentation, instrumental analysis is required. Position is available for one year, with a possibility of renewal. Submit a resume and two letters of reference to:

Dr. Gopal A. Krishnagopalan  
Department of Chemical Engineering  
238 Ross Hall  
Auburn University, AL 36849-5127  
Phone: (334) 844-2011  
Fax: (334) 844-2063  
E-Mail: gopalk@eng.auburn.edu

For more about Chemical Engineering at Auburn U., visit [http://www.eng.auburn.edu/department/che/](http://www.eng.auburn.edu/department/che/)

Industrial Opportunities

**R & D Specialists/Process Synthesis:** Hyprotech, a leading supplier of process chemical engineering software, is in the business of helping the process industries improve their profitability and operating performance through process understanding. With powerful capabilities to address design operability, training and optimization problems, Hyprotech serves more than 1,500 customers in over 80 countries around the world. Hyprotech is constantly improving existing products as well as developing new,
We are seeking individuals with a Chemical Engineering background to fill positions as Research & Development Specialists - Conceptual Design in our corporate headquarters, located in Calgary, Alberta, Canada. These positions are with the HYSYS Concept development team. We require individuals with specialized knowledge in conceptual design, synthesis and design of distillation column sequences, heat exchanger networks, reactor networks, and/or chemical processes. Background in mathematical programming applied to synthesis or insightful techniques for synthesis are required. The successful candidates will apply their experience to the design, implementation and testing of synthesis tools and technologies for conceptual design of chemical, petrochemical, oil and fine chemical processes. In addition, they will also participate in the maintenance and enhancement of the existing code base.

As a successful candidate, you should have:

- M.Sc. or Ph.D. in Chemical Engineering
- 5-10 years of process simulation experience
- A strong background in modeling, numerical analysis and computer programming
- A strong background in conceptual design (process systems engineering, process synthesis)
- C or C++ programming in a Windows environment
- The ability to work independently and as a team member
- Excellent verbal and written communication skills

We offer a stimulating team environment coupled with advanced technology tools and programming languages. We offer competitive compensation that is commensurate with education and experience. Relocation assistance is also available.

Interested candidates should send a copy of their resume and references to:

Hyprotech, Ltd.
Attention: Human Resources
300, 1110 Centre Street North
Calgary, Alberta T2E 2R2
Canada
Phone: (403) 520-8000/FAX: (403) 520-8080
E-Mail: info@hyprotech.com

For more about Hyprotech, visit http://www.hyprotech.com/

**Associate Engineer:** Atmospheric & Environmental Research, Inc. (AER) has an entry-level Associate Engineer position open in its Air Quality Division located in the San Francisco Bay Area, California. The position will entail assisting Senior Staff for the development and application of air quality simulation models. Responsibilities will include writing FORTRAN or C++ subroutines for air quality
models and using existing mathematical models to simulate air quality. The technical skills required include solid technical knowledge of transport phenomena fundamentals, computer programming (including FORTRAN), and numerical analysis. Experience with UNIX is desirable. An M.S. degree in engineering (chemical, civil, mechanical, environmental, or petroleum) or physical science (atmospheric science, chemistry, or physics) is required.

Send resumes and salary requirements to:
Dr. Christian Se igneur
AER, Inc.
2682 Bishop Drive, Suite 120
San Ramon, CA 94583
Phone: (925) 244-7121
Fax: (925) 244-7129

For more about AER, Inc., visit http://www.aer.com

Research Engineering: Bridgestone/Firestone Research Center in Akron, OH. Expertise in the areas of polymer and/or multi-phase reaction engineering is desirable.

Qualified candidates should have a Ph.D. in Chemical Engineering. The successful candidate will join a small group of engineers and scientists to develop and optimize innovative polymer synthesis process technology. This position requires hands-on operation of bench- and pilot-scale equipment and the development of computer simulation models.

Applicants are required to possess a thorough academic background plus strong creativity and problem-solving abilities. Solid written/verbal communications and interpersonal skills are also needed. The successful candidate will interact effectively with other research groups, departments, and laboratories within the Corporation.

Applicants must be authorized to work in the United States. A drug test is required as part of the pre-employment physical.

Responses will be made only to interviewees (No third parties or phone calls). For confidential consideration, direct your written reply to:

Bridgestone/Firestone Research, Inc.
Attn: Ms. Cheryl Schlosser
Human Resources - BFIS
1655 South Main Street
Akron, OH 44301
Fax: (330) 379-6386
E-Mail: jrensel@bfs.e-mail.com
Sr. Applications Scientist/RMM Development Scientist: This person will be responsible for the research and development of Millipore's proprietary reactive micro matrix (RMM) materials used for the purification of semiconductor specialty gases. While some of the RMM formulation and synthetic routes may be similar to current methods of solid-phase catalytic design, we are searching for the creative individual who will explore new methodologies for RMM design and new chemistries for the removal of trace impurities in these specialty gases. Validation of RMM prototypes in specialty gases will occur in a new state-of-the-art facility. Journal papers and Application Notes will be written and presented at industry conferences. This person will serve as Millipore's technical expert on gas purification. This position will be in our Dallas, TX facility.

Requirements

M.S. or Ph.D. in chemistry, chemical engineering or materials science. Experience with inert atmosphere techniques and manipulation of hazardous specialty gases essential. Prior experience in the design of catalysts or inorganic support materials a plus.

Must have the ability to critically analyze data and have good technical problem-solving skills.

Must be comfortable working in a hands-on lab environment. Must be safety-conscious.

Excellent English written and verbal communication skills. Must be willing to travel approximately 20%. Initial travel may be higher for training.

Knowledge or experience in any of the following areas would be a plus: FTIR, gas chromatography, mass spectrometry, semiconductor gas handling equipment, trace-level gas analysis, design of experiments, or gas purification. To apply, contact:

Dr. Jim Snow
Millipore, Inc.
Fax: (781) 533-3195
E-Mail: jim_snow@millipore.com

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The Department of Chemical Engineering at the Indian Institute of Technology/Kanpur is seeking to fill the following positions:

**Assistant Professors (3+):** We are looking for several faculty members at the Asst. Professor level in all specializations in Chemical Engineering. Interested candidates are invited to send a copy of their biodata, copies of papers/thesis abstract and names of 3 referees with their fax and email addresses.

**Visiting Faculty:** We are also looking for Visiting Faculty at all levels in all specializations. The interested persons should send a brief C.V. to initiate the process. These positions are available from one semester to two years. Indian citizenship is not a requirement for Visiting Faculty.

For either/both of the above positions, please send hard copies of the requested material to:
Dr. J. P. Gupta, Professor & Head
Department of Chemical Engineering
Indian Institute of Technology
Kanpur-208016
India
Phone: (011) 91-512-597406,597629
Fax: (011) 91-512-590104,590007,590260
E-Mail: jpg@iitk.ernet.in

For more about IIT/Kanpur's Dept. of Chemical Engineering, visit [http://www.iitk.ernet.in/pub2/che/homepage/](http://www.iitk.ernet.in/pub2/che/homepage/)

**Assistant Professor (Temporary):** Bucknell University invites applications for a one-year temporary position with the possibility of an extension, at the assistant professor rank in the department of chemical engineering beginning fall 1998.

A doctorate in chemical engineering and a commitment to excellence in teaching are required, undergraduate degree from an ABET accredited (or equivalent) program preferred, industrial experience desirable.

The successful candidate will have the ability to teach courses across the chemical engineering curriculum. Expertise in particle technology or related areas also desirable.

Applications will be reviewed as received and will continue to be accepted until the position is filled.

Send curriculum vitae, a statement of teaching interests, a research plan, and names of three references to:

Dr. Jeffrey Csernica
The Final Word

In honor of Prof. Michael Mohr's winning of the Institute's Big Screw award, I thought we'd close with this song, the text for which was thoughtfully relayed to me by Steve Wetzel:

(refrain)
This is, this is, this, this is, this is the biggest screw,
It's here because Mohr dared to do what others dared not to do.
He gave too many quizzes and he spoke till he was hoarse,
And he didn't seem to realize that this ain't their only course!

The bravest souls at MIT are those who go ChemE.
They see so many problems that would make the others flee.
Diffusion, separation; laminar, turbulent flow,
And if they don't retain it all, the chemical plant will blow!

But the thing about course 10 which daunts the bravest engineer,
Is ICE - the course which ChemE's take throughout their Senior year.
Their workload through these modules makes the other courses sneer,
But when it's time to get a job, its value soon comes clear.

And if, perchance, there's such a thing as a ChemE without a job,
Starving, cold, and penniless he still won't need to rob.
Instead he'll go and get a meal at Boston Food Bank,
And yet again, he'll find that he has Dr. Mohr to thank!

(Nominations for the "Big Screw" award netted over $700.00 which was contributed to the Greater
Thanks To...

Prof. Armstrong, Elaine Aufiero, Arline Benford, Prof. McRae, Prof. Mohr, Michelle Shippie, Emmi Snyder, Liz Webb, Steve Wetzel and Prof. Ying for their contributions to this month's Course X News!

Submissions for the Course X News should be sent to:
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Assistant for Publications, Payroll & Fellowships
MIT Administrative Services, 26-139
77 Massachusetts Ave.
Cambridge, MA 02139
E-Mail: gsands@mit.edu
Phone: (617) 253-0949
Fax: (617) 253-9894