Franklin W. Olin College of Engineering

THE NEWSLETTER OF THE FRANKLIN W. OLIN COLLEGE OF ENGINEERING

FIRST SEMESTER WRAPS UP WITH FOCUS ON PROJECTS Event Highlights Olin's Distinctive Curriculum

OLIN FACULTY, staff and students browsed through the Academic Center on December 13, marveling at the displays of semester-end projects. The previously blank walls were lined with students' self-portraits, and the halls were filled with kinetic sculptures, student-designed engines and other examples of students' hard work. This 'Exhibition Day' offered a look at the fruits of not just one semester of work, but a few years of research and curricular development.

While the college is still growing into its brand new campus, the new curriculum is a near-perfect fit, according to the students. After more than two years of design and testing, Olin launched a new, rigorous engineering program in the fall with special emphasis on the arts, humanities, entrepreneurship and hands-on application. The range of displays during Exhibition Day demonstrated this unique combination.

Most of the students displayed their final projects from their "cohort" classes, which combine a math course and a physics course with an engineering project. The students' enthusiasm for Olin's hands-on, interdisciplinary approach is clear. "By immediately applying math and physics concepts to projects, homework is a lot more fun and we understand the material better," says Susan Fredholm, who displayed her dragster cohort project during Exhibition Day. Students were as excited about their arts and humanities exhibits as they were their cohort displays on December 13th. Rather than write final papers, students from the History of Technology class designed content-rich web pages, which they displayed for the community. Other students revealed their artistic talent with drawings from an art class led by Helen Donis-Keller, professor of biology and art.

Several students showcased work from independent projects completed through Olin's "passionate pursuit" program, which awards nondegree credit and funding for projects that enrich students' educational experience. Joelle Arnold displayed work from a welding course, and David Yoshida showcased impressive works of blown-glass.

The Olin Conductorless Orchestra, made up of students from the music composition class, wrapped up Exhibition Day with an impressive performance. Student soloists including a pianist, cellist, percussionist, violinist and clarinetist also wowed the audience.

Students departed for winter recess on December 19 thankful that their oral and written final exams were behind them and amazed at what they accomplished during their first semester of college. Faculty celebrated the successful completion of Olin's first-ever semester of classes.

ENTREPRENEURSHIP CURRICULUM TAKES SHAPE: Students to Come Up with New Uses for Segway Transporter

OLIN COLLEGE will

implement a key component of its developing entrepreneurship curriculum this spring, as students take part in an 'opportunity assessment' practicum aimed at fostering entrepreneurial thinking. As part of the exercise, students will compete to come up with new uses for the renowned Segway transporter invented by New Hampshire entrepreneur Dean Kamen.

Working in small teams assisted by business 'mentors,' Olin students will vie to come up with the best new applications for the Segway, which allows users to move about using a gyroscopically balanced scooter-like device. The invention is being hailed as an environmentally friendly transportation solution for everything from traffic congestion to mail delivery.

Kamen himself is scheduled to visit the Olin campus April 9 to judge the competition and take part in "Big Conversations," a campus-wide event exploring the interface between society and technology. A Segway transporter will be on campus throughout the semester.

The opportunity assessment challenge is the brainchild of Olin faculty members Stephen Schiffman and John Bourne, who, along with staff member Ann Schaffner, are working to flesh out the entrepreneurship curriculum at Olin. Bourne sees the identification of opportunities as a key skill for budding entrepreneurs.

"We hope to teach students to be opportunity obsessed," said Bourne.



WINTER

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Above: Erin McCusker, Joy Poisel and Jay Gantz prepare to race the dragster they built in their "Things That Go" cohort class.

Below: Professors John Bourne (left) and Stephen Schiffman (right) check out the Segway transporter with freshman Leighton Ige, president of the Olin Entrepreneurial Group.



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PRESIDENT'S MESSAGE:



The first semester of Olin's existence as a full-fledged college has been full of "marquee events" that will long resonate in our institutional history: the arrival

of the inaugural freshman class; the introduction of our innovative, hands-on curriculum; and the opening of our campus, to name a few.

But behind the scenes, events of equal importance to the future of the college have taken place. I am thinking particularly of the work of the Board of Trustees and the President's Council in charting the course of the college in the next phase of its growth.

The college is in good hands on this score. These two bodies, one governing and the other advisory, are made up of individuals with deep experience in higher education and business. They include two former college presidents, the directors of the Olin Foundation, and national leaders in academia, business and engineering education.

What astounds me is the enthusiasm and sense of engagement these busy individuals have for Olin College. At the November 2002 meeting that brought together these two bodies, this enthusiasm was palpable. The topic was how to ensure that the financial models we rely on to provide for the future align with the innovative academic program we are developing. The Trustees and members of the President's Council listened attentively, engaged in a lively discussion, and made it clear they care passionately about the outcome of this bold experiment we call Olin College. After the meeting, I received detailed, thoughtful comments from the members with suggestions, proposals and ideas for continuing our success.

We are off to a great start. And thanks to the efforts of our Board of Trustees, President's Council, and the wider Olin community, I believe we have a bright future before us.

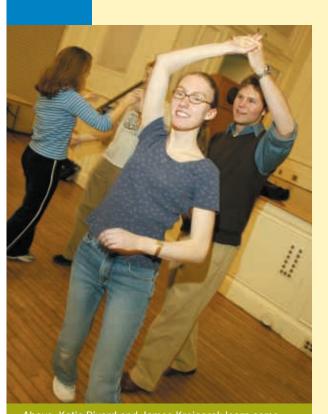
Richard K. Miller President

STUDENT ACTIVITY OPTIONS CONTINUE TO GROW

OLIN'S 75 inaugural students were busy in and out of the classroom during their first semester. Within the first few weeks, several clubs were up and running, community service teams were leading programs, and students had initiated independent "Passionate Pursuit" projects. The students returned for second semester with even more opportunities for fun and enrichment outside of the classroom.

ACTIVITIES

Student leaders founded 13 clubs first semester, providing opportunities ranging from theatrical productions to bowling. Highlights of club activities during the fall include the launch of *Frankly Speaking*, Olin's online student newspaper, as well as the Franklin W. Olin Player's production of *Albert's Bridge*, a radio drama. WHACK, Olin's newly formed fencing club, adds to the roster of clubs that includes the Game Club, *In Decent Exposure*



Above: Katle Rivard and James Krejcarek learn some new dance steps at a recent Salsa workshop. Below: Erin McCusker (right) practices sign language skills with Assoc. Prof. Jill Crisman.



(literary magazine) and the Olin Broadcasting Club.

Students also took advantage of a number of co-curricular offerings first semester. Olin's cocurricular groups, which are led by faculty or staff members, combine fun activities with intellectual awareness. First semester co-curricular offerings included F.I.L.M (For Intelligent Lovers of Movies), the Olin Dance Project, Ornithology for Engineers and La Vie Boheme (French discussion group). Some of the first semester offerings are continuing into the spring term in addition to new offerings such as an American Sign Language course, Yoga Stretching, and Architecture and the Environment.

Students have continued to advance the philanthropic mission of the college by actively participating in community service projects. One group of Olin students regularly staffs the recreation program on Friday afternoons at the local Charles River Association for Retarded Citizens. Other students are involved with philanthropic organizations such as Hillside Elementary School, the Broadmoor Audubon Wildlife Sanctuary and the Perkins School for the Blind. Several students also participate in a number of walks and races for good causes.

A number of students are taking advantage of Olin's unique "Passionate Pursuits" program, which awards non-degree credit and funding for independent projects in areas of student interest. Jeff Satwicz's first and second semester Passionate Pursuit is an ambitious car restoration project he titled "Build Your Own General Lee." Other students have initiated Passion Pursuits in music, language, and trade crafts.

The Student Activities Committee, which coordinates additional programming for students, has also planned a number of fun activities ranging from Halloween costume contests to formal dances.

"The clubs and activities on campus offer us important outlets from our rigorous coursework," said Freshman Erin McCusker. "Student leaders at Olin have helped provide a wide range of activities that offer something for everyone."

FALL EVENTS



Above: Freshman Emma Goodman leads a tour during the Needham Open House. Below, from left: Technology guru Nick Tredennick; freshman Kevin Tostado and family during Family Day; Polina Segalova and her mother.



Olin College may be only one semester old in terms of its official life as a college, but it's already hosting a full roster of events. This fall's events included an Open House for prospective students, Olin's first "Family Day" and an Open House for the local community. The college also invited a number of outside speakers to provide insights on everything from semiconductor design to getting the most out of college. Here's a rundown of the key events from a busy fall schedule:

Harvest Fair, Sept. 28: Students helped sell Olin gear, participated in a soup making competition, and took a trolley tour of Needham as part of this annual celebration of fall hosted by the Needham Business Association.

Future Synch, Oct. 16-17: This exploration of the future of engineering featured career workshops, panel discussions and special

guest speakers to help students plan their studies at Olin and think about the world beyond college.

Needham Open House, Nov. 3: More than 500 local residents visited Olin for a day of tours, presentations, and other activities aimed at showcasing the new campus. Attendees heard a talk by President Miller, sampled delicious snacks and enjoyed performances by Olin's talented musical ensemble.

Thinking It Through, Nov. 15: Dr. Richard Light of Harvard University, the author of "Making the most of College: Students Speak their Minds" presented his research to the Olin community. He stressed time management skills and group study habits as key to a successful undergraduate experience.



Above, from left: Kate Walsh and Caitlin Foley get resume tips from Beth Hassey, director of Babson's Undergraduate Center for Career Development; Guest speaker Dr. Richard Light; Below: Dan Lindquist, Sean Munson and Nick Zola sample the Olin soup entry in a contest at the Needham Harvest Fair.



Family Day, Nov. 16: The Office of Student Life sponsored this day of tours and presentations for the families of Olin students. During lunch Olin faculty member Sarah Spence dazzled the group with a performance of the "Lindy Hop," a form of swing dancing.

Admission Open House, Nov. 17: Nearly 100 prospective students from around the region came to campus to learn more about Olin's innovative mission and programs.

Nick Tredennick Visit, Nov. 21: Technology guru Nick Tredennick came to Olin to share his insights on future directions in the semiconductor industry and technology in general. Tredennick, the editor of the *Dynamic Silicon* newsletter, said the pace of innovation in technology would continue, despite the current downturn in the sector.

NEW TOOLS



Above: Asst. Prof. Jonathan Stolk tries out the new equipment, a multi-technique scanning AEX/XPS System.

COLLEGE RECEIVES EQUIPMENT DONATION High-end Device is Boon to Materials Study

The Pernicka Corporation of Fort Collins, Col., has donated a Multi-technique Scanning AEX/XPS System valued at \$350,000 to Olin College. The device is a high-end materials analysis tool that is not usually encountered in undergraduate education.

"We hope that the students of Olin College will benefit from the hands-on experience and research that can be performed on this system," wrote John C. Pernicka, president of the corporation, in a September 26 letter to President Miller.

"We look forward to developing ways to use this unique donation to further our mission to provide the most innovative engineering education in the country," said President Miller. "We deeply value the support of the Pernicka Corporation, because we know that it is only with the advocacy of engineering firms and business leaders that Olin College will succeed in its mission."

Mr. Pernicka and his wife Diana visited the college in mid-October to oversee the installation of the equipment, which is housed in the Academic Center.

NEW MEMBERS NAMED TO BOARD, PRESIDENT'S COUNCIL

This fall, two new trustees joined the Olin College Board, and the President's Council gained one new member.

William R. Cotter and Tamara P. Davis were named to the Board of Trustees. Both had served previously on the President's Council.

Mr. Cotter is president of the Oak Foundation in Boston, Mass. He is the former president of Colby College, where he served from 1979-2000. A graduate of Harvard College and Harvard Law School, Mr. Cotter served as assistant attorney general in northern Nigeria, as a White House Fellow and as coordinator of international programs for the Ford Foundation, among other posts.

Ms. Davis is the managing director and head of the Corporate Governance Practice at Levin & Company, Inc. in Boston, where she consults with CEOs of entrepreneurial life science and technology companies. Previously, she was president, CEO, and director of UST Leasing Corporation in Boston. A graduate of the University of California, Los Angeles, and California State University, Ms. Davis is Chairman of the Massachusetts State College Building Authority.

James E. Ashton was named to the President's Council. He is chairman of Poco Graphite, Inc., and a partner in Grisanti, Galif & Goldress, Inc., both of Dallas. Mr. Ashton's professional career includes executive positions at some of America's leading companies, such as FMC Corporation, Rockwell International and General Dynamics. From 1967-1982, he led the General Dynamics team that developed the F-16 fighter plane, one of the country's most successful weapons systems. He left General Dynamics after testifying before Congress about waste and mismanagement in the Trident submarine program. He is a frequent speaker on the topics of business ethics and integrity.



The Board of Trustees and President's Council met in mid-November to consider the issues facing the college as it enters the next phase of its growth. Here, the Board and President's Council are shown with members of Olin's senior administrative team.

CAMPUS NEWS



Honors and Awards



Lynn Andrea Stein, professor of computer science and engineering, has co-authored two articles published recently in IEEE Computer, the primary journal of the Institute of Electrical and Electronics Engineers. The first, published in the September/October 2002 Issue was titled "DAML +

OIL: An Ontology Language for the Semantic Web." The second, published in the November issue, was titled "Toward Behavorial Intelligence in the Semantic Web."



The artwork of **Helen Donis-Keller**, professor of biology and art, has been showcased at two exhibitions exploring the intersection of art and science. Her piece, "Genotype:Phenotype," was included in the "photoGENEsis: Opus 2" exhibit at the Santa Barbara Museum of Art November through February. The piece is on display at the City University of New York

(CUNY) Graduate Center Art gallery in Manhattan February through April as part of a "Genomic Issues" exhibit. In conjunction with the exhibition, Donis-Keller is participating in a presentation and panel discussion at CUNY on March 14. The CUNY exhibition is one of five art exhibits in New York City to commemorate the 50th anniversary of the discovery of the double-helix structure of DNA.



Sherra Kerns, vice president of research and innovation, has accepted an invitation to serve on the advisory committee of the Center for the Advancement of Scholarship on Engineering Education, a program within the National Academy of Engineering.



David Kerns, provost, was elected president of IEEE (Institute of Electrical and Electronics Engineers) Education Society. He took office Jan. 1.

IN BRIEF

Olin Selects Finalist Candidates for Admission

In January Olin received nearly 600 applications for admission to the Class of 2007 up more than 10 percent from last year's total. The caliber of Olin's applicant pool was again exceptional, rivaling the most competitive academic programs in the nation. Olin's admission team narrowed the pool down to 156 finalists to invite to one of two Candidates' Weekend events on campus in February and March. During the events, the candidates will participate in group design exercises, individual interviews, team presentations and information sessions. Successful candidates will receive offers for admission by mid-March. The Class of 2007 will include approximately 75 students.

Cross-Registration Agreement Signed

Olin College and Wellesley College signed a cross-registration agreement last fall, which took effect in the spring semester. A similar agreement with Brandeis University is in the works for next fall. Twenty students are taking advantage of the Wellesley agreement this spring; 14 are enrolled in courses at Babson under existing agreements.

Strategic Planning Committee Formed

Olin formed a committee to help develop a new strategic plan for the college. The committee is charged with making recommendations to cover the next three academic years. Through reviews of existing strategic assumptions and mission statements, interviews and other data gathering activities, the committee will develop a list of possible "themes" for the new plan. The committee will pay special attention to aligning the academic plan with the college's financial models and identifying new ideas and opportunities. The committee, which includes representatives of the faculty, staff and student body, will present its recommendations to President Miller by July 15.



Schiffman Assumes New Role at Olin

Stephen Schiffman, the Babson undergraduate dean who has spent the last two years working closely with the Olin faculty, will take a year-long sabbatical from Babson to devote more time to the development of the Olin curriculum. Schiffman, one of the architects of Babson's highly

regarded entrepreneurship curriculum, is helping to create an entrepreneurial track at Olin (see article, "Olin's Entrepreneurship Curriculum Takes Shape" in this issue).

TRANSLATION TEAM



Polina Segalova, right, is translating the letters of Alexander Borodin with the encouragement and help of Assistant Professor Yevgeniya Zastavker (left) and Assistant Professor Diana Dabby.

Like many Olin students, Polina Segalova has a passion outside of engineering. For Segalova, that passion is remaining in touch with the Russian language and cultural roots the Ukraine native left behind as a child of 10 when she emigrated to the U.S. Thanks to a project suggested by one of her professors, she has been able to do just that.

Segalova is finishing a project to translate 30 letters of Alexander Borodin (1833-1887), a Russian composer who also worked as a chemist and professor. Borodin wrote tuneful symphonies, operas and shorter works, many of whose melodies found their way into the Broadway musical *Kismet* and popular songs.

The project was the brainchild of Diana Dabby, an assistant professor of engineering and music at Olin. Dabby, a composer and concert pianist who has championed the study of artists who are also scientists and engineers, suggested it as a possible student project during the Olin Partner year. "Borodin had a track record as a chemist and composer," said Dabby. "I thought that was very timely for us, because it embodies the 'Renaissance engineer' concept that is becoming so important here at Olin."

Segalova, a non-musician, eagerly accepted the challenge, which quickly became a labor of love. Although Borodin's letters take up four volumes in Russian, only a few excerpts of them have appeared in English. Segalova and Dabby decided to concentrate on thirty key missives spanning the composer's life, excerpts of which had appeared in the English version of a seminal Russian biography of Borodin.

The effort turned out to be harder than the native Russian speaker expected. First of all, she had trouble translating some phrases into idiomatic English. She also needed help with some cultural and historical concepts. She found that help when Assistant Professor Yevgeniya Zastavker, also a native of Ukraine, joined the faculty last year.

Olin Freshman Translates Letters of Russian Composer

"The take away message of the letters is that you can pursue more than one passion in life. Borodin's life is a perfect model for us here at Olin."

-Polina Segalova, Class of 2006

Zastavker became her collaborator and made sure, as she put it, that the "color of the Russian culture was not lost." She also helped make the translation more flowing, and provided some of the missing historical and cultural context.

The letters, to Borodin's ailing wife in Moscow, discussed day-to-day developments in his life on the faculty of the Medical Surgical Academy in St. Petersburg. He also wrote about his musical ideas and commented on the work of other Russian composers.

According to Dabby, the translations are significant because they "shed light on Borodin's composing process and the personalities of those involved in the Russian musical movement."

For Segalova, the exercise offered important lessons from the career of a person criticized at the time for working in two very different fields. "The take away message of the letters is that you can pursue more than one passion in life," said Segalova. "Borodin's life is a perfect model for us here at Olin." Zastavker saw the project as a confirmation of Olin's approach to engineering education. "We are not just growing technicians, we want to make sure our graduates are multidimensional and erudite," she said.

During the course of the project, for which Segalova received non-degree credit as part of Olin's "Passionate Pursuit" program, she drew close to her mentors. The three will continue to work together during the next phase of the effort as they "finish, polish, and publish," according to Segalova.

"This project brought us together," she noted. "Where else but at Olin would I have had the opportunity to get so much time with professors?"



ENTREPRENEURSHIP CURRICULUM TAKES SHAPE:

Students to Come Up with New Uses for Segway Transporter

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"We want to teach students to see opportunities whether they be for-profit, nonprofit, or for the good of humankind."

Both Bourne and Schiffman have strong Babson connections.

Bourne is on the faculty at both Olin and Babson, and Schiffman is spending a sabbatical at Olin on leave from Babson, where he was a key architect of that school's entrepreneurial undergraduate curriculum.

"We hope to create a new kind of engineer at Olin who understands how to bring value to society through the creation of new ventures," said Schiffman.

The proposed entrepreneurship curriculum will encompass the four semesters of Olin's foundation curriculum. In their first semester at Olin, students will focus on developing teamwork skills through their cohort projects, followed by opportunity assessment in the second semester. As sophomores, students will participate in creating a business, undertaking such tasks as creating a business plan and a feasibility plan.

Before the proposed curriculum can be fully implemented, the rest of the faculty and the administration must weigh in on it, and the college must finalize an intellectual property (IP) policy to spell out the ownership of any products created at Olin. Once the IP issue is sorted out, one possibility is that a modest business hatchery might be established at Olin that would enable students to continue working on their business plans as juniors.

Entrepreneurship is one of the "legs" of the Olin trianglethat combination of engineering, business study and the arts/humanities that distinguishes the college's curriculum. Like many aspects of the curriculum, it is still under review and development. When fully implemented, Olin's entrepreneurial focus will make it unique among engineering schools, according to Bourne. 'You won't find any engineering school with this kind of business and entrepreneurship requirement."

The effort to create the curriculum is enthusiastically supported by the membership of the Olin Entrepreneurial Group, which encompasses nearly half of the freshman class. Its members are bubbling with business ideas of their own, and eager to learn how to turn their ideas into reality via Olin's hands-on curriculum.

"Olin gives you the tools to make a tangible impact on the world," said Leighton Ige, president of the group.

CAMPUS VOICES

What we learned last fall

The fall semester of 2002 was an exciting time for Olin College. The first freshman class arrived, and, along with the faculty and staff, launched an exciting new curriculum. The term was filled with hard work for everyone. We learned much about our new curriculum model and made good progress toward completing the design of the last two years of the program.

We all learned from our experience last semester. The centerpiece of our first-year curriculum is the cohort, a large course block combining physics, math and a hands-on project. We have learned that teaching in an applied, coordinated and integrated way involves



considerable investment of time by the faculty and students. This active approach pays great dividends on the expenditure of effort: The students learned the material well and found the subject integration and immediate application exciting, stimulating and effective. Likewise, the active-learning philosophy in our Engineering Computing and AHS (Arts/Humanities/Social Science) courses also provided challenging, intellectually bracing and rigorous experiences for the students.

The fall semester was fun and exciting, and took a lot of work! We all tried new ways of teaching and learning, and we got Olin off to a fabulous start. As we move forward, we keep in mind the advice of Mark Twain:

Twenty years from now you will be more disappointed by the things that you didn't do than by the ones you did do. So throw off the bowlines. Sail away from the safe harbor. Catch the trade winds in your sails. Explore. Dream. Discover.

Michael Moody, Dean of Faculty

Key Achievements of Fall Semester

This past semester marked the transition from Olin as a college-making enterprise to a college with all of the trappings – real students, real courses, and questions about work loads. Perhaps the most extraordinary achievement was that there were no major surprises. The curriculum, student life programs, Passionate Pursuits, CORe (student government), Honor Board, and all the rest started according to the plan. What did not go perfectly — the overambitious workload at the start of the year, for example — was quickly corrected by our effective feedback system and everyone's openness to change.



Of course, we did not give up the college-making business. While taking on the challenge of Olin's first academic semester, we also focused on planning for years three and four of the academic program, as well as working out the specifics of year two. It has been incredibly exciting to participate in committees, informal discussions, and town meetings that turned our attention and creativity to these questions.

As busy as our community is, we still made time to have fun and to begin what tour guides will someday describe as "traditions."

Sean Munson

President, Council of Olin Representatives (CORe)

UPCOMING EVENTS

Candidates' Weekends 2003:

February 28 - March 1 and March 7 - March 8 — Olin hosts finalist admission applicants and their families on campus for a series of events including team design exercises, individual interviews, group discussions and information sessions.

"Big Conversations" with Dean Kamen: April 9 — Dean Kamen, inventor of the Segway and founder of Deka Research & Development Corporation, is the featured guest speaker for the first event of Olin's "Big Conversations" series focusing on the interface of technology and society.

Olin Rising: Campus Dedication and Presidential Inauguration: May 3 — The Olin community welcomes friends and distinguished

guests to celebrate the dedication of Olin's new campus, the inauguration of President Richard K. Miller, and the achievements of the inaugural class.



Innovations

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