Dear friends,

I succeeded Mike Hopkins as Chairman of the Department of Chemistry on July 1, 2009, and this is my first letter to the alumni community in this role. I am pleased to say that Mike left the department in fantastic shape. In the last few years, the Gordon Center for Integrative Science (GCIS) was completed, Searle Laboratory was fully renovated, and the labs in Jones Laboratory were upgraded. All of the department’s research groups, central facilities, and offices are housed in new, modern space, and we have space for future expansion. The young faculty we have recruited during the last few years are leaders in their fields, and we have an exceptional group of graduate students. These researchers are supported by a dedicated and highly competent academic, technical, and administrative staff.

This past year we were successful in recruiting Professor Gregory Voth to the University. Greg and his group are moving from the University of Utah this spring. He is a pioneer in the development and application of theoretical and computational methods for the study of the structure and dynamics of condensed phase systems, including proteins, membranes, liquids, and materials. All of the department’s research groups, central facilities, and offices are housed in new, modern space, and we have space for future expansion. The young faculty we have recruited during the last few years are leaders in their fields, and we have an exceptional group of graduate students. These researchers are supported by a dedicated and highly competent academic, technical, and administrative staff.

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Financially, the department is on a firm footing, and we are weathering the financial crisis. Our biggest financial challenge is generating funds for graduate student support. This is an area where gifts from alumni have an important impact. If you would like to help support our graduate program, please contact Vera Dragisich, Executive Officer for the Department of Chemistry, at v-dragisich@uchicago.edu.

I am looking forward to working with our faculty and staff over the next few years to advance our research and educational missions and to recruit the best faculty and students to the University. And above all else, I am looking forward to working with you, our alumni.

Regards,

Richard F. Jordan
Chairman and Professor
Investing in Innovation
Chemistry alumna has business down to a science

by UChicago Tech, Greg Beras

It’s no surprise that Intellectual Ventures, a leading global investor in inventions, hired Karen Kerr, Ph.D. ’95, to forge relationships with universities doing innovative translational research. After all, the recently appointed US Head of Business Development earned her doctorate in physical chemistry and had planned on pursuing an academic career.

Until, that is, Kerr became fascinated by inventing, investing, and intellectual property near the end of her degree program. That’s when she began working on business plan development and technology vetting for ARCH Development Corporation (then part of the University). “I never looked back,” she said.

Kerr turned down a National Science Foundation post-doctoral position in chemistry to become a member of the first class of Kaufman Fellows, a program that identifies and develops emerging leaders in venture capital. “It was a big switch from ‘rocket science’ to private equity,” she said. “Researchers look at things deeply and narrowly, but I found that I wanted to be an investor because you get to look at things broadly and make connections between science and business.”

After her fellowship, she returned to ARCH Venture Partners (by then split off from the University) and eventually became a managing director. Then Kerr founded Agile Equities, where she advised venture firms, start-up companies, and university technology transfer offices. Kerr has invested across a broad array of companies in life science, biotech firms, start-up companies, and university technology transfer offices. Kerr serves on the Physical Sciences Division Visiting Committee and the University of Chicago is one because its researchers are so innovative.”

That’s more of a bonus, really—pharmaceutical companies and clinical researchers do it best. Our objective is to provide new concepts, new compounds, new targets, and new proteins that haven’t really been examined before to see if you could develop new approaches to targeting human disease.

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What was the genesis of the Tri-Institutional Center? I got together with some colleagues here, including Hiroshi Yamaomoto, Vishal Rawal, and Milan Mrksich, and colleagues at two other institutions in the Chicago area. Each of them is interested in developing compounds for the types of studies that my lab has been doing, and each has expertise in a different area of organic chemistry or chemical biology.

We thought it would be cool to combine these experiences to establish a program to facilitate the discovery of biologically active compounds. We realized we could do it more efficiently if we worked together.

I was the PI on the National Institutes of Health Grant that provides the majority of support for the Center and the PI for the Lever Award by the Chicago Biomedical Consortium that also supports it. This has been going on now for a year-and-a-half. And it’s been pretty good!

Chemical libraries—collections of chemicals used for high-throughput testing—are a major part of the center. Why are they important to your work? Let’s say we would like to recognize a biological target—a protein, a nucleic acid, any component of cellular machinery. We start with what’s called a library of compounds and look for a probability that one of them is going to bind to or modulate the activity of this biological target.

One important part of this is the ability to bring in the latest advances in analytical techniques, like purification techniques and automation. When you are dealing with a thousand molecules rather than one, you have to be able to take advantage of machines that help students to use their time efficiently.

Our initial emphasis is on discovering a lot of new compounds and building new libraries, but later on we are going to have a lot of biological data that we will obtain by screening these compounds against a variety of target receptor cell lines. Advancing the most promising compounds and developing molecules that biologists can use that will probably represent the ultimate effort of this center.

This is something that we have already a lot of experience with in my lab because we had a smaller effort over the past few years that allowed us to get an idea of how this research progresses.

What class are you teaching right now? I’m teaching two courses actually this quarter—that’s where a lot of my time is going. I’m teaching General Chemistry 113, with 280 students in a class, and I’m also teaching a new graduate-level course that is relevant to a lot of these new activities. It’s called High Throughput Methods in Chemistry; there are about 25 people in it, a mix of senior undergrads, graduate students, and post-docs. The idea is to show students how doing research using high throughput methods can help them to solve problems in a more efficient manner, enable unique solutions, and just generally be a better scientist.

Profiles in Research: Sergey Kozmin

Sergey Kozmin is associate professor of chemistry. He joined Chicago’s faculty in 2000, and is currently the director of the Chicago Tri-Institutional Center for Chemical Methods and Library Development.

Your work focuses on what you call small molecules. What is it that attracts you to these materials? Biologists like to call these compounds “small molecules” because they’re small compared to proteins. Our focus is on developing new small molecules that modulate the function of proteins and biological systems. I’m interested in them because they provide unique ways to study the function of proteins in their native environment in real time.

Of course, some of this research goes beyond fundamental studies of biochemistry and cell biology and can be translated into medicine.