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ACS DIVISION OF Business Development and Management

Newsletter

this issue

BMGT Symposiums

The Business Management and Development (BMGT) Division of the American Chemical Society (ACS) is hosting a series of relevant and intriguing symposiums at the upcoming Boston meeting:

Job Growth in This Economy?: Clinical Supply Manufacture and Local Economies of Scale

Open Source Drug Discovery

Chemistry: The Future-Proof Profession

Open Innovation: The New Paradigm for Competitive Advantage

The first two above symposiums are more relevant to the pharmaceutical market, but they all have some general themes that will be of interest to most of our members.
The general themes which will be developed in this newsletter are:

How best to take advantage of external organizations?

Is there a way to leverage 'open innovation' for a competitive advantage?

What is gained and lost by an open system?

How has the training as a chemist prepared us for today's and tomorrow's job market?

First, what is meant by open research?

Open research is research that is conducted in the spirit of free and open source software. If the research is scientific in nature it is frequently referred to as *open science*; *open research*.

The main advantage of open research is to make clear accounts of the methodology, along with data and results, freely available via the Internet. This will potentially permit a massively distributed collaboration.

Theoretically, research data that is posted can be added to/interpreted by anybody who has the necessary expertise and who can, therefore, join the collaborative effort. Thus the 'end product' of the project arises from many contributions rather than the effort of one group.

If there is something new in "open source" production, then, it must be more than the traditional practices that some observers call "open science". The additional element is focus, *i.e.*, the desire to obtain not just knowledge but a specific product. Far more than in traditional science, it is this purposefulness that forces members to interact, to subordinate themselves to a larger plan, and to judge success by such suspiciously capitalist measures as consumer acceptance and market share. Properly understood, then, "open source" is less a legal category than a behavior.

ACS announces its 2010 class of ACS Fellows

192 distinguished scientists have been selected as 2010 Fellows of the American Chemical Society. These ACS members were selected based on their outstanding achievements in and contributions to the science, the profession, and their excellent service to the Society. Similar to the inaugural class of 2009, the Fellows represent a wide range of disciplines and geographic locations, representing 33 technical divisions and 79 local sections. The 2010 class also includes distinguished scientists and engineers from industry, academia, and government.

A complete list of the Fellows can be found in the August 2, 2010 issue of C&EN. For additional information on the ACS Fellows Program, go to www.acs.org/fellows or send an email to fellows@acs.org.

Congratulations to the following BMGT ACS Fellows:

Carol A Duane
Dennis W. Smith
Dorothy Jean Phillips
Henry F. Whalen, Jr.
Judith Cohen
V. Michael Mautino

BMGT Symposiums (Continued)

For Open Source Drug Discovery, the ability to assemble and motivate a massive distributed collaboration in much the same fashion as open source software is enviable; however there are a few barriers to be overcome. First open source computing is not nearly as resource demanding as drug discovery and second drug patents or more specifically, the ability to exclusively manufacture a particular drug is very profitable.

Despite these differences, the open-source idea has entered biomedical research. Resulting in several programs such as Biojava, BioPerl, BioPython, Bio-SPICE, BioRuby and Simple Molecular Mechanics for Proteins, and inspired other initiatives such as the Human Genome Project, the SNP Consortium, the Alliance for Cellular Signaling, BioForge, GMOD and Massachusetts Institute of Technology's BioBricks.

However, the existing biology collaborations fail to meet all of the potential advantages of Open Source Drug Discovery (OSDD) or are too preliminary to evaluate. While this observation may be discouraging, open source drug discovery is possible. These potential areas include diseases of the developing world, bioweapons, and so-called orphan diseases. Here, progress can succeed if government and non-profit programs can assist in meeting researchers' costs. Second, commercial drug discovery is not monolithic. Instead, it consists of roughly a dozen innovation steps, each of which requires its own specialized personnel, equipment, and skill sets.

We are in the midst of a scientific renaissance that is yielding unprecedented number of collaborative opportunities, but these collaborations are not resulting into a plethora of new therapies. The cost of developing new drugs, which is estimated to be billions of dollars apiece, is limiting the number of projects that can be funded.

The cost-effectiveness of projects/cures in areas that offer limited commercial prospects such as rare diseases, biodefense, and the diseases of poverty are fertile areas for OSDD. Yet, the challenge of producing treatments for these neglected areas has encouraged scientists and entrepreneurs to come up with alternative R&D and business models that are often based on the networked architecture that is characteristic of open innovation. Currently there is a growing body of data that will allow a comparison of the economics of traditional and open innovation models. This data will allow business models to be built that make open innovation a compelling option. This could have profound implications for the pharmaceutical industry.

The symposium on Open Source Drug Discovery will shed meaningful light on these above issues.

How best to take advantage of external organizations?

To understand the best approach and strategies for leveraging the power of external organizations, different modes of collaboration need to be considered. This involves different strategic tradeoffs.

Companies/universities that choose the wrong mode risk falling behind in the race to commercialize new technologies, products, and services.

The symposium "Job Growth in This Economy?: Clinical Supply Manufacture and Local Economies of Scale" will address the best strategy for pharmaceutical companies to use external service suppliers versus the formation of local

ACS Chemistry for Life™

BMGT Symposiums (Continued)

care providers. This symposium will be an opportunity to discuss the possibility of establishing clinical-supply manufacturing capacity locally in eastern Massachusetts. The founding hypothesis is that this approach may be not only a smarter way to do business, but also a more environmentally responsible one -- and a source of solid, secure middle-class jobs by promoting environmentally-aware manufacturing that produces jobs and improves local business. This could potentially be as desirable for public-sector leaders in Massachusetts as it is for the industry.

A BASF sponsored symposium entitled "Open Innovation: The New Paradigm for Competitive Advantage" will examine the advantages and disadvantages of using external innovations in an attempt to shorten the time of commercialization of novel ideas.

The management challenges of selecting the best options for the different institutions wishing to deploy open innovation are much more difficult. Should your company/university open up and share your intellectual property with the community? (This question is very tough for universities to negotiate after incurring patent cost.) Should you nurture collaborative relationships with a few carefully selected partners or should you harness the wisdom of crowds? Increasing the number of collaborators may increase the probability of solving the problem, but present a problem of management of all of the ideas.

Collaboration networks differ significantly in the degree to which membership is open to anyone who wants to join. In a totally open collaboration, or crowd sourcing, everyone can participate. A sponsor makes a problem public and then essentially seeks support from an unlimited number of problem solvers, who may contribute.

There are two basic issues that executives should consider when deciding how to collaborate on a given innovation project: Should membership in a network be open or closed? Should the network's governance structure for selecting problems and solutions be flat or hierarchical? This framework reveals four basic modes of collaboration: a closed and hierarchical network (an *elite circle*), an open and hierarchical network (an *innovation mall*), an open and flat network (an *innovation community*), and a closed and flat network (a *consortium*).

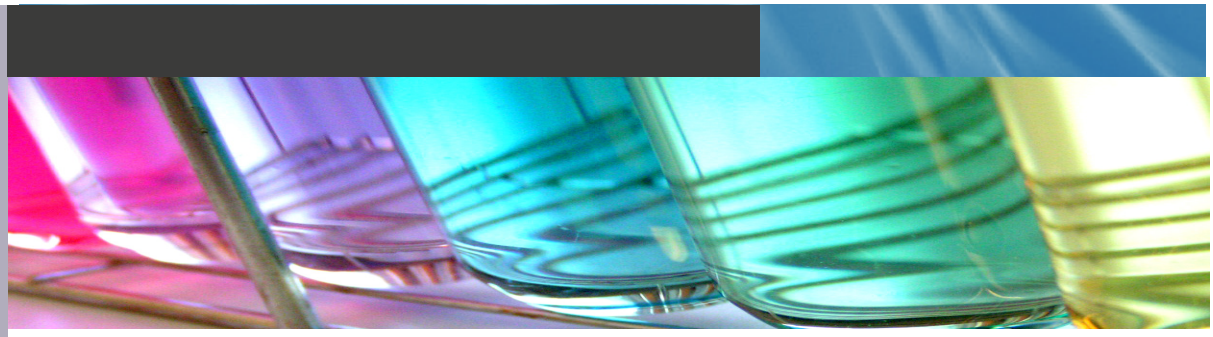
When figuring out which mode is most appropriate for a given innovation initiative, a firm should consider the tradeoffs of each, weighing the modes' advantages against the associated challenges and assessing the organizational capabilities, structure, and assets required to manage those challenges.

The costs of searching for, screening, and selecting contributors grow as the network becomes larger and can become prohibitive. Understanding when you need a small or a large number of problem solvers is crucial. Closed modes, obviously, tend to be much smaller than open ones.

When you use a closed mode, you are making two implicit bets: that you have identified the knowledge domain from which the best solution to your problem will come, and that you can pick the right collaborators in that field.

How has the training as a chemist prepared us for today's and tomorrow' job market?

In BMGT's last newsletter, the employment situation for chemists was covered. In this letter the 2018 projections for job growth for chemists positions is 2 percent growth from now till 2018, according to the US Labor Bureau. Demand for chemists is expected to be driven by biotechnology firms. Biotechnological research, including studies of human genes, continues to offer possibilities for the development of new drugs and products to combat illnesses and diseases that have previously been unresponsive to treatments derived by traditional chemical processes.



BMGT Symposiums (Continued)

Advancement among chemists will usually take the form of greater independence in their work or larger budgets. Others choose to move into managerial positions and become natural sciences managers. Those who pursue management careers spend more time preparing budgets and schedules and setting research strategy. Chemists who develop new products or processes sometimes form their own companies or join new firms to develop these ideas.

The symposium entitled "Chemistry: The Future-Proof Profession" will cover a presentation discussing how the speaker's chemistry training prepared them for competition in today's job market. BMGT has selected speakers and colleagues who have parlayed their chemistry backgrounds and skills into unexpected and rewarding roles and careers.

ACS Webinars

American Chemical Society Webinars (ACS Webinars™) is a weekly online event serving to connect ACS members and scientific professionals with subject matter experts and global thought leaders in chemical sciences, management, and business on relevant professional issues. Each webinar is 60 minutes in length, comprising of a short presentation followed by Q&A with the speaker. The live webinars are held on Thursdays from 2-3pm ET. View and register for upcoming events at **http://acswebinars.org/events**. Recordings of the past webinars are available online at **http://acswebinars.org/archives**.

August 12, 2010 - How Chemical Policy Reform Can Spur Green Chemistry. In the wake of the largest Gulf oil disaster or public concern over the chemicals in a baby bottle, how will changing legislation affect chemical professionals? Public policy has the potential to transform the chemical industries and set a new course for the next decade. Join our speaker, Richard Denison, and learn about the latest Green Chemistry policy developments (Safe Chemicals Act/TSCA reform) and how they may affect chemical professionals, chemical industries, and the future of green chemistry.

August 19, 2010 - Propel Your Career – Networking Tips and Strategies for Success. Looking to increase your career opportunities? Networking has consistently been cited as one of the most important skills for building a successful career. As a scientist, your talents, abilities, and experience are important but may not amount to much if no one meets you or remembers you. The old adage, "Its who you know" can make all the difference in this competitive global economy. Join our speaker, Cheryl Martin with KPCB, as she shares tips, strategies, and best practices for propelling your career upward through the powerful practice of networking.

August 26, 2010 - Tapping into the Chemistry of Beer and Brewing. Fancy a bubbly brew? Curious to know how chemistry affects the differences behind various beers? With over 1,500 professional breweries and many dedicated homebrewers, the United States is the world's largest producer of this most popular alcoholic beverage. Join us with speaker Charles Bamforth, Professor of Food Science and Technology at UC Davis, to learn about everything from chemistry tips for making great brews to career options for chemical professionals in the beer industry. It's all about the chemistry behind beer!

240th ACS National Meeting Sponsors

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Program & Events Roadmap, 240th ACS National Meeting, Boston, MA August 22-26, 2010

Sunday, August 22, 2010

Job Growth in This Economy? Clinical Supply Manufacture and Local Economies of Scale

12:00 PM-4:00 PM, BCEC - Room 208

BMGT, Co-sponsored with Vertex Pharmaceuticals and NESACS

And the Theme: Prevention and combating disease (CPCD)

Networking reception and Knowledge Cafe following the symposium 4:00 PM – 5:00 PM, BCEC – Room 211

Monday, August 23, 2010

Open-Source Drug Discovery

8:30 AM-12:00 PM, BCEC – Room 254 A/B
1:30 PM-5:05 PM, BCEC – Room 254 A/B

BMGT, Co-sponsored with NESACS and MEDI

And the Theme: Prevention and combating disease (CPCD)

Reception and book signing for The Chemical Industry and Globalization 5:05 PM - 7:05 PM, BCEC – 254 A/B

Sustaining a Chemical Business with Federal Grants and Contracts

9:00 AM-1:55 PM, BCEC – Room 212

SCHB, Co-sponsored with BMGT, PROF, and WCC

Tuesday, August 24, 2010

Chemistry: The Future-proof Profession

8:00 AM-11:40 AM, Sheraton Boston – Republic Ballroom B
2:00 PM-5:00 PM, Sheraton Boston – Republic Ballroom B

BMGT, Co-sponsored with SCHB, CEPA, GEAB, WCC, and SOCED

"Just Cocktails"

WCC Networking Reception for Mid-Career Chemists

4:30 PM – 6:30 PM, Sheraton Boston – Republic Ballroom A

WCC, Co-sponsored with BMGT and SCHB

Wednesday, August 24, 2010

Open Innovation: The New Paradigm for Competitive Advantage

9:00 AM-12:10 PM, BCEC – Room 208
2:00 PM-4:50 PM, BCEC – Room 208

BMGT, Co-sponsored with NESACS and BASF

BUSINESS MEETINGS

Sunday, August 22, 2010
Division Open Business Meeting

12:00 PM-1:00 PM, BCEC - 252 A

Social Events

Knowledge Café and Networking Reception

Sunday, August 22nd, 4:00 PM -5:00 PM, BCEC - Room 211

BMGT, Co-sponsored with Vertex Pharmaceuticals

BMGT Networking Reception and Book Signing

Monday, August 23rd, 5:05 PM-7:05 PM, BCEC - Room 252 A/B

BMGT, Co-sponsored with BASF

Meet with Roger Jones and other speakers who wrote a book based on BMGT's 2008 symposium on globalization

240th ACS National Meeting Sponsors

Women CHEMISTS Committee

SCHB

CEPA