

AIS NEWS



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Bioscience Day at the Capitol

Written By: R. Levinson

A morning meeting was held at the State Capitol in January to network and to hear the latest on State and Federal efforts to support and regulate the bioscience industry. The significance for our HSC Biotechnology program is that there were expressions of support at all levels for the specialized training of biomedical graduate students and post-docs to prepare them for careers in commercial biotechnology R&D. Thus it would seem that establishing a certification program here is very feasible in terms of rationale and funding.

The following is a summary of the main points discussed in the sessions and in the press conference that followed.

Biotech is experiencing incredible growth in Colorado, and nationally. In Colorado, it is now a sector that employs nearly 20,000 people in almost 1000 companies, and over \$1 billion has been invested in Colorado companies from 2002 through mid 2008. Further, growth in both funding and employment has been increasing far above the state average for other industries. As a result, State government and Governor Ritter in particular now consider Biotech to be a major industry in terms of growth potential and thus a major focus of state

developmental efforts.

Universities are recognized as essential sources of both technology and manpower for this industry. In this regard, numerous references were made to our campus's emerging biotech facilities and commercialization plans (incubators, commercial campus).

While all biotech sectors are represented in Colorado, the biomedical device sector is especially strong, with Denver and Boulder ranking highly nationally in terms of amount and density of biomed device R&D.

On the other hand, everyone recognized that biotech enterprises are very fragile and risky, so the challenge is finding ways to nurture start-up companies until they can attract substantial outside investment. In the current financial climate, this is especially problematic.

There was considerable discussion on "best practices" by which governments could optimally establish and grow a bioscience industry. For this occasion the CBSA released the Colorado Bioscience Roadmap 2008, which is a summary of progress in the industry statewide over the past five years and a strategic plan for the next five years.

Prominent among the requirements discussed to promote bioscience growth is the necessity to attract and train the required workforce! The need to prepare graduate students and post-docs through specialized training was mentioned several times. CBSA recommended this be accomplished through an industry fellows program.

There was considerable discussion on legislation at Federal and State levels that would either help (e.g. sales tax breaks for equipment purchase by companies; funding of embryonic stem cell research) or hinder (e.g. subjecting new drugs and devices to a "cost effectiveness" evaluation; limiting patent rights of companies and inventors). FYI, Gov. Ritter affirmed his support for stem cell research in response to questions from the press. He expects that legislation will soon be passed to enable embryonic stem cell research in the state.

Overall, it would seem that establishing a biotech skills program for scientists in training (post-docs and graduate students) should have strong support at the academic, government, and industry levels. It seems reasonable to expect that this support would consist of significant funding for program operations.

AIS STUDENT ROOM
Ed- 2: P28-2204!

UPCOMING EVENTS:

April 7th

BioBeers
Twisted Pine Brewery,
Boulder

April 30th

BioBootCamp
Holland and Hart,
Denver

Early May

Tom Yulsman
Science Journalist
Anschutz Campus,
Aurora

CAREERS IN INDUSTRY: CAREER DEVELOPMENT THROUGH PROFESSIONAL ORGANIZATIONS

WRITTEN BY: TIANNA HICKLIN

AIS members are interested in exploring career options in science outside of academia. However, some members have zeroed in on the career they want to explore further or in which they want to begin a career. Once you've decided on a career path, what is the next step?

One potential strongly advised move is to network with professionals within your career of choice. How do you meet these people? One easy and local option is to find the organization designed for the people working in the field.

Importantly, an organization that has a local chapter will benefit you the most, especially if they hold regular local meetings. Within the last few months, several professional societies have dropped in on AIS members to give their advice and offer access to their resources and members. If you are still a student, memberships are very affordable, allowing you to explore several options. Moreover, some organizations help set-up student internships!

Many industry professionals have advised that networking is the best way to get a job. Many of these organizations post local job opportunities on their websites, some which may not show up on the national job searching sites!

The majority of AIS members surveyed expressed interest in entering the biotech/pharmaceutical industry. In response, AIS has traditionally invited speakers from local companies, with varying positions, to elucidate the black box of industry. However, most recently, AIS hosted representatives from specialized professional organizations dedicated to advancing the careers of these industry professionals. These representatives articulated the benefits of joining their particular society and were recruiting interested parties to organize student chapters here on campus.

The recently invited professional societies were: the International Society for Pharmaceutical Engineering (ISPE) and the Parenteral Drug Association (PDA). Both organizations maintain active chapters locally in Colorado.

International Society for Pharmaceutical Engineering

ISPE representatives were at Anschutz back in February. They explained the benefits of forming a student chapter for students at the University of Colorado. ISPE is a non-profit organization dedicated to providing networking opportunities for individuals in the life sciences and provide training and education in the pharmaceutical manufacturing industry. CSU's student chapter industry sponsor explained one of the biggest perks that CSU student members have is on-site field trips to practically any biotech/pharmaceutical company they choose. Moreover, they also provide interviewing skills practice opportunities and job training. This group placed an emphasis on fun networking events, which provide food and drinks for members. A sampling of the networking events this year are: a ski train to Winter Park, a golf tournament in Brighton, and a holiday party. However, their most prominent event is the annual vendor exhibition and workshop held in February annually. Check out the website: www.ispe.org for more information.

Parenteral Drug Association

PDA representatives were also on campus in February. This organization's goals are to develop sound, practical technical information and resources to advance science and regulation for the pharmaceutical and biotech industry. They provide technical reports and have their own journal in which industry professionals publish. Their local networking events are guaranteed to have the local pharmaceutical company professionals in attendance, though the local chapter's membership is heavily

weighted in quality control professionals. They hold three events each year and the parent organization holds training courses in aseptic processing, biotechnology, environmental monitoring, filtration, microbiology, quality/regulatory affairs, training, and validation. Check out PDA.org for more information and to see if this is the right fit for your career goals.

Additional local organizations that hold networking events and have local biotech/pharmaceutical company professionals as members are:

Colorado BioScience Association

The University of Colorado is already a member of the Colorado BioScience Association (CBSA), which allows University staff and students to attend events for free! CBSA organizes most of the networking events AIS members attend. This group recently began an annual biotech/pharmaceutical company career fair locally. Check out their website for free local networking events: www.cobioscience.com

Rocky Mountain Regulatory Affairs

There is also the Rocky Mountain Regulatory Affairs group, which provides professional development, educational programs, professional interaction opportunities and job postings from local companies about regulatory affairs. You can find more information at: www.rmmas.org

American Society for Quality

Check out this global organization if you have an interested in quality control. This groups offers education, networking events and their website has a wealth of information on careers and salaries in quality control: www.asq.org

SPOTLIGHT ON: SCIENCE WRITING CAREERS

WRITTEN BY: ANGELA RACHUBINSKI

Many different careers fall under the spectrum of science writing. Two broad categorizations used to describe science writing are science journalism and medical writing. While some areas of science writing are wide open and continue to grow, others are becoming limited due to the decline of print media and science budgets.

Science journalism includes writing science blogs, newspaper or magazine articles and books. In general, science journalists describe current research in terms for those without a science background. A traditional researcher who has published a popular science book also falls into this category. For some, one of the biggest attractions towards science journalism is the opportunity to be a freelance writer – although this is arguably the most difficult way to make a living. Compensation varies widely for those in science journalism, depending on experience and whether one is employed as for a company or as a freelance writer.

A must-read for those potentially interested in science writing is "A Field Guide for Science Writers: The Official Guide of the National Association of Science Writers" by Deborah Blum, Mary Knudson, Robin Marantz Henig (2006). Another highly recommended resource for students serious about pursuing a writing career is the annual Santa Fe Science Writing Workshop, where you have the opportunity to receive advice

from experienced science writers (<http://sciwrite.org>). Other websites with helpful information include the National Association of Science Writers (<http://www.nasw.org>)

According to Gray and Hamilton (1994), 94% of medical writers were between mostly and extremely satisfied with their jobs. As a comparison, less than half of the general public are satisfied with their jobs (The Conference Board by TNS). Those working in the medical writing field generally follow one of two routes: marketing or regulatory affairs. Marketing encompassing everything from writing patient brochures, continuing medical education materials, and scientific articles or abstracts for a biotechnology companies. Regulatory affairs encompasses writing clinical trial reports and policy documents in compliance with FDA regulations.

Compensation for medical writers can be lucrative. The latest median incomes (2007) for medical writers with advanced degrees are at \$95,000 with a large variability among fields. For example, writing for a biotechnology company may pay over \$100,000, while working for a university or medical school typically net about \$65,000 (AMWA website). A good place to begin researching a medical writing career is the American Medical Writers Association website (<http://www.amwa.org>) or the Regulatory Affairs Professional Society website (<http://www.raps.org>).

If you think a career in science writing might be for you, it is never too early to begin collecting writing samples. Advice from the AMWA website includes paying particular attention to things you may already be doing: reading medical journals and paying attention to format and tone of writing and seeking out opportunities to write (e.g. organizational newsletters). Writing courses, while not necessarily required to begin in the field, can provide valuable feedback and networking opportunities. Some universities, such as the University of Chicago, MIT, Boston University, and University of California Santa Cruz offer intensive science writing courses, certificates or degrees. Degree programs can be very competitive and expensive, although those graduating from the programs are often well connected to launch their careers. Medical writing certificates are considered part of career development and are sometimes required, especially for those starting out. No formal additional training is required for entering regulatory affairs.

If you missed January's invited speaker, presentation by David Hare, PhD, from Aegis Creative Communications about his position as a medical writer creating education materials, you can still catch the upcoming environmental scientific researcher and journalist, Tom Yulesman from CU Boulder speaking about the science journalism profession in early May.

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NEW WEBSITE:
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The Alternatives in Science Club, which began in 2007, is a student-run organization based at the Anschutz Medical Campus of the University of Colorado-Denver. The organization is dedicated to career development for students, post-docs, and faculty of the University of Colorado. The goals of AIS are threefold. We hope to introduce interested members of the university to the potential science careers outside of academia. We also hope to educate research scientists about what skills they might need in order to excel outside the university and how to attain those skills. Finally, we intend to act as a liaison to connect talented scientists with the bioscience community.

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