Dr. Maria Maccecchini, president & CEO of QR Pharma, works on a compound that could change the course of Alzheimer’s disease.
Connect and learn with your fellow women in science

The HBA offers affinity groups dedicated to women in medical or scientific roles through many of our chapters. These small, intimate groups are designed to offer professional support for career advancement through interactive and empowering educational and professional development programs as well as opportunities for networking both in person and online.

Find your chapter’s women in science group, or access our myriad online resources at www.hbanet.org.
“Our brains work nicely into our 80s. We can change in the beginning, in midstream or at retirement—the work environment is more mobile than it used to be.”

“In these unstable economic times, it is important to keep networking, to keep your eyes open for opportunities and to have a good handle on your transferrable skills.”

“[Changing careers] was really hard, but I gained a lot by making myself go through it. I know that I am capable of succeeding even in really difficult circumstances—and that’s given me a lot of confidence in myself.”

“To make a successful transition from academia, a scientist needs the ability to clearly explain technology to people who might not have the background to understand its value for themselves.”

“My progress in biotechnology required persistence, a belief in my invention and a little naiveté regarding the amount of work involved in the commercialization of a technology.”

Letter from the issue editor

Welcome to the Fall Issue of the HBAdvantage—an issue dedicated to the profiles of women in science who have made successful bench-to-business career transitions.

Career transition is a topic on a lot of people’s minds these days, in the wake of huge changes in the healthcare and pharmaceutical industries combined with the current economic situation. And for those of us who have PhDs, transition can take on a unique meaning.

Many students who take the path to earning a PhD in science do so with dreams of success in academia, whether as a renowned professor or groundbreaking research scientist. But some of them, myself included, decide to take the road less traveled—whether because of personal desire, unexpected opportunity or economic reality—and cross the bridge into the world of business.

Though some may think it easy to get a corporate position with the backing of an advanced degree, this is not always the case. PhD training is well regarded for its ability to teach students how to think through problems and find innovative solutions—a quality highly desired in the corporate world. But it is not designed to teach students how to apply those skills outside of the lab—in fields such as entrepreneurship, medical writing, market research or a number of other careers that employ scientists.

In this issue, we’d like to introduce you to five women who have successfully made the transition from bench to business. These women have found that there is no “one path” for women in science. Instead, just as in all career paths, we each need to take ownership and define our own career paths. Scientists need to use the same discipline, inquisitiveness and ability to see things from a different perspective that they learned in school to become the CEOs of their careers.

We hope their stories inspire you to continue to take charge of your own career.

Sincerely,
Christine G. DiRienzo, PhD, issue editor
Meet Maria Maccecchini, PhD
from pharmaceutical researcher to Alzheimer’s pioneer

Profile by Christine G. DiRienzo, PhD

Current position: President and CEO, QR Pharma

PhD: Biochemistry (Rockefeller University)

Early career: Dr. Maria Maccecchini’s early career path began like many other PhDs, with post-doctoral work followed by a successful research career within a large pharmaceutical company. She enjoyed steady progression—advancing from entry-level to director-level in five years.

Bench-to-business turning point: Many professions allow students to exit formal education on a defined path where they “check a box”, then proceed to the next level. And Dr. Maccecchini initially had no reason to believe she’d be any different. After all, her original career path resulted in a rapid climb up the corporate ladder.

She soon began to realize, however, that extraordinary science requires scientists to be engaged in creating their own inventions—as well as their own careers—amidst an environment that is sometimes filled with failure and frustration. Even as she advanced, Dr. Maccecchini continued to feel that for her, basic research was too far removed from reality because it would not translate into humans—at least not quickly enough. Dr. Maccecchini knew she could offer more. But, to do this, she would have to find her own path.

Taking steps to the future: Dr. Maccecchini learned a great deal through her work in pharma companies and stepped onto her new career path with a strong sense of confidence in her scientific skills and business savvy. What she lacked, however, was the ability to directly take a drug from inception through clinical development. To do that, she realized, she’d have to start her own company—and that meant facing daunting odds. A newly invented compound has just a 1/10,000 chance of coming to market.

Undeterred, Dr. Maccecchini founded her first biotech company—Symphony Pharmaceuticals—in the early 1990s. Unfortunately, the drug this new company had in development ran into toxicity issues, ultimately leading to layoffs and the shrinking of the workforce from 30 people down to just three.

Like any good scientist, Dr. Maccecchini recognized the value in the adage of “it’s good to fail fast, fail early, learn and then move on.” When one of her investors shared some problems that two other companies were experiencing—one in Scotland and one in Japan—Dr. Maccecchini headed up the effort to merge Symphony Pharmaceuticals with these companies, hoping to turn them around and reassure investors that positive change was ahead.

It was a gamble that paid off. With her newly merged trio of companies, she was able to turn the tide. Knowing that early-stage compounds faced such slim odds of success, Dr. Maccecchini decided to streamline the companies and focus on production rather than invention. She sold the Japanese company, which focused solely on research, and integrated the Scottish company into Symphony to create Annovis—the world’s largest producer of DNA pieces meant for antisense and gene therapy in clinical trials. In 2001, after having grown sales from $3 million to $18 million, Annovis was sold to Transgenomic, Inc.
Where she is now: Today, Dr. Maccecchini is once again taking on the challenge of developing a novel treatment—driven by her continued desire to bring new and more promising treatments to the people who need them most. As CEO and president of QR Pharma, Dr. Maccecchini is working with her team to develop two compounds that have the potential to stop the progression of Alzheimer’s and Parkinson’s disease. In these compounds, QR Pharma sees the hope of bringing to market treatments that may literally change the course of these diseases.

Dr. Maccecchini is also a member and director of two angel funds—Robin Hood Ventures and Mid-Atlantic Angel Group—serving as an investor and mentor to those starting their own companies.

Advice to other scientists: In addition to motivation and talent, Dr. Maccecchini stresses the importance of feeling secure in your own strengths, something she learned from her own experience. As she gained self-assurance, Dr. Maccecchini became more confident as a scientist and, in turn, more outgoing—assets that proved invaluable in the search for investors. She also encourages her fellow women in science to continually push for the science—and career—they believe in. “If you persevere, you will find your way,” says Dr. Maccecchini, “but if you assume you will die, you will die.”

Dr. Maccecchini also believes that a “cookie-cutter career plan” shouldn’t be expected of innovators—and that no one should feel they need to follow the same career path for a lifetime. “Our brains work nicely into our 80s,” says Dr. Maccecchini. “We can change in the beginning, in midstream or at retirement—the work environment is more mobile than it used to be.” Coming from a woman who’s betting her career on understanding the brain, as the CEO of a company that works on developing drugs for Alzheimer’s disease, this seems like good advice.

The sick brain makes toxic proteins that inhibit nerve cells from talking to each other and slowly kill them. The brain then tries to protect itself from these toxic proteins and sequesters them into aggregates. So Aβ is packaged into amyloid plaques and tau into neurofibrillary tangles. Plaques and tangles are what we recognize as hallmarks of Alzheimer’s disease.

Incidence of AD increases with age and reaches a maximum of about 50% in people over the age of 85.  http://www.alzheimersdisease.com (2008)

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Alzheimer’s Drug Discovery Foundation at www.alzdiscovery.org
Alzheimer Research Forum at www.alzforum.org
Meet Mary E. Dominiecki, PhD
from biology professor to successful market research consultant

Profile by HBA writing staff

Current position: Associate group director, National Analysts Worldwide Research & Consulting

PhD: Basic medical sciences – microbiology (New York University School of Medicine)

Early career: Dr. Dominiecki spent her early career in science teaching biology as an assistant professor at Slippery Rock University.

Books-to-business turning point: After realizing that teaching wasn’t the ideal job she’d hoped it would be, Dr. Dominiecki decided it was time to venture out and find her true “dream job”. Relying on the network she had started building during her first co-op position at the US Department of Agriculture as an undergraduate at Pennsylvania State University, Dr. Dominiecki researched several career options before deciding on medical writing.

Taking steps to the future: Entering into the world of healthcare and pharmaceutical communications, Dr. Dominiecki worked first as a medical writer and then as medical director of a small medical communications agency focused on oncology. There, she built a team of writers and helped implement company-wide processes and standards.

Dr. Dominiecki’s next move, to a contract position with AstraZeneca in publications, allowed her to work on multiple teams and projects, including a co-promotion with Bristol Myers-Squibb.

“I definitely liked working in pharma,” recalls Dr. Dominiecki, “but very few opportunities were available at the time, and my contract at AstraZeneca wasn’t permanent.” So Dr. Dominiecki turned to the HBA, attending an HBA mentoring panel, where she met panel member Susan MacDonald, president of National Analysts Worldwide Research & Consulting (NA).

“Susan agreed to meet me for an informational interview, during which we discussed NA’s unique approach to consultancy, which integrates sophisticated market research methods with specialized industry expertise to guide important business decisions.” Dr. Dominiecki got more than information during her meeting—she also came away with the opportunity to interview for a position in the company’s bio-oncology group.

Where she is now: Dr. Dominiecki is now six months into her new position as an associate group director at NA. “So far, it’s been a great fit,” she says. “I get to work on all aspects of market research, from proposal development and survey design to data analysis and presentation.” She is also able to draw upon all of her previous experience, including presentation skills developed as a teacher, data analysis capabilities honed as a researcher, and pharmaceutical industry knowledge gained as a service provider and internal team member at AstraZeneca.

Advice to other scientists: Dr. Dominiecki began building her network early—during her undergraduate days—and advises others to do the same. “In these unstable economic times, it is important to keep networking, to keep your eyes open for opportunities and to have a good handle on your transferrable skills,” she says. “Organizations such as the HBA offer an invaluable opportunity to expand your network and build your professional skills.”
Meet Rebecca Urbanek, PhD
from medicinal chemist to pharmaceutical resource and project manager

**Current position:** Global compliance resource and project manager at AstraZeneca

**PhD:** Chemistry (University of Minnesota)

**Early career:** Dr. Urbanek loved the idea of being responsible for creating revolutionary pharmaceuticals from the time she learned about the field as a high school student. And, once she saw a direction to grow in, she began what seemed like the first step in a dream career as a medicinal chemist in AstraZeneca’s (AZ) central nervous system (CNS)/psychiatry therapeutic area.

**Bench-to-business turning point:** As a medicinal chemist at AZ, Dr. Urbanek quickly began to develop within her role as a pre-clinical team leader. “I loved that role,” she recalls, “especially the cross-functional working, the organizational aspects, the feeling you got from knowing you contributed to a really good team and a possible new drug to help patients.”

However, when the pharmaceutical business environment began to change—with mergers and acquisitions and the economic recession making research a key target for downsizing—Dr. Urbanek decided she’d need to find a new way to put her considerable skills to work at AZ.

**Taking steps to the future:** When Dr. Urbanek was notified that AZ would be leaving the CNS/psychiatry therapeutic area and that all lab-based activities would be closing down, she started to consider her next step.

Fortunately, the same management skills that stood out in her career as a scientist gave her the opportunity to stay on to help organize the department as it dismantled. And that bought her the time she needed to utilize the resources AZ offered to help employees find new positions inside the company. Leveraging the best parts of her previous position, Dr. Urbanek was able to adapt and grow into a whole new—and equally rewarding—career.

**Where she is now:** Dr. Urbanek has been in her new role as global compliance resource and project manager at AstraZeneca for several months now. She sees her job as very different and much more corporate, but a good challenge.

Though it seemed like a gamble at first to move away from her roots at the bench, to Dr. Urbanek, it made a lot of sense. She could see there were no guarantees that other pre-clinical research jobs would last in the current downsizing environment either. And, with the new corporate position, she wouldn’t have to relocate her family.

Ultimately, her decision paid off. Looking back at when she was transitioning and her future was uncertain, Dr. Urbanek remembers it as a tough time. “It was really hard, but I gained a lot by making myself go through it,” she says. “I know that I am capable of succeeding even in really difficult circumstances—and that’s given me a lot of confidence in myself.”

**Advice to other scientists:** Dr. Urbanek encourages her fellow women in science to stay open-minded and flexible in their outlooks during a career transition. “When I was making decisions regarding my transition, I knew what I liked and what I was good at—organizing and collaborating to reach a goal,” she recalls. “And, in order to gain the necessary proof of competency, I completed a formal training program in addition to my on-the-job project management training.”

Profile by Tracy E. Bunting-Early, PhD
Meet Johanna Allston, PhD

from successful professor to the go-to person for building successful biotech companies

Profile by HBA writing staff

Current position: CEO and chairman, bioCapture

PhD: Molecular biology (University of Alabama at Birmingham School of Medicine)

Early career: Dr. Allston began her career in the sciences in research and faculty positions at Rockefeller University and the California Institute of Technology.

Bench-to-business turning point: Soon after being awarded tenured medical school professorship, Dr. Allston was approached by Boehringer Ingelheim Pharmaceuticals to head up the company’s research department. “I was a little frightened,” she recalls. “I wasn’t sure what to expect, but I thought pharmaceutical research would need to be more targeted than academic research.”

When Dr. Allston learned that the company was looking for a leader who could provide solid scientific direction and focus, she decided to take a chance and accept the position. It turned out to be the right choice.

While at Boehringer Ingelheim, Dr. Allston guided the discovery of the first non-nucleoside analog inhibitor—her team’s groundbreaking work included designing and conducting the first-ever clinical trials for the novel drug. But as exciting and fulfilling as she found the position, a company-wide reorganization soon alerted Dr. Allston that it was time to look for her next career opportunity.

Taking steps to the future: In 1994, Dr. Allston took another chance when she teamed up with four other scientists to start ViroPharma, a pharmaceutical company the scientists hoped to build through drug in-licensing. As vice president of business development at ViroPharma, Dr. Allston, along with her team, succeeded in that goal—taking the company public in less than two years.

Where she is now: After working internationally for several years, Dr. Allston joined the Pennsylvania biotechnology community. She is currently chief executive officer (CEO) and chairman of bioCapture, a company that develops Capture Agent-coupled Particles (CAPs™) to separate and purify biological agents, and she is widely known in biotechnology circles as the go-to person for building a successful company.

Advice to other scientists: “Make sure you explain the science and technology in a relevant and targeted way so that your audience understands it,” says Dr. Allston. “To make a successful transition from academia, a scientist needs the ability to clearly explain technology to people who might not have the background to understand its value for themselves.”

As for the broader question of facing change—in life and in your career—Dr. Allston advises calculating the risks involved before you take them and taking time to figure out your goals to make sure you stay on course.
The bioCapture technology platform consists of highly-magnetic, solid nickel particles. Agents that bind specific cell population can be effectively coupled to the magnetic particles. When the agent-coupled particles are exposed to a mixture of cells, they bind only the cells recognized by the binding agent. Applying a magnetic to the side of the vessel pulls the magnetic particles and the targeted cells bound to them out of the cell mixture.

**GO ONLINE FOR MORE INFORMATION**

Learn more about bioCapture at www.biocapturellc.com
Meet Yvonne Paterson, PhD

from microbiology professor to inventor, company founder and associate dean

Current position: Chair, scientific advisory board and consultant, Advaxis Inc.

PhD: Biochemistry (Melbourne University)

Early career: After completing her postdoctoral fellowship at Cornell University, Dr. Paterson secured a position as an assistant professor in the Scripps Research Institute’s department of immunology. She was later recruited by the University of Pennsylvania as a professor of microbiology.

Bench-to-business turning point: Even while at Scripps, Dr. Paterson made it a point to pursue opportunities and experiences beyond the bench. By participating on various advisory committees, she had the chance to observe firsthand the start-up, growth and eventual sale of several small, science-based companies. It was these experiences that initially spurred her interest in inventions—and the commercialization of those inventions.

But as with most things in life, timing is everything. In 1994, the field of tumor immunology started to mature. “When the idea started to emerge that tumor-specific T-cells could kill tumor cells, I could see that it was the right time to incubate a new idea,” says Dr. Paterson.

Taking steps to the future: During this time, one of Dr. Paterson’s colleagues at PENN was working with Listeria monocytogenes, bacteria that could live within a cell’s cytosolic compartment. Linking this work to the concept that CD8+ T-cells recognize pieces of protein processed in the cytosol of cells, including tumors, Dr. Paterson made an exciting revelation—and the T-cell generating vector was born.

Recognizing the potential of her invention, Dr. Paterson patented the new technology—and soon, the new head of technology transfer at the University of Pennsylvania expressed interested in the T-cell generating vector for use as a platform technology (an invention that enables the creation of products or processes that support present or future development). The time was right to explore the possibilities.

With no data on the vector’s safety or efficacy in humans, Dr. Paterson...
knew her invention would never attract larger companies—but given its potential clinical application in a variety of diseases, she also knew it was an attractive candidate with which to start a new company. So, in 2002, she started Advaxis, together with some business founders and the support of the University of Pennsylvania. Despite a rocky start in tough economic times, Dr. Paterson—a firm believer in the role the inventor plays in the viability of a company—was sustained by her commitment to her invention, her investors and the patients she knew she could potentially help.

Where she is now: Today, Dr. Paterson sits on the scientific advisory board for Advaxis, which currently has four promising ongoing clinical trials in cancer. She also continues her work as a professor at the University of Pennsylvania, where she created a biotechnology commercialization class specifically geared toward scientists rather than business majors, and acts as associate dean for research for the university’s school of nursing.

Advice for other scientists: Dr. Paterson acknowledges that scientific advancement requires the ability to recognize the difference between discovery and scientific knowledge—along with being around the right people at the right time. She encourages other scientists to find ways to continually keep themselves motivated in their work and expand their peers beyond their existing world.

“My progress in biotechnology required persistence, a belief in my invention and a little naiveté regarding the amount of work involved in the commercialization of a technology,” says Dr. Paterson. “As an inventor, you also need to find funding, and that means you need to know how to explain the science behind your work to investors with little or no scientific background.”
Who will be the 2012 HBA Woman of the Year?

Nominate an outstanding woman in the healthcare industry for the 2012 Healthcare Businesswomen’s Association Woman of the Year Award. The WOTY is an exceptional leader with an accomplished career in healthcare. She may work for a large company, be an entrepreneur or may lead a smaller organization. Visit the HBA website at www.HBAnet.org to download the form and submit your nominations before the deadline of Friday December 30, 2011.