

Biophysicist in Profile



Tharin M. Blumenschein

When asked at the young age of eight what she wanted to be when she grew up, *Tharin Blumenschein* confidently answered "a scientist!" Such determination, which some call stubbornness, combined with an innate passion and curiosity, have driven Blumenschein throughout her personal and professional life.

Born on March 8, 1973, in São Paulo, Brazil, Blumenschein spent the early years of her life in the town of Piracicaba, located in the state of São Paulo. In 1978, Blumenschein's father took a job in Rio de Janeiro and moved his family to that city. Although she lived in Rio until she finished high school, Blumenschein always felt that "São Paulo was home." Moving from Piracicaba to the city was a big cultural shock. The accent and native cuisine were different, and the city was just too laid back to mesh with Blumenschein's serious personality. Blumenschein dealt with the change by escaping through

reading, which she had learned to do by the age of four. Some of her favorite books were the *Laura Ingalls Wilder* "Little House" series. She still loves to read, but now enjoys mostly science fiction and fantasy books where "the author creates a situation, like a world with three suns, and builds a story on how people react to that condition." At the age of 12, Blumenschein became a girl scout, which was very important to her. For the next seven years, the Girl Scouts put her in touch with the outdoors and hiking, a love which has remained with her to this day.

Growing up with a physicist father, Blumenschein saw science as a noble profession. She also had a fundamental interest in learning how things work. She remembers one day asking her father where lightning comes from and, "he drew a mountain and clouds, and put electrical charges in them to explain. I couldn't have been more than seven," she recounts, "but now I remember that as being important for my feeling that it's fun to find out how the world works." This curiosity, coupled with her interest in science, is what prompted her to start out in the biology department, when Blumenschein started

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her undergraduate studies at the University of São Paulo (USP) in 1990. She chose USP because it is one of the leading universities in Brazil. When USP created a new undergraduate degree in "Experimental Course in Molecular Sciences," Blumenschein immediately made the switch to the new major. It was called "experimental" because it was a new experiment in education, not because it included lots of experiments, although

they did have to be in a lab for the last two years of the course. While she enjoyed biology, Blumenschein missed the math, and this new major included an emphasis in math, physics, molecular biology, chemistry, and some computer programming.

With the guidance of *Hernan Chaimovich*, the course coordinator, Blumenschein thrived in the program. Chaimovich's approach to science had a lasting influence on Blumenschein, "He believes in doing top quality science in Brazil," she explains, "despite the somewhat difficult access to imported reagents and equipments." Because of his drive, Blumenschein and her fellow classmates spent their first two years in the program learning physics and math at the same level as students who chose that subject as their major. It was a really intensive program with three terms a year and no summer breaks. During her last two years, Blumenschein was required to choose a supervisor and plan what courses to take, choosing any course offered in the university, a luxury that is common in North America, but rare in Brazil, where most degrees have no flexibility in the first three years and limited choices during the last. Blumenschein chose *Fernando Reinach* because she wanted to learn to use molecular biology techniques. Reinach introduced her to the muscle area, an area Blumenschein has never left.

Blumenschein finished her undergraduate degree in 1994 and continued to work in Reinach's lab for her PhD, using myosin regulatory light chain as a model to study EF-hand sites. Working for Reinach was a great experience for Blumenschein because, "he is a very intelligent man and made his students work hard, not accepting any kind of sloppy work." One of Blumenschein's colleagues there, *Aurea De Sousa*, says

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that she was immediately impressed with Blumenschein, who received first place on the admission exam for Biology at USP. Sousa admires Blumenschein's ability to "read in quickly...she can read and summarize a page of a complicated paper in only a few seconds." The two still keep in touch, meeting at least once a year at the Biophysical Society meeting, and exchanging updates throughout the year on up-and-coming scientific topics of interest.

While working towards her PhD, Blumenschein attended a meeting of the Brazilian Society of Biochemistry and Molecular Biology that had a focus on structural biology. From the experience in Reinach's lab, Blumenschein knew she enjoyed working in molecular biology, however, this meeting sparked her interest in structural biology. Unfortunately, there were no labs working in structural biology at USP. Luckily, Reinach had collaborations with *Brian Sykes* at the University of

Alberta, who was also a speaker at that meeting, and suggested that Blumenschein contact him. Sykes was happy to have her come to his lab in Canada as a postdoctoral fellow since she was an expert in the muscle area, where his research is focused.

Blumenschein went to the University of Alberta as a postdoctoral research fellow in Sykes' lab. She enjoys working with Sykes, who is very supportive and encourages the members of his lab to "work hard, play hard." "Blumenschein is an excellent scientist, and a big part of our research program," says Sykes, "she is very dedicated and yet interested in a broad range of activities."

One of the first things Blumenschein did when she moved to Canada was to find a club where she could join other people in hiking and climbing. She is currently involved with the Alpine Club of Canada and a smaller hiking group with eight close friends. They hike in Alberta, in the Rockies, and sometimes right over the border into British Columbia.

Although Blumenschein hikes on a regular basis, she also has many other interests. "I seem never to have spare time," Blumenschein says, "I fill up my time with a good balance of work and fun." Of her participation on the ice hockey team for Sykes' lab, Sykes' says that, "It is pretty impressive to see a Brazilian woman playing on an ice hockey team!" Blumenschein is also involved with the Westwood Unitarian Church in Alberta. Looking for a spiritual community that did not impose specific

beliefs, she found Westwood, which "feels like an extended family where each person has his/her own ideas about spirituality."

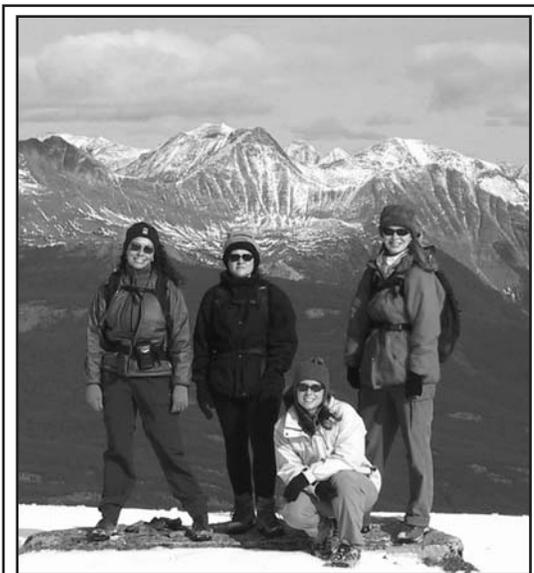
And there, she's been able to put her salsa dancing to good use. A few months after starting to attend Westwood, the church organized a fundraising event for a school in Nicaragua. Westwood was looking for someone to teach participants how to salsa and bring other dancers to the event. Blumenschein jumped in, using her

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salsa expertise, which she had picked up in a ballroom dance class she attended while living in Brazil. Blumenschein finds it rewarding to use one's talents to make a difference in other people's

lives. "I feel that since I never had to struggle to feed or clothe myself," says Blumenschein, "it's my duty to help those who do struggle." Through Westwood, she also volunteers as an "In-School Mentor" with Big Sisters and Big Brothers. For the past two years, Blumenschein has been working with a third grade girl, assisting her with homework and literacy skills. The two have developed a relationship, which has helped the child develop better social skills and self-esteem. Having always succeeded academically, Blumenschein feels it is "just fair to share it by giving a hand to other people."

Despite rock climbing, hiking, ballroom and salsa dancing, golf, bicycling, hockey and softball, "Blumenschein spends an extraordinary amount of time in the laboratory, spending most week-day evenings and a large portion of her weekends working on nuclear magnetic resonance (NMR) assignments and



Left to right: *Blumenschein* with hiking group members *Nicole Aippersbach*, *Jill Tucker* and *Genevieve Carolan* on top of Whistler's Mountain, in Jasper National Park, Alberta, Canada.

molecular biology," according to *Darrin Lindhout*, a friend and current colleague.

Alberta, according to Blumenschein, is a great place to live and work. "The lab produces high quality science, but the atmosphere is friendly, rather than competitive," she adds, "and the city is the right size.... not so small that there's no cultural life, yet not big enough to have serious violence and traffic problems."

In Sykes' lab, Blumenschein is currently using NMR to study troponin complex, which is formed by three proteins, and regulates muscle contraction. "Although people have been studying these proteins for decades," she says, "there are still so many unanswered questions!" While she started working with muscle proteins as an undergraduate student, as a postdoc Blumenschein has focused on learning NMR. She has one year left in the fellowship she received from Alberta Heritage Foundation for Medical Research, and her goal upon completion is to find a faculty position, develop her own research line, and have her own lab. The "younger

generation" of faculty in the Biochemistry Department is about ten years older than Blumenschein, and all have very successful labs. In ten years, she wants to be in a similar position. While Blumenschein still has ties to Brazil—her parents, sister, *Yasmin*, and brother, *Ivan*, live there—in the end she prefers Alberta. Blumenschein has recently applied for immigration status in Canada.

Blumenschein, who joined the Biophysical Society in 1997, is very involved in the Society's Early Careers Committee. She recently came up with the idea of the Mentor Database, which is now operational on the Society website. The goal of this database is to help people get opinions about prospective labs from people that work or have worked there. If someone opts to volunteer, the database stores their name and which lab they are willing to discuss and if they are willing to be a contact person in their department.

Blumenschein also worked with Early Careers Committee member *Bosco Ho* of The University of California, San Francisco, at the Baltimore Annual

Meeting to organize a table at the opening mixer where people who came alone to the meeting could meet others. She has also just recently become involved with the Placement Center, and will work with *Rachel Laudadio* of Harvard School of Public Health on that project. Being active in the Early Careers Committee is important to Blumenschein because that Committee deals with issues that affect her directly. "These are the transitions that I'm living," she explains, "first from student to postdoc, and now looking forward to faculty." Blumenschein likes to be involved in making a difference in the issues that affect her instead of waiting for someone else to "figure out how things should be." This way, she can have an input into the situation.

Since the age of eight, *Tharin Blumenschein* has known that science was in her blood. "If I hadn't become a scientist," she says, "I wouldn't be me. Science is a part of how I define myself." Former colleague, Sousa, says Blumenschein, "was born to science... it's hard to imagine her working in another field!"

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- Support for the Bridging the Sciences Coalition will be continued.
- Reduced membership rates for students and for new members from countries in financial need (as listed by the World Bank) will be offered.

The Finance Committee works to ensure the financial viability of the Society. This is needed so that, through its many activities and member services, the Society can fulfill its mission, namely, to encourage development and dissemination of knowledge in biophysics.

—*Mordecai Blaustein*, Treasurer

A=Audited B=Budgeted	2001A	2002A	2003A	2004B	2005B
Annual Meeting					
Revenue	\$1,100,195	\$1,119,320	\$1,100,383	\$1,274,105	\$1,377,168
Expenses	857,311	1,043,373	892,874	1,060,550	1,117,773
Net	242,884	75,947	207,509	213,555	259,395
Biophysical Journal					
Revenue	1,664,032	1,585,956	1,568,743	1,530,650	1,781,889
Expenses	1,270,664	1,396,786	1,527,948	1,500,092	1,723,257
Net	393,368	189,170	40,795	30,558	58,632
Membership Services					
Revenue	610,155	713,780	705,887	947,395	755,016
Expenses	681,442	958,640	902,243	1,153,711	1,056,729
Net	-71,287	-244,860	-196,356	-206,316	-301,713
Reserve Income					
Revenue	82,912	50,931	36,389	53,400	53,690
Total Revenue	3,457,294	3,469,987	3,411,402	3,805,550	3,967,763
Total Expenses	2,809,417	3,398,799	3,323,065	3,714,353	3,897,759
Total Net Revenue	\$647,877	\$71,188	\$88,337	\$91,197	\$70,004