

Angela Wandinger-Ness

She is not a great fan of pigeonholes, but Angela Wandinger-Ness was taken aback at a family dinner last year when her daughter Kelly, a biology major home from Washington University in St. Louis, announced a newfound love for biochemistry. “Well, it must run in the family,” said Wandinger-Ness. “Your father and I are both biochemists.” “You are *not*,” said a shocked Kelly. For the record, Angela Wandinger-Ness and Scott Ness have doctorates in biochemistry from the University of California, Los Angeles (UCLA), where they also met and married. But since 1985 when she took a postdoc with Kai Simons at the European Molecular Biology Laboratory (EMBL) in Heidelberg to study polarized protein sorting in the cell membrane, Wandinger-Ness has been a working cell biologist. Or at least she is “a protein biochemist who does things in the context of cell biology,” as she puts it. Whatever her label, Wandinger-Ness has been an ASCB member since her Heidelberg days.

That said, Wandinger-Ness is actually in the Pathology Department at the University of New Mexico (UNM) Health Sciences Center, which houses the university’s medical school in Albuquerque. For a fundamental research outfit that studies the Rab GTPases in endocytosis and polycystins in cell adhesion and polarity, the Wandinger-Ness lab has an amazing track record of collaborating with basic scientists and clinicians on a variety of human disorders. These have included polycystic kidney disease (PKD), protein transport retinopathies, *Helicobacter pylori* pathogenesis, endometrial cancers, and Charcot-Marie-Tooth disease. Recent methods work has carried the Wandinger-Ness lab into kidney stem cells and high-throughput screening of GTPases for drug discovery.

“Angela’s science is really broad spectrum,” says Mary-Pat Stein, a former postdoc now on the biology faculty at California State University,

Northridge. “It can cover virtually anything.” In her own case, Stein says it covered long afternoons teaching her confocal microscopy. After a graduate school career marked by difficulties and detours, Stein says that she had the singular good fortune to land a postdoc with Wandinger-Ness to work on intracellular trafficking. “But I had no immunofluorescence training whatsoever,” Stein recalls. “Angela would sit with me in the afternoons looking at cells on the confocal microscope and explaining what it was that I was looking at. I would say, ‘I think I see *this*.’ And she would look and say, ‘Ahem. No.’ I’ve never had anyone take that much time or have that much patience in showing me how to become a scientist. And Angela did that kind of thing with everyone in the lab, not just me.”

Stein says she learned more than technique from Wandinger-Ness. With her fresh start at UNM, Stein went on to a second postdoc at Yale Medical School with Craig Roy, where she focused on endosome pathways in the *Legionella* pathogen, and then to her own *Legionella* lab at Northridge. Wandinger-Ness gave her training, direction, and confidence. “Angela’s better than sliced bread,” Stein declares. “She listens to what really interests you, and she’s very willing to help you get there.”

Point to Point

Getting there scientifically for Wandinger-Ness is a careful process of building an airtight experimental story, says Robert Bacallao, a longtime collaborator on various PKD projects. “You can see it in the way her papers are written,” according to Bacallao, who is now at the Indiana University School of Medicine. “They are models of clarity, taking you along the main line of thought that develops from a very simple observation into a well-grounded, rigorously scientific, demonstrated result.” All too many authors start from point A and

“Angela’s science is really broad spectrum,” says Mary-Pat Stein, a former postdoc now on the biology faculty at California State University, Northridge. “It can cover virtually anything.”



Angela Wandinger-Ness

jump straight to point E, Bacallao complains. “They leave you at point E and can’t understand why you didn’t grasp points B, C, and D.” Wandering-Ness connects all the points to tell complete stories, says Bacallao.

Wandering-Ness is a first-generation American, born to postwar German immigrants in the town of Neptune on the celebrated Jersey Shore. She grew up in nearby Long Branch and Asbury Park. “Bruce Springsteen country!” she proudly proclaims. “Bruce was a few years ahead of me so I was not of age to go to the Stone Pony when he was playing there. I appreciated his music a little more after I went to college.”

That was the University of Massachusetts, Amherst, where she languished in introductory biology courses that focused on classical zoology and botany. Biochemistry, with its quantitative approach, was more interesting, and an undergraduate placement in Bruce Jacobson’s membrane domain lab offered her a glimpse of the research life. But it was the year she spent after graduation working as a technician for Don Creighton, an enzymologist at the University of Maryland, Baltimore County, that “trained me how to do things exactly and in a scientific context.” Eventually she decided that if she was going to graduate school, she wanted to go out west. Creighton had his PhD from UCLA. Did he urge her to consider his alma mater? “Actually Don didn’t think I’d get in,” she laughs.

She did. At UCLA, she met Scott Ness. It may have been risky for a serious couple to join the same lab, but they both decided to study proteins through the genetics of the bread mold *Neurospora crassa*, under Richard L. Weiss. Then came Germany, where Angela had family and they found a pair of postdoc positions at EMBL. Their first faculty positions were at Northwestern University in 1991. They headed west again in 1998 for Albuquerque, where they have both settled in deeply at UMN and into the New Mexico landscape. Wandering-Ness casually mentions the view from her backyard of the red-glowing Sandia Mountains that mark the eastern edge of Albuquerque. That’s where the Nesses live and where they raised their daughter, Kelly, the disbelieving biochemist,

and their son, Gregory, who is a business major at UNM. The New Mexico mountains are also where they walk Flash, their Golden Retriever, most mornings. It’s also where they head uphill each winter to ski the challenging and beautiful terrain at Taos.

Academic Overtures

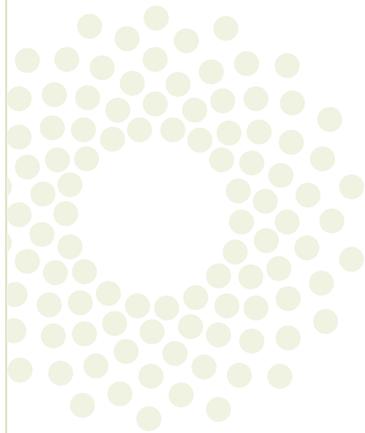
Besides her lab and her teaching, Wandering-Ness directs the U.S. National Institutes of Health (NIH)-funded Microscopy Facility for UMN’s Cancer Center. She is the PI for the NIH National Institute of General Medical Sciences Institutional Research and Academic Career Development Award (IRACDA) to support postdoctoral training in research and education for those interested in pursuing academic careers. Current fellows in the program hail from across the U.S. and represent a diverse group. Their research interests range from evolutionary biology to West Nile virus epidemiology. Teaching opportunities involve collaborations with New Mexico’s minority-serving

institutions and their predominantly Latino and Native American student bodies. To all this, she just added membership on ASCB’s Women in Cell Biology (WICB) Committee.

It seemed like the right time, and WICB the right place, to embrace her growing appreciation of role modeling for women in science, she says. Starting out, Wandering-Ness saw herself as part of the second wave of women researchers, grateful for the breakthroughs made by the first female PIs but confident of their own abilities. “There were enough women in my cohort that I didn’t want to be identified as a woman-scientist. I wanted just to be a scientist.” In retrospect, Wandering-Ness believes, “I was somewhat naïve. There were still barriers that I just didn’t realize were there.”

Still, she is now convinced that the greatest barrier to women of her cohort was the scarcity of good role models. This came to her only after she moved to UNM, a small but dynamic academic community with a large number of women in leadership roles. A primary influence for Wandering-Ness was her former chair in Pathology, Mary Lipscomb, who supported her far-ranging research interests and her growing

Wandering-Ness is a first-generation American, born to postwar German immigrants in the town of Neptune on the celebrated Jersey Shore... “Bruce Springsteen country!” she proudly proclaims.



involvement in graduate science education. “Mary always thought I had a talent for that and she motivated me to keep moving.”

A turning point was being chosen for the UNM Medical Education Scholars Program, a year-long faculty-development program. With its emphasis on problem-based learning, the Scholars Program “was eye-opening,” Wandering-Ness reports. “I’d been teaching (as a faculty member) for six years at that point, but nobody had told me you had to have learning objectives tied to assessment. I’d always tried to get there by approximation, but until you understand those links, you’re not going to be effective.”

Teach Scientists Science Teaching

The notion that scientists could be taught to teach was “not in vogue then,” at least outside Albuquerque, says Wandering-Ness. “Nobody was training scientists in this and yet when they got their first faculty position, they were expected to be fully formed academics.” Science education pedagogy may finally be coming into vogue elsewhere, but at UNM Wandering-Ness and colleague Sherry Rogers have already forged ahead, establishing a University Science Teaching Certificate program for graduate students.

Kelly Chavez is one of its graduates. The certificate is structured as a string of elective courses leading to an individual education research project. Chavez said it crystallized her career plans of building her research lab around a commitment to teaching. Wandering-Ness was instrumental in getting her to join the certificate program, Chavez says, and then to go on to win an IRACDA fellowship at the University of California, San Francisco. “When Angela’s excited about something, there’s no hiding it. And it rubs off on you.”

Chavez recognized how contagious this could be while taking Wandering-Ness’s graduate introductory cell biology course. “We would each have to go... [to] the board and present our answer. I guess some people found that a little intimidating, but for some reason I really liked doing it,” Chavez recalls.

“I just remember Angela asking me, ‘So how would you test that?’ I knew the answer and started jumping up and down and shouting, ‘Phosphotyrosine!’ I got it! And Angela was like, ‘Okay. Let’s move on to the next question.’”

Whatever the next question—scientific or academic—Wandering-Ness figures it will look more manageable from the hills above Albuquerque, walking with her husband, kids, and Golden Retriever by morning light. ■

—John Fleischman

“I’d been teaching (as a faculty member) for six years at that point, but nobody had told me you had to have learning objectives tied to assessment. I’d always tried to get there by approximation, but until you understand those links, you’re not going to be effective.”

Cool Stuff ...



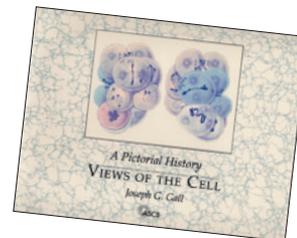
Career Advice for Life Scientists,
Vol. III
FREE



CBE—Life Science Education,
FREE online journal, FREE poster



Notecards
Blank, all occasion, 12 notecards
Mitosis Series, Meiosis Series
\$12 per box



Views of the Cell: A Pictorial History
\$29 each

... visit the ASCB Online Store at www.ascb.org