These doctors strategized, made deals, and grew tough skin as women breaking into the “old boy’s club” of medicine. Brilliant and tenacious, they achieved the highest positions in medicine and revolutionized their respective fields.

Here are their untold stories.

A photograph of three women in a wood-paneled study. One woman is seated on a leather sofa on the left, another stands in the center, and a third stands on the right. A large grandfather clock is in the background. The room is filled with books, a lamp, and a patterned rug.

TRIPLE TRIUMPH

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A joint imprint of Syracuse University Libraries
and Syracuse University Press

Recommended Citation:

Gorovitz, Samuel, and Newton, Cathryn R.,
eds., Triple triumph: Three women in medicine:
Syracuse, New York, Syracuse Unbound;
Syracuse University Libraries and Syracuse
University Press, 48 p., <https://doi.org/10.14305/sub.9781684450015>

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ISBN: 978-1-68445-000-8
e-ISBN: 978-1-68445-001-5

A digital version of this publication is in the
Syracuse University institutional repository at:
<https://doi.org/10.14305/sub.9781684450015>

This printing was generously supported by

UPSTATE
MEDICAL UNIVERSITY

Triple Triumph: Three Women in Medicine

*Left to right: Dr. Ruth S. Weinstock,
Dr. Sharon Brangman, and Dr. Patricia Numann*

Three physicians, all women, each perceived serious unmet needs in their fields, and envisioned imaginative approaches to meeting those needs. Each encountered resistance, discouragement, and obstruction from the traditional, male-dominated departments in which they worked. These powerful pioneers, undeterred, created programs that earned the highest levels of national distinction and acclaim. Their work and their names are now legendary—in geriatric medicine, in the treatment of breast cancer, and in diabetes research and treatment. Their stories differ, but the commonalities help us understand why constructive change is often so hard-won, and what it takes in commitment, courage, and tenacity to triumph in the end. Sharon Brangman, Patricia Numann, and Ruth Weinstock are inspiring heroes, from whom we can all learn essential lessons.

Introduction

By Samuel Gorovitz

One evening in January 2016, talking with Sharon Brangman, Patricia Numann, and Ruth Weinstock, I said that each of them had a story about their careers so important and compelling that they ought to write those three stories, to appear together with a reflective essay exploring the commonalities and significance of their struggles and accomplishments. Each immediately refused.

Sharon Brangman said she has no time to write, and is as busy as ever with a new major grant to administer in addition to all her other responsibilities. Ruth Weinstock said that her clinical and research commitments make writing impossible, adding that perhaps if and when she retires she could consider it. Pat Numann explained that in retirement she is traveling almost constantly, and certainly has no time to write about her career. I replied “Each of you triumphed over long odds by steadfastly refusing to accept “No” for an answer. That will happen to *you* right now.”

I proposed a process by which they could tell their stories orally, retaining total control over the content, without having to write a single word. They each agreed.

Melissa Chessher, chair of the Magazine Department at Syracuse University, located an ideal student journalist, Danielle Roth, who had already demonstrated a high degree of professionalism in various dimensions of magazine journalism. Danielle interviewed each of the three physicians, with a set of questions developed to guide the interviews. She used the interview transcripts as a basis for producing first drafts of the three stories, and as springboards for a second round of interviews. This iterative process culminated in the stories you see here.

I also sought the collaboration of my colleague Cathryn Newton, both to help guide the project and to co-author the reflective essay with me. As a distinguished scholar in paleontology and also in oceanography, she too has triumphed over many early obstacles, including having been for 16 years the only woman in our Geology Department. As one who has also worked with Drs. Brangman, Numann, and Weinstock, she understands their work and their trajectories deeply. And as an unusually insightful analyst of issues facing scientists in general and women scientists in particular, she has done me great service by agreeing to collaborate on this project.

With Danielle’s assistance, we engaged Drew Osumi, then a commercial photography student in the Newhouse School, as our photographer. Danielle also designed this entire publication. We are proud of these students, and grateful for the swift and fine work they have done.

We thank Upstate Medical University’s President Danielle Laraque-Arena, Syracuse University’s College of Arts and Sciences, and Ramesh Raina, chair of Biology at SU, for financial support for the printed version of this publication. We thank Barry L. Wells for providing essential substantive content, critical acumen, and steadfast encouragement. Many others also assisted us: Euphemia Frie, Darryl Geddes, Roberta Hennigan, Cara Howe, Anna Kahkoska, Anne Lutz, Gabriel Nugent, Amanda Page, Alice Randel Pfeiffer, David Seaman, Melanie Stopyra, Synergy Transcription Services, Scott Warren, and Lynn Wilcox.

Dr. Sharon Brangman

Advocate for the Care of Older Adults

by Danielle Roth

Patients have sometimes assumed Sharon Brangman was the social worker.

A nurse once snatched a chart from her hand, saying, “You have no right to look at that,” before reading “M.D.” on her nametag. She goes on rounds, wearing her white doctor’s coat, and some have interrupted her work to ask, “Excuse me, could you change my husband’s bed pan?”

She’s explained her credentials—SUNY Upstate Medical University Division Chief of Geriatrics, Geriatric Medicine Fellowship Director, former President of the American Geriatrics Society—to patients who thought she only succeeded because of affirmative action policies.

These microaggressions, daily forms of racism or sexism, have tested the fortitude of Dr. Brangman as she has worked her way up in geriatrics. She has pioneered the study of ethnogeriatrics, developed a world-class geriatrics center in Syracuse, and responded to the needs of older adults to improve their care. She has risen at SUNY Upstate Medical University from Assistant Professor of Medicine in 1989 to Division Chief of Geriatrics and Distinguished Service Professor. As an African American woman, she has faced an institutionally racist public school system, discouraging college advisors, and fear-inducing medical school professors. Despite these obstacles, she kept focusing on the greater goal—to bring health care to marginalized individuals—and has become a national leader in geriatrics.

Sharon always found support from her mother, one of the first nurse practitioners in Syracuse. Her family moved from New York City to Syracuse when Sharon was 13 years old. The middle school she attended lumped the African American students together on a vocational track. The school immediately placed her into typing classes in which she had no interest. “Someone looked at me and decided that I would be a typist,” she said. Her mother was determined she would graduate with a Regents Diploma, a science- and math-based degree. With her mother as an advocate, Sharon joined a few other black students to study math and science with mostly white classmates. In physics, she was the only black student. In biology, a few more had joined her. Calculus had only her. (She taught herself how to type about 15 years ago.)

When she was growing up it was still considered a long shot for her to become a doctor. But health and how the body functions intrigued her from a young age, and Sharon was determined. After graduating from Nottingham High School, she received a scholarship and studied biology at Syracuse University. She was the first in her immediate family to attend college. Her family drilled into her the importance of higher education. Still, she was charting new territory without a built-in network of college graduates to ask for advice. Her undergraduate advisor would suggest impossibly horrendous course loads, saying that heavy class schedules were the only way to reach medical school after graduation. Once again, her mother became a key beacon of support. She helped Sharon talk to some of the medical professionals her mother worked with. The doctors Sharon consulted with helped her realize that her advisor set her up for guaranteed failure. She took a more appropriate course load and did well. Sharon was also able to find professors at Syracuse University who provided encouragement and support. She learned early on that it may take extra work, but she could always find someone who provided genuine interest and guidance.

Dr. Brangman is certain this advisor’s behavior affected some of her friends who did not go on to become doctors. The advisor was acclaimed for encouraging women to pursue medicine—but not if they were women of color. Sharon’s roommate at the time also wanted to become a

doctor, but changed paths and graduated with a Spanish degree. After working as a Spanish teacher, she decided to become a physician's assistant. She could have become a doctor with the right encouragement and support.

“I thought I would be lumped together with everybody and assumptions would be made about me. Everybody needs the benefit of the doubt and support. I didn’t know if I was going to get that.”

“If you don’t have someone to help you keep the perspective and keep the focus on the big goal, it will derail you. There are many obstacles to go through any time you decide to reach for a big goal,” Dr. Brangman said. After Dr. Brangman established herself as a leader in geriatrics, that discouraging former advisor called to ask for advice about her own mother and requested that Dr. Brangman return to give a lecture to the premed undergraduate students. Dr. Brangman was happy to help.

Sharon entered medical school at SUNY Upstate in 1977 as one of only a handful of African Americans. The year before she started, the school had accepted the largest number of minority students in its history. Most of them did not make it to the second year. Rumors about their dismissal spread a sense of fear, which made Sharon nervous. Those who did not leave were repeating their first year. “I thought I would be lumped together with everybody and assumptions would be made about me. Everybody needs the benefit of the doubt and support. I didn’t know if I was going to get that,” she said. She was determined to find success. “I studied my butt off,” she said.

One infamous professor smoked a putrid pipe. For certain anatomy discussions, he would display Playboy centerfolds to point out body parts. He would display pictures of baseball players from the Negro Baseball Leagues and do a dialect impression while describing their muscles. He hardly thought the African American students could succeed, but Sharon resolved to prove him wrong. During the hardest tests imaginable, he would stand over her and blow the smoke right over her while she kept her head down to take the test. He also would do this to the other African American students in her class. She worked intensely hard just trying to pass every class. Some of her friends failed. “He was very, very powerful. So I had to eat it and be quiet. And I passed the test,” she said. Passing would be the only way to prove her abilities and show discouraging individuals that she was going to succeed, she thought. Fear kept her focused. Rumors connected this specific professor to the minority students who did not advance to the next year. His position gave him a major impact on which students moved from one year to the next in medical school. She had his class for a whole year. Even after that class, she continued to be nervous. For most of

medical school, she felt petrified. “It is starting to get a little blurry because it was so long ago. But I remember that pipe very well,” she said.

She worked twice as hard just to be considered “average.” As with her undergraduate years, she did not enter medical school with a built-in network for advice, so she created her own. She tapped into this group to know what material to focus on when studying. Not all the professors discriminated against her. She met Dr. Numann, already a professor of surgery, through her mother. She admired Dr. Numann for her excellence in a demanding field and for being one of the few women professors at Upstate. Some other professors also acted kindly and approachable toward her. She made sure to ask questions, even if she thought some professors did not want to answer them.

Dr. Brangman does not think her success signifies that her ability is unique. “One has to have the opportunity and the right environment to succeed,” she said. Her peers who did not complete medical school would have been as confident and able if they had the right environment. But if somebody important decides that you’re not to become a doctor, that person holds a lot of power. “People say, ‘Well, you made it.’ Yeah, I made it. It is a wonderful accomplishment. But think of the other people who could have made it, too” she said. Medical school challenges students, and Dr. Brangman believes the education should not be easy given that lives depend on the quality of education and training.

After graduating from SUNY Upstate in 1981, she planned to leave this “dinky town and never come back.” To cover the cost of medical school, she borrowed funds from the National Health Service Corps with the agreement that she would work in an area with physician shortage after graduation. She moved to the Bronx to pursue an internship and residency at Montefiore Medical Center. The program she selected advocated for quality healthcare for everyone and addressed poverty’s effects on health. She worked in areas of the south Bronx that had been decimated by poverty. Her original plan was to become a physician in a public clinic and focus on an underserved community. She initially emphasized primary care, and then started to notice that older adults had unmet needs.

The older patients she treated wanted to stay independent and functional. They were determined to maintain their ability to do their own laundry and grocery shopping. Her younger patients had a different perspective. “I became frustrated with younger patients who had no or minor illnesses versus people who had multiple chronic illnesses and how they approached it,” she said. The people she expected would want to stay home were those most grateful for anything that would help them stay independent. She realized that older adults were a marginalized group that often received poor care. She saw more ways to make an impact in the relatively new specialty

Dr. Sharon Brangman brought a world-class geriatric facility to Central New York.

of geriatrics than in general medicine.

Her two years working repaying her National Health Service Corps scholarship solidified this interest. She noticed the social and economic issues that impacted the health of older adults. While working in the Bronx, Dr. Brangman was treating an older man who had ulcers on his foot from diabetes. She instructed him to elevate his legs and stay off his feet to help the wound heal. But the wound was not improving. After getting to know her patient, Dr. Brangman found out that he lived on the top floor in his building and his elevator was chronically broken. Walking up and down the stairs was making his foot worse. “Without knowing the context of his social needs, I realized the medical care I was giving had no way to help him,” she said.

When she started her career, she admits she was idealistic and had no idea what she was getting into. She saw the emerging field of geriatrics as an opportunity to improve healthcare for older adults. “I had no clue how hard it would be, or how long it would take to reach that goal. That’s probably a good thing. If you know how hard something is going to be at the beginning, you might just say: forget it. Let me do something else,” she said. Geriatrics faced resistance from general practitioners when the field started to develop as a specialty. The classic line was “I take care of older adults all the time. Why do they need a specialist?” From the perspective of a

geriatrician, the medical issues regarding an 85- or 90-year-old patient might parallel those of a 40-year-old patient, but they must be looked at in a completely different way. “That was our fight: to get geriatrics infused into medical school curricula so that every doctor who graduated had some experience with geriatrics,” she said. A curriculum had to be developed. Research questions had to be explored on issues related to older individuals. Geriatricians looked at how health systems accommodated the needs of older adults. The different avenues of this newly emerging specialty appealed to Dr. Brangman. “I could pick so many different directions to focus on, and possibly alter how older adults receive care in this country,” she said.

Her idealism got her hooked, and the ability to have an influence in geriatrics sustained her interest. In 1988, she sat for the first boards offered in geriatrics. As much as she enjoys caring for patients in an exam room, she understands that many things outside the exam room affect their health. “Within my realm of reach, I can have impact,” she said.

During her training, she joined a professional organization called the American Geriatrics Society (AGS), which facilitated her influence on geriatric medicine nationwide. She latched onto the energy and interest the Society generated for improving care for older adults. Dr. Brangman has contributed to establishing curricula for residency programs to ensure that physicians in training have a basic knowledge of geriatrics so that they can provide better care to older individuals. She also worked with AGS to help influence policies that affect older adults by meeting with members of Congress in Washington, D.C. “It’s never one person alone influencing change. It’s always a team. Actually, that’s what geriatrics is all about: a team approach to care,” she said.

Within AGS, she found a group of people who, like her, were concerned about the treatment of older adults from different racial and ethnic groups. They formed an interest group that started to study ethnogeriatrics, and the importance of all health providers attaining a level of cultural competence, a term that someone in this group most likely coined. They organized symposia that were well received at the Society’s annual meetings. Eventually the group successfully petitioned to have their ethnogeriatrics interest group become a standing committee of the AGS. Dr. Brangman was the founding chair of the Ethnogeriatrics Committee and led its members in the development of projects involving clinical care, educational resources and research with other committees within AGS.

She and the Ethnogeriatrics Committee helped conceive and edit a groundbreaking book, *Doorway Thoughts: Cross-cultural Healthcare for Older Adults*. This book helps healthcare professionals interact with patients of ethnic, racial, or religious backgrounds that differ from their own. By

becoming involved with more projects, she gradually gained more leadership positions and recognition. She became a board member of AGS and in 2010 was elected president and then chairman of the board. The Association of Directors of Geriatrics Academic Programs, which works closely with AGS, nominated her to be on their board. Now, she serves as its president. She also serves on the board of the Health in Aging Foundation, and is frequently called upon to represent AGS with media requests.

Dr. Brangman has had a powerful impact locally through her positions at SUNY Upstate Medical University. Central New York started to look more appealing than New York City to her after she and her husband had two children. They returned to Central New York in 1989. She no longer considers Syracuse to be a “dinky town” and has found it to be an excellent place to raise her family and develop her career.

Dr. Brangman worked tenaciously for years to create space specially designed for geriatrics at Upstate Specialty Services at Harrison Center. Her old practice, a converted office building, did not accommodate her older patients well. Visitors had to park far away. The ramps presented difficulties for those using wheelchairs. Older individuals found difficulty with waiting in long lines to check in. Small features of the exam rooms that would not be an issue for younger patients presented problems for her older demographic. Every exam room had a full-length mirror behind the door, which would startle and agitate those with dementia who were not able to recognize their own image in a reflection anymore. They think another person is in the room, so Dr. Brangman and her staff covered the mirrors as a short-term solution.

The three-foot tall tables in the exam room presented difficulty for patients with limited mobility. Dr. Brangman and her staff stopped examining patients on the table and placed them in chairs, which limited the exams. After several years of asking and navigating a labyrinth of committees, her practice received one adjustable table. This table allowed someone to lie down and then be lifted up, but there was a circular hole for someone’s face. It was a massage table. Her practice did eventually receive one proper table, but then they had to prioritize which patient needed that table the most.

This “one size fits all” approach to a doctor’s office was not acceptable for Dr. Brangman’s clients. After 15 years of advocacy, Dr. Brangman moved her practice to its current location at Harrison Center in 2012. She helped create this space so that it would best accommodate her patients. Patients enter Harrison Center and find her practice immediately to their right. Wheelchairs glide through widened doorways. The development of this specialized geriatrics clinical practice at Upstate has been one of Dr. Brangman’s greatest achievements. No other practice in Central New York offers comprehensive geriatric assessments for older adults. This medical practice,

called University Geriatricians, is also the clinical site for the Central New York Center of Excellence for Alzheimer's Disease. The office is easily accessible and inviting. The height of the exam room tables can easily be adjusted depending on the person's mobility. And the staff have adopted functionalities apart from the physical space to meet the needs of her patients. Nurses can add reminder notes to help personalize phone calls and have a more effective conversation with their patients. Dr. Brangman made it common practice that the adult child or caretaker also gets reminders about upcoming appointments, something that's crucial for a patient with memory loss. Nurses can note if the patient is hard of hearing or prefers to be contacted at a certain time of day. Because of these many small changes, her department has the lowest no-show rate for appointments among Upstate's many clinical departments.

People ask Dr. Brangman how she planned such a successful career. "It's just funny how things happened, because I did not sit and plan every specific accomplishment. I wanted to be a doctor, but didn't necessarily imagine all of the outcomes I've achieved," she said. She followed her interests, volunteered when able, and took advantage of opportunities that were offered. "When I first started attending the American Geriatrics Society meetings years ago as a trainee, I never thought that one day I would become the president," she said.

When she set out for medical school, many people discouraged her, saying she should have a 'Plan B' in case she didn't make it. Others offered encouragement and assistance. With determination, fortitude, and persistence, she proved the naysayers wrong and followed her vision to improve geriatrics locally and nationally. And her daughter, a physician in San Francisco, is a graduate of Harvard University and the Brown University Medical School. There, her research mentor was Ruth Weinstock's brother Martin, whom she assisted in the development of a nationally significant telemedicine program in dermatology, now widely adopted by the Veteran's Administration medical system. The legacy continues.

Dr. Patricia Numann

Skilled Surgeon, Trailblazer for Women

by Danielle Roth

“Dear, you go to sleep now,” doctors would say to patients with a breast complaint. Perhaps she noted some tenderness. Perhaps she felt a lump. Perhaps she actually had breast cancer. She didn’t know, and her male doctor was unsure as well. The doctor would continue, “If it’s cancer, we’ll remove your breast.” These could be the last words a young, otherwise healthy woman would hear before she underwent surgery to remove her whole breast. This common treatment struck Pat Numann as morally wrong when she started studying surgery in 1965 at SUNY Upstate Medical University. Further, she could not find research to support this common practice that she found paternalistic. Lumps have a small risk of being cancerous. Research proved radiotherapy to be an effective treatment. Women would go to sleep and wake up missing a piece

of themselves, even if they were as likely to be able to be treated without removing their breast. In this environment Dr. Numann started her medical career. Her classmates and professors in her undergraduate studies constantly told her she would take a man's place if she went to medical school. While at medical school, the chairman warned, with good intent, that she would ruin her life as a woman if she pursued a surgical residency. She completed that residency as the only woman in the class. Undeterred, she became the first woman surgeon at Upstate, the first woman chair of the American Board of Surgery, the second woman president of the American College of Surgeons, the founder of the Association of Women Surgeons, and a leader in endocrine and breast surgery. Raised on the virtues of honesty and respect, she created a community of support at Upstate and nationally, when she didn't even know another woman surgeon. A renowned leader at Upstate when she retired, she had created a legacy of supporting women surgeons, and nationally leading breast care and endocrine surgery practices through her work at Upstate.

The Patricia J. Numann Center for Breast, Endocrine and Plastic Surgery Center at 550 Harrison Place has on-site imaging, its own operating room, and the ability to schedule patients quickly in one of many exam rooms. The breast care clinic had started with just two staff members, Dr. Numann and a nurse practitioner, Jane Dantoni, in a cramped space borrowed from the cancer center. They convinced Upstate's Auxiliary to raise funds to support the creation of a breast center, while they treated patients a few times a week in the borrowed space. Dr. Numann and Jane shared an examination room, with the examination table as their shared desk. They shared one stool. Their two secretaries had such a tiny space that when one had to get up, the other had to move her chair. A few days a week, they would see patients who noted concerns with their breasts. Her breasts felt lumpy, sore, too big, too small, too soft. Whatever the concern, Dr. Numann and Jane would listen to the patient and provide proper treatment.

She found this work rewarding: she gave women respectful, research-supported care. But this kept her from her passion for endocrine surgery. She loved the challenge and precision that this type of surgery required. Endocrine surgery, a technically challenging surgery, entails operating on three glands: thyroid (four inches wide), parathyroid (as big as a grain of rice), and adrenal (one inch wide). She became a national expert and a leader in this surgery late in her career, averaging hundreds of surgeries per year.

She first developed a love of surgery when she saw what she thought were the smartest, greatest doctors working first hand. When her mother developed pancreatic cancer during Pat's third year of medical school, Pat brought her mother for treatment at Upstate. On Nov. 22, 1963, the rest of the nation mourned the loss of President Kennedy while Pat patiently waited for the results of her mother's surgery. After the surgery, it was evident her mother would not live much longer. Pat, with the blessing of Upstate, went home to the Catskill Mountain region to care for her

mother. While on leave from medical school, she missed the rotation devoted to learning about surgery. The Chairman of Surgery, who performed her mother's operation, told Pat that she learned more from caring for her mother than she would have in the few weeks on the surgery rotation. Eager to learn more

about surgery, she completed the surgery rotation during the summer. The biggest draw: She could fix people. A patient would have an operation and would get better. Pat found that surgery required technical skill and strong relationship skills with patients, both of which she loved. Those surgeons were the best doctors she had seen so far, and she strived to be like them.

From his perspective, pursuing a surgery career would ruin her life as a woman. How would she be pregnant and have a family as a woman surgeon?

Then came the problem: the world wasn't ready for a woman surgeon.

She sent out applications for surgery residencies; all were returned. Medical schools didn't read them. Why would they? Women can't be surgeons. Dr. Numann remained optimistic. Perhaps doctors thought this way because they had never met a woman surgeon before, she thought. Determined to have a surgery residency, she explained her situation to the chairman. From his perspective, pursuing a surgery career would ruin her life as a woman. How would she be pregnant and have a family as a woman surgeon? "Why would I ruin my life if you haven't ruined yours?" she asked. The chairman spoke out of paternalistic concern, not with malicious intent, when he said it would be a hard life for her. "Well, I want it," she retorted.

She made a deal with the chairman to split her internship at Upstate between medicine and surgery. If after six months of studying medicine she still wanted to be a surgeon, and if the surgeons thought she was qualified, she would be able to have a surgery residency. She graduated in 1970 with no one offering her a job. She arranged a position at the Veterans Hospital and found an endocrinologist who did research there, Dr. Arnold Moses, who would teach her to do research. Only a week later the new Chairman of Surgery offered her a position as an assistant professor at Upstate Medical University. As one of the first women surgeons, she initially had difficulty finding patients. This challenge gave Dr. Numann extra incentive to start educational campaigns on breast care. She traveled to Kiwanis Clubs and other community groups to share best practices for breast care. She explained options apart from full mastectomies. She shared information often with men concerned with their spouse's healthcare.

Her personal charm and community involvement helped build her reputation. More and more patients and doctors requested her as their surgeon. Her advocacy in the community for proper breast care led to more and more patients and doctors selecting her as their surgeon. She became

known for the technically excellent thyroid and parathyroid operations and her small incisions. This success did not go unnoticed by jealous male peers. When a new Chief of Surgery came, who practiced the same type of surgery, he viewed her as competition because clients preferred her care to his. How upsetting for him that he was being beaten by a woman! He fired her, not once, but consistently.

The first time he said she was fired, she believed him. She told her community of co-workers at Upstate that she would be leaving. Her friends asked her why she looked upset and, matter-of-factly, she told them that she lost her position. Dr. Numann had already arranged to move into a private practice and had received a good offer to leave town when she spoke with a patient about the incident. He said, “I wouldn’t respect you very much if you let one rotten son-of-a-gun run you out of your home.” Dr. Numann, not quite ready to leave the community she had built, decided that she would not let this unwelcoming individual push her out of Upstate. Even though this individual repeatedly made her feel unwelcome, she had fostered a supportive community at Upstate.

Dr. Numann has a keen ability to win people over and create a community. She believes she would not have succeeded in her career if she only relied on supportive women to help build her career. Those she calls “enlightened men,” men who treated women with respect, supported her career. She found support in nurses, and in Dr. Sharon Brangman’s mother, one of Syracuse’s first nurse practitioners. Many wives of doctors encouraged her pursuits. However, she did not know any other women surgeons.

In the late 1970s, she traveled to Tucson, Arizona for the first Women’s Leadership in Academic Medicine conference sponsored by the American Medical Women’s Association and the American Association of Medical Colleges. At first, they rejected her application for the limited number of spots for the expense-paid trip. Determined to arrive, she bargained with the event organizer to allow her to pay her own way and attend the conference. Then she convinced her Dean that he should help pay her way to the conference.

She joined 20 women—pediatricians, radiologists, OB-GYNs, pathologists—and realized that the sexism she muddled through happened to women in medicine nationwide. She was not alone. She thought she was treated unfairly because she was the only woman in the surgery department. But these women worked in fields more open to women doctors. “How do you treat a pediatrician or pathologist unfairly?” she thought. This experience made her re-examine the unfairness that had followed her career thus far. The conference raised her awareness of the detrimental effects of bias as women were being treated unfairly across the board.

The conference attendees promised to put what they learned into action locally and nationally. When Dr. Numann returned from the conference, she led the creation of the Women’s Caucus,

Dr. Patricia Numann specialized in endocrine and breast surgeries during her tenure at SUNY Upstate Medical University.

currently called the Presidential Committee on Women's Issues, at Upstate. This women's group tackled unfairness in promotions, the tenure process, and salaries, among other problems. She remembers the deans and hospital directors always being receptive to being fair, once she had the data to back up her agenda. As with medical research, data drives everything. "I found a much better way of dealing with things than whining. You need the data, and you need a concrete plan," said Dr. Numann.

Dr. Numann pondered how to keep the promise to bring fairness to women surgeons nationally. She thought, "How could I do anything for women nationally?" She didn't even know another woman surgeon. So she started small. During the American College of Surgeons' Clinical Congress, a national meeting for surgeons, she posted a little note on a bulletin board inviting women to join her for breakfast. About 20 women joined her. Most did not know another woman surgeon before that breakfast. They discussed their careers, the issues of gender-based bias, and strategies for succeeding in their environments. One of their first "campaigns" was to make sure everyone knew they were doctors, not nurses or spouses, at the conferences. The conferences had exhibit areas showing new pieces of equipment, instruments, books, and other innovative materials. The people showing off the new tools would call the women "dear." They would

dismiss the doctors as the spouse of a surgeon, not the surgeon. The male surgeons, however, would receive full demonstrations and complementary instruments. After the breakfasts, the women started to correct them. They'd point to their badges, explain their qualifications, and tell the product promoters to call them "doctor."

Gradually, more women joined the breakfasts each year. In 1981, they created a formal organization: The Association of Women Surgeons. AWS has helped many women develop leadership skills and gain national visibility. Many of the women who served in leadership positions in the American College of Surgeons also worked with this women's group. The only two women presidents of the American College of Surgeons were members of AWS, one of them Dr. Numann.

The American College of Surgeons always admitted women surgeons; however, few served in leadership positions. Dr. Numann wrote a letter asking where all the women surgeons were. After this letter, she started to see more women speaking on panels, not yet moderating the panels, but better than nothing, she thought. Knowing the power of research, she decided to track the data on the number in leadership positions such as officers and committee chairs. Both those positions were zero for years and years. She and her team told this to the leadership, even though they were not keen on listening.

This persistence helped her join some committees, including a committee that picks speakers to present on cancer topics at a global congress. One year in the late 1980s, the commission selected breast cancer as the topic. A list of potential panelists was presented at the committee. Dr. Numann called out the group for being all "old, white men," a phrase she is known for saying. The committee lacked diversity entirely. The chair of the committee approached Dr. Numann. "You're right," he said. "You go back and you give me a list that doesn't have old, white men on it and we will merge that list with the current one to get a diversified group." Dr. Numann did, and the panel had a diverse group. After that, Dr. Numann and two women physician friends maintained lists of "worthy women" to nominate for membership organizations. Through these activities, she became a role model for women surgeons.

Dr. Numann does not recall gender-bias while growing up the 80-person town of Denver, New York, about 140 miles from New York City. Her parents and her father's aunt, who raised her, had not attended college, but they made it clear that Pat, her sister, and her brother would pursue higher education. Her great aunt, raised in an orphanage, never received a formal education, but she read unceasingly. Auntie taught Pat to read and spell all before kindergarten. She instilled a sense of fairness in young Pat. If you asked to borrow a penny from Auntie, you paid it back because "borrow means return." She always had to tell her the absolute truth. To this day,

Dr. Numann may tell you that she won't tell you something. But if she tells you, it's the truth. She would never borrow something and not return it, because that's stealing. Her upbringing ingrained a sense of honesty and morals in her.

Her brother, nine years her senior, became a successful engineer in Rochester. Her sister, eight years her senior, started college courses. Although a diagnosis of multiple sclerosis thwarted this plan, with the characteristic Numann determination, as a mother of three she returned and completed college. Pat's teachers did not favor men over women while she attended Roxbury Central School. She went to the same school from first grade to twelfth grade with the same students. Side by side with another gifted student, who eventually became a lawyer, she elected to take more challenging algebra and Latin classes. She graduated in 1958 with 12 women and four men.

Whatever bias she encountered, she chalked up to ignorance. When she told her high school guidance counselor she wanted to study science at the University of Rochester, he said the school only admitted men. She knew it admitted women. He said she could only become a nurse, not a doctor. She assumed that her guidance counselor just didn't know, not that he was giving this advice maliciously.

When she started at the University of Rochester, she was one of about ten women among 100 students on the premed track. There were few women faculty. There were not even women's restrooms on every floor. The women were repeatedly told that they were taking a man's place, as if this was bad. They implied that the women should think of alternative careers because they would not get accepted to medical schools. Yet, two other women and Pat became doctors.

As a woman science major, who was also poor, she did not fit in with her wealthy male peers. Her sister sent her five dollars per month so she could have a little money to buy coffee. She worked during the summers, but could not afford the trips or activities her peers participated in. When she was first accepted, she called the school and explained her situation: She couldn't attend unless she received a scholarship. The school granted her \$400 per year, enough to cover tuition and most of her room and board when she started studying. She didn't realize students didn't normally forthrightly ask for financial aid like that. But that was her situation, so she was honest about it.

As the cost of attendance rose, and her patience with the unfair treatment declined, she found a way to complete her studies in three years. What is now SUNY Upstate Medical University accepted her during the fall of her junior year. She would receive a degree from the University of Rochester contingent on her passing the first year of medical school. For years, she had recurring nightmares that she failed medical school and was humiliated by returning to Rochester.

However, she was determined to continue on the path to become a surgeon. For this, all of the communities she has touched are forever thankful.

Dr. Ruth S. Weinstock

Leader in Diabetes Research and Care

by Danielle Roth

A local driver (doubling as translator) navigated Mongolia's vast steppe region in an old Russian Jeep taking Dr. Ruth Weinstock, an American writer, a Mongolian medical student, a former Mongolian Colonel of Military Intelligence, and a former Mongolian exchange student who had lived and studied in the United States for 10 years, to remote communities in outer Mongolia. The team traversed the open countryside on mostly unmarked dirt roads to tackle Dr. Weinstock's mission to help local medical professionals address Mongolia's growing diabetes epidemic. The emerging problem was related to the drastic shift from a nomadic lifestyle to urbanization. The group arrived at small villages and was warmly greeted by hosts who welcomed the foreigners into their yurts—nomadic homes. The hosts prepared a meal with mare's milk, boiled mutton over a tin metal stove fueled by animal dung or wood. The meal was

graciously shared with the travelers. Continuing her journey to small rural clinics Dr. Weinstock, through her translator, shared her expertise in diabetes treatment with local doctors and nurses. In the capital city of Ulaanbaatar she gave a series of lectures (translated) to Mongolian doctors, nurses, trainees and medical students. Realizing that there was a lack of basic equipment to measure glycemic control for people with diabetes, Dr. Weinstock arranged for the donation of needed equipment (for measurement of A1c).

That is the Dr. Weinstock who had an immense impact on people with diabetes in Upstate New York as their advocate and through her positions as Medical Director of the Joslin Diabetes Center and Clinical Research Unit, and Division Chief of Endocrinology, Diabetes, and Metabolism at SUNY Upstate Medical University in Syracuse, New York.

Dr. Weinstock completed her undergraduate studies at Smith College in 1974, graduating summa cum laude in the biological sciences. Thereafter she received a National Service Award grant from the National Institutes of Health to pursue the dual M.D.- Ph.D. degrees at Columbia University and became only the second woman to receive both doctorates in their Medical Scientist Training Program. Her Ph.D. advisor Dr. Richard Axel, a distinguished molecular biologist who later won a Nobel Prize, encouraged and inspired her to perform research that addressed important gaps in knowledge relevant to health and to think creatively about problem solving.

In 1995, Dr. Weinstock led the effort to establish Upstate's affiliation with the Joslin Diabetes Center, creating one of the oldest and most successful affiliates of the Harvard-affiliated Joslin Diabetes Center. The center cares for thousands of patients, using a team approach to serve people of all socioeconomic levels—making it the premier center for diabetes care in upstate New York. Along with growth in patients served, Dr. Weinstock developed highly successful diabetes research programs. Research studies, in which she has participated, have benefited people with diabetes worldwide.

From 2000 to 2009, Dr. Weinstock's team collaborated with Columbia University to complete a multimillion-dollar demonstration project in telemedicine funded by the Centers for Medicare and Medicaid Services, called Informatics for Diabetes Education and Telemedicine. The researchers installed telemedicine units in the homes of more than 1,200 Medicare beneficiaries in federally designated medically underserved areas. Patients uploaded their blood sugars and blood pressure from home. Her team reviewed the data for problems and complications from their Syracuse office. They augmented the care given by patients' primary care physicians and recommended changes in therapy to best help the patient.

This was one of the largest randomized studies of telemedicine ever conducted. Columbia University researchers aided underserved populations in New York City while Dr. Weinstock's team served a region that spanned from the Canadian border through the Adirondacks down

to Sullivan County and the Pennsylvanian border, and from near Buffalo to near the Vermont border. Many patients in these areas had never seen a dietitian or certified diabetes educator. Her team recognized this need and responded to the community. The nurses and dietician educators developed wonderful relationships with the patients and were able to improve blood sugar control, blood pressure control, and cholesterol control.

Her parents frequently followed paths the rest of society did not follow. One of their favorite mantras was “We do what we think is right and let other people do what they think is right.”

Throughout her career, Dr. Weinstock worked toward her goal to meet the needs of people with diabetes. She persisted despite many gender-related obstacles. Dr. Weinstock's family had great strength and purpose, which inspired her. Her grandparents were immigrants from what is now Ukraine. They never learned to read or write English but they had an ongoing belief in the importance of education, hard work, and helping others who were less fortunate. In fact, her grandfathers gave what little money they earned to those from their village in the “old country” so that they could immigrate to the United States. Dr. Weinstock's parents consistently supported her dreams to pursue higher education and a medical degree. As a seventh grader attending a Queens (NYC) public junior high school, Dr. Weinstock recalls telling her guidance counselor that she wanted to become a doctor. His response, in front of her class, was “Girls don't become doctors. Only men are doctors, but you can become a nurse.” When she told her parents this, they advised her to be steadfast in pursuit of her goal—to become a physician. Her parents frequently followed paths the rest of society did not follow. One of their favorite mantras was “We do what we think is right, and let other people do what they think is right.” The influence of Dr. Weinstock's parents cannot be overstated.

Ruth's father was orphaned at 16. Taken in by his sister, while working as a longshoreman on New York City's docks, he slept on his sister's couch. This manual labor job helped support his sister, her husband, and himself while he attended City College of New York at night. After ten years of classes, he received his bachelor's in business administration degree, and soon thereafter become a certified public accountant. But World War II interrupted his career. He served under General George Patton and participated in the invasions of Sicily and southern France. He had a lifetime love of learning, and never a day went by when he didn't read at least three newspapers.

Her mother exemplified the steadfast determination needed for an intelligent woman to succeed in the early-mid 20th century. Against her father's wishes, Ruth's mother was the first woman of the family to attend college. Angered by his daughter's decision, and fearing she would not find a husband if she went to college, her father did not speak to her for two years. Ruth's mother proved her father wrong, graduated from Brooklyn College and married eight years later. During her marriage she continued to work to help support the family. Years later Ruth's mother decided her true calling was to become a teacher. She sought and received her Master's degree in Education from the City College of New York—at age 50. She worked as an elementary school teacher in New York City for nearly 20 years. She made such an impact as a teacher that Ruth continued to receive thank you notes from her mother's elementary school students, even after her mother's passing at age 91.

Ruth's parents were always supportive of her pursuing both career and motherhood. Ruth's mother advised her always to present her job positively when Ruth left her young children to go to work, no matter how she felt, because then the children would not feel like they were being denied anything. Ruth followed this advice and told her children that she needed to leave them during the day so she could go help other people. When her oldest daughter Rebecca graduated from preschool to attend kindergarten, she came home and said to her mother, "You're not going to believe this! Do you know that some mothers don't work? Why aren't they out helping people?" When her daughter made this remark, Ruth realized how smart her mother was for this advice. Ruth's two daughters are now also pursuing their careers and motherhood.

Ruth grew up with a younger brother, Martin. Dr. Martin Weinstock is now a Professor of Dermatology and Community Health at Brown University School of Medicine, and a national leader in teledermatology at the VA Medical Center in Providence, Rhode Island. Like Ruth, he is a Columbia University M.D./Ph.D. program graduate. His academic successes were recognized when he was awarded the prestigious American Academy of Dermatology Astellas Award for his contribution to public health in dermatology.

Dr. Weinstock spent much time during her childhood with her first cousin Roselee, whose diagnosis of type 1 diabetes when they were in high school changed the course of their lives. The effect of Roselee's disease was great upon all in her family. As Ruth watched her dear cousin develop most of the dreaded chronic complications of diabetes and die prematurely, her determination to improve diabetes care through education, team-based management and research intensified.

Dr. Ruth Weinstock conducts research at SUNY Upstate Medical University's Institute for Human Performance

In pursuit of her professional goals, Dr. Weinstock encountered general opposition, much of which was gender-based. When interviewed for medical school admission, she was asked questions that are not allowed today, such as if she would soon be getting married and having children, or if she knew she would be taking the spot of a man. She remembers one interviewer who essentially wanted her to assure him that she would not have children. Dr. Weinstock maintains that while there was rampant gender based bias, especially early in her career, she also received tremendous support from male mentors (female mentors did not exist). For example, when her first federal grant application was sabotaged by another physician at Upstate who ought to have supported her, the Dean of the Medical School intervened and rectified the situation (both were male).

As a woman in a male-dominated field, Dr. Weinstock was fortunate in having a small group of highly accomplished and honorable women with whom she could discuss situations involving gender bias and provide and receive advice and support. Dr. Weinstock met Dr. Numann through her work with endocrine surgery. Dr. Brangman became a friend when she returned to

Syracuse to work at Upstate; they were the only two female Division Chiefs in the Department of Medicine. These friendships have grown over the decades.

Dr. Weinstock encountered one of her greatest challenges when she campaigned to bring a Joslin Diabetes Center to Upstate. She rejected the status quo and advocated for a team-based and research-oriented approach to diabetes treatment. She recognized that the system at the time needed improvement. She wanted to provide one high level of care—regardless of a patient’s ability to pay. When Dr. Weinstock arrived in Syracuse in 1984, the diabetes clinic operated only one half day per week in a shared space behind the cafeteria in Upstate’s University Hospital. Because of inadequate diabetes care in Central New York, some patients travelled more than 300 miles to the original Joslin Diabetes Center in Boston for treatment. Harvard’s original Joslin Diabetes Center in Boston has been a leader in diabetes research and treatment since its founding in 1898. It is internationally known for its high quality and innovative diabetes care and prominence in research and training programs. She believed central New York residents deserved the same quality of care closer to home.

Despite resistance, in 1995, the Joslin Diabetes Center at Upstate opened as the 11th affiliate of the original center. In 2015, the Joslin Center at Upstate served children and adults from approximately 25 counties, with more than 36,000 visits to the E. Genesee Street location. The staff takes a team approach to patient care and offers patients innovative research options. Endocrinologists (physicians specializing in diabetes), nurses, dietitians, physical therapists, podiatrists, nurse practitioners, and physician assistants use their certified and specialized knowledge of diabetes to support patients holistically. Nurse educators spend time teaching patients, family members, significant others, friends, and caretakers how to manage diabetes. Patients receive nutritious meal plans meant to benefit the whole family. Beyond the specialized diabetes center, patients have access to the rest of Upstate’s system of specialists if complications arise. In 2016 there are also more than 20 active diabetes-related clinical research projects that are funded by the National Institutes of Health, nonprofit organizations such as the Juvenile Diabetes Research Foundation and the Helmsley Foundation, and industry sponsors. In 2017, a trial of an artificial pancreas is expected to begin.

Dr. Weinstock continues to give back to the community beyond her role as a medical professional. As soon as she moved to Syracuse, she became active in the local chapter of the American Diabetes Association and other organizations that support diabetes populations. She has served on local boards and has volunteered in positions ranging from fundraising to community training. She has put enormous effort into educating our communities and medical professionals relative to diabetes prevention and treatment.

Dr. Weinstock's efforts extend beyond local communities, reaching populations statewide, nationally, and internationally. She has worked with many nonprofit organizations. She served in many roles for the American Diabetes Association, including as a member of their National Board of Directors. She has served on review panels for the National Institutes of Health. As a volunteer with the American Austrian Foundation, a nonprofit organization that fosters an international exchange of knowledge in medicine, arts, and science, Dr. Weinstock has traveled to Salzburg, Austria twice to update physicians from underserved countries about diabetes management. She has kept in touch with physicians from all over the world, continuing to provide advice on diabetes management.

To improve the health of people with diabetes with better treatments and innovative research is a dream that started in a young Ruth concerned about her cousin's diagnosis. She has come far on this journey to help those with diabetes. Much of what she learned in medical school is outdated, and sexism has lessened. She has always known that she wanted to become a physician, and she feels very privileged and fortunate to have realized that dream. "I arrived here in 1984" says Dr. Weinstock. "It's been a long time. I still love what I do."

What Are They Doing Now?

Their Work Continues

Dr. Sharon Brangman continues to lead the Division of Geriatrics and has been busy rolling out the new \$2.3 million project that establishes the Center of Excellence for Alzheimer's Disease at Upstate Medical University. She was recently appointed to the Geriatrics Specialty Board of the American Board of Internal Medicine and continues as President of the Association of Directors of Geriatric Academic Programs. She combines her clinical practice with teaching future and established physicians at all levels. She mentors pre-medical and medical students, as well as junior faculty. The geriatric medicine fellowship program, of which she is the founding director, has trained more than 50 geriatricians since its inception more than 20 years ago. Dr. Brangman is the medical director of the Transitional Care Unit on Upstate's Community Campus, which helps older adults return home successfully after hospital care. She also directs Upstate Medical University's Acute Care for the Elderly (ACE) Team that provides interdisciplinary assessments of older adults admitted to the hospital. A highly sought speaker, she frequently presents on geriatric topics locally, across New York State, and around the country. Earlier this year in Albany, Chancellor Dr. Nancy L. Zimpher inducted Dr. Brangman into the Academy of Distinguished Faculty of the State University of New York. This ceremony officially designated Dr. Brangman as a Distinguished Service Professor.

Dr. Patricia Numann. After the Association of Women Surgeons (AWS) was formed, The Royal College of Surgeons started a Women in Surgery Committee, as did The American College of Surgeons (ACS). Other countries followed suit. With time, Dr. Numann realized that the diversity had changed surgery to become a more patient-focused specialty without compromising its commitment to quality. Women were as decisive and technically qualified as men. In the United States, women, now active in all fields of surgery, hold leadership positions and are essential to supply an adequate workforce and maintain excellence.

As President of the ACS, she met women throughout the world. Many knew of AWS and some even belonged. They recognized the same needs in their countries where women were prohibited from becoming surgeons or discriminated against when they did. Now, Japan, the Philippines, Egypt and the countries of east Africa have all established associations of women surgeons. They acknowledge Dr. Numann's support in their achievements. For this, the International Society for Surgery gave her their highest award, the ISS Prize.

To her surprise, Dr. Numann is not leading the life of leisure she had anticipated nine years after retirement. She spends more time reading and visiting with friends and family but continues an intense work schedule. The e-learning project, Fundamentals of Surgery, she began with the American College of Surgeons continues to grow. At 72, she received a patent for the unique scoring system developed for this program. She will soon be co-chairing the development of a similar program for advanced learners. She continues to visit surgical programs nationally and internationally, speaking about the need to encourage women to be surgeons and to assure them they can live up to their maximum potential. She recently traveled to Malawi and Egypt. She also supports initiatives to assure access to surgical care for people worldwide. In 2017, the American College of Surgeons selected Dr. Numann to be the subject of a forthcoming documentary in their Icons of Surgery series. She continues to hear frequently from patients, students and women surgeons that she has made a positive difference in their lives, which she finds the most gratifying of all her accomplishments.

Dr. Ruth Weinstock participates in four research studies sponsored by the National Institutes of Health (NIH), one sponsored by the Juvenile Diabetes Research Foundation, four sponsored by the Leona M. and Harry B. Charitable Trust, and four industry-sponsored clinical trials. She also serves on the Steering Committee, Publications and Presentations Committee, Laboratory Monitoring Committee, Committee on Oversight of Protocol, and the Comorbidities Assessment Committee for the NIH-sponsored Treatment Options for Type 2 Diabetes in Adolescents and Youth DAY Phase 2 Long-Term Post-Intervention Follow-Up study. She is on two NIH Data and Safety Monitoring Boards (for The Diabetic Retinopathy Clinical Research Network and The Nonalcoholic Steatohepatitis Clinical Research Network) and NIH grant review panels. She peer reviews for medical journals. She continues to give presentations. She gave a symposium talk at the American Diabetes Association's annual meeting in June 2017. She volunteers with nonprofit diabetes organizations, such as the Juvenile Diabetes Research Foundation. Dr. Weinstock received the 2017 American Diabetes Association Outstanding Physician Clinician Award at that annual meeting in San Diego in June, a meeting attended by 16,000 people from around the world.

She teaches medical students and trainees at SUNY Upstate, is Medical Director of the Clinical Research Unit at SUNY Upstate, and is Medical Director of the Upstate Joslin Diabetes Center, where she cares for patients with diabetes and other endocrine disorders. She is Chief, Division of Endocrinology, Diabetes and Metabolism in the Department of Medicine at SUNY Upstate. She also is loving her new role of "grandma."

Lessons for the Future of Women in Medicine

Against the Odds and Transforming the Odds

By Cathryn R. Newton and Samuel Gorovitz

Each of these narratives is singular. All inspire. And taken together, these richly textured individual accounts offer us powerful lessons for the future. This wealth of information from three prominent women leaders comes just when the medical professions are wondering aloud about why, at this late date, so few women and people of color can be found in the highest leadership roles. These narratives, and our interpretations of them, extend further than the recent analyses of fulltime faculty experiences in medicine and the recent surveys that have been quantitative or semi-qualitative. These three stories, told in response to a structured series of questions and discussed in a longer format in this interpretive section, add to the women in medicine literature in significant ways. They, and this section, highlight both the factors that accelerate progress toward greater inclusion in medicine, including in its leadership—and those that markedly impede progress. In preparing this interpretive component, we relied on our reading of the full transcripts of Danielle Roth's interviews of Drs. Brangman, Numann, and Weinstock, on the narratives she wrote about them, and on multiple subsequent conversations we had with the three physicians.

Some congruent themes connect the three accounts. Among the most striking is the intertwining of the professional histories of Drs. Numann, Brangman, and Weinstock in such significant ways. Dr. Brangman recalls vividly the evening her mother, a nurse practitioner, said that she had met a woman surgeon that day. This was when Brangman was about fourteen, within that critical interval in which girls make choices about whether to pursue the sciences. In turn, that surgeon, Dr. Numann, was at that moment a young physician starting her career in a specialty and academic climate in which she was typically the only woman in the room. She formed a close connection in those days with Dr. Brangman's mother, a registered nurse and a force for improving public health in the Syracuse community who also became a friend and mentor to the young woman surgeon¹. Both Dr. Brangman and Dr. Weinstock have, in turn, benefitted from Dr. Numann's example, friendship, and mentoring as they ascended in their careers at Upstate Medical University, where by then Dr. Numann held a senior faculty post and became medical director at University Hospital. And now, these interwoven collegial relations foster a new generation. Dr. Brangman's daughter, Dr. Jenna Lester, worked with Dr. Weinstock's brother at Brown University, collaborating with him on clinical research while she was in medical school there. Such is the power of longstanding supportive ties among professional women—in this case, spanning at least three mentoring generations: Sharon Brangman's mother with Pat Numann, and then, via Pat Numann, to Ruth Weinstock and Sharon Brangman, and finally to Sharon's daughter Jenna Lester. This is not the familiar "networking" of alumni groups or social media. It is the power of interwoven mentoring lineages with mutually resonant understanding of battles won and lost, of allies and foes, of hurts and healing, and of envisioning a creative and purposeful future with undaunted tenacity.

Nor does the mutual, long-term support among these physicians arise from the classic American story of the connectedness of families of social privilege. None was born to wealth. However, all three grew up in families that prized and prioritized education. This make-or-break importance of their supportive families (and other caring mentors) emerges unforgettably in how they transcended barriers.

Starkly emerging from these accounts is the disproportionate leverage exerted by a tiny number of faculty who determine who can continue to the next level in medicine—in part by filtering out those they deem unworthy. These individuals occupy key positions that allow them to function as gatekeepers. We call these *screeners*. Examples include the pipe-smoking professor who hovered above Dr. Brangman and other African American students in an intimidating way, blowing smoke over them during examinations. Dr. Brangman says his threatening manner was so stressful that some of her talented peers dropped out. Brangman mourns those gifted and diverse students lost to medicine as a result of his hostile hovering. She directly attributes her ability to overcome this intimidation to her mother's staunch and unswerving dedication. Without that, she notes, she also might have left. The faculty member in question, whose discriminatory behavior was well known among both students and faculty, remained in his role for decades.

Screeners also can determine who enters medical school. Undergraduate pre-medical advisors play a key role; their biases—in some cases overt, and in others, implicit—can actively turn students away. Dr. Brangman experienced this as an undergraduate. An advisor who was active as a proponent of most women did not accord the same support to women of color. Brangman was advised to take on course loads in excess of what other students carried—commitments that, in the view of some doctors she consulted, would have led to failure. Again, as her account indicates, her mother stepped forward to connect her with physicians who advised her more wisely. Her roommate and peer, without such strong and knowledgeable family supports, abandoned the pre-medical track in favor of a Spanish major; after a career as a teacher, she returned to health care many years later to complete a physician's assistant program. Dr. Brangman believed and believes that the woman would have made a superb physician. This filter of the pre-medical advisor parallels that of the professor from the first year of medical school. In each case a single powerful screener controlled which students ascended to the next step.

Each woman physician independently gave vivid accounts of middle or high school screeners' attempts to redirect them to other fields. These included people in pivotal roles such as guidance counselors. Dr. Numann assumes the negative input she received from the counselor about her dream to attend the University of Rochester and then become a physician was more about ignorance than open sexism. Drs. Brangman and Weinstock recount their school experiences of overt bias and discouragement a full generation later, and in urban rather than rural settings. They attribute their ability to endure and prevail when so many others did not to the flinty and unwavering support of parents—mothers especially. This is a key lesson.

When writing this essay, we discussed some of these emerging issues of screeners and the need to transcend those barriers with our African-American colleague Barry L. Wells, longtime Senior Vice President for Student Affairs at Syracuse University and currently Special Assistant to the

Chancellor. He reacted strongly to these instances of screeners and their power to influence careers, adding his own experience that resonates with those described here. In the 9th grade, on Long Island, a guidance counselor placed him in a vocational track (as the counselor had done with other students of color). His mother, hearing this, definitively stated, “No, you *will not* be on a vocational track. You are going to college and will take college-bound courses.” His mother directed him to return to school and insist that because he was headed to college he would need to sign up for the appropriate curriculum. If he required her help in convincing them, she would assist, but the first conversation had to be his. And she rescinded his permission to continue on the football team until his grades improved enough to reflect his intellectual ability (which they did). Thus, his high school path was changed. And in telling this story, Wells concluded slowly and with emphasis, “I know all about screeners. That was my life, too—but for my strong mother.”

Some screeners persist in their roles for decades, even generations. This seems an underappreciated barrier, one in which a tiny number of people block more rapid increases in institutional inclusion. A single screener in a critical introductory course, or in advising and guidance counseling, can leave a wake that alters thousands of lives. One screener in this article occupied a position for 42 years; another screener persisted in various roles, including being a pivotal faculty member and chair, for 37. A third individual, with whom we have had direct experience, lasted for more than 30 in an introductory course. As two former Arts and Sciences deans, we have had the opportunity to see some of the factors in this persistence. Many of these roles—teaching at the introductory level, high school and lower-division college advising—are not seen as prestigious positions by most colleagues who prefer research or upper levels of teaching. Faculty peers and chairs become willing and even eager to externalize these responsibilities to a single colleague for prolonged periods. They thus become culpably complacent about being shielded from the resulting harm.

Change does not usually stem from peer objections, but comes principally from new leadership. When there is long-term stasis in the personnel responsible for introductory courses, or within academic counseling and advising programs for students, a new administrator can make some startling discoveries by carefully investigating programs (or leaders) left unexamined for years. As administrators, we sometimes found in these critical posts long-serving people whose values—explicit or implicit—run against inclusion. Deans, Chairs, Principals, and Program Directors bear special responsibility to review and bolster academic advising and introductory courses. It is here that many problems occur, as our three physicians attest.

Virginia Valian, writing in 2000 on the advancement of women, openly challenged our society in a book entitled by a piercing question: “*Why So Slow?*”ⁱⁱ An eminent sociologist, she analyzed the available data from academia and a broad array of other professions: medicine, law, the judiciary, the intelligence community, finance, accounting and more. This allowed her to place in a larger context the patterns of each learned discipline, and to watch gender trends across different parts of a career. We see many of the themes Valian explored reflected in the narratives of our three physicians. Reading those narratives, one sees both why progress is so slow overall and why these three physicians have succeeded.

These prominent physicians' experiences shed similar light on the common causes of attrition and the factors that serve as motivators, for women and people of color in medicine. All three doctors report multiple bias incidents. Their bias experiences are strikingly congruent, even though they occurred across different decades and in disparate places. These three doctors did not achieve their prominent leadership roles in the absence of barriers. Rather, they worked with tenacity, discipline, and courage, in a sustained way, to transcend or shatter them. They (and Wells) directly attribute the degree of their personal flintiness and persistence necessary to enter their professions to the unwavering core support of their families. To this, each of the three added enduring scientific and personal relationships they built with other women and some supportive men faculty. Indeed, in interviews our three physicians highlight both their networks of women colleagues and the importance of male advocates and mentors.

Yet becoming a doctor is just the first step. *How to surpass the persistent barriers between entering the field and advancing to higher posts*, as these three physicians have, is a critical question for diversifying academic medicine. This acute need came into sharp focus in influential reports emerging just as Drs. Brangman, Numann, and Weinstock were being interviewed for this project. In these newest studies we find persistent quantitative disparities in salaries and recurring qualitative concerns reported by and about women in academic medicine—including women at senior levels.

Reports show that over a forty-year trajectory, women have made fundamental and long-lasting gains in medicine, yet they still account for only 20 to 21 percent of fulltime faculty. The strongest increases for women in medicine have instead come at the entry levels. 2015 data show women are 47 percent of matriculants in medical schools, with a comparable percentage graduating; this reflects a slight declining plateau in proportions of women, from a peak in women applicants and matriculants around 2003ⁱⁱⁱ. (Total applications continue to rise, but the percentage of women in medical schools has leveled or slightly decreased.)

Disparities magnify upward. Between medical school and full-time faculty ranks, a loss of more than half the women occurs. This troubling phenomenon of a “leaky pipeline” showing the attrition of women from academic medicine is well-studied; its causes include insufficient mentoring, direct bias incidents, competing pressures during childbearing years, and many other factors^{iv}. As mentioned, barely 20 percent of fulltime medical faculty are women. We see significant disparities here. Despite progress at lower levels, a recent study of medical faculty experiences appraises the situation beyond the entry level starkly: “Nonetheless, women have not achieved senior leadership in rank or position compared with men, and there continues to be a gender disparity in pay—controlling for specialty, seniority, hours of work per week, publications, and grants—that has not improved from 1995.” This was the survey used by Valian to ask “Why So Slow?” of medicine and other professional fields nearly two decades ago. She also pointed out that medicine is not alone in its attributes and in its resistance to change, and that other disciplines have many parallel properties.

Medicine parallels parts of the physical sciences in both the approximately equal gender proportions of students who enter the field and the still-low frequencies of women and people of color on the full-time faculty. It is the conjunction of these two patterns that is

most significant. Indeed, one chapter of a comprehensive 2015 book on women in the earth sciences is entitled, *We Are the 20%*—referring to the percentage of women faculty in academic departments^{vi}. The subtitle of this work, *Practical, Positive Practices toward Parity*, emphasizes those crucial implementation strategies required for earth sciences to achieve balance and equity. Like medicine, this area of the physical sciences involves long hours of work in the field applying what has been learned in the classroom. Many of the elements of the leaky pipeline are congruent between fields. Sharing and implementing these “Practices toward Parity” between academic medicine and the physical sciences could accelerate change in each.

Medical faculty all report to someone whose attitudes and actions are particularly pivotal: the departmental chair. Only 15 percent of chairs in academic medicine are women, according to the most recent figures from 2015. These chairs wield great power over both academic and clinical activities in the department. Many chairs persist in the position for decades. They are also the administrators who most impact the daily culture for women and people of color. They handle crucial issues of annual salary increases; the population of departmental committees considering recommendations for tenure and promotion; and nominations for advancement in other roles in the institution. In short, chairs are directly involved in decisions or recommendations that lead to disparities. Variation in attitudes of chairs also creates heterogeneity in the climate for women across departments within a medical college. In the most recent medical Faculty Survey, a woman full professor with 20 years’ experience concludes: “So there are departments where women are paid equitably and there may be other departments where they may be making 75 cents on the dollar compared to males.” Another full professor, this one with 29 years on the faculty, says, “Most of the leadership is male. We still have only two women who are department chairs. Most of the people at the vice-chair level are men.”

We hypothesize that, since chairs immediately impact departmental climate and also control the factors giving rise to many disparities, effectively addressing accountability and inclusion at this level can substantially accelerate advancement of women and people of color to the higher levels in medicine. The concern has two distinct parts. One is that we must diversify this level, now the least diverse part of the hierarchy in medicine. A second, equally crucial, is to hold chairs accountable for goals of inclusion, for promoting a positive climate in the department, for proper mentoring and fair evaluations of faculty, and for inclusive hiring practices. Many of these chairs, as we have seen, will be men. (One encouraging example of what we advocate is the recent appointment at SUNY-Upstate of Danielle Laraque-Arena as President. This African-American pediatrician understands from her own experience what obstacles—from individuals to structures—must be encountered to eliminate unjust barriers.) Underscoring the serious need for these steps, we find congruent comments in the report “Increasing the Diversity in the Biomedical Workforce.” This extensive, interview-based project summarizes the results of studies by university consortia in funding partnership with the National Institutes of Health. Approximately 25 percent of medical schools were randomly sampled for this major study of both men and women in medicine, and of their attitudes and experiences on diversity in biomedicine; the interpretations are based upon interviews. The report excerpts some comments from both men and women. This influential July 2016 report boldly calls for management changes that include expectations and accountability for department chairs: “To make progress towards improving diversity on a campus, leadership support is needed at all

levels, from trustees and regents to deans and department chairs...Evidence from the corporate sector suggests that establishing management accountability for diversity goals has the greatest impact on the achievement of those goals...Tying success with diversity efforts to compensation of senior leaders and establishing performance metrics may be one way to accomplish this objective; in addition to enforcing accountability, it may also help to ensure diversity efforts survive leadership transitions.” We concur strongly.

Indeed, our experience as deans underscores the necessity of accountability, especially at the chair and dean levels. One of us, when dean (SG), urged the all-male chemistry department to make a diversifying appointment. When the department chair presented the search committee’s three finalists, all male, he explained that women were in the applicant pool, but none strong enough to improve the department. It was, he affirmed, therefore impossible to make the kind of appointment that was wanted. The unexpected response was that no appointment was approved and the search was extended to the following year. Somehow, after subjecting the dean to a torrent of outrage and verbal abuse, in the next search cycle the department proposed hiring a woman candidate—a scientist who went on to achieve great distinction. Virginia Valian, in her seminars on creating progress for women in sciences and technology, has cited this dean’s decision as a key example of productive strategies for administrators.

Given the importance of department chairs and the talent of our three physicians, one wonders why none of these eminently qualified leaders ever led a medical department. During their three long careers, their departments had many leadership changes. Any one of them could have enhanced the quality of clinical service, accelerated research progress, and transformed their departments’ openness to talent-based equal opportunity. They ought to have been courted, lobbied, and successfully urged to take a turn at the helm. But this did not happen.

One of the three was resolutely uninterested in chairing a department, preferring to invest her efforts in other ways. Another was asked to be an *interim* chair, often a perilous and unrewarding role. She declined. But a third was indeed interested in chairing her department. She agreed to be a candidate as the search process proceeded. When a crisis emerged in the department, the dean canceled the search and offered the position to her as the candidate with the best credentials. She accepted it. That choice was forwarded properly through administrative channels, only to be inexplicably rejected by the president, with no further explanation. She was not informed directly by any administrator of this reversal, but learned of it indirectly. That dean stepped down, and a new dean was named. He told her he too thought she was clearly the strongest candidate, and would appoint her as chair once his own appointment began. But her appointment did not happen, because intervening defenders of the crusty rigidity of the status quo were too threatened by decisions based on the merits, when those merits favored pioneers who viewed the medical landscape through different lenses. And when that dean soon departed, she was approached about becoming dean herself, a position for which she was eminently qualified. Yet men’s and women’s credentials are assessed differently, and she was not considered. Instead the position went to a man with far weaker qualifications.

As we have seen, each of these women had an impressive ability to discern and understand the deficiencies of the practices and perspectives that surrounded them, constrained them, and short-

changed the patients they sought to serve. Such paragons of deeper perception, broader vision, wide-ranging imagination, and unremitting creativity surely can't be trusted to protect the vested interests of those unable to understand or embrace their larger visions. Search committees can be screeners, and when they are dominated by traditionalists, they limit the upward leadership mobility of those they see as too different from themselves. Just as networks of various kinds steadfastly support minority physicians and agents of change, so too networks of resistance can be long-lived and can work behind the scenes to undermine progress. Even when a search committee tries to facilitate progressive change, it can be thwarted from above. The pipe-smoking professor who treated Sharon Brangman and many others with damaging disrespect persisted for nearly 40 years on the Upstate faculty. Such voices can exert a persistently conservative influence even after their formal responsibilities are limited. No wonder it has taken so long to see even a gradual increase in medical school department chair positions filled by women.

We have seen that much has changed for the better, and too much has not. It will take unremitting effort by the advocates of reform to neutralize the remaining discriminatory forces. That effort must enlighten and expand the vision of individuals, and also change the institutional structures of selection and authority. The barriers to progress are now sufficiently well known that being a bystander—even one who laments injustice—is not a viable position. To be passively a witness to injustice and its harmful consequences is to be an enabler of its perpetuation. And the uphill battle has recently become steeper.

It has often been said that the acceptance of Einsteinian physics depended not so much on the power of good evidence to prompt changes of understanding as on the eventual disappearance, one way or another, of the cohorts of recalcitrant scientists for whom the new perspectives were too discomforting to acknowledge. The history of science is replete with such accounts of resistance. Familiar examples include: the Copernican revolution, in which a geocentric view of the solar system was gradually replaced by a heliocentric one; the transformation led by Georges Cuvier from the view that no species ever disappeared to the discomforting new view that extinction occurred, and there was “a world before our world”; the emergence, in the face of massive opposition, of plate tectonics, dispelling the notion that the continents are stable in fixed locations, and establishing that they are in constant motion; the long, hard and ultimately successful battle by Maria Tharp to demonstrate the existence of a globe-encircling oceanic rift; Barbara McClintock's decades of enduring derision and dismissal as she sought deeper, unconventional understandings of genetic processes, ultimately winning the Nobel Prize. All these transformations in understanding took time.

Nonetheless, “These things take time, work hard but be patient” is unacceptable. Health care in all its dimensions is changing at a dazzling, unprecedented, and accelerating pace. The need for talented, creative, well-trained physicians is growing even as the criteria for training physicians well must themselves be reinvented. In the meantime, talent is lost, opportunities are lost, and patients suffer and sometimes even die unnecessarily because outdated structures prevent them from receiving timely and situationally appropriate care. There is no time to lose; there is no time to be patient.

Historically under-represented groups have their stars, whose inspiring stories are often held up as evidence that with dedication one can achieve one's dreams. Barack Obama became

President, Sheila Widnall became Secretary of the Air Force, Marcia McNutt heads the National Academy of Sciences, Barbara Ross-Lee (told by her college advisor that women were not suited to be doctors) became the first African-American woman to head a medical school. Such lustrous examples—and there are many others—do not shed light on the leaky pipeline, or the young people with great potential whose talent is undeveloped because they have not had the structures of support in their families, communities, schools, or elsewhere that would enable them to reach escape velocity from their constraining contexts. Recall Sharon Brangman's classmate, who dropped the pre-medical track to study Spanish. Her story multiplied a thousandfold does not come close to reflecting the measure of our national loss.

We noted, above, that each of the three physicians whose stories appear here was sustained and supported by powerful networks of understanding and dedicated mentors, family members, and friends. Another kind of network is also at work in these stories. We have learned that many of the physicians and other hospital and medical school staff who discriminated against them, obstructed them, and in other ways treated them unfairly were connected with one another through personal friendships, familial relationships, and self-serving political intrigues. Talented people were moved out of their positions to make room for the spouses or friends of people in power; and less competent people were hired because of old family connections. Clinicians who were no longer competent (or never had been) were protected so that their deficiencies would not reflect harmfully on those in powerful positions who ought to have been forces for quality control but instead were bastions of resistance to criticisms that would disrupt the entrenched patterns of power and reward.

Such networks sustain the culture within which discriminatory practices are tolerated. The principal characters—sometimes, departmental colleagues or chairs, sometimes deans or even presidents, are not always transparently enemies of injustice. They may have veneers of virtue, and may even make strong positive contributions at times, but like characters in Shakespeare's *Twelfth Night*, beneath those veneers they are not what they pretend to be. Further, not all such people are men. Each of our three physicians encountered other women who differentially treated women so badly as to thwart their efforts to provide effective and timely health care—in some extreme cases even to the point of creating life-threatening situations. Such behavior was enabled by their “being in the club”—that is, making sure they stayed in favor with the centers of power; and overlooking injustice and incompetence that would be disruptive to address. Some of these women were described to us as “bullies beyond mean.”

When unjust behavior is acceptable within the culture of an organization, it is self-reinforcing. Each wrongful action that is tolerated increases the normalcy of such actions, making it easier and safer for others to do likewise. Ripples of harm spread out to ever-wider circles of victims. Our three physicians each spoke to us of the time, effort, and emotion they expended as defenders of such victims who turned to them, singly or in groups, even as their own prospects as medical students or even as faculty were being impeded by discriminatory barriers. In one instance, generations after Sharon Brangman's medical-school experiences, one of our doctors saw that an entire cohort of diversifying students had been affected by a screener in a critical evaluative position. That individual was ultimately removed, but the negative effects on the group of students persisted. Judgments made unfairly were nonetheless irreversible. The work that

Drs. Brangman, Numann, and Weinstock did in these situations—sometimes successful and too often not successful—was officially invisible, always uncompensated, and often excruciatingly frustrating. Not only is such work frustrating, it—and the patterns of discrimination that lead to it—are corrosive of the health both of those treated unfairly and those to whom they turn. As reported in *The New York Times* just as we are completing this essay, discrimination is demonstrably not only a matter of social justice; it is a major, pervasive, public health concern^{ix}.

Our three physicians have experienced how deeply entrenched resistance to reform is. In light of their stories, efforts to end unjust barriers in medical education and practice might seem futile. It is useful to recall Ernest Shackleton, whose aptly named ship *Endurance* broke apart when entrapped in Antarctic ice in 1914. He took 21 sailors from the ice to the safer haven of Elephant Island, and set out in quest of help in a small open boat. Against all odds, with unfathomable courage and tenacity, he reached South Georgia Island, arranged for that help, returned to Elephant Island 14 months after leaving it, and rescued all 21 of them. Changing a culture of injustice, like changing any other culture, requires courageous and tenacious forces of reform to reach a tipping point—a collective pressure strong enough to break through the resistance. We know accelerated change can happen, because it has in other areas. We see this in better accessibility in architecture, better protections from imposed exposure to tobacco smoke, more supportive public attitudes toward gay marriage, and more open public accommodations, for example. Retrograde pressures emerge; complacency is never warranted. Still, as with other deep societal changes, we know that coalitions of those committed to change, with higher expectations for inclusion and plans to make this happen, can attain that point where the expectations shift, where the reformers' viewpoint is normalized and the resisters have the explaining to do.

Through the voices of three women physicians, we explore several key areas required to effect deeply needed change. *Mentoring*, especially the peer mentoring shown so beautifully in their interwoven histories, develops over months, years, and decades. Our physicians point out its intrinsic role in their success, and they also emphasize that it is not a “quick fix” as some administrators have advocated. It evolves slowly, through time and trust. *Screeners* are a critical factor for institutions to examine. We advocate much closer review and training of all faculty and staff whose work influences the evaluation of faculty entering medicine and of groups of medical students (including prospective students). In this, as we have seen, tiny numbers of people wield excessive power over the diversity of the whole. We also articulate a pressing need for *higher accountability for those in intermediate roles such as departmental chair and dean*, and we hypothesize that rapid changes in the education and review of departmental chairs can accelerate inclusion within academic medicine. Finally, our physicians emphasize that *all faculty and administrators are responsible for these changes*—that the burden is on the larger community, not on only a few.

These physicians have shared their stories with a goal of placing injustice on the defensive and improving the odds for other women and people of color in medicine. Each reader of our words has multiple roles, perhaps as a professional, tax-payer, parent, neighbor, citizen, resident, student, visitor, patient—and there are many more. We have pondered what follows from these various roles for what one can do, and what one ought to do, understanding the stories of our three triumphant physicians. The injustices they overcame took a toll on them, of course. And, as we have seen, those discriminatory practices also limited what they could do for the benefit

of others. Similar patterns are clear in most of our social institutions—in politics, business, many parts of the performing arts, the iconography of advertising, the design of products, and more. These are not independent domains, such that matters could be set fully aright within one without regard to the others. They constitute an interactive web, within which progress in any one will be impeded by lack of progress in the others. So it's a fulltime struggle on all fronts.

This struggle continues still. The lessons from these three physicians are not just about the advancement of fulltime faculty into the highest leadership positions. Their experiences still resonate for the young doctors beginning their careers. As we have worked on this project, we have been contacted about women residents being channeled into less remunerative specialties. A prominent physician wrote a widely circulated letter about the severe toll the imposter syndrome currently takes on the current cohort of young women physicians and most specifically on the goals they set for themselves^x. And we learned of highly qualified young women being pressured by chairs *not* to train in technologically sophisticated techniques that mark the forefront in a specialty, being redirected instead to less technical areas. Our three physicians, wearily familiar with these issues from their own careers, are the ones to whom the young women doctors in these situations turn.

It is incumbent upon each of us, in every role, to work actively to discern all aspects of discriminatory actions, structures, and assumptions, whether they are overt or subtly imbedded in habitual outlooks. Sharon Brangman, Patricia Numann, and Ruth Weinstock have shown us that triumph is possible against long odds. But talented young women should not face long odds. They should thrive in a supportive environment in which the odds are in their favor. The environment young women face, however, despite sporadic gains, now favors ruthless competition, unembarrassed misogyny legitimated by the highest levels of political leadership, dismantling of the mechanisms defending social justice, and devaluing of those collective interests that serve each by defending all. In grateful tribute to our three triumphant physicians, we dedicate this document to redressing that imbalance, so that their successors may triumph without being pioneers or warriors, but simply because of the merits of their hearts, minds, and passionate perseverance.

Recommended Citation for This Chapter:

Newton, Cathryn R., and Gorovitz, Samuel, 2017, Lessons for the future of women in medicine: against the odds and transforming the odds, in Gorovitz, Samuel, and Newton, Cathryn R., eds., Triple triumph: Three women in medicine: Syracuse, New York, Syracuse Unbound; Syracuse University Libraries and Syracuse University Press, 48 p., <https://doi.org/10.14305/sub.9781684450015>

About Samuel Gorovitz

Samuel Gorovitz has probed issues of ethics, inclusion, and social justice in medicine and in higher education throughout his career. He first published on moral problems in medicine in the mid-1960s. Then, as a young philosophy professor at Case Western Reserve University, he started a collaboration with Nobel laureate and biomedical researcher Fred Robbins, dean of the medical school. Robbins won the Nobel for work he had to do in Sweden, because in the USA ethical objections to the research had emerged. Gorovitz and Robbins initiated pathbreaking work together. There, Gorovitz collaborated with several women and men to develop academic seminars and other projects that helped give rise to the field of bioethics. From its inception, this field he had helped invent uncovered and pursued questions of gender bias, social justice, and equality.

Dialogo sopra i due massimi sistemi del mondo (1632) by Galileo Galilei;
Bronze Cast Philosopher by S. Gorovitz

Born in Boston, Massachusetts, he received a B.S. in Humanities and Science from MIT (1960) and a Ph.D. in Philosophy from Stanford (1963). In 2016 he received an honorary Doctor of Science degree from the State University of New York (nominated by Upstate). His mother was a revered 6th grade teacher in Brookline; his father, an immigrant from Vitebsk, graduated from Harvard Law School in 1929.

Gorovitz became dean of the College of Arts and Sciences at Syracuse University in 1986, having taught at Wayne State, Case Western Reserve, and the University of Maryland at College Park. As dean (1986-92), he prompted the college to make key faculty appointments of women in STEM disciplines; commissioned the first Committee on Conditions for Women in the College; and appointed the first woman associate dean in the College's history. He was known for rigor in evaluating slates of candidates, insisting that women candidates be fully recruited and considered before he would approve any faculty offer.

After being dean (1986-92), he taught a course in Public Administration for three years. In fall 1996, he was Baker-Hostetler Professor of Law at the Cleveland Marshall College of Law and in fall 1998 was Visiting Scholar in Science and Technology Studies at Cornell. He was Dearing-Daily Professor of Bioethics and Humanities at SUNY Upstate from 2001-04, and for 2004-05 was Visiting Professor of Philosophy and Bioethicist in Residence at Yale.

He returned to leadership at Syracuse in 2004 as Founding Director of the Renée Crown University Honors Program, emphasizing the necessity of an increasingly pluralistic and academically diverse program (2004-10). He continues as Professor of Philosophy at Syracuse.

Gorovitz has published extensively in bioethics and on other topics in philosophy and public policy. His advice on college governance and on health policy has been widely sought. He has given hundreds of invited lectures on five continents, and directed many seminars and institutes for faculty in various disciplines, including an NEH seminar for college teachers and an NIH workshop on research with human subjects. He has been a consultant to PBS, WHO, and many federal agencies. He emphasizes that philosophy is an ideal pursuit for anyone who thrives on minding other people's business.

About Cathryn R. Newton

Cathryn R. Newton grew up in small coastal communities, first in southern California and then in Beaufort, N.C. During the civil-rights era in North Carolina, she was a twelve-year-old advocate of social justice, taken into police custody for violating local ordinances by appearing openly in a multiracial group. In an act of civil disobedience, these courageous children were out caroling together when arrested. Ever since, Newton has been a strong and effective advocate of inclusiveness, diversity, and equal opportunity.

Newton's distinguished work on mass extinctions and deep-water coral reefs is based on extensive field studies and intensive research in museums worldwide, combined with meticulous laboratory analysis. Her book *Ancient Environments*, co-authored with Léo Laporte, has been translated into German, Polish, Spanish, Japanese, and Portuguese. She has won numerous awards for research and teaching, always involving students in her research and bringing her research into her teaching. In 2017, a newly discovered fossil species was named in her honor by a former doctoral student of hers, in tribute to her research accomplishments and extraordinary mentoring.

Cathryn R. Newton holds nautical charts used in her work as an ocean scientist.

In 1973, as a 16-year-old Duke sophomore, she was the youngest scientist on the team that discovered the long-sought sunken USS Monitor off the North Carolina coast. She has a book nearly completed about this experience and the way it shaped her career, leading to important transformations of our understanding of populations of shipwrecks and even of ocean processes. After doing further work in this region with the Monitor National Marine Sanctuary, she received tributes from NOAA, the Secretary of the Navy, the Swedish Government, and others in 2013.

Newton received her Ph.D. from the University of California at Santa Cruz, and then joined the Geology Department at Syracuse University as its first woman. She remained its only woman for 16 years. When she became the first woman to lead the College of Arts and Sciences as its dean (2000 to 2008), Newton focused on enhancing inclusiveness and excellence in faculty and student ventures. She was founding co-director of the Women in Science and Engineering (WISE) program at Syracuse, oversaw the planning and construction of the Life Sciences Complex, and catalyzed many collaborative projects that flourish still. In recognition of the breadth of her talents, the University named her its only Professor of Interdisciplinary Sciences. In late 2016, she agreed to serve also as Special Advisor to the Chancellor and Provost for Faculty Engagement. In this role, she is Syracuse University's liaison to our neighbor, the SUNY College of Environmental Science and Forestry, she represents Syracuse University's strategic academic planning in the development of the University's overall physical environment (new construction, renovations, roadways, signage, and more), and fosters the development of undergraduate participation in research. Through this assignment, she will help pass on to others the kind of intellectual empowerment that, at sixteen, became such an important part of her own academic heritage.

About Drew Osumi

Originating in the Bay Area where he was drawn early into the art of photography, Drew Osumi has already established an international artistic reputation. He is widely known for his portraits, landscapes, and abstract works.

Following his dual baccalaureate degrees in commercial photography and geography from the Newhouse School of Public Communications and the College of Arts and Sciences at Syracuse University in 2016, Drew was invited to participate in the prestigious Danish School of Media and Journalism's Photographic Communication program in Copenhagen for six months. These recent months of study in Denmark have deepened and extended his creative range and have led to a series of prominent commercial projects.

About Danielle Roth

Danielle Roth is a journalist based in New York City. She works on the production team for StoryCorps. As a freelance fact-checker and research assistant for Audible Originals, she helps create audio documentaries and podcasts, one of which won a Gracie Award.

She grew up near Harrisburg, Pennsylvania and returned to the city in 2016 as a reporter for *TheBurg*, Harrisburg's award-winning community magazine. Roth has also contributed to NPR.org, Syracuse.com, NewYorkUpstate.com, and Wharton magazine.

Roth graduated magna cum laude from Syracuse University with a bachelor's degree in international relations and magazine journalism in May 2016. The Newhouse School recognized her with the William Glavin Award for Excellence in Magazine Writing and the Heather L. Fleischman Memorial Award.

Lessons for the Future of Women in Medicine
Endnotes

- ⁱ Dr. Brangman notes that her mother was “one of the first RN’s at Upstate back in the late 60’s when she first met Pat...[I]n 1974, [s]he was in the first NP [nurse practitioner] class at the University of Rochester and was among the first NP’s in Syracuse and the first black NP in Syracuse.”
- ⁱⁱ Valian, Virginia, 1999, *Why so slow? The advancement of women*: MIT Press, 401 p.
- ⁱⁱⁱ Carr, Phyllis L., Gunn, Christine M., Kaplan, Samantha A., Raj, Anita, and Freund, Karen M., 2015, Inadequate progress for women in academic medicine: Findings from the National Faculty Study: *Journal of Women’s Health*, v. 24, n. 3, 190-199. <https://doi.org/10.1089/jwh.2014.4848>
- ^{iv} Paulus, Jessica K., Switkowski, Karen M., Allison, Geneve M., Connors, Molly, Buchsbaum, Rachel J., Freund, Karen M., and Blazey-Martin, Deborah, 2016, Where is the leak in the pipeline? Investigating gender differences in academic promotion at an academic medical centre: *Perspectives on Medical Education*, v. 5, n. 2, p. 125-128; and a host of other recent references.
- ^v Ibid.
- ^{vi} Holmes, Mary Anne, O’Connell, Suzanne, and Duff, Kuheli, 2015, *Women in the geosciences: Practical, positive practices toward parity*: American Geophysical Union Special Publication 70, 180p.
- ^{vii} Ibid.
- ^{viii} Increasing diversity in the biomedical research workforce: Actions for improving evidence, 2016, Joint Report of the Coalition of Urban Serving Universities, The Association of Public and Land-Grant Universities, and Association of American Medical Colleges: <http://www.aplu.org/library/increasing-diversity-in-the-biomedical-research-workforce/file>
- ^{ix} Khullar, Dhruv, 2017, How prejudice can harm your health: *New York Times*, https://www.nytimes.com/2017/06/08/upshot/how-prejudice-can-harm-your-health.html?_r=0; <https://nyti.ms/2rYNTJa>, and many studies cited herein.
- ^x Koven, Suzanne, 2017, Letter to a young female physician: *New England Journal of Medicine*, v. 376, n. 20, p. 1907-1909. <https://doi.org/10.1056/NEJMp1702010>