

Marilyn Stovall, Ph.D.

Interview Profile

Interview 15

[These descriptive materials were submitted in 2012]

Interview Information:

One interview session: 10 May 2012

Approximate duration: two hours

Interviewer: Tacey A. Rosolowski, Ph.D.

About the Interview Subject:

Marilyn Stovall, PhD (b. 1931, Galveston, Texas) was hired as a radiation technologist at M.D. Anderson Hospital in 1951. Dr. Stovall shifted focus to epidemiology over the course of her employment and went on to earn her Ph.D. in Epidemiology in 1996. She is known for her work on the late effects of radiation therapy. At the time of the interview she was Director of the Late Effects Studies Group at MD Anderson.

To request the interview subject's CV and other supplementary materials, please contact:

Tacey A. Rosolowski, PhD; Trosolowski@mdanderson.org

Javier Garza, MSIS; jjgarza@mdanderson.org

Major Topics Covered:

Personal background and education

Memories of the early years of MD Anderson

Contributions to radiation therapy

Effects of radiation on long-term cancer survivors

A portrait of Dr. Robert Shalek, former Director of the Radiation Physics Center

A note on transcription and the transcript:

This interview had been transcribed according to oral history best practices to preserve the conversational quality of spoken language (rather than editing it to written standards).

The interview subject has been given the opportunity to review the transcript and make changes: any substantial departures from the audio file are indicated with brackets [].

In addition, the Archives may have redacted portions of the transcript and audio file in compliance with HIPAA and/or interview subject requests.

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Marilyn Stovall, Ph.D.

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Segment Summaries

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Segment 00A
Interview Identifier

Segment 01
B: MD Anderson Past
A Career in Radiobiology at MD Anderson

Story Codes
A: Character, Values, Beliefs, Talents
A: Personal Background
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A: Inspirations to Practice Science/Medicine
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C: Patients

Dr. Stovall first sketches her background and then describes her role as a radiation technologist and her working relationship with Dr. Shalek when she first came to MD Anderson. She shares memories of Gilbert Fletcher. She describes the value of radiation therapy to patients and illustrates with an anecdote about cancer of the tongue. She also recalls treating prisoners, brought to MD Anderson in shackles (some of whom escaped and had to be caught not only for legal reasons, but to retrieve the radioactive implants) and other patients of very limited means treated at MD Anderson. During this section she offers many impressions of MD Anderson and the strong ethic in the Department of Radiation Therapy that the patient always comes first.

Segment 02
B: Devices, Drugs, Procedures
Developing the First Computer Programs to Calculate Radiation Dosages

Story Codes

B: MD Anderson History
B: MD Anderson Snapshot
B: MD Anderson Impact
B: Devices, Drugs, Procedures
A: Contributions
A: Overview
A: Definitions, Explanations, Translations

In this segment, Dr. Stovall describes how, in 1956 or '57, the Department began to use computers to calculate dosages and beam strengths (the first in the country to use computers in this way). Dr. Stovall wrote some of the earliest versions of the programs, which she had to run at night on the computer in the billing/accounting department. (One calculation might take four or five nights to complete.) Sometime in the late fifties, the Department of Radiation Physics acquired its own computer. Dr. Stovall notes that she is very proud of her contributions to the use of the computer for these dosing calculations and recalls that the Department gave the program away to other services free of charge. She also underscores the need to check computer calculations, both then and today, noting several consequences of mistakes in calculations.

Segment 03

A: The Researcher
Studying Late Effects of Radiation Therapy

A: The Researcher
A: Professional Path
A: Overview
A: Definitions, Explanations, Translations
C: Professional Practice
C: The Professional at Work
C: Collaborations
C: Discovery and Success

Dr. Stovall talks about her career shift to epidemiological work on the late effects of radiation on cancer survivors (20 minutes). This began in 1960 when she worked on a study that showed that patients irradiated as children had increased risk of secondary tumors of the thyroid, findings that led radiation therapists to begin protecting the thyroid and testing cancer survivors for late-effects of radiation.

Dr. Stovall then describes her work with several late-effects studies, many conducted in Scandinavian countries, and explains why retrospective studies were easier to conduct there than in the U.S. She notes the surprising results of one study that revealed no fertility problems in adults who were treated with radiation as children.

Segment 04

A: The Researcher
Investigating the Effects of Radiation on Long-Term Survivors

Story Codes
A: Professional Path

D: On Mentoring
A: The Researcher
C: Discovery and Success
B: MD Anderson Culture

Dr. Stovall describes her graduate education, taking seven or eight years to earn her Masters in Public Health while working full time, and ten years to complete her Ph.D. She needed more education to pursue the late effects studies, and she goes on to describe studies of breast cancer and her work with the Children's Cancer Survivor Study (funded by NCI), an 18-year study (to date) that is projected to follow patients throughout their entire lifetimes. She also discusses the WE CARE study [Women's Environment, Cancer, Radiation Epidemiology]. She underscores that these studies have put physicians and radiation therapists on alert for late-effects of radiation, so cancer survivors are offered adequate testing.

Segment 05

B: Devices, Drugs, Procedures
Technology in Radiation Therapy and Fee-For Service Activities

Story Codes

A: Definitions, Explanations, Translations
B: The Business of MD Anderson
B: Devices, Drugs, Procedures
B: MD Anderson History
D: Understanding Cancer, the History of Science, Cancer Research
D: The History of Health Care, Patient Care
B: Multi-disciplinary Approaches

In this segment, Dr. Stovall talks about technology in radiation therapy. She describes wax avatars (called "The Phantom Family"; see attached printout of PowerPoint presentation) used to estimate beam position and size. She describes an NCI funded a program in which the Department of Radiation Physics checked radiation therapy machines for other Texas hospitals. This program was so successful that when it ended (in 1965?), the Department continued it as a fee for service program. Dr. Stovall talks about the types of equipment they test and some of the mis-calibrations they have discovered. She speaks briefly about the American Association of Physicists in Medicine and MD Anderson's acquisition of the first Cobalt-65 unit in the United States. Dr. Stovall then talks about advances in shaping a radiation beam to match a tumor size and shape and notes the symptoms of doses that are too high. She describes techniques to avoid overtreatment.

Segment 06

B: An Institutional Unit
Radiation Physics and Institutional Growth

Story Codes

B: MD Anderson History
B: Growth and/or Change

In this segment, Dr. Stovall first speaks about the growth of the Department of Radiation Physics. She comments on the growth of MD Anderson as a whole, noting that one has to see that growth from the perspective of an employee of the institution.

Segment 07

A: View on Career and Accomplishments

Research Opportunities; Appreciating MD Anderson's Reputation Abroad

Story Codes

A: Personal Background

C: This is MD Anderson

C: Personal Reflections, Memories of MD Anderson

C: MD Anderson Past

B: Gender, Race, Ethnicity, Religion

A: Character, Values, Beliefs, Talents

C: Evolution of Career

A: The Researcher

Dr. Stovall begins by observing that she never felt as though she was treated differently from male employees. She reflects on her own growth as a professional, saying that she is committed to accuracy in her work and that she carries on Dr. Shalek's traditions of checking work and putting the patient first. She also explains that her work on the late effects of radiation therapy has taken her overseas. During the late 60s and early 70s she did a "Grand Tour" to collect patient data. She recalls how warmly she was welcomed because she represented MD Anderson, seeing first hand the affects of the institution's reputation. In the seventies she spent time in Vienna, working through the International Atomic Energy Agency to help developing countries establish radiation therapy facilities.

Segment 08

A: A View on Career and Accomplishments

Passing on Lines of Research and Opportunities to Young Faculty and Staff

Story Codes

A: The Researcher

C: Professional Practice

C: The Professional at Work

B: Beyond the Institution

A: Career and Accomplishments

In this final segment, Dr. Stovall discusses how important it is to pass on her late-effects work to someone else. She notes her efforts to help younger people break into the work, as so many people helped her along the way. She again mentions her work with the Children's Cancer Survivor Study, and underscores that such late-effects work provides a real service to cancer survivors.



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Chapter 00A Interview Identifier

Tacey Ann Rosolowski, PhD

0:00:03.1

Okay, so we're recording right now. And let me just put the identifier on for the sake of the archives. I'm Tacey A. Rosolowski interviewing Dr. [Marilyn Stovall](#) for the [Making Cancer History Voices Oral History Project](#). The project is run by the Historical Resources Center at the University of Texas [MD Anderson Cancer Center](#) in Houston, Texas. Dr. Stovall joined MD Anderson in 1951 as a radiation technologist and is now a professor in the [Department of Radiation Physics](#) in the Division of Radiation Oncology. Is that correct?

Marilyn Stovall, PhD

0:00:37.5

Uh-hunh (affirmative).

Tacey Ann Rosolowski, PhD

0:00:38.5

Okay. The interview is taking place in Dr. Stovall's office at the Department of Radiation Physics at MD Anderson's El Rio Street location. This is the first of two planned interview sessions. Today is the tenth of May 2012, and the time is about quarter of one. Thank you, Dr. Stovall, for participating in this project for us.

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Chapter 01

0:00:38.5 + to 0:16:42.9+

B: MD Anderson Past

A Career in Radiobiology at MD Anderson

Story Codes

A: Character, Values, Beliefs, Talents

A: Personal Background

A: Professional Path

A: Inspirations to Practice Science/Medicine

A: Influences from People and Life Experiences

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C: Offering Care, Compassion, Help

C: Patients

Tacey Ann Rosolowski, PhD

0:00:38.5 +

I wanted to just begin with a little bit of personal background—if you could tell me when you were born and where you grew up.

Marilyn Stovall, PhD

0:01:11.0

I was born in 1931 in [Galveston, Texas](#), and I grew up there. I lived in Galveston until I went away to [Baylor University](#). My parents retired while I was in college, and so they moved to [Lufkin](#), in east Texas, but I've never lived there. I came directly to MD Anderson when I graduated from Baylor.

Tacey Ann Rosolowski, PhD

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0:01:38.7

Was anyone else in your family involved in the sciences?

Marilyn Stovall, PhD

0:01:42.1

No, I just knew I wanted to work in a hospital. That's all I knew.

Tacey Ann Rosolowski, PhD

0:01:46.1

How did you know that so early?

Marilyn Stovall, PhD

0:01:47.6

I don't know. I was just fascinated by people who worked in hospitals, and I did have a little volunteer job once one summer in Galveston at [John Sealy Hospital](#). You don't want to know about this.

Tacey Ann Rosolowski, PhD

0:02:02.1

Yes, I do.

Marilyn Stovall, PhD

0:02:03.5

My job was to rub burn ointment on children in the burn ward, and I just made the circuit around the ward and applied the ointment. And as grim as that sounds, I loved it, and I wanted to work in a hospital.

Tacey Ann Rosolowski, PhD

0:02:19.4

How old were you where you were doing that volunteer work?

Marilyn Stovall, PhD

0:02:21.4

Oh, I think I was 14.

Tacey Ann Rosolowski, PhD

0:02:22.9

Wow.

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Marilyn Stovall PhD

0:02:23.5

You probably couldn't do that now.

Tacey Ann Rosolowski, PhD

0:02:25.0

Yeah, I imagine not. So that was middle school.

Marilyn Stovall, PhD

0:02:29.0

Oh, yeah.

Tacey Ann Rosolowski, PhD

0:02:29.4

And how did you get that opportunity?

Marilyn Stovall, PhD

0:02:30.8

I don't remember.

Tacey Ann Rosolowski, PhD

0:02:32.5

That's interesting. Were you taking a lot of science courses? I'm interested in how you began to track yourself into the sciences.

Marilyn Stovall, PhD

0:02:42.3

Yeah, my degree was in biology and math. When I got out of Baylor, I just got a [Houston Chronicle](#) and started looking through the want ads, and there was an opening for, I guess, a technician at MD Anderson Hospital. That's all I knew. So I came here and Dr. [Robert J. Shalek](#) interviewed me. He was, after that, for a long time, chief of the department—Physics Department. He's well known in medical physics, and he told me a lot of things about the job that I didn't understand at all. And when he got through, I said, "I don't know how to do those things." I'd never done anything like that. And he said, "Don't worry about it. I'll teach you."

Tacey Ann Rosolowski, PhD

0:03:40.1

How interesting.

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Marilyn Stovall, PhD

0:03:40.5

And he did, and he was a wonderful teacher. He was a wonderful boss. He always said, “Don’t assume that I’m infallible.” He said, “If you see me do something you think even might be wrong, you tell me, and I won’t hold it against you, because I do make mistakes. We’re dealing with patients, and we can’t afford to make mistakes.”

Tacey Ann Rosolowski, PhD

0:04:04.2

So tell me what your roles and responsibilities were when you began.

Marilyn Stovall, PhD

0:04:08.0

Well, I did a lot of calculations for patients receiving [radiotherapy](#). I would work out their treatment plans, which of course now is done by computer, but we had to do it by hand. Each patient had to have a detailed and separate plan, and so I would take what the physician described as the location of the tumor and place the beams of the machine on the tumor in the best arrangement. Then Dr. Shalek— If I did one, Dr. Shalek would check me. If he did one, I would check him.

Tacey Ann Rosolowski, PhD

0:04:49.2

So it was a real team—

Marilyn Stovall, PhD

0:04:51.2

Right, exactly.

Tacey Ann Rosolowski, PhD

0:04:51.4

—kind of approach to make sure it was accurate. And so I assume when you were figuring out the treatment plan, there was the size of the tumor, the placement— What were the other dimensions that you were looking at and calculating all by hand?

Marilyn Stovall, PhD

0:05:05.5

Well, the dimensions of the patient—I would have to measure the contour of the patient because we worked in cross-sections of the patient—and size of the treatment beam. All these things entered into an optimum plan—optimal. And it would just finally be my judgment as to which was the best. He would look at it, of course, and if he saw a better way to do it, he would. Now

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that's external beam that I'm describing. We also used [brachytherapy](#), which is short-distance therapy. That means that sources were implanted either in the patient or on the patient. And cancer of the cervix in those days was treated a lot by inserting ovoids in tandem in the vagina and uterus, and that was done in the operating room because it required an anesthetic. So I went to the operating room for every one of those and made measurements in and around the patient to verify the right implant geometry. So I got a really good exposure for all the different types of radiation therapy used then. Of course, it's not that particular— Those particular methods are not used anymore, but external beam and brachytherapy are still used.

Tacey Ann Rosolowski, PhD

0:06:37.7

What were your—? First of all, where were the Radiation Service and Department of Physics located at the time when you began?

Marilyn Stovall, PhD

0:06:47.8

Well, it was in the Baker Estate—the old Baker Estate near downtown Houston. That was before the MD Anderson Hospital was built, of course. I think that was in '54. You know better than I do. So I worked at the old Baker Estate for three or four years. I think there were a total of five people in the physics department, something like that.

Tacey Ann Rosolowski, PhD

0:07:24.3

And as I understand it, there was only one other woman who was a secretary?

Marilyn Stovall, PhD

0:07:28.5

Right, exactly.

Tacey Ann Rosolowski, PhD

0:07:29.7

Yeah, I was going to ask you about that—what it was like being a woman in an institution of this kind at that time.

Marilyn Stovall, PhD

0:07:38.9

Well, I didn't feel anything— I certainly was not discriminated against or in any way put down because I was a woman. I don't remember thinking anything about it like, oh, I'm different. Dr. Shalek—I can't say enough about him. He was a wonderful boss. He taught me— There were no

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formal courses in those days for people like me to learn about medical physics, and so he just taught me as we worked, and he was very patient. Of course, he's an outstanding—he's now retired—he's an outstanding physicist, and I loved my job. I still do, but I really— The introduction to medical physics for me was wonderful.

Tacey Ann Rosolowski, PhD

0:08:33.3

Now, was medical physics a new field at that time?

Marilyn Stovall, PhD

0:08:36.2

No, not new. It had been around—well, radiation, they first started using it to treat cancer in the early 1900s. But it was not—and that was more in England than in this country—but it was not as widespread in its use as it is today, of course. You had to go to a major hospital to get radiation therapy.

Tacey Ann Rosolowski, PhD

0:09:09.9

Who was it that established the use of radiation here at MD Anderson?

Marilyn Stovall, PhD

0:09:14.6

Well, [Dr. Gilbert Fletcher](#) was the first radiation therapist, and he was here when I came. He was Chief of Radiation Therapy, and can I say what a wild man he was?

Tacey Ann Rosolowski, PhD

0:09:32.6

He was a wild man? How do you mean?

Marilyn Stovall, PhD

0:09:36.2

He was French, and he had a volatile style about him. He was— If he lost his temper, he let you know it, and that was just the opposite of Dr. Shalek. And they had— Dr. Shalek had a tough time sometimes getting along with him. Dr. Fletcher was a brilliant physician and radiation therapist. He really was. He did much to establish the field. He wrote a textbook and did much that set MD Anderson on the right course to be pre-eminent in radiation therapy.

Tacey Ann Rosolowski, PhD

0:10:19.0

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What was it about his vision that you felt was the right course?

Marilyn Stovall, PhD

0:10:23.6

Well, he believed that radiation therapy should be used more than it was in those days. For example, the surgeons ruled the day when it came to cancer therapy, and their attitude was sort of, well, if I can't do anything for the patient, if it's too far advanced or whatever, I'll let the radiotherapist have that patient, and they can give him palliation. There was never a thought that the first approach to treating cancer should be radiation, and Dr. Fletcher really stood his ground on that. He would go to planning clinic where all of them saw the patient when they first came, and that is surgeons and radiation therapists, and he would just scream until he got access to the patient and said, "I'm going to treat this patient." It might be something—well, an example is cancer of the tongue, where in radiation you can implant sources or make a mold that fits on the tongue, and you save the tongue. The surgeons would remove all or part of the tongue. That was their only treatment, but they believed that was better. And he would— It's obvious for the patient you'd rather save your tongue if at all possible. And Dr. Fletcher would just stand his ground and say, "I'm going to treat this patient." And in most hospitals in the United States, they didn't rule the day. They didn't have a chance to get early access to the patient, and so the early— Radiation therapy at that time sort of had a bad name because you treated palliation only, and he brought it into the world of, let's see what we can do for the early cancers. He invented the applicators that we used here that treated the cancer of the cervix—Fletcher did—and they were later used by most hospitals in this country that treat cancer of the cervix, and that's many. So he was very outstanding.

Tacey Ann Rosolowski, PhD

0:12:45.8

So you knew him personally and you worked—?

Marilyn Stovall, PhD

0:12:47.1

Oh, yes.

Tacey Ann Rosolowski, PhD

0:12:52.1

What's maybe one of the most memorable cases you worked on with Dr. Fletcher? I mean, I know it's a long time ago, but if something comes to your mind.

Marilyn Stovall, PhD

0:13:00.2

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Oh gosh, I don't know that any one stands out. I guess the cancer of the tongues, because I always went to the operating room for those, and that makes an impression on you if you see somebody sticking needles in a tongue. We treated a fair number of [retinoblastomas](#), which, as you know, are eye tumors usually in children. I remember one family especially where—of course, retinoblastoma is genetic, and they had three children, that family, and all of them had retinoblastoma.

Tacey Ann Rosolowski, PhD

0:13:47.7

I'm sorry. Go ahead.

Marilyn Stovall, PhD

0:13:52.7

The family didn't have much money, and they came from west Texas. You know, I feel silly doing this.

Tacey Ann Rosolowski, PhD

0:13:59.6

No, the anecdotes are actually wonderful. They really are. Please, do continue.

Marilyn Stovall, PhD

0:14:04.0

But they didn't have much money, so they lived in their car in the parking lot. I think, after we discovered that, the social services did something for them. But they all slept in the car, and their three children were treated.

Tacey Ann Rosolowski, PhD

0:14:19.8

All three of their children had the—

Marilyn Stovall, PhD

0:14:20.5

Yeah.

Tacey Ann Rosolowski, PhD

0:14:21.3

Oh, my goodness.

Marilyn Stovall, PhD

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0:14:21.9

Because it's genetic.

Tacey Ann Rosolowski, PhD

0:14:23.3

Oh, my goodness.

Marilyn Stovall, PhD

0:14:25.2

And we treated—also what I remember— We treated the state prisoners here. They would bring them from Huntsville, and of course they'd have to have a guard, and some of them, they'd just have handcuffs on the whole time they were here because they were— And once in a while they'd break out, and I know if they had an implant in them, of course that was radioactive, and they couldn't just go off somewhere with that. We chased one man down and got him and brought him back as much for the radiation sources as anything else.

Tacey Ann Rosolowski, PhD

0:15:06.6

That's amazing. Well, that kind of goes to what I was going to ask next, which is really what your impressions were of MD Anderson as an institution and culture of care when you worked here in those early years. It seems like that instance of caring for that family is pretty amazing.

Marilyn Stovall, PhD

0:15:28.3

That was after the hospital was built but not long after MD Anderson as we know it started. But of course, it was so small that we didn't treat many patients in the old Baker Estate. But when we first moved here, I think even by then MD Anderson had a pretty big name in the country, largely because of Dr. Fletcher on the radiation side. There were also some outstanding surgeons. I don't remember their names now, but many of the physicians that worked here had come from England, France. They were attracted for some reason internationally to MD Anderson. And I think a lot of that was—at least from the radiation part—was Dr. Fletcher.

Tacey Ann Rosolowski, PhD

0:16:32.7

What about the ethic of care and living up to early [R. Lee] Clark's vision? What did you recall about that?

Marilyn Stovall, PhD

0:16:42.9

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Well, certainly in our department, largely I guess because of Dr. Shalek, he stressed that we had to have ethics about treating a patient. He said to me many times, “If you make a mistake, tell me about it, even if you discover it much later.” And he said, “I won’t get mad.” He said, “I’ll get mad if you know you made a mistake and you don’t tell me.” So that was one thing he said over and over. The patient is always first, and it doesn’t matter about our feelings or— We don’t want to hurt each other’s feelings, but the main thing is to do the right thing for the patient. And he would say, “If you don’t do that, you might as well go home.”

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Chapter 02

0:17:37.7 to 0:26:19.1

B: Devices, Drugs, Procedures

Developing the First Computer Programs to Calculate Radiation Dosages

Story Codes

A: The Researcher

B: MD Anderson History

B: MD Anderson Snapshot

B: MD Anderson Impact

B: Devices, Drugs, Procedures

A: Contributions

A: Overview

A: Definitions, Explanations, Translations

Tacey Ann Rosolowski, PhD

0:17:37.7

Now what would it mean to make a mistake?

Marilyn Stovall, PhD

0:17:40.4

Well, in these calculations that I did and Dr. Shalek did, it would be easy to make up a mistake and set up a treatment plan incorrectly. And it might mean that, for example, you would miss the tumor. The directions of the beams would be adjusted, so I thought it was right on paper, let's say. But maybe the piece of paper I'd been given had the tumor in the wrong place. Well, that wouldn't be my mistake, but I could make another kind of mistake. And as I said before, I think, we checked each other. I did a calculation, and he would check it from scratch, and I would check his, and we would sign off on it when we had checked it. Well, the person who did the original calculation would sign it—in ink, remember—and then the person who checked it would initial it. And everything was done in that way, so if something happened—let's say you got a bad result in the patient—you could go back and retrace your steps in the treatment. Was there something there that went wrong? Does that explain what happened to the patient?

Tacey Ann Rosolowski, PhD

0:18:56.8

Now, were there formal studies of that at this point, or was it—?

Marilyn Stovall, PhD

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0:19:03.9

Well, certainly there were publications about our methods for treatment here—which Dr. Fletcher might have designed things slightly different from other hospitals—and then we were the first to use computers for these calculations.

Tacey Ann Rosolowski, PhD

0:19:21.3

When did that start?

Marilyn Stovall, PhD

0:19:23.7

Oh that must have started about 1956 or '57, maybe a bit earlier than that.

Tacey Ann Rosolowski, PhD

0:19:36.8

Were you working with [Eleanor McDonald](#), by any chance?

Marilyn Stovall, PhD

0:19:39.4

No. I knew her. She was in Epidemiology, and they would keep a count, of course, of the patients who were treated or even enrolled here. But what we did was write computer programs that would calculate this dose distribution that I had done by hand, and I wrote some of the earliest versions of the program because I knew the calculations so well. I was not a very good programmer, but I learned enough to at least get it started. We didn't have a computer at Anderson big enough and fast enough to do these calculations, except we had the one in the business office that generated the bills and that sort of thing. So the arrangement with them was that I could get access to their computer at night. One of these calculations for an implant might take four or five nights, all night long, and those were the punch card days. I would empty out a big box of punch cards from the output and put it in the next stage of the calculation, and I would do this all night. I'd have to get up about every three or four hours and change the cards at some intermediate point in the calculation. I did that for a while, and Dr. Fletcher said, "Oh, these calculations by computer are wonderful. We'll do every patient from now on." And I said, "Wait a minute. I can't sleep in the computer room every night for the rest of my life." And his attitude was, if I want it done, that's what you'll do. Of course, Dr. Shalek understood it was really just a trial to see if it would work, and then we got our own computer.

Tacey Ann Rosolowski, PhD

0:21:39.3

Do you remember about when you got your own computer?

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Marilyn Stovall, PhD

0:21:43.8

Oh gosh, it must have been— It wasn't long after that. It was—

Tacey Ann Rosolowski, PhD

0:21:49.1

So late '50s?

Marilyn Stovall, PhD

0:21:50.8

Yeah, something like late '50s. And of course any computers then—it was an IBM—any computer was huge. It took up a whole room. But anyway, I think we could be proud of having started the use of computers for calculations, and it grew very quickly from that a lot of people— In fact, we gave away the program free of charge. Dr. Shalek's view was we're not trying to make money on this, and a lot of people got an early version of those programs.

Tacey Ann Rosolowski, PhD

0:22:33.5

So this was other clinics and hospitals all over the country?

Marilyn Stovall, PhD

0:22:36.7

Right.

Tacey Ann Rosolowski, PhD

0:22:37.6

Wow.

Marilyn Stovall, PhD

0:22:38.2

Because we of course wrote papers about the computer method, and they were, I think, read a lot because it was an interesting innovation. So I'm rather proud of having worked on that project. I certainly didn't do it alone, but that was a real advancement, because the hand calculations were very time-consuming. However, even after we started using computers, Dr. Shalek required that I check them by hand. Now that didn't take as long as doing them from scratch by hand, but his view was, you don't trust the computer. You have to go back and check the very steps and be sure it's doing the right thing. And I'm afraid that's something that young people now don't know. Their view is, hey, the computer did it. It must be right. No, you can't assume that.

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Tacey Ann Rosolowski, PhD

0:23:39.2

I was going to ask you that, if that ever—

Marilyn Stovall, PhD

0:23:41.8

I'm of the old school, because you can put in wrong input data— There are a lot of reasons why a computer calculation can be a mistake, an error. But anyway, those were exciting days to get the computer calculations started.

Tacey Ann Rosolowski, PhD

0:24:00.9

Now, I'm getting the feeling that— You said there weren't any training programs that you went through to prepare for this job, and it seems like you were learning on the job all the time.

Marilyn Stovall, PhD

0:24:10.3

Oh, yes.

Tacey Ann Rosolowski, PhD

0:24:13.3

So this was really kind of a new territory—

Marilyn Stovall, PhD

0:24:17.0

Oh, yes.

Tacey Ann Rosolowski, PhD

0:24:16.6

—everybody was entering. What were some of the other—? Is there something I'm missing here? Are there other territories of investigation that you were participating in at the time that I may not be aware of?

Marilyn Stovall, PhD

0:24:30.1

The two big areas of radiation therapy are external beam and brachytherapy, which we still use. So that's the first major breakdown. A lot of the methods have changed, of course, drastically, but we will use them—those two forms of treatment—and everything's done by computer now.

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Even the machines that treat the patient are all linked in one system to the computer that calculates your treatment plan, and that's a little scary to me, because if a mistake is made early on, I'm not sure they catch it. Well, I shouldn't say that. They must, but it's a little risky. It sounds to me that it's a black box, and it's all linked together, and it's one system. And if you make a mistake in one part, it can be carried through, and that's not—well, it's a big advancement because—in one sense—because if you did the calculations still by hand, it would be a nightmare to put it into a computer that would turn on the machine that treats the patient. And they do have methods for checking these calculations, and there are all sorts of quality assurances that are methods that are performed to be sure everything is working right.

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Chapter 03

0:26:19.1 to 0:09:15.3+

A: The Researcher

Studying Late Effects of Radiation Therapy

Story Codes

A: The Researcher

A: Professional Path

A: Overview

A: Definitions, Explanations, Translations

C: Professional Practice

C: The Professional at Work

C: Collaborations

C: Discovery and Success

Tacey Ann Rosolowski, PhD

0:26:19.1

Could I interrupt you just a second? I want to pause this. Okay, we're back after just a brief pause. I wanted to ask you, when was the point where maybe there was a little bit more confidence in the computer?

Marilyn Stovall, PhD

0:00:14.4

Oh gosh, well, I guess after we had been using the computers for a few years, we got more and more confidence, and at some point I left clinical work. I really don't know how they checked plans after that. They must have checked them. I don't want to imply I'm the only one that did that, but the break in my career—I've done two things: the clinical work that I've talked about, and now I do strictly late-effects—what I call late-effects—work in patients. And that came about because I was so lucky. [Dr. Shalek](#) came to me one day and said—I've forgotten who it was. It was someone, I believe, at the [University of Pennsylvania](#) was doing a study on patients who had thyroid cancer. There were two hundred patients, and they wanted somebody to look at the charts and pull out enough data to have the right kind of data to feed into a program, because they were looking at the long-term effects of the treatment. These were patients who had been treated several years to many years before. And I sort of reluctantly said okay, mainly because I was so busy. I could see two hundred patients falling on my desk, and I wasn't too thrilled, but I did it, and I loved it. I went to meetings with the people at the University of Pennsylvania, and they talked about—Now, this is where epidemiology comes in, because at that time Eleanor Montague—was it Montague?

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Tacey Ann Rosolowski, PhD

0:02:09.4

McDonald.

Marilyn Stovall, PhD

0:02:10.1

No, McDonald. We also had an Eleanor Montague. She had already left, and of course she dealt only with Anderson patients. But anyway—

Tacey Ann Rosolowski, PhD

0:02:23.3

What was the year that Dr. Shalek came to you with this study? Do you recall? Just even ballpark.

Marilyn Stovall, PhD

0:02:30.4

I would say probably 1960.

Tacey Ann Rosolowski, PhD

0:02:35.3

So pretty early.

Marilyn Stovall, PhD

0:02:36.1

Oh yes, it was early.

Tacey Ann Rosolowski, PhD

0:02:36.9

Yeah.

Marilyn Stovall, PhD

0:02:38.2

And I think that was about the first long-term effects study that anybody—well, that I knew about—had done. And when they got through with that and we published in papers, then it was well recognized, and we did more and more studies with more and more patients.

Tacey Ann Rosolowski, PhD

0:03:04.1

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Who were your collaborators at U Penn?

Marilyn Stovall, PhD

0:03:07.5

[Anna Meadows](#) was the main one, and she's still there. I don't remember the other names.

Tacey Ann Rosolowski, PhD

0:03:17.0

And what was she? Was she in Radiation?

Marilyn Stovall, PhD

0:03:21.5

Yes. She was—I guess she was in Radiation. She was a pediatric radiation oncologist, and I think all of these were children. I said they were cancer of the thyroid. Now we were looking at the thyroid as the second tumor. What they wanted to know was, did the first treatment—which was any kind of treatment—did it cause cancer of the thyroid? The thyroid gland is very susceptible—sensitive—to radiation. Anyway, there was a lot of attention paid to Anna and that study.

Tacey Ann Rosolowski, PhD

0:03:58.8

What were the findings that made it so important?

Marilyn Stovall, PhD

0:04:01.8

Well, it was that children who had been treated with radiation had more cancer of the thyroid, and so the idea was, if you can protect the thyroid in some way, that's a good idea. And there are different ways you can protect it, but it's pretty difficult. You can't cover it up with a lead shield or anything. It would take too much lead to protect it. But you can adjust the fields; maybe make them shorter or something like that. But the main thing is, if you are just aware of it, you can check children and on for years to come—check the thyroid to see if it's been affected and do tests that normally you wouldn't do if somebody just walked in the door as a patient and you didn't know they'd been treated with radiation. There would be no reason to do those tests, but now they know.

So anyway, after I did that, I really enjoyed it, and I gradually moved away from clinical work to doing studies of that type. My time now is pretty evenly split between late-effect studies, and now we have thousands of patients in our studies. We did one study of cancer of the cervix with 35,000 patients. We work a lot with investigators at other hospitals, particularly in Scandinavian

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countries. And the reason for that is that in [Denmark](#) and [Sweden](#) particularly but also [Norway](#) and [Finland](#), they have everything about a person on a computer. They are Socialist countries, and they have excellent healthcare that's free for everybody. So if the government comes to them and says, "I want to know whether you use illegal drugs," they tell them. And on the computer they know where they work, of course when they were born, what kind of examinations they've had. So it's an excellent source for getting— They have good cancer registries, and we can get patients treated there, identify all the patients that had a certain tumor, find out how they were treated, look at their second tumors or third tumors, and see if this first treatment might have had something to do with causing those.

Tacey Ann Rosolowski, PhD

0:06:40.1

What are some of your big findings that have come out of that?

Marilyn Stovall, PhD

0:06:43.8

Well, obviously thyroid was one of the early ones, because that's a very sensitive organ. But also we study things besides second tumors. We study, for example, children and young adults. One of the first questions they have if they believe their cancer is being cured—"Can I have children, and will they be normal, if I have children?" We do a lot of studies where we look at their children. We did one in Denmark not long ago where they drew blood to do a [DNA analysis](#) on both parents, and all the children and one of the parents was treated for cancer years before that. And it was an enormously large—many, many thousands of patients. They compared their children who had birth defects with the general population, and they found that the radiation-treated patients had no difference in the incidence. That was a wonderful study from the viewpoint. Most of our studies come out with bad news for radiation, but this was very important and a study that showed that radiation therapy does not cause birth defects.

Tacey Ann Rosolowski, PhD

0:08:05.8

Now, in the very beginning, when [Gilbert Fletcher](#) was being so insistent about the need to treat early with radiation and more and more physicians were using that as a treatment plan, was there already some suspicion at that time that maybe there would be long-term effects, or—?

Marilyn Stovall, PhD

0:08:22.3

I don't think so. I think if you had asked them, they would have said, "Well, probably." But the view was we've got to treat the cancer. That's what's here today. And I've even heard physicians say, "That's my primary responsibility." And if a patient lives long enough to get a second

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tumor, maybe that person is lucky that they lived that long. That sounds very callous, but they didn't think about what might happen ten to twenty years from now. Some late effects, it takes that long.

Tacey Ann Rosolowski, PhD

0:09:02.0

So that study that was being done, if you were asked to participate in that U Penn study around 1960, that had been nine years if there was some—

Marilyn Stovall, PhD

0:09:10.0

Oh yes.

Tacey Ann Rosolowski, PhD

0:09:10.9

So there were some—so people were recognizing by 1960 that—

Marilyn Stovall, PhD

0:09:15.3

Well, I think they weren't sure it was true, but they wanted to find out. And that was Anna Meadows. She was very forward-looking, and she treated these children, and she was probably wondering what are we doing for their long-term effects? And they knew already then the thyroid was a very radio-sensitive organ, so they started with that. And then she did a lot of other studies after that. I worked with her as well as other people. We sort of built up a reputation here for doing the radiation aspect of these studies, because we started from the beginning, and we're still doing it.

Chapter 04

0:10:02.8 to 0:20:59.2 +

A: The Researcher

Investigating the Effects of Radiation on Long-Term Survivors

Story Codes

A: Professional Path

D: On Mentoring

A: The Researcher

C: Discovery and Success

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B: MD Anderson Culture

Tacey Ann Rosolowski, PhD

0:10:02.8

Now, tell me how you made the decision to go on and get the Master's in Public Health and then the PhD with a focus in Epidemiology.

Marilyn Stovall PhD

0:10:11.1

Well, I just wanted to know more than I knew at that time. And again, I hate to keep mentioning Dr. Shalek, but he encouraged me to get more education, and if I had to go away during the day for a class or make up the time in the evening, that was fine with him.

Tacey Ann Rosolowski, PhD

0:10:32.0

How long did it take you to get your master's and then your PhD?

Marilyn Stovall, PhD

0:10:36.6

Gosh, I guess the master's, it was seven or eight years, at least. The PhD, I think it was ten years. I thought it would never end, because I had to work full-time during all of that.

Tacey Ann Rosolowski, PhD

0:10:58.7

But by that time, I guess there were—certainly in public health—there were courses being offered.

Marilyn Stovall, PhD

0:11:04.3

Oh yes.

Tacey Ann Rosolowski, PhD

0:11:04.9

And your focus at that time— What was your focus for your master's?

Marilyn Stovall, PhD

0:11:10.2

I looked at women who had breast cancer in both breasts but not at the same time. And the question I was asking was did treatment of the first cause the second? And strangely enough,

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we've done a lot of studies—we still are doing studies of that type. We have a big study where we're looking at it in far more detail than I did at that time.

Tacey Ann Rosolowski, PhD

0:11:38.3

What were your findings?

Marilyn Stovall, PhD

0:11:42.2

There is scattered radiation to the opposite breast, but you can shield the opposite breast so it doesn't get much. And so there are other characteristics of a woman, like family history, that probably will determine that more than the radiation. But there is an increase—a slight increase—if you've been treated with radiation, but then radiation is the best treatment for many women. The alternative was a mastectomy, and most women don't want that if they can avoid it, so it's a tradeoff.

Tacey Ann Rosolowski, PhD

0:12:27.0

What about the move to get your PhD?

Marilyn Stovall, PhD

0:12:32.5

Why did I do it?

Tacey Ann Rosolowski, PhD

0:12:33.5

Yeah.

Marilyn Stovall, PhD

0:12:34.5

Well, again, Dr. Shalek was—he pushed me.

Tacey Ann Rosolowski, PhD

0:12:37.8

Why do you think he did that?

Marilyn Stovall, PhD

0:12:39.6

I think he was just interested in people, and he wanted to see the best for them. And I had been here a long time. He said, "You'll get a promotion, and things can happen if you have a PhD that

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won't happen otherwise." I was tired from working on my master's, and I just didn't think much about it. I said, "Oh, that's unrealistic to do while I work." And he said, "No, just do it." So I think— And I had a secretary at that time. She's still a good friend of mine. He would push me and push me. "No, you're not going to quit school."

Tacey Ann Rosolowski, PhD

0:13:24.6

What's her name?

Marilyn Stovall, PhD

0:13:25.8

Barbara Pylate. And if I said anything about, "I just can't do this any longer," she would say, "Yes, you are."

Tacey Ann Rosolowski, PhD

0:13:37.8

Were there other people in the department that Dr. Shalek pushed in that way?

Marilyn Stovall, PhD

0:13:43.3

Oh yes. He encouraged everybody to be the—sounds like the army—to be the best you can be, particularly if they had been there a long time, and he would really do his best to see that you advanced even if it wasn't here.

Tacey Ann Rosolowski, PhD

0:14:06.5

What qualities do you think he saw in you that he felt could be nurtured by more education?

Marilyn Stovall, PhD

0:14:12.7

I have no idea, because I didn't see anything that special in me except I had been here a long time after so many years. But I would like to think I was doing a good job. I worked long, long hours, and it amuses me now to see some of the younger people who are so concerned about, if I work seven minutes overtime, will I get paid for it? But no, I have to work eight minutes? Oh, gee. And just work until the work's done. I know that's tough, because if it takes more time than you have in the day, it's really, well, it's tiring. But I won't say anything about the young folks now.

Tacey Ann Rosolowski, PhD

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0:15:08.4

But you see a change in the work ethic?

Marilyn Stovall, PhD

0:15:10.3

Oh yes, absolutely. I interviewed a man a while back for one of the jobs in our section, and when I got through this long explanation of what he would do, I said, “Do you have a question?” He said, “Yes, how soon can I take vacation?” So I said, “You can start right now.” He didn’t even get it at first. I just stood up and said, “Thank you for coming in. Your vacation has started.”

Tacey Ann Rosolowski, PhD

0:15:44.5

Not a very prudent thing to say, by any means.

Marilyn Stovall, PhD

0:15:47.1

Even if that’s what you’re thinking, you don’t—I would come up with some question about the work first.

Tacey Ann Rosolowski, PhD

0:15:56.5

Sure. So tell me how your research evolved, because I’m trying to get a picture of the work you were doing for your job and how that connected up with your educational path and fed it, maybe.

Marilyn Stovall, PhD

0:16:14.3

Well, somewhere—and I can’t tell you the years—but I had already started on some of these late-effect studies when I started working on a master’s, I think—certainly when I worked on my PhD. And I saw the need for more education to do the research, and as I mentioned, we were the first to start doing the radiation calculations for late-effect studies, and I think today we still do more than anyone else. We have two major cohorts that we’re studying. One is children. It’s called The [Children’s Cancer Survivor Study](#). The PI is at St. Jude’s, but we do all of the radiation work for it. About half of those patients had radiation and half didn’t.

Tacey Ann Rosolowski, PhD

0:17:16.3

How long has that study been going on?

Marilyn Stovall, PhD

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0:17:18.8

Eighteen years and it will probably continue. We keep adding new patients as they come along, but also they keep following the original patients. The thought is—this is [NCI](#) funded, of course—and the thought is that they would follow these patients for the rest of their lives. Some of the first ones are already well into their fifties, and they had to be less than twenty-one years of age when we started. I hope that works out right, but anyway—

Tacey Ann Rosolowski, PhD

0:17:55.7

And what's the other? You said you had two cohorts.

Marilyn Stovall, PhD

0:17:57.5

Oh, the other one is a study of women with breast cancer. That's called a [WECARE Study](#). The PI there is at [Memorial Sloan-Kettering](#). It's looking at this problem of the opposite breast, and is it more likely to have cancer? But it's not just radiation. We do the radiation part, but also they are looking at genetics and a lot of other factors that might cause breast cancer.

Tacey Ann Rosolowski, PhD

0:18:27.8

Yeah, I think I read they're also looking at environmental factors.

Marilyn Stovall, PhD

0:18:32.6

Right. The WECARE is? Yes.

Tacey Ann Rosolowski, PhD

0:18:35.0

Yes, and there was a 2008 article on that?

Marilyn Stovall, PhD

0:18:38.5

Oh, there have been quite a few.

Tacey Ann Rosolowski, PhD

0:18:39.6

There have been quite a few. What have been some of the big findings that you had in that study?

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Marilyn Stovall, PhD

0:18:45.0

Well, again, it was that there's more—

Tacey Ann Rosolowski, PhD

0:18:47.2

The bilateral?

Marilyn Stovall, PhD

0:18:48.0

Yeah, more if they've been treated by radiation but not—that's probably still the major finding. The first study we did for the WECARE, they looked at the DNA and the—the DNA only for a particular gene that made the women at high risk for breast cancer and radiation. And the expectation was that this gene was going to really tell the story. But it was kind of amusing to me. I'd go to meetings, and it would take me about fifteen minutes to explain what I did with radiation, and they would talk two days about the genetics. When it all finished up, it was the radiation that caused more cancer than the genetic background. So I don't know whether that's good news or bad news, but now they've extended it to do more work in the genetics area and added more women to the study—bigger numbers—and they've extended it to European hospitals to get more patients, so it's really expanding.

Tacey Ann Rosolowski, PhD

0:20:10.3

What have been some of the ways that your findings in these longitudinal studies have influenced patient care or preventive measures?

Marilyn Stovall, PhD

0:20:22.0

Well, I think for some patients it's made a difference, and, frankly, for others it has not. I don't think women—well, I know that women are not going to stop being treated with radiation for breast cancer. That would be crazy, because it's one of the best treatments. But again, if you are aware that the opposite breast is at some increased risk, they can do more exams. But this is particularly true of children in our other study that I mentioned, the CCSS.

Tacey Ann Rosolowski, PhD

0:20:57.5

The Children's Cancer Survivor Study?

Marilyn Stovall, PhD

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0:20:59.2

Yeah, exactly. They can be at higher risk for any number of second cancers, but if you know that's true, you can be alert for it. They're at higher risk— They may be at higher risk for heart disease, for example. If the heart is in the beam or close to a treatment, but you can check the heart, do exams more often than you normally would in, say, a child or young adult. So I think these studies have contributed quite a bit to how to follow up a patient more than changing the methods of treatment.

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Chapter 05

0:20:59.2 + to 0:42:16.2+

B: Devices, Drugs, Procedures

Technology in Radiation Therap; Fee-For Service Activities

Story Codes

A: Definitions, Explanations, Translations

B: The Business of MD Anderson

B: Devices, Drugs, Procedures

B: MD Anderson History

D: Understanding Cancer, the History of Science, Cancer Research

D: The History of Health Care, Patient Care

B: Multi-disciplinary Approaches

Marilyn Stovall, PhD

0:20:59.2 +

Let me see if there are any other studies. Those are the two major big studies with a lot of patients. The way we do our studies here—I just happen to have a picture here. I didn't have this out for you, but I'll share with you anyway. We have what we call phantoms. They are mockups of people, and this wax they're made of is tissue equivalent. The white squares are treatment beams. But anyway, we can make measurements in those. We put little dosimeters, and this is in slices.

Tacey Ann Rosolowski, PhD

0:22:40.5

So this is a teaching tool?

Marilyn Stovall, PhD

0:22:43.8

Well, we use it to make measurements but then feed into our programs that calculate the dose—

Tacey Ann Rosolowski, PhD

0:22:49.6

I see.

Marilyn Stovall, PhD

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0:22:50.2

—for patients in our studies.

Tacey Ann Rosolowski, PhD

0:22:51.9

Would it be possible for me to have a copy of this?

Marilyn Stovall, PhD

0:22:54.3

Sure, you can take the whole thing.

Tacey Ann Rosolowski, PhD

0:22:55.2

That would be great. Thank you. That would be great, thanks.

Marilyn Stovall, PhD

0:22:58.0

And we've gotten many, many measurements in those phantoms and compared it with other methods and calculations, and we have a big library now of doses from various machines and energies of radiation. So the fact that we can calculate the dose outside the beams is what we're primarily interested in. In fact, we can calculate the dose to any part of the body.

Tacey Ann Rosolowski, PhD

0:23:33.0

I was just going to ask you— You said that you do these studies in addition to other work, and I was going to ask you what that other work is. So it looks like that's what this other work is.

Marilyn Stovall, PhD

0:23:42.7

No, the other work is completely different. We run a service for pay—for-fee service. You got money? We'll do it, checking therapy machines at other hospitals. And we mail out little [dosimeters](#). They're tiny little capsules, and they have powder in them—[lithium fluoride](#)—that measures radiation. And they put that in the beam of the machine at a certain fixed distance and irradiate it. They send it back to us. They tell us what they calculate the dose to that little capsule is, and we tell them what they really gave to it. And obviously if it's 1.00, then we're both perfect, but if they're off more than plus or minus 5%, that's not considered by NCI to be a correct treatment. So there's not much slop allowed in there. And we run that service on a routine basis for over a thousand institutions, so we have a pretty big operation.

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Tacey Ann Rosolowski, PhD
0:24:54.2
When did that—? I’m sorry.

Marilyn Stovall, PhD
0:24:55.4
When did it start?

Tacey Ann Rosolowski, PhD
0:24:56.1
Yeah.

Marilyn Stovall, PhD
0:25:00.2

We started on a small scale probably in 1965. In fact, NCI gave us money to do it just in Texas, and it was such a success that after they stopped the funding, people wanted to keep it up, and so we said, “Will you pay for it?” and “We’ll do it.” So for all the people that work here in my section, which is about fourteen, they spend about half of their time of each of these—about half on late effects and half on the services. Of course, when we find someone who’s making a mistake, we call them immediately.

We also check the irradiation of blood in blood banks. I don’t know whether you know it or not, but most blood now is irradiated before it’s given to the patient, because if you have a compromised immune system, you could cause host-versus-graft—graft-versus-host disease. That’s very serious. In a place like MD Anderson, there are so many patients with a compromised immune system, so they irradiate all the blood. Now in other hospitals’ blood banks, they irradiate more and more.

Okay, the point is, they take our little dosimeters and put them in the irradiator for the blood and check the dose they’re given. And we, just this morning, had a really serious mistake that we caught, because they thought they were giving 2500 to the blood [centigray](#), and they were giving 35 to 40 thousand—so 35 [Gray](#) or 3500 centigray. Anyway, they were giving 50% more than they thought that they were, and so at that point you’re beginning to damage the blood. That’s not good. So of course we called, and we sent them the report by email. That doesn’t happen often, of course, but if it happens, they need to catch it as soon as possible. Most hospitals don’t have any way to check it themselves. Now, if they have a physicist who works in a radiation therapy department, he has chambers that he can use, but they are awkward to check the dose in blood, and these dosimeters we use are much handier.

Tacey Ann Rosolowski, PhD

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0:27:52.6

Can I just ask you for a little clarification? Because you were talking about centigray and giving some numbers before.

Marilyn Stovall, PhD

0:27:59.0

Oh, yeah.

Tacey Ann Rosolowski, PhD

0:27:59.7

I don't understand how that all works.

Marilyn Stovall, PhD

0:28:02.1

Okay, it's a factor of a hundred difference between centigray and Gray. A Gray is of the order—well, a tumor dose would typically be 50—35 to 50 Gray. If you want to convert that to centigray, just multiply by a hundred. And people use these sort of interchangeably. If you're in the clinic, you may refer to this patient as getting so many centigray, or you may use Gray.

Tacey Ann Rosolowski, PhD

0:28:33.3

And that's centi and then gray like the color?

Marilyn Stovall, PhD

0:28:36.2

Exactly.

Tacey Ann Rosolowski, PhD

0:28:38.1

Interesting.

Marilyn Stovall, PhD

0:28:39.9

And if it's just Gray, it's capitalized. If it's centigray, it's not. That just happens to be what its SI units are.

Tacey Ann Rosolowski, PhD

0:28:49.6

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SI meaning—?

Marilyn Stovall, PhD

0:28:51.9

Standard international units.

Tacey Ann Rosolowski, PhD

0:29:01.7

We're adding a lot of technical stuff here. It's a very technical field.

Marilyn Stovall, PhD

0:29:05.8

Well, yeah.

Tacey Ann Rosolowski, PhD

0:29:07.9

Well, that leads to another question where I noticed that when I was reading about your background that the physicist in medicine at some point became a particular category of researcher, and I wonder if you could tell me a bit about what that category means and why it became important at the time it did.

Marilyn Stovall, PhD

0:29:30.5

Well, there is an organization called the [American Association of Physicists in Medicine](#), and that is the national organization for medical physicists. I don't know when that was started. Dr. Shalek had a lot to do with starting it. That must have been about 1955 or '60. And now I think it has something like—gosh, I'll be way off—but it may have 2000 members. But most medical physicists in the country are members.

Tacey Ann Rosolowski, PhD

0:30:20.0

Was the creation of this connected up with the surge in the sciences after the Second World War and funding?

Marilyn Stovall, PhD

0:30:30.3

I suppose so, yeah.

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Tacey Ann Rosolowski, PhD

0:30:32.4

I was just curious.

Marilyn Stovall, PhD

0:30:34.9

I think physicists—medical physicists—began to see that they need to collaborate with each other. They needed to intercompare—well, ion chambers, for example, are what they measured—the primary instrument for measuring radiation. And your chamber says one thing. The guy over there in another hospital, his says something else. Obviously you want to intercompare to be sure you're both saying the same thing. And as you more and more start working like that, you see the need to not only collaborate with instruments but also just to get together and talk about the field and innovations and what I can do that you aren't doing or what you're doing that I need to learn from. So they now have an annual meeting, and as I said, I think there must be about 2000 members. I could be way off.

Tacey Ann Rosolowski, PhD

0:31:39.1

When did you first get involved with them?

Marilyn Stovall, PhD

0:31:47.7

It was very early on because I didn't have my PhD yet. Dr. Shalek had to write a letter or something, give me a special dispensation to get me in, because most people didn't get in unless they had a PhD. I can't remember when it was. It was way back, not too long after the organization was formed.

Tacey Ann Rosolowski, PhD

0:32:12.2

What were some of the big lessons that you learned at that? I'm just wondering if that was a different kind of environment and maybe if you absorbed something special from that.

Marilyn Stovall, PhD

0:32:22.1

We were trying to all do the same thing, not so much go our own way. We had courses that were given at the meetings, and I attended those.

Tacey Ann Rosolowski, PhD

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0:32:35.1

Courses in what?

Marilyn Stovall, PhD

0:32:35.7

Well, it could be brachytherapy or any specialized part of medical physics. This is a silly thing, but Dr. Shalek and I taught a course at AAPM. Now, he'd done that sort of thing many times before, and he asked me to help him. He didn't need help. It was a way of getting me pushed into doing that sort of thing. I taught a little part of the course. It was late morning, and then when it was over—it was in the hotel where we were staying—I went to my room and stretched out on the bed and said, "Thank goodness that's over." And while I was stretched out on the bed was when [John F.] [Kennedy](#) was shot. I heard people running up and down the hall of the hotel, and I got up, and I looked out, and I said, "What's going on?" And some guy said, "Some idiot in—Some Texan in Dallas just shot the President." Of course it wasn't— At that time, they didn't know who it was, but I went back and turned the TV on, and it was all about Kennedy being shot. At that time, they didn't know whether he'd live or not, so I hung around in my room until I finished hearing the status of that. But that sticks in my mind. What was that, 1963?

Tacey Ann Rosolowski, PhD

0:34:09.1

In 1963.

Marilyn Stovall, PhD

0:34:09.6

Yeah.

Tacey Ann Rosolowski, PhD

0:34:11.6

Everybody remembers where they were—

Marilyn Stovall, PhD

0:34:13.5

Exactly.

Tacey Ann Rosolowski, PhD

0:34:14.0

—when Kennedy was shot.

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Marilyn Stovall, PhD

0:34:15.2

Isn't that strange?

Tacey Ann Rosolowski, PhD

0:34:15.6

We were sent home from school.

Marilyn Stovall, PhD

0:34:16.4

Especially since I was not at work or doing the usual thing.

Tacey Ann Rosolowski, PhD

0:34:21.0

Yeah, I remember the day too. What were you teaching that day?

Marilyn Stovall, PhD

0:34:28.1

I was teaching a course on brachytherapy and computer calculations thereof.

Tacey Ann Rosolowski, PhD

0:34:45.0

Going back a little bit to—well, related to this field and when you were working as a radiation therapist, what were your observations about the changes in technology and how that altered the field?

Marilyn Stovall, PhD

0:35:01.7

Well, the energies of the machines changed drastically. When I came here, it was [orthovoltage](#) machines, which is about 250 [kVp](#) energy or lower. Then [Cobalt-60 teletherapy](#) came along, and—gosh, when was that? I'm terrible at dates. We had the first Cobalt unit in the country, and again, that was largely due to Dr. Fletcher, because he was instrumental in designing it. He was very upset it was made in Canada, and a Canadian hospital got the very first one. He wanted the very first one anywhere, and we didn't quite make that. That was the next big step up, because Cobalt-60 is a big change in energy from orthovoltage, which means the beam is more penetrating, so you can treat deeper tumors with less damage to the intervening, normal tissue. The whole—Almost the whole of external beam has been a trend in that direction, higher and higher energies. We now have linear accelerators, but we've also gone to newer techniques such

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as—there are so many—but ways of defining the beam. You can have shaped beams, and they used to have square or rectangular beams. We call it [IMRT](#) now. It's Intensity Modulated Radiation Therapy. I can draw you a little picture. This is an old-style beam.

Tacey Ann Rosolowski, PhD

0:37:12.5

So it's pretty much a square.

Marilyn Stovall, PhD

0:37:13.7

Yes. Square or rectangle. Four sides, that's it. Now—and the tumor might be—

Tacey Ann Rosolowski, PhD

0:37:21.5

Very irregular within that.

Marilyn Stovall, PhD

0:37:22.4

Yes.

Tacey Ann Rosolowski, PhD

0:37:23.2

Oh, so you were irradiating a lot of tissue that you didn't need to.

Marilyn Stovall, PhD

0:37:25.4

Exactly. All this out here is normal tissue, but it has to be irradiated to get this—

Tacey Ann Rosolowski, PhD

0:37:29.7

Because that's the shape of the beam.

Marilyn Stovall, PhD

0:37:31.0

Exactly. Now, over here, let's say, you make a lot of little beamlets. I won't draw all of them, but you may have a hundred.

Tacey Ann Rosolowski, PhD

0:37:45.7

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So it's sort of like a pixel?

Marilyn Stovall, PhD

0:37:47.2

Exactly. And then you don't use these out here that don't go to the tumor.

Tacey Ann Rosolowski, PhD

0:37:51.6

That don't hit the tumor.

Marilyn Stovall, PhD

0:37:52.5

Yes.

Tacey Ann Rosolowski, PhD

0:37:53.2

I got you.

Marilyn Stovall, PhD

0:37:53.8

And you can even give a different dose to each one of these so that you shape the beam—the radiation—in three dimensions.

Tacey Ann Rosolowski, PhD

0:38:04.8

So computers.

Marilyn Stovall, PhD

0:38:06.4

Exactly. You couldn't possibly do a calculation like that by hand. No way. IMRT is really—probably most treatments are like that beam.

Tacey Ann Rosolowski, PhD

0:38:19.7

What happens—? What did you see in patients that had been over-irradiated or had tissue damage from radiation at the moment of treatment.

Marilyn Stovall, PhD

0:38:30.0

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Well, it's usually not at the moment of treatment. It might be a short time thereafter. It might be a very few weeks or even could be days if it was a lot. But when they would come back for a checkup, I would often see the patients, and the tissue would become very red, and it was like an awful sunburn at first. It could be so bad that the tissue would just slough out and leave a hole there. Now I don't remember—I've seen pictures of patients that had that, but I don't think we ever treated a patient so badly that they had their tissue slough away.

Tacey Ann Rosolowski, PhD

0:39:09.5

And that would be external tissue. Would anything happen to internal tissue?

Marilyn Stovall, PhD

0:39:13.1

Oh yes, it's burned too. If the sources are implanted in the tissue, it certainly would. And even if it's an external beam, depending on how deep the over-irradiation occurred, it could be very serious, and it's painful. But we didn't have any patients like that.

Tacey Ann Rosolowski, PhD

0:39:44.6

That says something good about the service.

Marilyn Stovall, PhD

0:39:47.1

That's right. Well, Dr. Fletcher was a very—he was an excellent radiotherapist, and he knew how much dose to give the various tumors. There are a lot of things that figure into an old treatment—the size of the beam, for one thing. The bigger it is, the more— You can't give the same dose to a large beam that you would give, perhaps, to a small one because that's adding more dose.

Tacey Ann Rosolowski, PhD

0:40:22.4

How long do you think—? What was the learning curve for figuring all this out?

Marilyn Stovall, PhD

0:40:27.9

Gosh, I think the learning curve for me is still going on. I don't— That's hard to answer because there's so many things to learn in radiation therapy, so many aspects, and it's changing. It's not day-to-day, but there are always new techniques and new machines, and I guess it's a never-ending thing. Because you can see what could be improved about one treatment—maybe it's a

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great treatment except for one little aspect—and you think, well, I think I know a machine or I can design a machine or I can do this to fix that. It just never ends. There are also many, many different kinds of tumors. Not only histology but size and where they're located in the body. If a tumor is near the heart, you're not going to treat it without giving quite a bit of radiation to the heart, perhaps, and that's not good. Let's say if it's a female child, it may be a neuroblastoma in the pelvis, and you're going to irradiate the ovaries. Sometimes they go in and they pin the ovaries near the pelvic wall during treatment.

Tacey Ann Rosolowski, PhD

0:42:15.5

Oh, that means moving them aside.

Marilyn Stovall, PhD

0:42:16.2

Yes, moving them out and then bringing them back. They don't do that as much as they used to because they have better treatment techniques to avoid the dose. But all of those things that go into improving the treatment, they have been going on, I guess, as long as therapy has been going on.

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Chapter 06
0:42:44.3 to 0:54:25.2 +
B: An Institutional Unit
Radiation Physics and Institutional Growth

Story Codes
B: MD Anderson History
B: Growth and/or Change

Tacey Ann Rosolowski, PhD
0:42:44.3
Do you mind if we shift gears a little bit?

Marilyn Stovall, PhD
0:42:45.8
No.

Tacey Ann Rosolowski, PhD
0:42:47.2
Because I wanted to ask a bit— One of the missions of the project was to get a sense of the growth and change of the institution. So I'm wondering if you could tell me about the evolution of the Department of Radiation Physics and how it morphed. I know it changed locations, but if I could have your observations in change in size and maybe focus, reorganization, that kind of thing. And who were some of the really good leaders? I know you've spoken about Dr. Shalek.

Marilyn Stovall, PhD
0:43:18.4
Yes, I keep mentioning him because he was—in the early days, the Department of Physics was part of the—I think they called it—what was it?—Radiation Therapy. In other words, Radiation Therapy was over—Physics was part of Radiation Therapy or Radiation Oncology. Gilbert Fletcher was the chief of all of us, and then Dr. Shalek was Chief of Physics. Now—well, I think it's still that way. [Geoff Ibbott](#) is Chief of Physics.

Tacey Ann Rosolowski, PhD
0:44:04.8
I'm sorry, what's his name? Geoff?

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Marilyn Stovall, PhD

0:44:06.0

Yes, Geoff. G-E-O-F-F.

Tacey Ann Rosolowski, PhD

0:44:10.0

Oh, G-E-O-F-F.

Marilyn Stovall, PhD

0:44:12.2

I-B-B-O-T-T.

Tacey Ann Rosolowski, PhD

0:44:15.8

Geoff Ibbott.

Marilyn Stovall, PhD

0:44:16.5

Yes. And—oh, that's embarrassing. [Dr. \[Thomas A.\] Buchholz](#) is Chief—it's still like it used to be, I think—he's chief of all of us, Buchholz. You probably know more about the organization—

Tacey Ann Rosolowski, PhD

0:44:36.6

I don't. I mean, it's amazing what people don't know about the organization. That's why I'm asking in part.

Marilyn Stovall, PhD

0:44:43.5

I don't know.

Tacey Ann Rosolowski, PhD

0:44:45.3

Because as I understand, there's a Department of Radiation Physics, and then within that, there's a division of Radiation Oncology.

Marilyn Stovall, PhD

0:44:53.8

No, I think it's the other way around.

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Tacey Ann Rosolowski, PhD

0:44:54.5

It's the other way around? Okay.

Marilyn Stovall, PhD

0:44:56.2

Yes. Division of Radiation Oncology has part of it as Physics—Radiation Physics. And Dr. Buchholz is head of Radiation Oncology. And that's sort of been the organization since the beginning.

Tacey Ann Rosolowski, PhD

0:45:25.9

Why was that? What else is included in the division of Radiation Oncology?

Marilyn Stovall, PhD

0:45:31.3

Well, I think there's a division—oh, this is embarrassing—Radiation Imaging is like Radiation—I'd better not say; I'll be wrong.

Tacey Ann Rosolowski, PhD

0:45:52.3

Okay. That's fine.

Marilyn Stovall, PhD

0:45:54.8

Maybe you'd better just look it up. I'm embarrassed. I'll get in trouble if I say the wrong thing.

Tacey Ann Rosolowski, PhD

0:46:01.4

Well, what do you recall about just the growth of your area over the course of time? You said when you started there were five people, and now there are a lot more.

Marilyn Stovall, PhD

0:46:12.7

I think there are at least 300 people in Radiation Physics, and maybe more than that. A lot of people just do research. I say "just." It sounds like I'm downgrading it, but there are so many different parts of Radiation Physics, and I don't think we all ever get together in one room. There's no place big enough. When we have staff meetings, it's all over the hospital wherever we work, and it's televised.

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Tacey Ann Rosolowski, PhD

0:46:59.2

Virtual meeting.

Marilyn Stovall, PhD

0:46:59.6

Yes. But Geoff Ibbott is Chief of Radiation Physics.

Tacey Ann Rosolowski, PhD

0:47:17.9

So how have you experienced that growth? That's a really different environment to work in.

Marilyn Stovall, PhD

0:47:25.1

Oh yes.

Tacey Ann Rosolowski, PhD

0:47:27.1

So how would you characterize the change that that's created?

Marilyn Stovall, PhD

0:47:28.8

It just grew and grew and grew. Once we moved into a hospital—the main hospital as it stands now— Of course, so many buildings have been added that it just— You can always think of something new to do, and it really needs a physicist to do it, and then there you go with a neat project. Of course, it takes a lot of money, and we get most of our funding from NCI, an awful lot of it. As I mentioned, we get NCI funding here for the late-effect studies. There would be no way you could do them without outside funding. And then there are people in the department who just write computer programs all day because they are working up new ways to calculate the dose and do it faster and better.

Tacey Ann Rosolowski, PhD

0:48:46.4

How do you feel that that change—? There's been a lot of discussion, especially during President [John Mendelsohn's](#) [Oral History Interview] tenure, and he was so invested in growing the institution when it was being really financially threatened by changes in insurance practices. And so there's been a lot of discussion and debate about what the implications of that growth might

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be. How do you see that? What are the pros and cons of that kind of growth within your own department?

Marilyn Stovall, PhD

0:49:21.3

Of course, we don't depend on patient billing directly, or maybe we do. I don't know how that works. What I'm thinking is that we're not like a clinical department where we treat a patient and the billing depends on that. A lot of our money—not all of it—comes from grants directly to NCI, although we certainly get money indirectly from patient billing because we're doing clinical work. For example, every machine that treats patients has to have one or more physicists assigned to it, and that's their full-time job—to get the patients treated on that machine. So radiation therapy is a very expensive form of therapy. Maybe it's no more than surgery, but my guess is it has to be because the equipment is so expensive. Is something burning?

Tacey Ann Rosolowski, PhD

0:50:47.5

I don't know. I'm going to pause this while we—

Marilyn Stovall, PhD

0:50:50.3

It smells. (pause in audio) I've lost my train of thought.

Tacey Ann Rosolowski, PhD

0:50:53.2

Oh, you were talking about how radiation is a really expensive form of therapy and that the equipment is so expensive.

Marilyn Stovall, PhD

0:51:00.3

Yes, and I have to retract what I said before. We certainly do get money from patient billing. I just don't know how that breaks down. But anything new that we do that we develop has to have funding from NCI. Our late-effects work, for example, is all funded by NCI because we don't bring in patient billing directly with it.

Tacey Ann Rosolowski, PhD

0:51:31.3

Certainly expansion has had a really positive effect.

Marilyn Stovall, PhD

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0:51:34.9

Oh yes.

Tacey Ann Rosolowski, PhD

0:51:37.2

Are there some areas where you think expansion has maybe had negative effects?

Marilyn Stovall, PhD

0:51:41.4

I don't think of any. I think any time you expand and grow, there's a danger of not communicating well. I guess we have that to a certain extent, but I don't think it's bad. I think overall we benefit from the hospital being bigger. Now, I think from the patient viewpoint, it's terribly confusing to come to MD Anderson.

[Redacted]

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Chapter 07

0:54:25.2 + to 1:10:59.2

A: View on Career and Accomplishments

Research Opportunities; Appreciating MD Anderson's Reputation Abroad

Story Codes

A: Personal Background

C: This is MD Anderson

C: Personal Reflections, Memories of MD Anderson

C: MD Anderson Past

B: Gender, Race, Ethnicity, Religion

A: Character, Values, Beliefs, Talents

C: Evolution of Career

A: The Researcher

Tacey Ann Rosolowski, PhD

0:54:25.2 +

We're back. Okay, so we're recording again. I wondered if— Let me shift gears and then maybe I'll come back. A question is forming in my mind here. The whole issue of women at MD Anderson, we've touched on it a little bit, and I was wondering when you began to see some changes in the numbers of women coming into the institution and maybe changes in the institution that helped women advance in their careers. I think I read an article where you were kind of featured in it. It was about women in the institution, and you were quoted as saying that in the early years it really depended on how your boss was—your relationship with your boss. If you had a supportive boss, you were able to get ahead, and you certainly had one in Dr. Shalek. So I'm wondering, beyond that, when did you see that the institution itself as a whole was more hospitable to the women that were more able to advance?

Marilyn Stovall, PhD

0:55:37.8

That's hard to say, because I don't feel that I was ever discriminated against. Of course, I was a woman, as you say. Dr. Shalek just did not do things like that.

Tacey Ann Rosolowski, PhD

0:55:48.9

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Did you feel any different attitudes from other practitioners, other physicians here, other researchers?

Marilyn Stovall, PhD

0:55:59.3

Not really. I don't ever remember a time when I was put down because I was a woman or I didn't get a promotion because I was a woman. If I didn't, I didn't know it. I just assumed that I was where I was supposed to be and doing what I was supposed to do. I think that everyone here who has anything to do with me has been very supportive, and I have progressed in my career much better than I ever expected, so I have no complaints.

Tacey Ann Rosolowski, PhD

0:56:44.3

What were your goals when you first began in 1951? Where were you thinking you might end up?

Marilyn Stovall, PhD

0:56:51.6

I don't think I had any long-term goals. I just wanted a job and to be able to eat, because when I graduated from Baylor, and my father made it clear, "I'll pay your way at Baylor, but when you're out there, there's no more money from me. That's it." That was reasonable, because they were not wealthy people. And that was fair enough. So I knew when I got out that I had to make my own way financially.

You don't care about this, but when I told you I answered an ad in the *Chronicle*, I didn't have a car. I got on the bus in Lufkin and rode the bus to Houston and came and filled out some more papers in what we called then Personnel, which was a grand total of three people. When I got through that sometime in the afternoon, **Mr. Yoder**— I'll never forget him. He was the head of Personnel, and he said, "Can I give you a ride somewhere?" And I said—I was so stupid—I said, "Well, I don't know where I'd go." I didn't have any plans. And he said, "You don't know where you're going to sleep tonight?" And I said, "No, I don't know." And so he said, "Well, maybe I better take you around and look for a room to rent in a house," because I couldn't afford a hotel. So I probably said, "I shouldn't put you to that trouble." And he said, "It's no trouble." So we got in his car, and we got a paper and looked at rooms to rent and finally found one in [Bellaire](#).

Tacey Ann Rosolowski, PhD

0:58:46.1

That's pretty amazing.

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Marilyn Stovall, PhD

0:58:50.6

I mean, who would do that now? That was so stupid. And so I lived in this rented room with no kitchen privileges. They made it clear that you don't put any food in our fridge. You get to sleep in the room, and that's all. I rode the bus to MD Anderson every morning, and I was so happy. I didn't know any better. He was such a nice man.

Tacey Ann Rosolowski, PhD

0:59:21.7

So what did you do to eat if you didn't have kitchen privileges?

Marilyn Stovall, PhD

0:59:24.1

I don't know. I was trying to think about that the other day. I think I ate my main meal at the hospital at noon. And I have no idea what I did for breakfast and dinner otherwise. I must have picked up a snack, because I didn't have anything in my room to keep things cold. I don't know. Of course, I didn't have a television or a radio or anything like that. I just went back to my little room and read. And I didn't know any better. I was happy.

Tacey Ann Rosolowski, PhD

0:59:59.1

Do you feel that over the years, as you've advanced in your career, you've tried to make it easier for other women coming up?

Marilyn Stovall, PhD

1:00:05.3

Oh yes.

Tacey Ann Rosolowski, PhD

1:00:06.0

How so?

Marilyn Stovall, PhD

1:00:06.7

But not just women. I feel—well, as I tell them, so many people have helped me. I need to help other people as they come along. That would only be the right thing to do. I have a woman here now—and I want to help people even if they don't want to stay in this field—she's going to school to work in a funeral home. I give her time off during the day that she makes up, and she was afraid for a long time before she asked me if she could do it. And I said, "I cannot turn you

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down because so many people did it for me.” And that’s the way I feel with male, female, whatever. I had some really terrific people work for me, and some of them still work for me. But no, I feel obligated to help them. I don’t do it just for that reason. I really want to help them, but I’d be a terrible person to hold them back.

Tacey Ann Rosolowski, PhD

1:01:29.0

What professional qualities do you think you’ve developed since you’ve come here?

Marilyn Stovall, PhD

1:01:35.9

Well, that’s sort of self-serving.

Tacey Ann Rosolowski, PhD

1:01:39.5

Well, I don’t know. I mean, how did you grow as a professional?

Marilyn Stovall, PhD

1:01:44.3

Well, I think one thing I still do is I want to check everything two or three times. I just don’t—particularly if it has anything directly—well, anything. It doesn’t have to do directly with a patient. It can be patient data, anything that I do in this job. I want it to be right, and I don’t have—I make mistakes. If I did everything one time, I’d have a lot of errors. And we still try to maintain this you-do-it-and-I-check-it or I-do-it-and-you—check-it attitude. So I’m still sort of carrying on from Dr. Shalek. I carry on in many ways how he treated me, because I certainly grew from it, and I think the work was better as he organized it and had this ethic of the patient comes first.

Tacey Ann Rosolowski, PhD

1:03:01.3

Are there other kinds of practices in a practical sense that you continued from the early days of working with Dr. Shalek?

Marilyn Stovall, PhD

1:03:11.5

Well, I try to take every opportunity I can to learn new things, and it may not be something that I think I will use directly right now. You don’t always know how you’re going to use it until you see what it is. And I try to at least keep in touch with new things, and if it looks like it would pay

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off in our section here, well, I learn more about it. I can't think of an example, but— I'm drawing a blank at the moment. But I try to be open to anything that's a new method.

Tacey Ann Rosolowski, PhD

1:04:14.1

What are some of the things that you've done at this institution that you are most proud of? You've mentioned one already.

Marilyn Stovall, PhD

1:04:21.8

Well, as I said earlier, using computers. And then getting started and continuing the late-effects work, because we're the only people I know of who do that for many, many studies. And we have a reputation now. We do the radiation [dosimetry](#) for late-effect studies. I should make that clear. We don't do statistical analyses and that sort of thing. But we have a reputation now of doing the radiation dosimetry. When other people—I may not even know them—if they want to do a study but they don't do the radiation dosimetry, they will come to me and we work out a way to do it. I have a lot of friends that I've worked with for thirty years on these studies all over the world. We have many colleagues in Europe, the Netherlands, as I mentioned, and Denmark. I consider them good friends. That's a real plus to my job to have a bigger view than just MD Anderson. We meet in meetings, or we may just meet for the studies. They're good colleagues, and I enjoy the collaboration.

One thing I didn't mention—this was probably in the late '60s, early '70s, somewhere along there—I was collecting patient data—records and things—for a late-effect study, and I did a grand tour of Europe. It was awful. It started out— It sounds great, but after a while— I went to England and France and Italy and Greece and all the Scandinavian countries. Of course, I was stupid. I went to Italy in the summer, and I went to Finland in late December. Oh my gosh, I've never been so cold in my life. I got off the plane and the physicist—she was a woman—met me, and I had— I was so proud of my new wool coat. I was wearing it, and she looked me up and down, and she says, "Where's your coat?" I said, "I'm wearing it." She said, "No, no, that won't do." She said, "I have a coat I'll lend you."

Why I brought that up is I really saw how the world views MD Anderson, and I was treated so well on that trip because I was from MD Anderson. It wasn't me. They didn't know me. But everywhere I went, they entertained me, they had me to their homes for dinner, or they took me to a concert, and it was just really a wonderful thing that I saw when they said, "Oh, you're from MD Anderson." And that was— I don't think I realized before then how well thought of—how well known it was all over the world.

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Tacey Ann Rosolowski, PhD

1:08:11.9

What do you think MD Anderson represented to them at that time?

Marilyn Stovall, PhD

1:08:15.2

I think it represented high quality of cancer therapy, and to a large extent it was because of R. Lee Clark and Dr. Fletcher. They knew them and they had put us on the map. And then I should mention that two years, along about sometime in the '70s—early in the '70s—I was on a two-year leave of absence, and I went to the [International Atomic Energy Agency](#) in Vienna. I worked there for two years in their medical section. Their role, and why I went, was to help developing countries develop their radiation therapy facilities. At that time, a lot of hospitals in, say, Africa—even some in Europe—didn't have much in the way of radiation therapy.

Tacey Ann Rosolowski, PhD

1:09:19.4

That must have been a fascinating experience.

Marilyn Stovall, PhD

1:09:20.8

Oh, it was wonderful. Best time of my life.

Tacey Ann Rosolowski, PhD

1:09:23.4

What made such an impression on you?

Marilyn Stovall, PhD

1:09:26.7

Well, Vienna is such a wonderful city to live in. It's beautiful. I bought a little car, a [VW](#), and with a friend there, I drove all over Europe. We had generous vacations and we just went. We spent three weeks in Greece. What a wonderful time. And now I think about all their troubles in Greece. It wasn't like that when we were there. It's a shame. Anyway, that's of no point to the story except to say that it was a wonderful time.

Tacey Ann Rosolowski, PhD

1:10:07.4

How did that opportunity come about?

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Marilyn Stovall, PhD

1:10:09.7

Well, the physicist who was in charge of the medical section visited our department, and of course I didn't know him before then, but he talked with Dr. Shalek and told him they needed somebody to work on an atlas of isodose curves—[isodose data](#)—for these developing countries. He asked Dr. Shalek if he knew anybody here who would want to come and work there for a while, and bless his heart, Dr. Shalek said, "We have somebody." He mentioned me, and so the man told me about it. I said, "Sure I'll go. I have no encumbrances." So I went, and it was a wonderful time.

Tacey Ann Rosolowski, PhD

1:10:59.2

It sounds like a great experience.

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Chapter 08

1:11:00.7 to 1:23:45.5 (end of audio)

A: View on Career and Accomplishments

Passing on Lines of Research and Opportunities to Young Faculty and Staff

Story Codes

A: The Researcher

C: Professional Practice

C: The Professional at Work

B: Beyond the Institution

A: Career and Accomplishments

Marilyn Stovall, PhD

1:11:00.7

Yes. So this job, if you want to call it that, or career—I just call it a job—has opened up so many opportunities for me. I couldn't have done better, I don't think. And by better, I don't mean just money. I mean the fun I've had in my job, not only strictly to work but just associated with it, like Vienna.

Tacey Ann Rosolowski, PhD

1:11:26.9

Sure. It widened your horizons.

Marilyn Stovall, PhD

1:11:28.8

Right. Absolutely. I'd never been to Europe before that, and that was a wonderful time.

Tacey Ann Rosolowski, PhD

1:11:36.6

What are some of your goals for your remaining time here?

Marilyn Stovall, PhD

1:11:40.9

Oh, gee. One thing I want to do is pass everything on to somebody else who will be interested in late effects. It's not that the work is so difficult or that I had problems. It's just that medical physicists make so much money doing clinical work that most of them are not particularly interested in—I shouldn't say that. They're interested in research, but when it comes down to do

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they want a job that pays them less, they want to go back to the clinic. So I don't know. I'm trying to help some of the younger people break into this kind of work.

Tacey Ann Rosolowski, PhD

1:12:42.6

You mentioned the late effects, but are there other initiatives that you started that you hope younger people in this department and section carry on?

Marilyn Stovall, PhD

1:12:51.9

No. I think that's about it. Late effects is what I do now that's research, and I like it so much, and it's a very wide area of research. It's not limited, because you can choose any number of different kinds of patients and treatments and ages of patients to look at long-term. If you look at them like we're doing the CCSS patients, the rest of their lives, it never ends. A big part of our work is that we want to keep our records in good shape, and I have a wonderful computer analyst who when we get records of patients in here, we scan them and store them in at least three different places. So if one place is destroyed— She takes one set of discs, or however she stores them today, and keeps that at main hospital, so if we have a fire here, we don't lose all of our patient records. I feel very strongly about that, because NCI had paid a lot of money for us to collect these records.

Tacey Ann Rosolowski, PhD

1:14:14.8

What's this person's name?

Marilyn Stovall, PhD

1:14:16.5

Rita Weathers. I have two senior people here. The other one is Susan Smith who—well, they've worked for me for thirty years, and they're just wonderful. They work hard, they work smart, and if they ever go and retire— They're eligible for retirement right now—full retirement. If they go, I go. That is one thing that worries me, because what they know, what they have in their heads, to pass that along to somebody else—I don't know how you do it.

Tacey Ann Rosolowski, PhD

1:14:58.6

That's a real challenge in any institution is for people who are the memory of the institution, and how do you keep that continuous.

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Marilyn Stovall, PhD

1:15:07.6

And a lot of it— You know, we never do quite the same thing in late effects. It's a new study, a new bunch of patients, and they use what they've learned in another study and apply it to these, and they do that so well. But I don't know if I hired a new person, if one of them quit, they wouldn't have that bank of experience. I guess that's true of a lot of jobs, but they are wonderful. They work long hours and just do a terrific job. They're not recognized as much as they should be.

Tacey Ann Rosolowski, PhD

1:15:56.4

What's the project that— Is there a publication that you're working on right now that you want to produce soon?

Marilyn Stovall, PhD

1:16:03.9

I don't think so. That sounds funny because usually it seems to me we're working on a publication all the time, but not right now. And usually—well, not usually but always—we're just some of a bunch such as— This is one here that just happened to be on my desk. If you want that you can have it.

Tacey Ann Rosolowski, PhD

1:16:35.0

Thank you. [Cardiac Outcomes in a Cohort of Adult Survivors of Childhood and Adolescent Cancer](#). Oh, this is from the Childhood Cancer Survivor Study cohort. Oh, I'd love to have this. Thank you.

Marilyn Stovall, PhD

1:16:48.1

A paper like that takes an awful lot of work to get together and be sure that everything and all the data are right. Of course, I'm one of the authors because of the radiation data in the paper. Heart damage, as I mentioned, is one of the things that's a result of radiation. I am proud of the CCSS work that we've done. We turned out—oh gosh—we've written over a hundred papers because it's been such a goal of mine, with information, to have all these records of patients treated now, some of them twenty years ago.

Tacey Ann Rosolowski, PhD

1:17:33.2

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And is this the program that started up with— Are you involved with the program set up by Norman Jaffe [Oral History Interview]?

Marilyn Stovall, PhD

1:17:42.1

No. I know him, but my work is not associated with him.

Tacey Ann Rosolowski, PhD

1:17:51.5

But you're saying you're particularly proud of this Childhood Cancer Survivors Study.

Marilyn Stovall, PhD

1:17:57.4

And there are so many other people that have a role in it. It's not my study, but because it's a big operation and a lot of people are involved, well, you can see the number of authors on that paper. It's turning out some really good papers to tell people about late effects in children. They're not children anymore when you see the late effects sometimes. But before CCSS was formed, as I said before, physicians had the view, well, I cured the tumor. What can happen now? They're okay. And they might follow them two or three years and that's all. But they have to follow them longer and do tests that they might not have done back in those days to check up on things that can be damaged by radiation.

Tacey Ann Rosolowski, PhD

1:19:02.8

That's a great legacy to leave.

Marilyn Stovall, PhD

1:19:05.2

Yeah, I think what we're doing is really something important to improve the quality of life of cancer survivors. For so long, maybe there weren't enough cancer survivors to be interested in it, but now there are more and more. I saw a number—I don't have it any more—about the number of cancer survivors in this country. My desk is always such a mess. Oh, here it is. In this country there are 300,000 survivors of childhood and young-adult cancer, and two-thirds of those who survive face at least one chronic health condition, so some health condition that can be traced to some part of their treatment. It may not be radiation. It may be chemotherapy, because some of those are very damaging to the heart too. But unless you recognize those things and it happens early on, the patient is not going to have quality of life.

Tacey Ann Rosolowski, PhD

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1:20:40.0

I think I've asked all the questions I had. Is there anything you'd like to add right now?

Marilyn Stovall, PhD

1:20:44.6

I can't think of anything.

Tacey Ann Rosolowski, PhD

1:20:47.5

This has been really interesting. Thank you.

Marilyn Stovall, PhD

1:20:49.1

Oh, you say that to everybody.

Tacey Ann Rosolowski, PhD

1:20:51.9

Well, I do because I talk to some pretty interesting people, actually. This project does put me in the way of some pretty interesting people.

Marilyn Stovall, PhD

1:21:02.7

I come in here to the same place every day, and it seems like I do the same thing. I don't, but in one sense, my work doesn't seem all that exciting. But I just can't bear to leave it. I could have retired many years ago, but I just love it here, so I'm going to keep doing it until they throw me out.

Tacey Ann Rosolowski, PhD

1:21:27.4

Well, thank you for your time today, Dr. Stovall.

Marilyn Stovall, PhD

1:21:30.2

I enjoyed it, and I probably said things I shouldn't have.

Tacey Ann Rosolowski, PhD

1:21:36.1

I doubt that.

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Marilyn Stovall, PhD

1:21:38.3

But overall, I think MD Anderson—well, I’ve said it before now—it’s a wonderful place to work. I don’t understand these things—I don’t know whether you’re familiar with these surveys they send employees about, are you happy? It’s a long list of questions. Do you feel appreciated? What do they call it? I’ve forgotten now what the latest one was. And my view is, if you’re working at MD Anderson, you’re already working at one of the best places you can, but if for some reason you’re not happy, get out and get another job. Don’t do this, “Yes, I’m not appreciated,” or, “My boss doesn’t understand me.” Go somewhere else and get another boss. But then if you sit down and think about that, most people will stay here. I have a wonderful boss. I never see him. That’s Dr. Ibbott. He doesn’t have time to come over and look at us. He really is a very nice person.

Tacey Ann Rosolowski, PhD

1:22:55.9

It seems like you’ve had a really good experience. It’s pretty amazing to speak to somebody who’s had so many years at the same institution and has grown so much in it. It’s amazing. I think it’s an unusual story.

Marilyn Stovall, PhD

1:23:11.1

I’ve never had a bad supervisor or a bad boss that really I just felt was not treating me right. It just hasn’t happened. Now Dr. Fletcher— Is that on?

Tacey Ann Rosolowski, PhD

1:23:28.2

With him?

Marilyn Stovall, PhD

1:23:32.3

Oh, he was awful. Don’t—

Tacey Ann Rosolowski, PhD

1:23:33.9

Well here, why don’t I close off the interview now?

Marilyn Stovall, PhD

1:23:37.5

Yes, this might amuse you.

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Tacey Ann Rosolowski, PhD

1:23:40.1

It's a quarter of three, and we're turning off the recorder at this point.

1:23:45.5 (end of audio)