

## Anamarija M.Perry Interview



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**1. Where were you born and where did you grow up prior to coming to study medicine in Zagreb?**

I was born in Zadar and for the first 8 years of my life I lived in a small tourist village called Punta Skala-Petrcane. I attended the elementary school in Nin a small historic town from which a part of my family came from. When I was 8, we moved to Zadar where I finished my elementary and high school. I have fond memories of those days.

**2. When did you decide to study medicine?**

I decided to study medicine very early on. My mother always says that I was barely walking and talking and I was already telling everybody that I will be a doctor. Looking back, I did have one role model in those early years of my childhood, my uncle Dr. Miroslav Dumic, who is a well known pediatric endocrinologist in Zagreb. He and his family would spend summer vacations in Punta Skala and I still remember that every day he would read his voluminous endocrinology books. I would sneak in and browse through those books full of pictures depicting kids with peculiar diseases; I must admit that I was totally mesmerized. In elementary school and high school I was a nerdy kid and a straight A student. However, my favorite subjects were always chemistry and biology. At the beginning of high school I already firmly decided to go to medical school. Thus medicine was a logical choice for me and I never changed my mind or thought of doing anything else.

**3. Did you enjoy your student days in Zagreb?**

I remember being very busy all the time. Looking back, I probably did not enjoy it enough. I started studying for USMLE during the 4th year of medical school, and that kept me busy because I still had to take all the prescribed courses and pass one examination after another.

**4. What were your favorite subjects during the preclinical and clinical years of your medical school studies?**

My favorite subject was pathology – big surprise. I also really liked histology, microbiology, and radiology. Clinical rotations were not my cup of tea, but I did well on all examinations. Studying about different diseases was interesting, but interacting with patients was frequently challenging.

**5. Did you have any role models who influenced you and helped you decide about your future life?**

I was fortunate to have 3 mentors in my career. During the third year of medical school I met Dr. Marin Nola who was an Associate Professor of pathology and was in charge of our small group sessions. Marin was one of a kind – wickedly smart, strict but fair, a visionary enthusiast, and an eternal optimist. I approached him and started working with him on different projects, as well as writing papers and book chapters. Having Marin as my mentor determined the entire course of my career. Through Marin, I met you and thus Dr. Ivan Damjanov became my mentor for nearly 25 years (Figures 1 and 2). In many ways I became like an adopted daughter of yours and Damjanovs became my American family away from home. My third mentor was Dr. Dennis Weisenburger, whom I also met thanks to Marin Nola. Dr. Weisenburger is a world class hematopathologist and researcher who contributed immensely to the field of lymphoma pathology. Denny, as we all called him, trained me in hematopathology and taught me how to approach translational research and write scientific papers. Together we co-authored over 25 papers.



Figure 1. With my mentor Ivan Damjanov in Kansas City in 2002

**6. How and when did you decide to become a pathologist?  
Did you ever waver or regret your decision?**

I decided to become a pathologist during my medical school pathology rotation, that means in the third year of my medical school. For me, pathology has always been a perfect combination of clinical medicine and an „in depth look“ into different diseases. Diagnosing diseases under the microscope is like solving a puzzle, and I love puzzles. In short, I fell in love with pathology at the first sight and never looked back.

**7. What did you do after graduation?**

After graduating medical school in 2004, I did a year of obligatory internship and took the Croatian licensing exam. Then I started working as a research assistant („znanstveni novak“) at the Department of Pathology under the mentorship of Dr. Stanko Jukic. I was based in Petrova bolnica.



Figure 2. With Ivan Damjanov, 20+ years later, pathology meeting in Novi Sad, May 2024

**8. When did you move to the US?**

I moved to the US in 2006. I took almost a year to go through residency application process, interviews, paperwork, etc. I started my AP/CP residency at the University of Cincinnati, Cincinnati, Ohio. They offered me position outside of the residency match, but more importantly they were willing to sponsor my H1B visa. The alternative is so-called J1 visitor's visa which is hard to convert to a green card. I didn't want to take any chances and I jumped at the opportunity to be on H1B visa in Cincinnati, which turned out to be a great choice. It is a relatively small training program but residents are very independent and perform many functions on their own. I think that I came out of it with a solid knowledge of anatomic and clinical pathology.

**9. Some doctors come to the US for training and then return back to their country of origin. Did you ever consider returning back to Croatia?**

Short answer – no, never. There are, I would say, three components to that decision. First of all, I like how pathology is practiced in the US. In comparison to Croatia, young pathologists have here infinitely more opportunities, particularly when it comes to translational research. Second, when you come to the US as a foreign medical graduate you need to mentally „burn the ships“. In other words, you have to accept wholeheartedly your new life in the new country and not feel sorry or guilty for leaving the homeland. I am convinced that this is the only way to be happy in a foreign country. My third and most important reason for staying is my husband Kyle whom I met during my residen-

cy, and of course our two kids. Kyle is an American from Florida and it is unlikely that he would ever adjust to a life in Croatia. I am, however, in contact with my Croatian colleagues and I am always happy to collaborate or help them any way I can.

**10. After your residency training in anatomic and clinical pathology, you joined Dr. Weisenburger at the University of Nebraska and became a board-certified hematopathologist. Why did you choose hematopathology? And why did you choose Dr. Weisenburger?**

Marin Nola is entirely to blame for both of those decisions. Back in early 2000s Marin started to shift to the field of hematopathology (from the gynecological pathology that was initially assigned to him). At the suggestion of Professor Labar, the Head



*Figure 3. Hematopathology fellowship at the University of Nebraska Medical Center (2011). Standing from left to right: Drs. Kai Fu, John Chan, Dennis Weisenburger, Samuel Pirruccello and Timothy Greiner. Sitting from left to right: Drs. Anamarija Perry, Patricia Aoun and Javier Laurini*

of Hematology at Rebro, Marin spent 6 months at the University of Nebraska with Dr. Dennis Weisenburger and his hematopathology team to learn as much as possible about lymphomas. Marin loved that experience. He used to tell me with limitless admiration stories about Nebraska, since he was convinced that it is the best place on earth to learn about lymphomas. In short, he planted in my mind the idea of specializing in hematopathology and moving to Nebraska after my initial pathology training. After I moved to the US for my residency, Marin's „propaganda“ continued and I started to dedicate more and more time to hematopathology and quickly decided that this will be my career choice. In the summer of 2008 I did a 2-month elective at the University of Nebraska to increase my chances of getting into hematopathology fellowship which was very competitive at that time. Marin of course recommended me for the fellowship in Omaha and that meant a world to me. Incidentally, during those 2 months I met my future husband Kyle Perry who was a pathology resident in Nebraska. Marin did not live to see me accepted to Nebraska hematopathology fellowship. Nevertheless, just a few days before his premature and sudden passing in September of 2008, I was able to tell him that I met a great guy. We joked about it but he was happy for me. So I „blame“ Marin for meeting Kyle. Anyhow, both decisions – hematopathology in Nebraska and Kyle turned out to be great choices! (Figure 3)

**11. After you married Dr. Kyle Perry, a surgical pathologist, two of you moved to Canada. Why Canada?**

I finished my fellowship in 2012 (Kyle finished his in 2011). We started looking for jobs in 2011. I wanted to find a hematopathology-only job in academics, while Kyle was a bit more flexible (he finished surgical pathology and cytology fellowships). In short, job situation was pretty dire in 2011 and to find two pathology jobs in the same institution (or the same city) was quite a challenge. After looking for 6 months or so we decided to expand our search to Canada. We found two potential places that were possibly able to accommodate us – University of Alberta (Calgary) and University of Manitoba (Winnipeg). Winnipeg people were quicker to respond and we accepted positions at the University of Manitoba. That was truly a leap of faith but ultimately it was a great experience for both of us. We practiced in a provincial system which in essence meant that all the pathology specimens from the entire province of Manitoba went to one hospital. I was in a group of 10 hematopathologists from 8 different countries, an incredibly diverse and supportive community. After 4 years in Winnipeg, Kyle decided to pursue an additional year of bone and soft tissue pathology fellowship at the Mayo Clinic. Thereafter we moved back to the United States after having spent 5 years in Canada.

**12. After 5 years in Canada, you moved to Ann Arbor, Michigan, and became a Clinical Associate Professor at the University of Michigan. Your husband got a job in Detroit, which about 25 miles north of your house. You also gave birth to two girls. How did you handle all these changes?**

We moved back to the US in the summer of 2017. I took a position at the University of Michigan and Kyle started working in Henry Ford Hospital in Detroit. Of note, after 6 years at Henry Ford, in 2023 Kyle moved to the University of Michigan. When we moved back to the US our older daughter was almost 3 years old and I was pregnant with our second child (she was born in November of 2017). Yes, life was and still is busy. I guess I did it like I do everything else – make a list in the morning and start going through it, one task at a time. Admittedly, those lists have gotten much longer after the kids were born but I have always been pretty efficient so things get done sooner or later. Girls are a bit older now so things are somewhat easier.

**13. In 2023 you were promoted to Full Professor. You were 43 years old, and in a telephone conversation, half jokingly, you calculated that each of your two daughters has set back your career goal by 1.5 years. I disagree with you and still believe that you deserve mighty kudos for what you have achieved so far. With whom do you compare yourself? With your school-mates from Zagreb? Or US women pathologists of the same age?**

Honestly - I am happy with my achievements. I am one of the younger professors in my department. Most of my colleagues become full professors in their middle to late forties. I have a few female and male colleagues who were professors at 40-41, so it can be done earlier, but it happens rarely, at least in major US Medical Schools. In our family, we have 2 careers and 2 kids to deal with which can be very hectic. However, I haven't noticed that people without kids get promoted faster, so I think that the internal motivation of an individual is the primary driver. I don't know what are the current trends for academic promotion in Croatia, but I never liked to compete with my colleagues or worry about my promotion. In the long run it makes not much difference.

**14. Academic titles might be important, but from the professional point of view I think that you are primarily a hematopathologist and your peers evaluate you mostly by your performance as a diagnostician, your writings and contributions to hematopathology and overall academic activities and recognitions. Am I right?**

You are completely right. I am primarily a hematopathologist and to „get ahead“ in the hematopathology community one needs to get involved with different projects, working groups and collaborations which ultimately result in publications. I can

assure you that hard work pays off. Pathology world is far from meritocracy and one definitely has to network and build relationships to succeed, but ultimately people do recognize quality and hard work. This is a long-term process and success does not happen overnight. And, as I emphasized before, I was fortunate to have great mentors who also pushed me, „hooked me up“ with the right people and opened different opportunities for me.

**15. What is your current job description?**

As a hematopathologist I spend most of my time doing service work, which includes signing out a full spectrum of hematopathology specimens (e.g. lymph nodes, bone marrows, peripheral blood samples). I also spend significant amount of time teaching my trainees (residents and hematopathology fellows), either at the microscope or through lectures and seminars (Figures 4-6 and Figure 8). I spend also some time with medical students that rotate through the pathology department. The rest of my time is dedicated to translational research, writing and editing of different publications, and participation in institutional and national pathology projects and committees.



*Figure 4. Lecturing at the New Frontiers in Pathology meeting organized by the University of Michigan. Picture was taken in October 2017, two weeks before my younger daughter was born.*

**16. How well-known are you as a hematopathologist in Michigan and nation-wide?**

I don't know how „well-known“ am I, and is there a way to measure that, as these things are not very objective. I can tell you that I am pretty busy and getting busier every year. In Ann

Arbor we have a large consultation service and during an average week I see around 40-50 consultations. I participate in several national committees, including College of American Pathologists (CAP) committee and Southwestern Oncology Group (SWOG) research network (I am one of the three pathologists who reviews cases as part of large hematology clinical trials). Moreover, I collaborate on multiple hematopathology projects with pathologists from a number of institutions from east to west coast of the US and internationally. This year I have been rather busy with invited lectures and courses, both at the national and international level. When is all said and done, I usually travel for business 6-8 times per year, which I think is quite a bit since our daughters are still pretty young. Kyle has been able to successfully „hold the fort“ while I am away. He travels quite a bit too, so it evens out.

**17. In your consultation practice at the University of Michigan how often do you have to correct the initial diagnosis rendered by general pathologist from a smaller hospital who is not a hematopathologist?**

Good thing that you asked me this question, I can actually give you some numbers since I recently did a study on this matter. We have a rule to review pathology material from every hematology patient referred to the University of Michigan for second opinion or treatment. We change approximately 10% of all diagnoses. Here I am talking about major changes, i.e. those that could significantly impact patient care. This number is comparable with the experience of other major university hematology centres. We more often change diagnoses made by community pathologists, compared to academic pathologists. Furthermore, we are more likely to change the diagnosis of a pathologist who is not trained/board certified in hematopathology as compared to board certified hematopathologists. Also, interestingly, we are more likely to change the diagnosis if the pathologist has been in practice for more than 10 years. However, older/more experienced pathologists are also less likely to be board certified in hematopathology. Conclusion – hematopathology is tough and subspecialty training matters! General pathologists who are „jacks of all trades“ practically do not exist anymore.

**18. Hematopathology diagnoses rely often on molecular biology data. Are molecular pathologists part of your diagnostic team at the University of Michigan?**

We have an entirely separate division of molecular pathology at the University of Michigan but we very tightly collaborate with our molecular pathologists. In fact, most of our molecular pathologists are also hematopathologists and they participate in both services. Hematopathology and molecular pathology fellowships have been a popular combination these days.



*Figure 5. With Drs. Lauren Smith and Adam Bagg after our USCAP (United States and Canadian Academy of Pathology) short course in Los Angeles*



*Figure 6. With my husband Kyle at work*

**19. Which one of your papers do you consider to be your most important contribution to hematopathology?**

That is probably the following paper.... Perry AM, Warnke RA, Hu Q, Gaulard P, Copie-Bergman C, Alkan S, Wang HY, Cheng JX, Bacon CM, Delabie J, Ranheim E, Kucuk C, Hu X, Weisenburger DD, Jaffe ES, Chan WC. Indolent T-cell lymphoproliferative disease of the gastrointestinal tract. *Blood*. 2013 Nov 21;122(22):3599-606.

In this paper we described in detail and proposed a new entity called „Indolent T-cell lymphoproliferative disorder of the gastrointestinal tract“. This entity was included in 2016 World Health Organization Classification as provisional, and in the most recent 2022 edition of the classification became a definitive diagnosis.

**20. How many scientific peer reviewed papers did you publish so far? What is your h-index?**

I published 58 papers in peer reviewed journals listed in the Current Contents and my h-index is 26.

**21. What is your favorite paper, i.e. the one that you are most proud of?**

Perry AM, Diebold J, Nathwani BN, MacLennan KA, Müller-Hermelink HK, Bast M, Boilesen E, Armitage JO, Weisenburger DD. Non-Hodgkin lymphoma in the developing world: review of 4539 cases from the International Non-Hodgkin Lymphoma Classification Project. *Haematologica*. 2016 Oct;101(10):1244-1250.

This paper is a large summary paper of the work done by the members of the International Lymphoma Classification Project led by Dr. Dennis Weisenburger and Dr. James Armitage, a well known hematologist from Nebraska. In short, over two decades 5 expert hematopathologists visited nearly 30 countries around the world (including Croatia) and examined relative frequencies of different lymphoma subtypes in various countries. I was the lead author of that paper and I also wrote several papers using the data from that large international study. These are valuable data of global importance since there are no similar papers in many of the developing countries that were included in this project.

**22. What is your most often cited paper?**

The following paper was cited 233 times so far and it is my most often cited paper:

Perry AM, Alvarado-Bernal Y, Laurini JA, Smith LM, Slack GW, Tan KL, Sehn LH, Fu K, Aoun P, Greiner TC, Chan WC, Bierman PJ, Bociek RG, Armitage JO, Vose JM, Gascoyne RD, Weisenburger DD. MYC and BCL2 protein expression predicts survival in patients with diffuse large B-cell lymphoma treated with rituximab. *Br J Haematol.* 2014 May;165(3):382-91. Interestingly, I noticed that one of the largest private hematopathology laboratories in the US used to put this paper/reference in their fluorescence in situ hybridization (FISH) reports. Thus unofficially it was probably cited tens of thousands of times.

**23. Many of the hematologic malignancies are relatively rare entities. The only way of learning more about them is to assemble large international teams and thus collect enough cases for complex studies. Do you participate in such international multiinstitutional projects?**

Yes, I have been participating in multi institutional studies since my fellowship days, both as a lead investigator for some studies and as collaborator on others. Since lymphomas are my primary interest I have been participating in several lymphoma collaborative projects in the US and internationally. These are essential for building larger cohorts of patients who have rare forms of malignant diseases. Such studies are an excellent way of building connections with other pathologists, as well as producing important new data.

**24. As a member of the „the international elite pathology club“ you are expected to perform certain functions *pro bono*, for public good or for promoting pathology in general and hematopathology in particular. Do you do such things if asked or if you feel that you „really must“ do it?**

I am a member of few journal editorial boards and I review manuscripts as *ad hoc* reviewer for different journals. I am also an associate editor of hematopathology section of *Pathology Outlines*, the most popular online pathology publication in the US



Figure 7. Lauren Smith and I with our lymph node pathology book

(and beyond). I also edit educational material for *The Pathologist*, a widely read journal that was launched some 15 years ago in UK. Generally, I am happy and always ready to review and edit manuscripts for medical journals and thus help my colleagues. I think that peer review of manuscripts is an important part of academic medicine and it should always be done *pro bono* to assure quality and credibility of medical journals and also minimize any potential bias.

**25. You like books. No wonder that you accepted the position of the Pathology Section Editor for Doody Publishing. What is Doody Publishing and what does a Section Editor do?**

In a nutshell, Doody Publishing is a company that, among other things, publishes reviews of different medical books on their website. These reviews are then purchased by different companies (e.g. book publishers, book sellers, libraries, Amazon, etc.) and re-published on different websites. Doody reviews help all these professionals decide which books to purchase, recommend as teaching material or to be stocked for general library purposes. My official title for the Doody Publishing is Editorial Review Group Chair for Pathology and Surgical Pathology. I have worked in this role since June of 2015. Every month Doody sends me hard copies of 5-7 new pathology books on average and my job is to find pathologists to write a structured book review. My function is to make sure that the review is well written and sound, objective and unbiased. So far, my reviewers have submitted well over 250 reviews. I started as a reviewer for Doody in 2002 and I wrote over 80 reviews myself. Thanks to this role, I have been able to follow pathology literature very closely and receive majority of pathology books from leading medical publishers. Needless to say, my husband loves getting the books too.



Figure 8. With my colleagues and hematopathology fellows from the University of Michigan

**26. Recently, the well-known American publisher Wolters Kluwer (WK) published your book on lymphomas. Why did you write this book?**

The book we wrote belongs to the „Biopsy interpretation series“, a very popular pathology series published by WK, and deals with lymph node pathology. Although there are several excellent lymph node pathology books on the market, in this series there is a special emphasis on small/needle core biopsies which can be very challenging in any area of pathology, and especially in lymph node pathology. Three of us editors (Dr. Rebecca King from the Mayo Clinic, Dr. Lauren Smith from the University of Michigan and me) are all experienced lymph node pathologists, and educators (Figure 7). We aimed to write a very practical lymph node pathology book, both for pathology learners and practicing pathologists. The book reflects our experience and contains microphotographs prepared from our own pathology material. It took us considerable time to sort through all the microscopy slides that we have collected in our files over many years. Collecting the material for our book required many hours of microscopy and microphotography, or as a former resident used to say, lots of „optical mileage“. I am of course subjective but I think that we succeeded in producing a useful book for histopathologists. I am particularly proud of images which turned out really nice. These days, younger generations of pathologists are reading less books than we did; they rely more on quick online resources. As I stated above, I am an author and an associate editor for the

popular online pathology resource called Pathology Outlines. To give you some concrete numbers, the topic „Nodal marginal zone lymphoma“ that I authored was viewed nearly 28000 times in 2023, and in less than 2 months in 2024 it was viewed over 4000 times. I don't know if any pathology book (other than maybe some classification books) gets sold in so many copies in one year. However, I am a true believer in books and I hope that our book will find its readers.

**27. Are you in contact with your colleagues in Croatia?**

I have always stayed in close contact with some of the Croatian pathologists, particularly Dr. Snjezana Dotlić who was also Marin Nola's protegee. Moreover, I am currently working with Dr. Marina Kos and Dr. Ivan Damjanov on the pathology compendium for medical students, that should help them understand better pathology and aid in preparing for the final examination.

**28. Any message for our younger colleagues in Croatia considering to follow in your footsteps?**

Without a doubt, moving to the USA and deciding to practice medicine in America was the right choice for me and I made a decision to stay relatively easily. However, I don't know what others would do and one needs to think long and hard if America is the right choice for them. You have a whole life and career ahead of you, so decide what is best for you.