Celebrating some people and lessons, from a time in Forest Inventory

By Kim Iles

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Adjusted for typos October 9, 2018
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Introduction

A few years ago, I went to a 30th high-school reunion. *I recommend it*. Like many people, I never fitted in with any of the crowds that were popular in high school. Not athletic, smart – or generally accepted. At least that was my memory. In fact, I was amazed when I met and remembered so many people that I really liked at that reunion.

There were only a few of the social set (they had not changed a bit) and they were completely outnumbered by the rest of us. I suppose that had never occurred to them. It had never occurred to us either. You might have the same experience. This discussion of people was the same. You tend to remember annoying people more than you should.

When making a short list to consider, I discovered that there was a long list of people I liked a great deal. I had not realized that lately, and it was good to be reminded of it.

Once upon a time …

This began, as all my writing does, because someone else insisted upon it.

In this case, it was **Els Armstrong** – cruiser, compiler, horsewoman, appreciator of things and competent person. While she was explaining what I "must do" to record "all the stories" … "and with photos, Kim, *photos* – you have to have *photos*!" … I was reminded of another forestry friend, **Lu Alexander**.

Dave Bruce, **Lu Alexander**, and John Bell, at John's home in Corvallis Oregon. These were three of the most important people in bringing "Prism Cruising" (Variable Plot Sampling) to the West Coast of North America.

Near the end of Lu's very interesting life in forest consulting, he wrote a document titled "*People who were part of my life or crossed my path on the way*". Many of these folks I did not have the pleasure of meeting, so I was interested to hear his view of them – and to compare Lu's impressions to my own when I happened to know the people he discussed. Els is right. There is a reason, and perhaps a compelling one, to record such things.

It will have to be a short and informal document, or course. There are good examples of this approach. Several measurement people that I have known have made an effort to document their lives and a bit of their professional experiences. **Frank Freese, John Bell, Bert Husch** and **Gene Avery** come to mind. They all had far more interesting lives than I did, but on the professional side of things I have been lucky enough to meet these men and many other interesting people inside forest measurements.

People get smarter as they age. The really dim ones might have started at a much lower point, or perhaps risen at a very shallow rate – but they are smarter than when they were pups – or at least wiser and more competent. It would be unkind to presume that bad behavior at an earlier age should be held against someone forever. Many of them will grow out of it. I have chosen to ignore most of the ill-behaved moments that people have had. I have had some of my own.

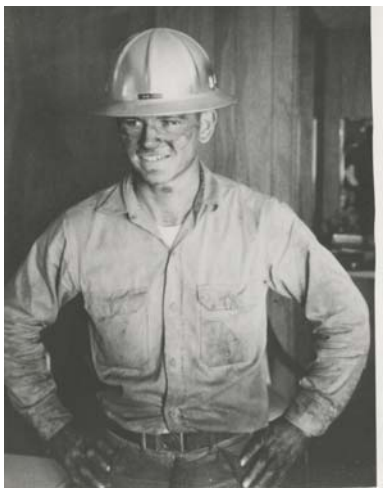
> *In the case of the worst examples of people I have experienced, I will just let history reward them as they deserve – it is not necessary that I do that, at least not in print. Over a glass of wine might be another matter, of course.*

The stories told in bars at conferences are some of the most interesting tales in the business. They are not recorded, and that is for the best. Some of them might not be clearly accurate, and are often second-hand, but most are still informative and have a lot of insight attached. The lessons seldom depend on the details, and some of my own memories might be recalled differently by others who were involved.

There is no point in telling a story unless it contains a message of some sort. Who cares who I have met unless there is some lesson involved? Often, it will be an example of how to behave during a professional life. Some of these people really knew about that. In many cases, they discovered it from a lifetime of thought and observation. In some cases, they also taught me some of these things.

Fair enough. Just for background, and from the beginning … (or skip to page 6).

I fell into the Forest Biometrics business by the decisions of others. I was marginal at mathematics, and still am. In my case it was because my old forest measurements professor **John Bell** wrote to me at the end of my army tour in Germany and suggested that I get a degree in Forest Biometrics. I already had a BS in Forest Management – but not one of any distinction, I must admit. An advanced degree in a mathematical field? - *fat chance*, I thought. I had struggled to even get a "B" in Bell's course on forest measurements. I had once tried to switch to Forest Recreation to avoid the required second forest measurements course, but I could not work out the scheduling. I was tricked into the business, really.



Me, as a forestry student, back from fighting a fire.
(Chemult, Oregon, USFS summer job)
I still use this hard hat, now very dented.

John picked me out of his class to help him with his research at Oregon State University when I was an undergraduate in the mid-1960s. He was doing his PhD thesis on 3P sampling. John always spotted the best sampling ideas right out of the box, and when looking for good ideas there is a lot of underbrush to search through in our field. It is one of John's real gifts.

I taught myself how to program computers in college, and before long I was useful enough to the Faculty to get whatever I needed for support during my undergraduate years. I helped John teach his famous **OSU Short Course in Variable Plot Sampling**,

starting in about 1966, and I wrote the computer programs to compile the data that OSU used for many years. **My advice** – get skills in technology *before* the rest of the crowd. It will serve you well.

It was **John Bell** who gave me a start in collecting people. You need to meet people in your profession. First-hand, mind you, not by reading their publications or just watching them give a talk. The venue must be personal, confidential (or the truth will *not* come out), and informal. Before starting my Masters Degree, John sent this young, utterly inexperienced and fairly unpromising Army G.I., who did not really understand Variable Plot Sampling, to meet **Walter Bitterlich** - probably the most famous living forester in the world, and certainly the top person in forest measurements. I didn't want to go. I didn't even understand Bitterlich's system, but one simply *cannot* say "no" to John Bell, so I wrote to Bitterlich from Nuremberg, where I was living at the time.

Just to set the stage … a few months earlier, this is the young soldier-forester John was working with. We had been out on guard duty all night, and came back just in time for a party at the unit. **General George Patton Jr.** (The Patton's son) was getting his first star, and they were having a parade with a band and a general hoopla. We walked into the middle of it, looking a bit scruffy, and definitely not under proper control.

With my friend John Bencivenga from IBM (on the left), in Nurnberg, Germany.

General George Patton Jr. gets his star recognized at the parade, and I thought we would get the stockade.

John Bencivenga, who always carried his Nikon camera with him, immediately dragged it out and started taking photos (very unmilitary behavior, and John was not in his party clothes, so the brass soon took notice). I was pretty sure that we were about to be sent to the brig when they spotted us at the edge of the party. You could see that they were balancing taking care of these ruffians vs. attending to the ceremony. They decided to ignore us because they were too busy to make an example of us right then. We both vanished before they could properly deal with us.

Patton did not recognize John a year or so later when John formed a Boy Scout group that the general was very enthusiastic about – but that day we were a bit too close to the edge. That happened a lot in my short military career (and afterwards). My advice is not to go to parties when you are not invited.

During the army years I had to program computers of an ancient variety, and under demanding conditions. I learned that working under difficult conditions really teaches you a craft. I had previously seen where computers were *going* (based on the OSU experience with very advanced systems) and the combination was of great benefit.

In the year 1971, however, I was just a recently discharged GI from the US Army, with no real prospects.

Visiting Walter Bitterlich

My letter to Bitterlich had asked if I could have a few moments to see the new Tele-Relascope he was developing. He wrote back to say that I should "come immediately" to Salzburg Austria before some other things came up in Vienna. *What did that mean?,* I wondered. My long-suffering wife suggested that this meant I should pack tomorrow, get in the Rover 2000 TC we owned, and leave immediately. "Don't hesitate", she said. She is always right about such things. It's annoying.

It was about 8:00 in the evening that I arrived, and the quintessential English housewife opened the door. Mrs. Bitterlich spoke fluent "British" English (I never did find out why). Language was one hurdle I had worried about – the other was the German way to dealing with these things, which was very direct. What did I want? "Could I meet with Dr. Bitterlich for a few moments, by any chance?". "Ah", she said, "The person about the new Relascope – No, Dr. Bitterlich has gone to bed" (*oh crap, should have come faster*). "What time do you want him to meet with you tomorrow morning?", she asked (as if a nobody like me should tell Walter Bitterlich when to make himself available). *Not a good way to start*, I thought.

"10:00?", I suggested, thinking that this would be convenient to an older man who seemed to need plenty of sleep. Little did I know that he got up at about 5:00 AM and had half a day's work done by then. I expected to be thrown out after about 15 minutes so he could do more productive things.

The Bitterlich home in Salzburg. The stag antlers of previous years have been replaced by a satellite dish.

He brought me into the house, took me to his workshop, and showed me the new instrument. He set up a tripod with a ruler attached to show how it would measure distance, then we got the diameter of the tree outside his window. "What did I think of the design of this new Tele-Relascope? … of the older Relascope? … of the scales?". "How was it used in North America?". I, of course, had no clue. He seemed to very politely accept the fact that I was wasting so much of his time.

A nice man, I thought, to be so patient with a know-nothing like me. Perhaps it was a European thing.

Eventually, he explained that he was to give a talk at the Argentina World Forestry Conference on his new Tele-Relascope. He thought that the translation of his paper from German was not quite right, but was not sure because his "English is very bad". Good enough to question a professional translation, I thought, so it must be great compared to my very poor German. Would I please take a quick look, and see if changes should be made? He was right. The translator was translating with a British vibration, and it was a bit stilted from an American point of view. Could I suggest changes? Hmmm… could the G.I. who did not really understand his sampling system suggest changes to Walter Bitterlich's address to the 7th World Forestry Congress? … *Sure, why not*.

There were a lot of small changes, so I suggested that perhaps I could just retype it on Bitterlich's office typewriter, and he could take or leave the changed sentences later. Meanwhile he could get on with his more important duties. "Oh, I couldn't bother you like that, Mr. Iles". Hard to imagine, but by that point I was comfortable enough to suggest that I *could* be bothered - so off he went, and I started typing.

So … I found myself sitting in Walter Bitterlich's office, typing out his paper for the World Forestry Congress, when Dr. Bitterlich appeared at my elbow carrying a tray of food. He had gone to the store to get some non-alcoholic beer (having recalled that I did not drink beer at that time) then he had added a local bratwurst and salad.

Walter Bitterlich is serving me brunch. Now this was just surreal. I remember it in perfect detail. Such a lovely gesture. After I was done with the typing (I slipped the carbon copy into my bag, and still have it), he announced that Dr. Hesske (whoever he was), would be arriving a bit later to take us to lunch downtown.

Benno Hesske

Benno Hesske was the driving force behind the Relascope. He had a degree in Law, and was in the German Mountain Troops in WWII. After the war he was useful to the Americans, and somehow ended up with an optics firm. He made enough money in eyeglasses, binoculars, etc, that he had some flexibility in how he did his business. He met Bitterlich and found out that Bitterlich needed an optical instrument built. What would you do with it? You would travel around the world to conferences and maybe sell some, said Bitterlich. As it happened, Benno loved to travel. They ended up all around the world in the process. Bitterlich did not particularly like travel, but Benno just loved it. It was a great collaboration. In later years, Benno brought in his daughter, Gerlinde, and she eventually took over the Relascope Company.

So Benno sweeps into the room (that is the only way to describe Benno entering a room), and immediately takes charge. Big guy, German mountain troops – you can imagine the scene. We are shuffled off to a restaurant founded by monks, in the year 908 as I remember, who specialize in "Salzburger Nockerl" – a kind of sugared soufflé in 3 large mounds that represents 3 of the main surrounding mountain peaks of the town. If you ever get to Salzburg - order it. It's wonderful.

15 years later – with Benno Hesske, at the office of the Relascope factory in Salzburg. The building later became part of the location for the world headquarters of the "Red Bull" company.

So this, I thought, *is how the Big Dogs act*. Undeserved courtesy to nobodies. Asking the opinion of those who don't really deserve to have one. Patience and civility. Kindness to folks of no merit or real experience. Here was a serious model for personal and professional behavior. A great message for a young person.

At one point during the visit, Bitterlich asked what John Bell and I had been working on at OSU, and it appeared that he had not heard of 3P sampling at that early stage of its development. I explained it quickly and succinctly (in detail) in under 2 minutes. I have the impression that he never even blinked (I understand that you can train yourself to do that), but I am *sure* that he never moved a muscle during that time, and he said nothing. It was absolute and total concentration. At the end of my explanation he nodded, and said "Yes, I understand". And he *did*. I had never seen that kind of thing before. Here, clearly, was a different level of thinker than I had ever met – and yet at the same time it was not intimidating in the usual sense of the word.

I don't know what your experience might have been with PhD's and other advanced degrees, but mine had not been inspiring to that point. Here, at the *top* of the business was a wonderful example of how it could be done. If this is what it was like, then I supposed that John Bell's suggestion to get an advanced degree was something I could do without embarrassment.

I do not remember much of the rest of the day, except for Bitterlich giving me several small brass targets that he had designed for use either with the original Relascope or at the end of a 1 metre stick. Somehow I got back to my house in Nuremburg. My view of the profession was never the same.

I remained in touch with Dr. Bitterlich for decades after that, (I could never be comfortable calling him "Walter", although he kept suggesting it). It was always "Dr. Bitterlich" or "sir". When visiting his house in Salzburg, I always stayed in **Hotel-Pension Scheck**, a bed and breakfast right across the street from his home. It had a great

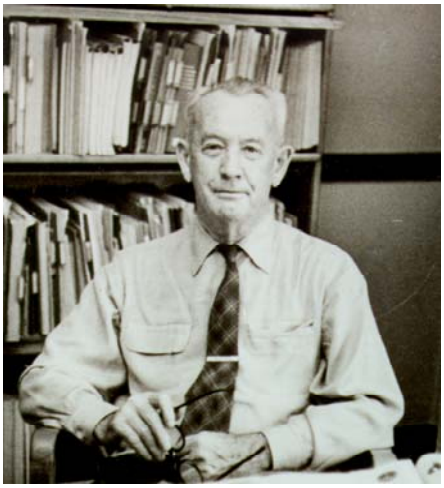
view of the Bitterlich house. Very early in my graduate work, I asked John Bell who else I should meet, and he said he would arrange that as the opportunity would arise. John, of course, knew just about everyone in the business. Lucky me.

Hotel-Pension Scheck, across the street from Bitterlich's house

Dave and Don Bruce

The first conference I attended with John was the "Western Mensurationist Meeting". People who measured trees and logs were called "Mensurationists" and later when they expanded their field they became "Biometricians". At the icebreaker, there was a slightly dumpy guy sitting quietly in the corner instead of mingling with the crowd. John asked me if I knew who he was, and of course I did not. "That is **Dave Bruce**", he said, "the guy who invented the wedge prism. Did you know that, Kim?". Well, actually no.

"OK", he said, "go over there and introduce yourself. Find out how things really happened in this field". It was a revelation. I remember nothing else about the meeting, which was trivial, no doubt, in comparison. Nobody joined us as we sat there. I learned that people like Bruce, who have so many stories in them, are seldom tapped for that information. The other graduate students were all telling each other about their oh-so-important research ideas. John saw to it that my time was not wasted during meetings.



Dave's father was **Don Bruce**. In the letters that I have between them, he always signed his letters "poppa". He wrote the famous 1935 book "*Forest Mensuration*" with his coauthor Schumacher. **Francis X. Schumacher** was brought into forest measurements by Bruce, and followed Bruce to run the US Forest Service inventory group. Their collaboration started at the University of California, where Bruce taught after a short career at Yale. Bruce was an original partner in **Mason, Bruce and Girard** and they became an innovative force for inventory in the Pacific Northwest.

Don Bruce, Dave's father and one of the founders of Mason, Bruce and Girard.

One day I was in Dave Bruce's basement looking around with Dave and I spotted a copy of the Bruce and Schumacher text on a high shelf. "A first edition Bruce and Schumacher?", I asked. "Yes", said Dave. "That was my father's personal copy" (*Oh*, I thought, *I wonder if he would let me look at it*?). "You collect books, right Kim? You should take that one home with you", he said.

At this point, as one can do in some situations, *I lost my mind entirely*. Not wanting to appear greedy or inappropriate, I proceeded to instruct Dave Bruce. I said "Oh Dave, you should keep that. It's a family piece. I *really* appreciate the gracious offer, but I really couldn't ". Imagine giving advice to Dave Bruce – I was an idiot. He sighed, and

patiently but firmly said "Look, Kim, my kids don't care about my old stuff, and yours won't care about your old stuff. You like books, so *take* the damn thing".

It was a good lesson, and I took the book with the thought that one should never give casual advice about such matters to someone like Dave Bruce, and that I would eventually have to consider where "my old stuff" should go before my kids put it into a dumpster. He also gave me the printers' proofs of his father's book.

Dave was very generous, but not with everything - his time, for instance. I was told that he once kept a sawed–off parking meter on his office desk. He would quickly listen to roughly what your problem concerned; then he would hand you a coin to insert into the parking meter. That would tell you how much of his time your problem was worth – 15 minutes, 30 minutes, or an hour. When the bell rang, you were gone. I never asked him about this, but it sounds like exactly what he would do. I suspect that he only really did that for some people – and we have all known those kinds of people.

The first time I visited his home, I was amazed by all the 3-dimensional puzzles on shelves around the room. Clearly, he was a collector, and I already happened to know the story behind a few of the famous and expensive ones. There were tens of thousands of dollars worth of puzzles in the room. To open the conversation for the visit, he handed me one of them. The situation was clear. How you performed in the next few minutes would determine whether you stayed for a while, or were shuffled out the door. Would you show proper focus, appreciation, imagination and interest? If not, you were probably made of the wrong stuff and would be hosed off at once. Apparently I passed, getting lucky with a few of the solutions.

It helped that one of the puzzles he had was the one I had sent in to Martin Gardner, who authored the famous column called *Mathematical Diversions* for Scientific American. Gardner featured it in one of his columns as a "Hypercard", and it was later used in a number of magic tricks. "What? Yours? Really Kim? Do you keep them around to show people?". "No, Dave, I don't actually have one", I said – so he immediately grabbed his, wrote on the bottom "Kim Iles : Here's one for you to exhibit" and handed it to me.

Dave demonstrates a wooden Relascope brought over to the US by Bitterlich.

Dave really liked instruments of all sorts, and had a lot of them in what people called "Dave's magic closet" at the Pacific Northwest Experiment station. I suspect that most of the instruments ended up with me over the years, including many that had belonged to his father. During one visit he

gave me a Bitterlich Wooden Relascope that he had hunted down and bought from the University of Washington. I found that paperwork in his office files many years later.

Just about every time we attended a Western Mensuration meeting he would invite me up to his room one evening to have a glass of wine, then bring out a bag of wondrous things. Taking each item out, he would ask "What do you think this is?", and eventually he would tell me the history. At the end of the evening, he would walk me to the door, say "Nice to see you again, Kim. Perhaps we can chat at breakfast". He would then quietly hand me the bag, and close the door without a word. Dave was not a very demonstrative guy, but he appreciated people who valued history. I had the good sense to ask him to sign many of his prototype glass prisms when he gave them to me.

Dave was a dedicated 3D puzzle *maker*, as well as collector. A few dozen select people formally get together each year somewhere in the world to talk about puzzles. As a member, you took your own newly designed and constructed puzzle to show or talk about, and a copy for everyone else in the group – and they all did the same. You came back with about 30 or more new puzzles each year. It was a very exclusive group. When Dave died, I worried about what happened to his puzzle collection, and found out by accident via the Internet. Apparently the family, in a stroke of genius, decided to sell his puzzles by auction – but *only* to other members of the group. It was a beautiful gesture. I wrote to one of the group, saying that I loved Dave dearly, and would very much like to have one of his wooden puzzles. Could I buy one back from someone?

I got a nice note back, essentially saying "*listen Bub, these people are collectors. Things go into their collection – not out*". As a book collector, I understood perfectly, but a few months later I got one of Bruce's puzzles in the mail, with no explanation. Collectors can also be generous people.

Dave was not kept busy enough with just forest biometrics and research, so he had other interests. He taught himself Russian, climbed all the pyramids in South America while doing archeology digs, fixed motorcycles, and made himself an expert on the mechanics of rifles. Heaven knows what else he did. He had a deep interest in optics of all sorts, and the calculations he did on the optics of prisms (well before calculators) was enough to make your head ache. This was in the days of 8 place logarithm tables.

Once in a while Dave would enjoy forming a group at a conference to talk about the old days. When I was the chairman of a meeting at Harrison Hot Springs he invited me up to have wine with his group (he always drank David Bruce vineyards red wine from California – not a relative). I had a lot of responsibilities at the meeting, but my instincts told me to go. Dave had **Lew Grosenbaugh, Gene Avery, Bob Curtis,** and several more of the older crowd to talk about former adventures and history. My friend Dave Marshall and I sat on the floor, like a couple of kids at the adult party, and just listened to stories for the entire evening. I was sorry for those who were not in attendance.

The PNW station was where Dave ended up, but he started out at the Southern Station, and did a lot of fire control work in the early years. What amazing company he had at the Southern Station and the other research units. **Lew Grosenbaugh, Frank Freese, Gene Avery, Floyd Johnson**, **Clem Mesavage** and many others I knew were constantly working on problems together, and clearly having a great deal of fun. The USFS Southern Experiment Station once had a competition for the best men's legs, and the ladies judged them as they paraded back and forth, shielded by a curtain from sufficiently north of the knees (Grosenbaugh won).

After Bruce passed away, **Dave Marshall** asked the research station if he could have Bruce's old files. They sent a lot of stuff along (no instruments) and I thinned out most of it for Marshall, who was too busy. I threw away hundreds of pages of tightly reasoned algebra and hand calculations, because I could not connect all of it to topics. We still had about 4 banker boxes after the thinning process. They involved his major research, especially his tree taper, stump shape, and prism stuff; with some fire research thrown in. Included were his cancelled check for the first prism purchased, and hundreds of letters to various people about developing the prism (especially Lew Grosenbaugh, who was even more adept at algebra – or any other form of math). Letters about the prism to his father, Don Bruce, cleared up a number of questions about how things were done and who did them. There is a lesson here – keep your correspondence in printed form, date everything, and number the pages of your notes. I have been trying to do that myself.

Dave Bruce was a quick thinker, had little time for fools, enjoyed ideas greatly, and was appreciative of any interesting work by others. I miss him, and so does anyone else lucky enough to have spent time with him. He gave me the photo shown below.

F.X. Schumacher, Fisher, and the first generation of Forest Biometricians

In 1936, **F.X. Schumacher** brought **R. A. Fisher** over from England, toured him around the US and introduced modern statistical methods to the US Forest Service and a few others who were allowed to attend. I would consider Schumacher to be the "first Forest Biometrician" in the Hemisphere (perhaps in the world), following on the heels of the great **Don Bruce** who was the leading "Forest Mensurationist" of his era. From just measuring trees, the field was branching out to sampling and statistics.

Fisher Statistical Seminar. Asheville, N. C. August 15-24, 1936.

The "Fisher Seminar" Group

I never met Don Bruce, Francis Schumacher, or R.A. Fisher. This first generation of forest biometrics was just before my time. **John Bell**, however, took two classes from Schumacher when he was a professor at Duke University.

Bell's fellow classmate in the Schumacher class was **George Furnival**. John recalled that George Furnival looked like he was sleeping in class most of the time. "*That guy is in trouble*", thought John. George, as it turned out, was the only one who understood everything that was discussed, and he eventually became Schumacher's graduate student - and George always held "Shu" in the highest regard. Those students might be said to form the second generation of forest biometricians – and I am in the 3rd generation. I lucked into a nice "line of academic descent" … Iles, out of Bell, out of Schumacher.

Years later, Schumacher donated his books to the University, including his signed personal copy of *Sampling Methods in Forestry and Range Management* by Schumacher and Roy Chapman, which was the first North American book specifically on resource sampling. The library, as they typically do after a few years, got a newer copy and threw out the first edition. George Furnival picked it up off the discard pile and saved it from the dumpster. At my request, George also signed it when he gave it to me.

The Royal Family of the Relascope

This was my title for the Bitterlich and Hesske families. **The Hesske family** was a great group. Gerlinde, Benno's daughter, was married to Helmut Ruthner and they lived in both Salzburg and Vienna. We were their guests on several occasions in Salzburg, and it was always a memorable visit. Whenever we joined the Hesskes, anywhere in the world, something wonderful happened. One night in Alaska we had a massive moose cross the road right in front of us after a great meal of ribs in the middle of nowhere.

Grandson Erhart was a very skilled young man, and ended up in the tourist business. He had the people skills of a 40-year old when he was a teenager, and it served him very well. Young people in Europe, at least the ones I met professionally, benefitted greatly from their skills in dealing with people – often getting invited to places it would have taken many years to "deserve" to be. Folks are always on the lookout for young people who know how to behave and would benefit from an opportunity they might be offered.

⬅ The Archduke of Austria, with Bitterlich and Benno Hesske.

The next Hesske Generation, who took over the Relascope business. ➡
Helmut Ruthner (the organist)
Gerlinde Ruthner (Hesske)
Erhart (their son)

Mike Fall (timber cruiser), is at the back of the group.

One evening in Salzburg the Hesskes invited us out on the spur of the moment, and we ended up in a very fancy place for dinner. I had on a t-shirt, so I kept my overcoat on. Although the Hesske family assured me that it was fine to take it off, I was not about to do so. I certainly felt like a hick. To divert the discussion I mentioned to their son Erhart that he had on a very handsome soccer jersey and asked him about the team. Ignoring my actual question, he said "Ah yes … but it is rather hot in here for this" and he stripped his jersey off over his head; so he was now sitting there in his t-shirt, just like me. Such a smooth operator. Age has nothing to do with the ability to have grace and good manners. Training, often by example, is important.

When he retired, **Helmut Ruthner** decided he wanted to learn to play a pipe organ. You might imagine that in Salzburg they have some *very* serious pipe organs, some of which were played by Mozart in his day. An internationally known organist was approached. During short periods when the church is empty, he agreed to teach Helmut how to play if the family became church members. On one visit to Salzburg we were allowed to watch the practice. To get there we walked through a storage area, where the monks kept their music and other historical material. Bear in mind here that this is *Salzburg*. You can imagine the stuff we grabbed a quick peek at while we walked through. The pipe organ was about 40 feet high over the multi-level keyboard. He needed special narrow shoes to pump the pedals properly.

We were in the upper level, perhaps 50 feet high, looking across to the pipe organ and down at the rest of this massive empty church. After a very ordinary session of instruction and scales, Helmut asked the organist if he might play "a little something" for these folks who had come all the way from the wilds of Canada. Not to disappoint, he opened that baby up all the way. I had *no* idea that a pipe organ could sound that powerful. A simple request and the day turned into pure magic. There is just nothing as good as travelling with professional connections (well, perhaps family connections). Make sure you establish those connections and keep them active.

I often wish that I had been more diligent about keeping track of all the visitors and interesting people I have met professionally over my career. For the cost of a few Christmas card mailings through the years I could probably visit just about any part of the world and have a local contact – which is always the key to a special experience.

If I had thought to pick up an old forest measurements text with some blank pages at the end as a "guest book", I could have gathered a delightful set of signatures over that time. That is one reason why my own books have spare blank pages at the back. It's hard to think ahead carefully at the start of your career. You miss a lot of opportunities, even when you work at it. I admire those who are better at these things than I am.

Equipment Vendors

A great place to meet people is at conferences. Take a look around at meetings. In 1984 at Alaska, there was a big meeting hosted by **Vernon (Jim) LaBau**, a forest inventory specialist who was one of John Bell's many graduate students, and who has spent much of his life in Alaska. He met us at the airport and drove us all over the map to show us some of Alaska. Two of the best connections at that meeting were among the vendors.

My first connection was **Ingvar Haglof**, who famously made increment bores as well as other forest instruments. He had a lot of equipment out, but the piece that caught my eye was a really old increment borer. He asked me if I wanted to see their newest equipment, and I said "No, I want to see the old stuff". This borer was made by hand, by his ancestor, and I really admired it. A few hours later I was wandering near the site again and Ingvar called me over. He said that he wanted to give me that increment borer. I was astounded and at a loss for how to handle the situation. Apparently he had asked around the conference and people told him that I appreciated and collected that kind of thing. How on earth was I going to thank him? During our earlier chat, he had mentioned that he was a fisherman, so I told him that I would get him an invitation to a Vancouver Island meeting, where we had some *serious* salmon fishing along the famous Campbell River, and we would dine at the famous Painters Lodge.

The timber cruisers from coastal British Columbia met once a year to share ideas and catch up on the latest changes in the cruising rules. They always invited me as a sort of mascot, and were happy to send an invitation to Ingvar to be their special guest speaker. Ingvar was the first real guest they ever had at a cruiser meeting. Haglof, in a similar way, had apparently never been asked to be anything at conferences except a salesman. Neither of them knew what to expect. Ingvar met the crowd by randomly handing out beautiful Mora knives and increment borers to the cruisers, and asking them what they liked (or did not like) about the company equipment. The cruisers loved his subsequent talk about forestry in Sweden, and were enchanted by Ingvar.

The cruisers gave him a handful of equipment ideas, like about how to hang the laser reflectors and the best color for some of the gear. The kicker was when he came back *the next morning*, and announced at the meeting that he had talked to Sweden last night and the changes would be done, probably by the end of the week. They had never had a reaction like that in their lives. Ingvar became an enormous hit. It does not take much to make friends among working people. Listening, some technical competence, and a bit of professional respect go a long way. From that year on, the cruisers wanted to know who to invite next, and we had a succession of guest speakers.

During the cruiser meeting I had constant troubles with missing guides, broken boat trailers and other problems for the Haglof visit, but my friend **John Ahokas** said "do you suppose that he would like a trip up the inlet by helicopter". The cruisers were working in a remote area the next day. It was a perfect day, and a member of Haglof's company had been brought along (just because Ingvar values his people). He had never been in a chopper and he was particularly impressed. There are few things in the world better than having the goodwill of timber cruisers, and it has saved my bacon many times.

When Ingvar left for the airport he grabbed my arm and said, with his Swedish accent, *"Keeem. If you don't come to Sveeeden to visit me, I come back and I keeell you"*. A few years later, he specifically invited me to the big Scandinavian equipment fair "Elmia Wood", held every 4 years.

At the Elmia Wood conference. Ingvar has me trying on a prototype of a new instrument.

Star Wars comes to forestry from Sweden.

About 50,000 visitors descend upon this little corner of Sweden to attend the conference, which builds many kilometers of road just so they can demonstrate all their logging equipment doing actual harvesting. It became a small city, filled with all kinds of people. Practical conferences are a world apart from academic ones

There was virtually no room during the Conference – I think Ingvar and his crew were sleeping in a barn somewhere – but he managed to put us up in a magnificent hotel on the lake. He met us when we landed from Canada so he could drive us around a great deal of Sweden, to see the sights on the way to the conference. One night he gathered about 40 guests, put them into a large bus, and took them to a lake he had rented. There were fishing poles for everyone, and we all caught a few trout. I took that opportunity to present a pen and ink totem pole that I had commissioned for him. All this came from taking a few moments to admire and appreciate a piece of old equipment at a conference.

Another vendor at that Alaska meeting was **Benno Hesske** from Salzburg. Benno recognized me from my visit to Bitterlich. He was handing me a little ceramic souvenir plate from Salzburg when, off the top of his head, he said "Walter Bitterlich is turning 80 in a few years - perhaps you should come for his birthday party". As we walked away I said "John, we are going to Salzburg for Bitterlich's 80th birthday". That toss-off line from Benno had enormous ramifications.

I kept reminding John, and after a year or so he contacted Benno; who immediately started plans for an international conference to celebrate Bitterlich in 1988. These people know how to throw a conference. Many parts of the world really train people to be skilled hosts, and you need to watch how they do it and learn from that.

Bitterlich's 80th birthday party

The crowd was about 1/3 aristocrats and family connections, 1/3 very senior national representatives of forest inventory from various countries, and 1/3 sampling specialists. Most of them came and went during a span of about 7 days, and a core of us were there for the duration. Where would I stay with a wife and two kids 9 and 11 years old? I thought we would drive around and find a hostel, then Carolyn would keep the kids busy some way while I went to the conference. Oh no. [We ended up here]

We were met at the airport, then driven to a hotel-mansion on the outskirts of Salzburg. Our immediate thought was "we really should stay where they want us to, so we will just have to take out a loan for this". Double doors for sound control, marble floors, chandeliers, antiques (Carolyn's first instruction to the kids – do *not* touch *anything !*), a large curving window with a beautiful view of Salzburg. *Perhaps it would be a big loan*. We were a young couple who would never stay in a place like this. Our kids noticed that there was an empty outdoor pool, and the hotel immediately ordered it filled - just for the kids.

In fact, the only Austrian currency we ever had was about $100 that we got at the airport on the way in, and we went home with almost all of it. We were not allowed to pay for anything for the whole stay in Salzburg. It was just impossible – and I tried. You just could not get around these people. When I tried to pay the bill at the end of the trip the lovely older woman who owned the hotel graciously said "*Oh … that cannot be done. It would disappoint Dr. Hesske. It just cannot be done*". So simple – "it just cannot be done". Her son, as it turned out, was a young forester – whose polite behavior at the hotel soon insured that he was invited to be the youngest forestry professional to attend the field trip at this very exclusive meeting (my point : choose your parents carefully, and mind your manners).

The conference started the next day (a car is sent for us, naturally). People are sent to amuse the wives during this time, or whenever the men are doing boring forestry things.

<u>This</u> is the way you run a conference. Day 1, in the morning, we have talks.

1/3 : "Happy birthday Dr. Bitterlich, haven't you done some nice things for all of us. Very clever. Well done. Thank you."

1/3 : "Here is how we used Bitterlich Sampling in our country".

1/3 : Technical or historical issues about sampling - always with a connection to Bitterlich.

Bitterlich shows three levels of the Relascope

(left to right)
The Tele-Relascope
The initial "stick" prototype
The standard Relascope

That's it. For the rest of the conference we take tours to see Salzburg and its castle, we visit a forestry museum being opened, we sail on lakes, we stop every two hours and take over a restaurant for "a little refreshment", we have banquets. Everyone meets everyone else. Everyone has a great time. This was a revelation. No boring talks. No boring people; and wives are invited to everything (except the first morning - but a few are there too). Children are invited to everything, and there is always something special laid on for the kids (and there are only 3 – two are mine, and one belonged to **John Gwaltney**, the president of Forestry Suppliers). This was a great example of what a conference can be when it is well planned and focused on the people instead of the talks. It must have cost Hesske a fortune, and I will be indebted to his family all my life.

One field trip was to this stand, where Bitterlich took his first measurements when he developed Variable Plot Sampling. He was able to produce the original notes from that time. Trying to make an impression, I actually wore a clean pair of jeans and a sweater. Pretty spiffy for a forester from Oregon on a field trip. Virtually all the other men are in their official national and regional uniforms, often with formal forest-green capes, and always with the formal hats of their individual region. I think everyone there had at least $2,000 worth of clothes on. I looked like a complete klutz – and to my utter amazement was never made to feel that way. I was just from somewhere they didn't wear capes into the woods, so that was

perfectly OK and it was never noticed. The ladies outfits were twice as nice – again with the capes, yet. At this level, there are virtually no snooty people. Perhaps it does happen, but at lower levels. A great lesson.

That lunch was at the top of a nearby alp. The ladies were taken up in cars, lest they get their shoes dirty. The foresters hiked up, of course. When we got there, it was just like the scene from *The Sound of Music*. This was apparently where the cows were taken during the summer season, but they had been removed because they might smell bad or behave rudely. The exception was one small calf, which was kept in the barn because they thought it might amuse the 3 children. There were enormous tables set out with a feast, laid out in the sunshine by young ladies in traditional dresses who normally took care of the cows. Serious people have serious lunches.

One of the field trips is to Bitterlich's old forest headquarters, well turned out with all the staff in their best official uniforms and capes. I believe that Bitterlich is from 5 generations of foresters. Part of the area under his control was the valley in which the royal hunting lodge stands. On the way, we have normally locked gates on forest roads opened for us by very senior people. Riding in the Bitterlich car, we get the royal treatment. It turns out that they actually did *not* use Variable Plot sampling for inventory in that area (big message here - no prophet is honored in his own land, so don't expect it) but they know the rest of the world uses the system. Since the forestry station does not own a Relascope, Hesske makes a big point of presenting one to the top dog of the group "*not* for the organization, but for you *personally*", he said. He was pretty sure that they would order several the next year after being put on the spot a bit – but it was very gently done.

The royal hunting lodge, **Schloss Blühnbach**, several stories high and about 100 meters long, is opened for this important occasion. We were just on the bottom floor, where the kitchen was located. Still, there were original oil paintings and hundreds of trophies (principally Red Deer and Chamois). Some of the paintings were forest scenes, perhaps with an eagle in the center. They were used as targets, and the bullet hole made by some princess from the royal group would be marked with her name and the date, along with the other guest's bullet holes - to show how accurate their shooting was on some special occasion. My son asked how much some of the postcards and so on would cost, and was enchanted to learn that in some situations you are welcome to take things if you find them of interest. The place was eventually owned by the Krupp family, and then by a wealthy American (who, like me, is a book collector – on a different financial level, of course).

The dinner at the end of the conference is in a famous restaurant where Mozart apparently had played. As we arrive, all the ladies are given special angel pins that commemorate this historic place, and for the two young girls a miniature version of the same pin – proportionate to their size. No gifts for the men, but my young son starts

looking at the pins and Hesske suddenly realizes that at this age it might matter to him. Bob, at age 9, had spent all his personal cash on a Bavarian hat - which charmed the folks from Bavaria. Hesske tells Bob that *of course* he has something special for Bob too, takes off his own hat, and removes the special pin that is worn by members of the association of mountain troops. We still have it. Amid a great number of important guests, he takes the time to make a small boy feel welcome – I was impressed at this balance and thoughtfulness.

One thing you can be certain of in professional circles, and I suppose in terms of being a host in general – is that anything you do for a person's children will be *long* remembered, even after what you may have done for *them* fades away. Because so few people do it well, it has a special affect.

To open the formal dinner program, after a bit of mingling and wine, we are seated for music that is specially written for the occasion, and directed by a choirmaster from Salzburg (where they know about serious singing). We also have opera, performed by one of Bitterlich's daughters and her husband. The crowd is dressed to kill (except for us), and we have 2 young children to worry about. We are all on the second floor, with a large circular opening in the center of the floor looking down to the lower level, with the crowd surrounding it and facing forward toward the entertainment.

Carolyn and I are invited to sit at the front with Bitterlich, so his daughter Helga Bitterlich says she will look after the children (*danger, danger ... says our parental instinct*). Part way through the program, Carolyn checks the kids, and finds that they are throwing paper airplanes from the middle of the crowd down through the hole to the first floor. She nearly faints, but there is no way to reach them in a dignified manner.

She relaxes a bit after I point out to her that the crowd thinks this is the cutest thing possible (the Bavarians love kids) and *it is Helga Bitterlich that is folding the paper airplanes for them.* We break for dinner, and we are invited to sit at the head table with John and Myrna Bell, and Walter Bitterlich and his wife. We protest, or course, because we feel we should stay and watch the kids. No problem, we are told – someone has been assigned to entertain the kids for us, of course. This was before we understood that these mostly grandparent-age folks are delighted to watch other people's kids. Sure enough, our kids act 10 years older than they really are, because they saw that when you go to fancy places then acting right is a part of the scene. We were astounded by this.

One of the most charming times was when we were visiting the royal estate of the **Archduke of Austria**. Quite soon after arrival, John Bell and I were escorted up to meet the current Archduke while the rest of the party toured the grounds and talked about forestry. As we were leaving, Bitterlich was just starting to explain the new hardware he had developed for measuring trees over time. It was a base for a pole that was buried in the ground. The Tele-Relascope was attached to it at 5-10 year intervals to insure good quality control by using exactly the same location and height for the instrument. We had a nice chat with the current Archduke, saw some of the famous historic stuff in the palace, and emerged to find Walter and Benno digging a hole in the manicured lawn of the palace in order to demonstrate the new hardware.

Now, I thought, *we have gone too far*. Sure enough, just about then the Archduke strolled out of the palace to see what the other foresters were up to. "*Not often that visitors dig up his lawn*", I thought. As he walked over to the group, his estate forester sidled up to him and started to explain that we were uncovering an instrument base that

was buried several years ago, and that the purpose was to remeasure tree growth for worldwide monitoring with a new technique that Dr. Iles has invented {you just met him I believe sir – *oh yes, of course*}, and **our own** Dr. Bitterlich is showing all these important international visitors how it works. So smooth, and I should have known that it was approved beforehand – only the Archduke, John and I were in the dark here.

The royal owner of the lawn thinks this is just great. He calls for Mrs. Archduke and the baby Archduke to see all these people digging up the royal lawn, and they too get the story of global forest monitoring.

Showing the monitoring hardware for Critical Height Sampling on the royal lawn.

People came and went during this conference, but the last formal lunch was in a famous gap where the army critically defended their position years ago. There is a very nice restaurant there, and our busload of foresters had a great lunch.

At the end of this lunch, several people rise and say nice things about their time at the conference, and perhaps give Bitterlich some special memento from their country. John Bell and I were sitting together when John whispered "Kim, I have a couple of John Bell and Associates baseball caps – do you think we should give them to Walter and Benno?". I pointed out that the hats these folks were wearing were very traditional, and probably a week's wages apiece, but that I would *always* trust John's judgment in such matters. "Fine", he said, "I'll do it".

John pops up and announces that we would like to give them both baseball hats. Our wives were looking elsewhere, probably thinking that we looked like hicks from the sticks. The reaction from the crowd is incredible. Huge applause, calls for photos with Walter in his baseball hat. Photos with Kim and John, photos with the hats at the great memorial outside, *and wasn't this just the best thing ever*. They loved it. I was amazed. This is why I always trust John Bell.

At the end, Benno announces that it is time for us all to get on the bus and go back, so being a good soldier I got right on the bus. It is not until the last moment that I saw John outside saying a final goodbye as Bitterlich gets into his car to go off to Salzburg, while I am stuck on the bus. John, being formerly an officer in the 10th Mountain Division might delay on orders from Hesske, but not me. I did, however, wave out the window as Bitterlich drove off.

My children, walking in the Alps with Bitterlich.

One of these days I would like to run that kind of conference. If there are really a lot of interesting people around, the best way to benefit is to be in the conversations, which are off the record and to the point. Listening to someone "giving a paper" is just not a proper use of time when that kind of opportunity is available. With enough time, you can get around to everyone. Coffee breaks at conferences are the best part of your time there – better yet, drop the official and sanitized papers altogether.

At the end of the trip, our kids had learned that travel was cool, that special events were delightful, and that when you behave well in formal settings people notice it and treated you differently. How could we ever have convinced them of this ourselves? They both became world travelers, and it was not just because of the beautiful buildings and the Alps of Austria, but because of those gracious and well trained hosts.

Kim leads a Bavarian band in Austria to open a forest museum.

Luckily, I had learned to conduct a band in school, and surprised them. They had said "follow the beat of the person playing the anvil".

The Bavarians, especially the older ones, just love kids - especially any that show some appreciation for the culture and reasonable behavior – don't hesitate to take yours with you. They will surprise you.

Benno, John, Walter and Kim, with the John Bell and Associates baseball hats that were such a hit

– who would have guessed?

Dave Bruce and Lew Grosenbaugh who did so much to introduce the Bitterlich sampling method to North America sign a piece of art I presented to Bitterlich.

Bitterlich passes away

In 2008, Bitterlich died - just 10 days before his 100th birthday. He did not want to participate in the planned celebration in Vienna, I think because he felt awkward about not being physically fit enough; but other people were going to celebrate this favorite Austrian son anyway. I had arranged to meet Helga Bitterlich and go to the Vienna celebration and then we would drop by to see Walter on the way back. "What will he do?", she said, "refuse to open the door to his daughter and his friend?".

It was a good plan, but not to be. I got an email from her a few hours after Walter died, and told her that I would still be there for the formal celebrations. A few years earlier, Walter had moved from Salzburg back to his old home town of Reutte.

The Bitterlich family breakfast table just before the funeral in Reutte. Helga is across from me, and her sons are next to us.

The family invited me to join them for the funeral, which involved foresters, academics, town politicians, old friends, and a Buddhist monk. Held in German, I missed most of the points being made, but the feeling was one of sending off a favorite son of the town and someone of great importance. Reutte has a lovely cemetery right in the middle of the town, and there is a great view in all directions because the town is in a bowl among these hills.

Bitterlich's old student Dr. Sterba places the urn.

During the funeral I noticed that Helga seemed to be wearing Walter's old Tyrolean hat to the service. When I asked if that was the case, she said that she did not bring a hat when she came from Barcelona and had picked it up from his closet. "Do you think it would fit you?", she asked. "Yes it does!", I immediately replied (without trying it on). It now hangs on my library wall with the cape - and it actually does fit me.

I sometimes take photos of visitors to Nanaimo wearing it. The hatband had been fractionally adjusted by Bitterlich for size, by inserting a slip of paper – part of a scientific paper on philosophy.

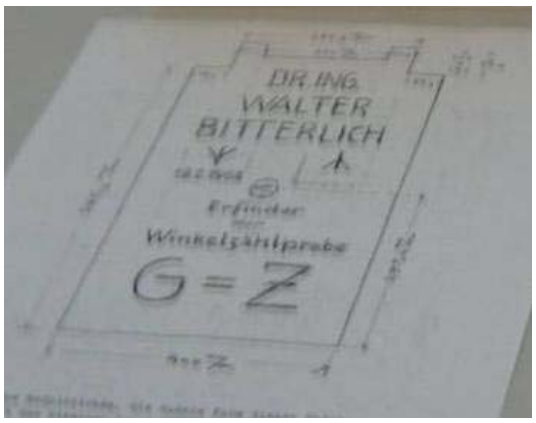
The family mentioned that they had a huge job of cleaning up in Salzburg because Walter had an entire floor still full of 60 years of his work, and a lot had to be thrown away into an industrial size dumpster they had ordered. I inquired if I might be of use in looking through things before they were thrown out, and ended up there all day long for more than a week. There were, indeed, things that could be thrown away. Bitterlich had tons of photocopies of all sorts, but among those were *wonderful* things. I told the family that some of it needed to be preserved, but they had very little interest in doing so. I said that I would go through everything and see that nothing of serious historical importance was thrown away. This reinforced a previous lesson. No matter who you are, when this time comes it is just "dad's old junk" to the kids.

Some things were already missing, and I have no idea where they went. Most of his books, and his paintings were not there. The Relascope people and I both kept one of each of his publication papers, which were still in their normal place. Many other items that I remembered were no longer there, and I never did find out where they went.

Bitterlich's outside wall, facing hotel Scheck.

Bitterlich's personal copy of his first commercial Relascope.

Many of the instruments shown in his book *The Relascope Idea* came home with me, and I told the family that if they ever came to their senses I would send them back. The daughter who lived in Salzburg (the opera singer) was anxious to clean out the floor and turn it into an opera studio. Someone wanted to have the "G=Z" on the outside of the house removed (this stands for "Basal Area = Count", but someone thought it was inappropriate and meant God = Counting); and I have not been back to see if that was done. I also found the design he made for his own gravestone.



Walters plan for his gravestone include his name, birth and death date, and including his equation G=Z, all inside the shape of the original metal target used with the Relascope. I showed this document at the Vienna meeting, but it went missing.

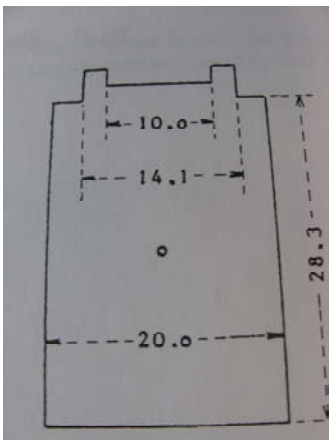
It was just like Bitterlich to have his death planned out well ahead of time. His design was much better than the gravestone actually used. I never did get into the attic and a few other parts of the Bitterlich home, so I just hope the family took care of that.

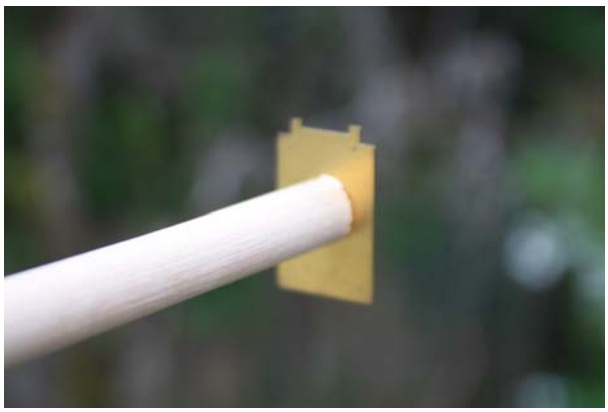
Many drawings, parts of original papers and instrument models were shipped back to me in Canada – and only one box went missing in the process. Looking back, I should have ordered a shipping container, filled it with everything on that floor, and spent a year sorting it out back in Canada. Hindsight is always 20/20. I don't think I made too many bad decisions about what to keep, but I am sure I made some. Thank heavens Walter was naturally well organized.

The University of Vienna had little interest in these things, but they kept the cardboard mock-up he used for the design of the Relascope and a machine he built for doing regressions (with flexible metal strips and springs) as a display.

The original "target" designed for the Relascope was a lifetime favorite of Bitterlich. He actually patented the form of it, and used it until the "drum" of the new Relascope was adopted. He would give targets out to visitors to his workshop in Salzburg. The target connected his work to earlier "proportional" ideas for measuring trees, such as **"Pressler's" method**. The increment borer was also invented by Pressler. In the days where measuring tools were not as good as today, and the math was done by hand, the use of proportions was cleverly applied. Bitterlich always had great respect for relating things with proportions, and his count of trees is best seen as determining a proportion of the stems on the land base to avoid measurements altogether. **Sue Creba**, my artist, cleverly included Bitterlich's target design into the cover of each of my books.

The idea of Pressler's method was that if you could locate the point where ½ of DBH occurred on the stem, then 2/3 of that height (with a slight correction) would tell you the length of a cylinder of diameter DBH having the volume of that tree. In forest inventory we now know this distance as "the VBAR" (Volume to Basal Area Ratio) necessary to turn Bitterlich's tree count basal area into a stand volume. Apparently, Bitterlich never realized this, and had stopped at the point of establishing the basal area of the stand.





Imagine designing an instrument *specifically* for this purpose, and never realizing that it gives you exactly the missing piece which would make your method used all over the world for inventory volumes. I am at a complete loss to explain this.

It is a good idea to remember that opportunities to ask these questions about how the history of the field developed are fleeting. With the death of principal players, many of these things will never be known. It would appear that even a highly gifted man like Bitterlich can miss this kind of important observation. On the other hand, Bitterlich was quiet about a lot of things, and very generously gave great credit to others. I missed my chance to ask about this.

I don't think we will ever know.

During the 80th birthday, Walter had mentioned that he bought a new cape for that occasion, abandoning the old worn one which he had used during his forestry career. It was years until I worked up the nerve to mention to his daughter Helga that I hoped the old cape had not been thrown away, and that I would love to have it if he did not want it any more – but not to mention the topic if she thought Bitterlich had any interest in keeping it.

When I next visited Salzburg it was waiting for me. Walter unwrapped it carefully, and explained how it should be cut up by my tailor to make "your new one". At this point, I clued into the fact that he thought that I just wanted it as a template for a new cape. Walter could not imagine that I would put any value in a worn old cape that just *happened* to belong to Walter Bitterlich.

I did not even try to explain that it was not a new cape that was the issue. I was reminded of this exchange during the day in Reutte when we laid his ashes to rest.

I greatly valued his friendship.

Photo by John Bell, up in the Alps

Conferences

Berlin

Conferences, which are usually rather boring, are a great place to meet people. The chance to hear someone speaking in person is some indication of what they are about, and the chance to get the opinions of others on a confidential basis is valuable. *Some of what is said should not be repeated*, but I think many general lessons are worth mentioning.

There was a 1992 **Berlin conference** that stands out for me. On the way to Berlin, we stopped by Salzburg and I told Bitterlich that I was going to talk about the history of the Relascope and some of his early instruments. He told me that I really should talk about the current ones, because nobody would be interested in his old stuff – they would just find it dull. He could not imagine anyone having an interest, but he said I could have anything I wanted … he just had to fetch it from the closet. Walter was swaying back and forth on a rickety stepladder and managed to hand down a cardboard box of "old stuff". The box had the cardboard model for the Relascope, and many of the initial forms of the instruments he later showed in his book. Dave Marshall asked, as I came out to the car "what do you have there, Kim?". My response was "*everything*, Dave – *everything*".

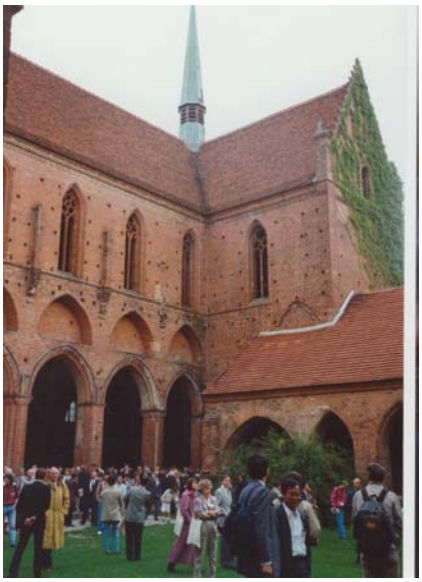
In Bitterlich's office, getting instruments to show in Berlin

Bitterlich sat in the back of the room for my Berlin talk, and he was amazed at how charmed people were to see these old things. The crowd loved it. I used this photo of me looking through these instruments in Salzburg as the label for the first bottling for my "Biometrics Vineyards" wine. It's just ordinary wine at the local u-brew shop, but I use photos of significant biometricians (sent to them for signing before application) for the wine labels. *Biometrics Vineyards – dismal wine, with distinctive labels*. The "co-vintner" also gets to pick a comment for the label.

Showing instruments at the Berlin meeting. Lee Wensel is looking at the wooden Relascope, as I am talking to Keith Rennolls.

One field trip at the Berlin conference was to Eberswalde, which is quite famous for its connection to German Forestry and the birthplace of IUFRO the International Union of Forest Research Organizations. This year was the 100th Anniversary of its founding.

It was a grand affair, and the dinner was served in an outdoor setting. After that, there was a concert. Picture this – we are seated in the ruins of an ancient abbey (beamed vaulted roof across the stone walls) and we have the Berlin Philharmonic orchestra doing a concert for us at one end. John Bell and the wives are rounded up by Helga Bitterlich to sit in "the Bitterlich pew" while I stand at the back, and the music is really quite nice (in my poor ability to judge such things). Patiently, as is the nature of percussion people, the cymbalist waits. At some point his big moment arrives, and we have the loud clash of cymbals. At the sound of this, *the bats pour out from the rafters*. What could possibly be as perfect, in an ancient abbey while listening to the Berlin Philharmonic?



Concert at the IUFRO meeting.

That IUFRO meeting was just after the Berlin Wall came down, and the East Germans were apparently running the show. All that was said about incompetent management during the Russian years in East Germany seemed to be true. The planning was a disaster. Every so often the IUFRO people would step in long enough to get things on track again, and then turn it back to the East Germans, who could not make a decision or get their act together. The West Germans, so well known for their precision and organization, were grinding their teeth and trying their best to be patient. The kicker was the dinner at the famous Berlin Reichstag. We were bussed out to this very historic place, and it was very large but the seating was pretty scarce (Helga Bitterlich got her family and the ladies a place to perch). At the end of the reception there was an announcement. In essence it was "we are sorry, but the busses that brought you will not be coming back, please make your own arrangements to get home" – and that was it. The organizers vanished. Hundreds of people were stunned and stranded. What a disaster. I do not even remember how we got home that night, but taxies and the rail system must have seen everyone to their hotel eventually.

The Finns, who were to run the next IUFRO meeting in Tampere, Finland, were grinning ear-to-ear. They knew that they would look like heroes when compared to this meeting (and they did). On the other hand, I remember Berlin much better than the smooth and well administered meeting in Finland. Weddings are kind of like that – the occasional disaster is so much more memorable. And in Finland, there were no bats.

A Midwest Meeting

Pick your targets when you go to a meeting. At a Midwest meeting in my younger years I heard that **Bert Husch** was at the meeting. The forest measurement text by *Husch,* and later *Husch, Miller and Beers* was a famous one, and I had used it as a student. I had him pointed out to me and watched for my chance. Slipping into line behind him at the cafeteria I introduced myself as I sat down next to him, as one can comfortably do in a situation like that.

Kim, Bert Husch, John Bell at Bert's home in Chile some years later.

I told Husch that I liked his book, and he asked me what kind of work I did. When I said that I worked with Variable Plot sampling, he asked me an odd question. "The section on my book about all the Variable Plot methods – do you think it's a bit overdone and perhaps too detailed?".

It was an awkward question to respond to. I said (very politely I think) that perhaps it was a bit much for a *student* text, although quite correct. "Well", he said, "that's all **Tom Beers** work, and I thought it was too much too – ***but that's OK****, because it's his book too*". I thought this was a great example of tolerance for other people's judgment and interests in a shared publication, and have tried to bear that in mind when doing joint papers with other professionals. It was interesting to have this insight into how Husch thought, and I could only have had this experience in a venue like this.

Montreal

Bitterlich, unlike Hesske, did not really like to travel. His friend **Harold Burkhart** (who would eventually be coauthor with Gene Avery on his Forest Measurements book) was one of the few people that could convince him to do that. In **1990**, Burkhart asked him to come to Montreal Canada for an international conference, and Bitterlich accepted. During part of it, I manned the booth for the Relascope, because there was a death in the Hesske family and they had to return to Austria.

Harold Burkhart, Helga and Walter Bitterlich at the Relascope booth.

I was Walters pack mule, along with his daughter Helga, and made sure he got around during the meeting. As I helped out at the Relascope booth, I forced a number of shy foresters to sit down and talk with Bitterlich.

One of the responsibilities of mid-level professionals is to help with that sort of introduction. Young foresters only get a few chances like that, and you would not want to miss them. Stick your neck out a bit. It will pay off.

On the day of his conference talk, we had breakfast and he asked me to review his paper because he wanted to ensure "that I would approve" of what he had to say about my work on Critical Height Sampling. I assured him that I felt silly even commenting on his work, but I read it because he insisted. I simply could not understand it. He was talking about using "negative critical heights", and I had no clue what that would be about. He, of course, considered it so elementary that I must have thought of it already. I think he probably knew that I was befuddled, but was far too polite to notice it. He was simply not an ordinary mind, and as comfortable as he made it to be around him, once in a while you realized the very extraordinary person you were dealing with. I simply told him that I thought it would be fine, and off we went to get to the talk early. He was the first speaker in his session after lunch.

The talk was one of the most fundamental experiences I have ever had at a conference. We arrived 30 minutes early, got seats that would make getting to the podium easy, and tested everything. At 15 minutes before the talk, all the seats were full. At 5 minutes before the talk, the aisles were all full of people sitting on the floor. Just before the talks began, the Montreal hotel staff tried to close the doors because of fire limits for the number of people. As I recall, it was **Keith Rennolls** who pushed the doors open and told them where to get off. Keith is a big guy, and would not put up with that nonsense. The snooty quasi-French hotel staff had not endeared themselves to anyone that week with their attitude. The hallway crowd poured into the back of the room.

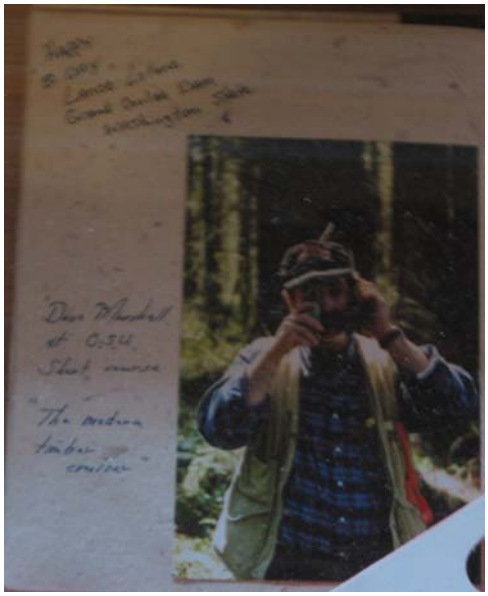
Walter started to speak, and at one point was having trouble with an English phrase, so he asked his daughter to come up and help him. The crowd loved that touch. The grand old man, getting a bit older, and having his daughter help out. Walter was never a great speaker, but this crowd knew that he was of consequence. Half of them knew just what a central character he was, and the other half had been listening to what a big deal this was (and how unlikely they were to ever see it again). At the end Walter thanked them and announced that he was finished. The packed crowd, who had listened quietly and politely, started applauding. Then they *kept* applauding. It was the only instance I have ever witnessed of prolonged applause at a scientific conference. I think Bitterlich must have been pleased, but could not really understand the fuss being made over him.

This was interesting to me. Once in a while, an audience seems to really appreciate that they have been treated to an experience of something special. In this case, many of them would in later years probably say "Oh yes, I listened to the old man in person one time, you know". Lucky them. Some of them owe their thanks to Keith Rennolls, who knew when to push back on a closing door, and Harold Burkhart who could twist an arm.

Other birthdays and the giving of Gifts

I also visited Bitterlich on his 90th and 95th birthdays. It is hard to know what to bring to someone like that. I once decided to bring greetings from timber cruisers. I had quite a number of them sign a special hand-bound leather book. People from the OSU short course, the BC cruisers meetings, the technical biometricians from the

Western Mensuration group, and others. There were also lots of group and individual photos that went with the comments. He was charmed.



I think there are few things that a professional appreciates so much as the goodwill of others in their field. The next time I went to Salzburg, he had all the pages color enlarged on a photocopier and pasted on the wall of his office. He insisted that I tell them all how much he enjoyed this gift and show them a photo of all the photocopies on his wall. After his death, in a corner of the forestry museum in Reutte devoted to showing his work, they put that book on display. When I saw it, it was opened to a page that showed a photo of Dave Marshall with a cell phone to his ear, in a cruiser vest, and looking through a Relascope. It was titled "the modern timber cruiser".

Dave Marshall – "the modern timber cruiser"

Gifts are difficult to give in professional settings, and the giver is judged by them. Insight, imagination and good presentation are all noticed. On one visit, I had a local BC artist draw a pen and ink totem pole, and incorporate a lot of things about Bitterlich's professional and personal life. It was a lovely thing, and came out better than I hoped. I typed up a page describing the symbolism, and Walter seemed to really enjoy it. Just after this was presented in the afternoon, it was time to leave for the day.

We returned the next morning, and had a chance to notice once more who we were dealing with. Not only had the drawing been hung on his wall, but a special light had been used to display it well. He then proceeded to give me a present in return. It was a wood carving called "the book lover" (since I collect books) with a special inscription on the base about Critical Height Sampling. How in the world he arranged this overnight I cannot imagine. Perhaps he took a lesson from the Russian Romanov family who had a supply room full of gifts that would be appropriate for any occasion – kept full by the great jeweler Fabergé, in that case. You simply could not get ahead of this man.

The totem pole art on Bitterlich's wall

The family was the same way. I approached **Bill Finlayson**, the Oxford chap who did the translation for Bitterlich's book "*The Relascope Idea*", during the 80th birthday and asked him how to behave within this rather intimidating crowd of people. "Do NOT mention that you like anything" he said. "If you do, it will immediately be obtained for you, and you can do nothing about it. If you screw up, just say thanks, because you are *not* in charge of your life while you are a guest here". This was immediately relayed to the kids. Bob was too young to do it, and lit up when he saw something that would look good on his new Bavarian hat. It was soon filled by conference people. Daughter Jennifer was grumped about that, but was more circumspect. I forgot one day when passing a print shop with ancient prints of Salzburg and said "how nice to have a city of an age where wonderful old hand-colored prints show the history of your home". The next day one was presented to me, framed and signed by the Bitterlich family.

"That's nothing", said Finlayson, "I once mentioned that my daughter was interested in getting a recorder (wooden flute). Not one, but *two* Bitterlich daughters were dispatched the next day from Austria up to the right town in Germany where the best recorders were to be had. The flute, a wooden case to hold it, proper music and a music stand were returned to be presented to my daughter. Good grief, she was only 8 years old". It was kind of him to advise me, doubly kind to subtly assure me that my error was not really that bad, and a good reminder of what thoughtful and hard working hosts I had. Bill retired from Oxford to Sri Lanka, and eventually I lost track of him.

It is hard work both to be a good host and a good guest, and best to get advice in new surroundings. One of Bitterlich's cousins later sent Bob one of the "brushes" that you see on Bavarian hats. The small ones are actually trophies of a Chamois goat hunt, made from the shoulder hair of the goat. Bob was only 9 at the time, and the brush is now properly displayed on my own Bavarian hat, and I often think fondly of that forester who would make such an effort and gave his trophy to a small boy.

Over the years, I have learned to appreciate German Riesling Wines. My advice – learn to like something more local and inexpensive … but they do have some <u>really</u> fine wines over there. Before the 80th birthday, we went to the little town of Wiltingen, which has the best vineyard that you can find in that wine region (according to Frank Schoonmaker, a wine expert who knew about these things). The famous "Scharzhof" vineyard is a magical estate a kilometer or so outside of town, and we stopped for just a few minutes to get a photo of me standing outside the gates. Then, it was off to find some of the wine. We ran across the "Scharzhof Gasthaus" a few blocks away.

I knocked. The housfrau, who was obviously knee-deep in cleaning duties, came to the door. What did I want? Wine. She could not help. "You have to see my man", she says. I am directed to knock on another door where her husband was working. At this point, I suggest we go elsewhere and stop bothering these people. Carolyn said "Kim, **Rick Steves** [1] says it's OK to let people help you - so let them". She is annoyingly right in matters of this sort. I knock. He answers. He is doing plumbing, very grubby, and I am *obviously* bothering him. *I knew this was a bad idea*.

I try letting him know that I am going to meet a famous forester (foresters are a big deal in that part of the world) and he will be 80, and I have come all the way from Canada. CANADA? REALLY?, he says. *Oh good, I think, this is going well*. "I was a <u>prisoner of war</u> in Canada! *Oh crap, I knew this was a bad idea*. "And I LOVED it there!!"

[1] A wonderful and well known travel writer.

"I built trails in Kananaskis Park, etc, etc … What was it again that you wanted?". "Scharzhofberger wine", I suggested.

"Well … no they are closed … no, they probably don't have any either– you know it is not really easy to get that wine, Herr forester … OK *come with me*". Now when a German grabs your arm and pulls you toward his car, you go. I wave to Carolyn, thinking maybe she will follow us. We drive up to the Scharzhof gates, we drive *into* the Scharzhof courtyard, he leads me *through* a door into the building – and announces, "Herr Kellermeister, this is my friend from Canada! We must help him."

Some days are pure magic. The Cellarmaster speaks very little English. I explain – I am a Forester / Important Forester involved here / 80 year birthday / international people coming from all over the world / … and then I stumble onto the right phrase. "So I think that for such an important gathering, the Scharhofberger would be the only adequate wine". The Cellermaster stands up just a bit taller. *Bingo*. What year wine was I seeking?, he asks. I reply that "of course I would rely on the advice of the Cellarmaster in such a thing". He smiles. *Double Bingo*. So far, so good.

Then he must explain that he cannot really sell this very exclusive wine. It is bid upon at official auctions, there are German Rules, etc. OK, I say, sorry to bother you … thanks anyway ... etc. "No, no, wait a moment Herr Forester", and he disappears through a door. A few minutes pass and he appears with two bottles. He carefully cleans them. He walks to the files, obtains the proper labels, carefully applies them to the bottles, wraps them in red tissue paper and hands them to me saying "With the compliments of the Kellermeister of the Scharzhof". There are just a few days like this in life.

I walk out the gates, finding a hot tired wife struggling with two kids who have been squirming the whole time and have needed a bathroom for quite a while - *and what in the heck is going on, Kim*?" I think it was the smile on my face, which lasted several days, which saved me. We thanked the hotel owner, and found that he still had rooms, so we stayed there that night. The best thing was that Bitterlich did not drink alcohol, so I got to drink them myself, while telling the story. A smarter man would have brought home the empty bottles, signed by the crowd.

For 30 years I have sent a yearly package of Nanaimo smoked salmon to the Kellermeister. Several times we visited the Scharzhof again, each time rising through another level of magic. Each time, tasting the finest wine available. The last time we visited, the timber cruiser **Mike Fall** and I had a wine later ranked 100 by the Wine Spectator during a tour of the ancient cellars – and Mike noted that on one rack there were about 50 bottles left of the famous 1971 vintage that is such a legend at the Scharzhof. Luckily, some Japanese were there to taste wine the previous day.

I doubt that price was discussed. At this level, the only question is "how much could we be allowed?". Because we arrived the day after this group, there were about 15 bottles in the Cellermaster's refrigerator (although no 1971s), and they were not empty. "Would we like to try some?" he asked. *Oh yes*. They were lined up for tasting in order of quality, and ranged from *magnificent* at the low end to *beyond belief* at the other. Always follow the big buyers to a vineyard.

A good day at the Scharzhof, with the Cellermaster

By this time, I had attained enough seniority to politely suggest that it would be wonderful if my *guest* and I could be allowed the *privilege* of buying two bottles of wine each. The Kellermeister made an exception, since he could not *possibly* embarrass me in front of my guest (by this time I am learning how to do these things). He brings up two bottles for each of us, noting that they rattled a bit when he put them into our backpacks. "A moment", he said, and disappeared to bring two more bottles each. "Packing", you see, "for the safety of the wine", he says. There was still a bit of rattle, so it was back to the cellar and two more bottles went in, upside down, to make the packs nice and tight. *Then* we were allowed to buy 2 bottles each, with the other 6 considered "packing". You cannot get ahead of these people.

Back at the Scharzhof hotel, we decided we should drink one bottle right then, while looking out over the view. We pulled out the central bottle of one pack. It was a 1971 Scharzhofberger. An astonishing gift, which was carefully carried back to Canada. I finally opened mine to celebrate the year 2000. Mike had his on a big wedding anniversary. It really was as good as the wine books say.

These and the other adventures at the Scharzhof were because I went past my comfort zone – well, to tell the truth I was *pushed* past it (by Carolyn). In no way did I deserve any of this enchantment. Always follow the advice of travel writer Rick Steves. I stayed in touch with the hotel owners as well, and always stayed there if I was in the area. They got smoked salmon too.

The owners of the Scharzhof hotel.

The hotel owner was a bit of an artist in his younger days, and I made the mistake of admiring a watercolor on his wall of two wine jugs dancing along the streets of Wiltingen. Of course nothing would do but that I must take it home, and it hangs on my library wall to remind me of former prisoners of war who are allowed to help. I have absolutely no doubt that I have allowed similar experiences to slip past me by a lack of the right attitude, and I have been trying to improve my skills as I muddle through life.

Dave Hyink was a biometrician of Weyerhaeuser Company when I met him. Dave was in the middle of the best practical research going on in the industry, and he had a feel for his responsibility to the profession. He was active in meetings, but his company was very firm that company people were never to release a bit of research information or company data. They did not like their people even talking about it. Dave got past that. He was instrumental in forming cooperatives, and in the technical discussion he would suggest certain spacings or trials that "might be of interest". Anyone that was awake would know that something interesting *would* be found, and that it had already been done, even if Dave could not discuss it openly.

Dave was very active in Boy Scouts at a national level. We asked him to be the invited speaker at a Western Mensurationist meeting after he retired. I started this tradition many years ago, when our first invited guest was Lew Grosenbaugh. We always told them that they did not need to give a talk, but if they did so we would like it to be about history as they knew it, or their advice to young professional on how to have a happy and useful career. Many of them chose to talk about technical matters, and we had to bring out the really important things at the bar in the evening.

With Dave Hyink at a meeting (the Okanagan Resort).

Dave Hyink, however, *got the message*. He talked about how to develop a career, how to work through the politics without wasting your life or losing your head in the process, and not to forget working out a good retirement so you can do as you like in your later years. It was one of the best talks we ever had. Here was someone who had not wasted his career, and was not reduced at the end (like some) who would tell you that they had authored 200 papers in their career (none of which had probably made the slightest difference). Dave had worked with very innovative senior people and, like anyone who knows how to keep his mouth shut about what he heard, was privy to very interesting insights. The details he could *not* give you would have supported the ideas that he *did*.

Dave retired to South Dakota, and the profession was better off for his presence while he was active. He not only did things, he allowed and encouraged others to do things. He was always thinking about the larger profession, not just about his little corner of it, and had the great benefit of knowing all the Weyerhaeuser scientists who formed the research unit that did such fundamental work. He continued his work in Boy Scouts, and was honored for it. His presence always added something to any meeting.

Walter R. (Mac) McCulloch was the dean of forestry in 1964 when I entered Oregon State University. He was a leader, not just an administrator. His attitude was that the main job of the school was to produce good men - and they would make good foresters out of themselves. That breed of dean has pretty well died out in universities. I was just a student at the time, but you could tell by the relationship he had with the faculty that he was a man of substance. He personally taught the introduction to forestry class, so that the students started out with the right attitude. On the wall as you walked in the forestry building there was a sign that said :

> *The School of Forestry expects every man in every class,*
> *every day, with every lesson prepared, and the right attitude*
> *toward the profession and his fellow man.*

I think my memory is correct on the exact wording. They did expect it too, and pretty well got it. It was beyond thinking that you would skip a class – at least for most of us. By school policy we were on a first name basis with every professor, including Mac. His secretary was not there to get in the way of anyone wanting to see him, and when you got into his office with too little thought in place he would deal with you on the spot. If you were right, things got done - and fast.

He operated by his pocket watch (probably a railroad model) and the bus to field work left *exactly* on time, even if a student was running for it and waving. You learned to be on time, or better yet - early. In the "Introduction to Forestry" class, he consulted his watch and then began by closing (and locking) the classroom door. It would not have been a good idea to knock on that door. When people with too little respect for the time of others are late, they should not be humored. When they are, things just keep getting later and later. We need more people with Mac's attitude.

He stopped me in the hall one day and said something like "Mr. Iles, I hear that you are doing well in engineering, although struggling a bit with Dendrology" - (quite true). "Bear down Kim, you can do it", and walked on. "The Dean of the school knows how I am doing", I thought. Of course I am sure that he picked out a few people each week and arranged to "run into them by accident" for this treatment, but at the time it was very impressive to a young student. It was a good technique. John Bell said that he thought that Mac's memory really was that good, and he simply remembered whatever he heard.

Mac wrote the book "*Woods Words*" about forestry terms, and I later managed to get the copy that he had signed as a gift to Clara Homyer, his long-time secretary. She was a lovely lady, and although we were all a bit frightened of her, we all instinctively liked her. When I did my Masters degree years later I located her in Corvallis (she was long retired) and asked her to type my thesis for me. She did so, and I valued that small connection to Mac. I used his book *The Forester On The Job* in class¸ but I was too stupid to have him sign it at the time.

As I drove away from OSU, on the last day after my Masters Degree work, there was a short message on the radio about Mac. He had apparently wandered away from the care home where he was staying "carrying a leather satchel. He might be confused, and the public should call if they run across him."

I remember him carrying that satchel into the school, and exactly what it looked like. It was the end of an era, and I miss such men.

Martin Ritchie

Martin is a biometrician in California, active as I write this, and he was a different thinker. He took an interest in historical things, as many appreciative people do. One of them was the work of **L.H. Reineke**, who was in the Forest Service research field. Reineke ended up at a forest products research station, and Martin wondered how that happened. He managed to get into the personal records, and found that Reineke hated to write up his results, and dragged his feet until his superiors finally lost patience. He was relegated to the Forest Products lab in Wisconsin for the rest of his career.

Martin gave a talk at the Western Mensuration meeting in 2013, and he won the best speaker award for that talk. He left out his best quote from the story, in my opinion. He had told it to me a few years before, and I had encouraged him to give a talk about it. Martin said that Reineke had died near Portland Oregon, at 95 years of age. We had meetings in Portland, and had many times been only a few miles from where he lived. Nobody knew. Nobody had thought to ask. "*He died full of stories, Kim, and nobody to tell them to*" said Martin. What a haunting phrase. I was ashamed.

There are wonderful opportunities in life, many of which we miss for lack of attention. What a pity. At least there are few, like Martin, who sometimes notice. If only we had known earlier. Reineke worked at a time when much of the historic work was done, and by the central characters of the business. Who knows what he could have told us.

Larry Promnitz

Larry was working for Crown Zellerbach when I first met him. Several mergers later, he ended up in a fairly senior position with TimberWest in Vancouver, Canada. I did a bit of work for them over the years in inventory. Once I got a call to come over and run an internal discussion about forest inventory. My role in this was a bit vague, and there was an odd feeling in the room during the discussions. I pulled Larry aside, and asked him what the *real* problem was. "Lack of leadership", he replied. That put a great deal into a few words. "What could I do to help?", I asked. "What *can* you do when there is a lack of leadership?", he replied. It was a good lesson. Sometimes you cannot be of real help when the situation is not conducive, but I tried not to make things worse.

At one time he was doing optimization on the company land base. I have always been rather critical of optimization in forestry and told him so. "Of course" he replied to my criticism. "The point is that the *first* thing you are forced to ask is *what are we trying to accomplish in this company?* When does that otherwise happen?". He was dead right.

Larry was one of those people who could see the bigger picture, and was always interesting to visit with. He rose to Vice-Presidential level in the company, and for good reason. That ability to stand back and see the human and business structure underneath the technical issues is a gift for some people, a hard won skill for others – but a wonderful ability in either case. Larry had that.

John Moser

John was once a president of the SAF, and a great guy. John and Tom Beers were often in charge of the technical meetings of the Midwestern Mensuration group, and whenever they could do so they had it at Mackinac Island, at the famous **Mackinac Grand Hotel**, with its famous 660-foot front porch. It was a class act. No cars allowed on the entire island (except for emergency vehicles).

John was always well dressed, and always told me that a gentleman should have a blazer with 3 buttons, not 2. I never did get a 3-button blazer, but at least know the proper form in these matters.

John in a 3-button blazer, Kim in a 2-button Harris Tweed.

Mackinac Island was the first meeting where I gave a professional paper after I got a real job (at the MacMillan Bloedel Company). We flew in to the small airport at the top of the "mountain" (a big hill to those of us from the west coast), and took a horse carriage down to the hotel. We went in to register, and they had a 4-piece string orchestra playing near the reception desk. "This is class", I thought. I asked who the chairman was, and they told me it was the famous team of Tom Beers and John Moser. I happened to have a very good bottle of German wine that I was planning to take home, but instead I wrote a short note and asked the desk to send it to the chairman.

Tom Beers

About 15 minutes later, I got a call in my room. It was Tom Beers, who wondered if I might like to come up and join the very senior group that was drinking the wine I had sent up. It was a magical connection, and paid off for an entire professional lifetime.

Bell, Husch, Avery and Tom Beers at the meeting where Husch and Beers were the special guests.

There were many books published by this group of foresters.

Tom would not have remembered it, but we had actually met some years earlier, when I drove across the states from Oregon to Michigan to begin teaching in 1975. I stopped in to see him at his office. I remember him giving me a "Purdue point sampling block" which he developed for Variable Plot Sampling. It used a round prism that could be rotated to correct for slope (although to my mind, there was not much slope in that part of the country). I often display it, along with other old forestry equipment at the OSU short course or other situations where people have any interest in such things.

Many years later, we invited Beers to come to a ski lodge in Washington as a guest of the Western Mensuration group (photo on previous page). We also invited Bert Husch, his coauthor on their *Forest Mensuration* book.

As it turned out, Tom and Bert had met only a few times over the years. Tom Beers and Charlie Miller had read the original book by Husch when it appeared, and thought it was not as well organized as it might have been. Perhaps a collaboration would work out? Bert Husch was only too willing to let them do the update. What they did not know at the time was the reason why the first edition was not well polished (see the later section on Bert Husch, page 71, for the details).

The Mackinac Island meeting also taught me something about giving a talk. The first lesson is that when you give a *really* awful talk it has an up-side, because you will probably never have to worry about having a bigger disaster for the rest of your life.

A few weeks before I arrived in Michigan I had contracted Pneumonia. For those of you that have not had it, you might not know that it often involves having *very* low blood pressure. Fainting is one of the very interesting experiences that you have in such situations. As the blood pressure gets too low, the body knows you need to lower your head to compensate, and you black out and hit the floor. It is about the most mellow feeling in the world. In the days before penicillin, it was a relaxing way to die, but since that wonder drug is now available, you recover quite quickly.

Unfortunately, the low blood pressure does re-occur. This was so on the day I gave one of my first professional papers at Mackinac Island. The topic was Critical Height Sampling, and I imagined that this would be of interest to Co-Chairman Tom Beers who I had met the day before. I had a work colleague with me and, as the talks before mine were given, I could feel my blood pressure start to drop. I began to get light-headed. "Steve, I might not be able to give this talk", I said, "you may have to take the overheads and do this for me". He said that would not be a problem (now I relaxed even more).

Now what happens is that at some point, you simply no longer realize the trouble you are in. That happened. When it was time to give the talk, I said airily "Noooo problem, Steve … I can do this". Bad mistake. From that point on, I remember only two things. First, partway through my talk, I dropped about 4 or 5 overheads from my talk on the floor. I remember staring down at them on the floor. "No problem", I though in my muddled brain, "I don't need those anyway". I have no idea how I thought I would get around them, nor any memory about what I said until I got to the end of the talk.

At that point there were questions. I was so relaxed at that point that I did not think that answering questions would be *any problem at all*. I have no idea what most of them were, although I think I answered them in some way. The only one I remember was from **Hans Schreuder** of the Forest Service who asked something about my feeling toward Bayesian methods. I don't remember the exact question, and probably did not know what it was at the time. All I remember was saying something like "Bayesians are probably

very nice people but that I had never been impressed by anything any of them had ever said, nor did I expect that it will happen". Silence. No more questions were asked.

Thinking that all this had gone *swimmingly* well, it was now the lunch break, so I floated back to my seat. Steve suggested that we go outside and relax on the lawn. I lay down on the grass in front of the hotel and, as physiology guarantees, my blood pressure began to rise and the horror of it all became clear. At this point, I realized that my professional life was probably over. What could I possibly do? Well, I would never have to worry about giving a worse talk – that was for sure. Panic set in.

I immediately sought out John Bell, and pleaded repeatedly with him to contact Tom Beers and explain that this Kim Iles kid had not been drinking, nor was he on drugs, and that there had been an unfortunate medical issue that was entirely unexpected and was not *any* indication at all of what I was like.

At this point, John swore that he would explain to the essential players what had happened (and I assume that he did so). Then he made one of his best-ever comments. "Well, your presentation style did seem a bit odd today – *but it was within your range*". The people who never heard the story must have had a very strange opinion of the odd young man from Western Canada. I could only pray that they forgot my name.

Gyde Lund

Gyde is a great character. He worked for much of his career with the USFS. When he was with the Bureau of Land Management, he authored the "BLM Notes", where he tried to publish practical and forward-looking ideas about forest inventory. There was almost nowhere else to publish useful ideas, and Gyde made an enormous effort to do that. He also published a number of agency papers on sampling, and continues to produce an Internet blog where he notes science papers of interest. He gives great talks on inventory, and sprinkles them with well chosen comic illustrations. Many of his subjects involve the very difficult issue of carefully defining a forest, or even how a tree should properly be defined. Definitions are not a trivial issue in forest inventory work.

On one occasion, Gyde and I ran a conference on inventory design, and it was well received. You know you have a winner when the working folks show up instead of the academics.

⬅ Kim, Gyde Lund and Richard Zabel

Gyde, more recently ➡

As usual, WFCA was the host of that conference. WFCA gives the best conferences on the West Coast, and it is because of **Richard Zabel**. I don't know if Richard is actually in this photo. He is often the photographer at these affairs, and is famous for inserting himself into group photos he has taken using Photoshop.

Richard Zabel

Richard is a ball of fire that keeps the Western Forestry and Conservation Association alive. He moves around the forest industry finding out what people want to know (rather than what academics want to tell them), then puts on a course for it. He invites people to talk at the conference (often as volunteers) who actually know what they are doing and have some wisdom and judgment to offer. Nobody does this as well as Richard.

When the course starts, the signs are all up, the food is arranged and checked, he has made friends with the hotel staff, and everything is on time. He is so good at this that the Western Mensurationist group has virtually turned over the running of their meeting to Richard, with the sad exception of the speakers and topics – which are still at the mercy of whoever is chairman of the event.

Richard is perhaps most remembered as the guy with a cowbell who goes into the hallway and rings it to get people back into the conference so the timetable is kept. People like this are gems in the gravel pit of conferences about forest biometrics (and most other specialties). The only conference that comes even close is the Timber Measurements Society, run by Matt Fonseca.

Matt Fonseca

Matt works for the United Nations in Geneva, mainly in the area of forest product markets, but also coordinating forest measurements and definitions for them. He once worked at Plum Creek Timber Company, and hired me to review some of their scaling practices. He followed my advice, and made it work for his company. Later, he wrote a book called *The Measurement of Roundwood : Methodologies and Conversion Factors* and mentioned the "previous load expansion" technique we worked out at Plum Creek. Sadly, Plum Creek is no more – merged into non-existence with Weyerhaeuser, and many of their mills have been closed, apparently due to the drought in Forest Service timber - an agency that is itself withering away.

Matt Fonseca.

At any rate, Matt puts on a wonderful meeting each year. It is an absolute model for anyone who wants to see how a meeting should be done. The first hint is that the room is full of competent people who can actually do something. They are mostly scalers, but each year there are also talks from reasonable people from other fields. Virtually every talk is given by someone who actually knows what they are talking about, has done it in practice, and wants to clearly tell you what he knows. Even the economists make sense and can be understood.

This happens because Matt digs up the speakers, who volunteer their time to be helpful (not to get a publication credit), and this means a great deal of effort on his part. Conferences die from the top, and chairmen often try to save them by putting them somewhere that looks like a great vacation spot. It's often a gilded cage for the conference to die inside. The second worst idea is to put too many speakers into the day.

The price for the conference, by the way, is $25 dollars at present, but there is talk of $35. The conference is done by volunteers, just like the talks. If you want to see how to run a conference, attend one of Matt's.

Rolfe Leary

Rolfe is a charming guy. This is a photo of Rolfe with his friend and mentor **Egolfs Bakuzis** who wrote a book called *The Balsam Fir*. Rolfe kindly arranged a signed copy for me. Rolfe was one of the most original thinkers in forest ecology, and there are a few of his publications that I could never quite penetrate.

Bakuzis (left) and Rolfe Leary

A great student of the history and ideas of science, Rolfe was full of insightful observations. I especially appreciated his discussion one time on the "two point" method of measuring things, which is one of the very few times when rounding numbers actually works correctly – and it is this assumption of correct rounding (and compensating errors) that underlies the central limit theory so fundamental to statistics.

One year, I think after he visited us here in Nanaimo, I asked him to be the guest of the Western Mensuration group. He agreed, and the announcement was welcomed by the group. There was some sort of medical issue at the last moment, so Rolfe could not attend - but there was a serious discussion about whether he should be awarded the Best Speaker award in absentia. He was that interesting to listen to.

Jerry Leech

Jerry is a forester with a fascinating background. Along with Al Stage, I have always considered him one of the few sharp thinkers in regard to forest modeling. His home is in Australia, but he worked in many parts of the world, often tropical ones. He wrote a series of short articles for an Australian newsletter called "*things not learnt at university*" which all young biometricians should read. He had a quick wit and an ability to write that works well in that sort of format.

I remember him talking one evening about how his field work introduced him to a very poisonous snake as it wiggled toward him at chest height along some fern tops - and started to strike at him. The snake did not reach him because as he lunged forward his rear part moved backwards. He said "*all I could think at the time was – Wow, its physics - for every action there is an equal and opposite reaction*".

Jerry went to school at The University of Adelaide, and that was where Sir Ronald Fisher went after he retired and left Britain to join the Commonwealth Scientific and Industrial Research Organization (CSIRO) in Adelaide. They still have many of Fishers books and

papers at their university library. Fisher apparently loved to talk to students, and discussion meetings were often arranged at Fisher's apartment. Jerry, as it turned out, lived across the hallway, so he was often called to "make up the numbers" when some students had something more important to do than listen to R.A. Fisher (hard to imagine, I know, but students are vacant sometimes).

Jerry remembered that Fisher would mull wine in "an old whale oil caldron", and they would all discuss statistics and the meaning of life. "There I was", he said, "completely and utterly stupid, and totally incapable of appreciating what was happening in front of me – what a waste … on the other hand, Kim, I was taught the Analysis of Variance by the man who invented it". What an interesting evaluation of the situation. If I had the choice, I would have requested to have tea with Fisher, asking him to run through the famous reasoning of his classic paper about "*a lady tasting tea*". Jerry was always worth listening to, and useful to run ideas past while you were developing them.

Mike Fall

A description of Mike Fall starts off my first book. He was as good a timber cruiser as BC ever produced, in my opinion. Blessed with a wonderful memory, great energy, a respect for other people above and below him at work, and a flexible and highly logical mind, he was a formidable professional. He taught me a great deal about timber inventory and the people involved with it. He made me welcome among the 25 or so permanent timber cruisers at the company, and it was a great education for me. I took Mike to the OSU short course as a guest speaker a few years after joining MB. He sucked up information like a sponge, and everyone loved him. He was always a natural teacher, because he was a thinker who got to the center of each idea, and then taught it well. Highly competent craftsmen are always recognized by other craftsmen, even if the business is quite different. The role of knowledge, detail, routine, tools and technique are appreciated by anyone who is really good at their own business. There is no substitute for depth of experience, but among college professors this is not always understood.

Mike has always been good with people, and that made him an excellent travel companion. He had never traveled overseas, so I offered to take him on 2 visits to see Walter Bitterlich. There are few people that I would have taken on such a trip, but Mike was one. He was capable of appreciating someone at Bitterlich's level. Mike clearly understood how important Variable Plot Sampling was to the business, and I think Walter knew just how much Mike valued that.

For the trip, Mike caught a few salmon, and we had them commercially canned at the local cannery. Typical of Mike, he had special labels made too, showing the two of us. This was a critical decision. When Mike told a waitress that we loved the food and sent a can of salmon back to the chef, things happened. In one case, we were driven home during a pounding rainstorm (several kilometers – it would have been a killer hike) by a chef who had once gone fishing on Vancouver Island. At the famous Vienna Sacher Café restaurant we walked away with signed menus and the promise that we would always be welcome there.

My own technique was to bring a special bottle of wine to a restaurant, and ask for 3 glasses. Many places in Germany were quite open to this, and very few charged "corkage fees" for not buying their wine. I would explain to the waiter our connection to the wine we brought, then pour the extra glass and ask him to take it to whoever was in charge in the kitchen area. In every case, they would come to join us, and good advice about the area flowed. It never worked as well as Mike's canned salmon, however, and the cans were worth the weight in our luggage. Much of that success was because Mike is just the kind of person that everyone warms to automatically.

Mike was a bit apprehensive about going to a "Heurigen" with a group of Vienna professors (a tasting of the new wine of the year – usually awful stuff but good fun). In short order he had the professors fascinated with stories of Mike's father (an ace in WWI, decorated by the King on 4 occasions and a Group Captain and commanding officer for the British in Egypt during WWII) - plus tales of measurement problems on our tough ground. Mike often points out that he does not have a college degree, but I think he is only a few courses shy of a biology degree and he is a great deal sharper than most PhD's I deal with. He went to the exclusive Shawnigan Lake Boys School before college. The Vienna professors were first-rate foresters, and recognized others who were first-rate in their own field.

Mike was pretty good with practical math, and great at putting ideas together. He often specified the cruising department math and procedures by himself – carefully and thoughtful, but without statistical training. He was always able to keep things in perspective, and we worked well together. Whenever I had an idea about inventory, I would have Mike review it. If it did not feel right to him, we would not do it. In a day or two, he would wander in and lay out a complicated set of interacting reasons why it would be a problem, which I would never have anticipated.

He was one of the first people to use Big BAF cruising, and was always interested in exploring ideas. The company made good use of Count/Measure plots when we first introduced them, and we dropped the Sampling Error in half with *zero* added cost or time. Mike was never hard to convert to a good idea. Hard to con, but easy to convince with evidence - it's a good way to deal with the world. Mike kicked himself for not converting to Relascopes when the company went metric. The change to Metric is often a great opportunity to refresh equipment and update other systems.

After visiting the headquarters in Germany, Mike asked the Relascope company if he could be their representative in Canada, and formed a business to do that. Since they had met Mike, they knew he would do it well. It is only a small drain on the time he spends running his farm near Nanaimo, and is a contribution to the profession. He is the only person I know with a specific budget for concrete, and builds additional buildings on a regular basis. Being a farmer's son, he can build or fix anything.

He did sometimes run afoul of overeducated lesser minds. Once he was called up in front of the manager to explain an "error" in a formula the company used, and which had been "caught" by some over-educated and puffed-up staff. They had not checked their work by doing an example, of course, because they *knew* the right equation. They showed off in front of the manager by deriving "the correct" equation, and pronounced that the current formula was off by a factor of 10 (as if that would not have been noticed by the practical cruisers downstairs who were actually doing things). Mike asked them if they got the factor of 1,000 in their equation from squaring the number of metres in a

hectare (100m on a side). "Yes", they replied. Mike then suggested that "even a dumb timber cruiser" knew that 100 squared was 10,000 not 1,000, that if they had checked their work they would have noticed that - and he would accept their apology whenever they chose to offer it. They never did, but they did not nip at his heels again.

When we drank wine in Germany, Mike always had a much better pallet than I did, and a memory for vintages to match it. In Ockfen, we walked into the famous Ockfener Bockstein vineyard, and the owner had us in to try the wine. There is something about Mike's smile in situations like that which opens doors. Years later, when I visited the same vineyard with another friend, we handed her a can of smoked salmon – her immediate response was "Oh yes – *the salmon people from Canada*!", and the hospitality rose several notches.

A beer drinker, Mike enjoyed the German brews, and decided to bring back beer steins from places we visited (17, as I recall – being a big guy, he carried them all). When he wanted one, there was sometimes a reluctance to sell them, but then Mike would specify that he wanted that mug - no need to wash it, because he drank their *wonderful* beer from that very mug and wanted to remember it when he was back in Canada. That always did the trick, and in one case they brought out an extra one (free) just in case of breakage. Wonderful technique, applied instinctively.

People react well to small touches that are genuine, and Mike does that naturally. Few of us can do it as well, even with a conscious effort. Always travel with someone like Mike if you have the choice. The downstream advantages are considerable.

Mike's wife Julia, a horsewoman, had never really traveled. On the second trip to Salzburg with Mike we took our wives, and I think Julia was uncomfortable at first. We lunched on top of Alps, met wonderful people, and saw the Lipizzaner Stallions in Vienna.

Carolyn Iles and Julia Fall try on sunglasses at the Hesske optical shop in Salzburg.

It was a splendid trip, and after that Julia became a traveler (and a German Wine drinker). She was soon in balloons over the Valley of the Kings in Egypt, on Segway adventures with her group of ladies that travel together, and she still travels regularly. Travel is not a natural thing. It is learned by doing it, as most skills are. The sooner it starts, the better – like with any investment.

Jim Wilson

Jim is a cruise compiler in BC, and has cruised timber on the coast and interior. The provincial government dominates the sampling done in BC (for better or worse), because they own virtually all the land base, and demand that field work be compiled to their standards. The programming for this was done by people outside the Ministry, mostly because the government staff did not have the experience or judgment to do that work. Before many years passed, the number of programs dwindled to just a very few,

and Jim Wilson was one of those few who maintain one – and to my mind by far the most innovative and competent compiler in **Coastal BC**.

Jim is a flexible and imaginative thinker, who loves ideas and is very expert about the details of his business. Best of all, he loves to test ideas and make things work. Any time I had a problem that required data, I would call him up. Although he could never release data that he kept for clients, he could always check an idea requiring thousands of plots to graph or establish an average. This led to many improvements and examples, some of which ended up in my books or in the John Bell Newsletter.

Jim Wilson and John Bell in Maine

One year, John Bell and I were invited to give a course in Maine. Our host was **Aaron Weiskittel**, and we had our usual problem of obtaining and processing field data. We invited Jim to come along, and he impressed the professionals at the course with his computations and display of the data. When Jim returned to BC, he wrote a wonderful Excel-based program for VP cruising that included all the right statistics and excellent graphs of the data - but few people were interested. Most people were satisfied with compilations that were uninformative and taught them nothing. Because of this, BC continues to sample inefficiently and remains uninformed – but happy. Sometimes you have to just do the work and patiently wait for the world catch up to you.

After the Maine course, Jim and I took off during their "color season" to see Maine. We climbed Cadillac Mountain, stopped along the road to eat blueberries, and had a great time. When you go to conferences, you need to take the time on the way (there or back – or both) to see some of the world. Merely attending the conference is a lost opportunity. In addition, once in a while other people at the conference make some wonderful offer that you really want to accept. Don't schedule yourself tightly – no matter how important the work at home seems. I have lost many opportunities because I "should" get home to do work I have long since forgotten – but I have not forgotten the lost opportunities.

Jeff Kerley

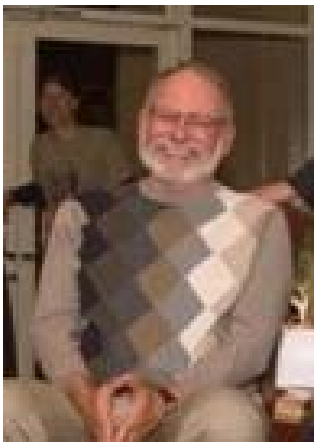
I named the young inventory character in my 3rd book after Jeff. He was always ready to try things, and has managed to survive in the very competitive world of consulting field work during some really tough times. Even his young kids caught a bit of the entrepreneurial spirit, and I had them design greeting cards for me. Jeff was one of the first to try 3P sampling here in BC, and organized a wonderful John Bell training session on Vancouver Island.

Kim, Jeff Kerley, and John Bell

Jeff was in a bureaucracy, and was lucky enough to escape before it dulled his ability. Only a few folks can work in a large organization and thrive under those conditions. He often meets with Jim Wilson and myself at the local Crow and Gate pub for what we term "quarterly meetings", called whenever we needed to catch up on what is happening in the forestry world and exchange good stories. Both of them made great suggestions that I put into my books.

Bill Hay

Perhaps the best example of someone who thrived inside a bureaucracy was **Bill Hay**. Bill worked for the **US Forest Service** for many years. Somehow, he could always arrange a John Bell short course at places like Lake Tahoe. He would go during the off-season, and the cruisers ended up in rooms with hot tubs in them. We were a hit before the course even started. I have no idea how he manipulated the paperwork, but he always did – and without being overcome with frustration (or annoying the system). Such people are very rare indeed.



Near the end of his career, Bill formed a "TEAMS" group that was a quasi-consultant inside the USFS. The folks working there maintaining some employment and other benefits with the USFS, but worked for other clients too. There were no buildings involved. Everyone had a car, a phone, and an internet connection. The virtual office really existed in his group. Before long, they were over a hundred people with a multi-million dollar budget. Some of the profits went back into education for the Forest Service, so their people came to courses for free. All this was inside a large bureaucracy, and anyone with a lick of sense would know that it was impossible to pull off, but he did it. Bill was that kind of guy.

Eventually succumbing to cancer, he kindly left me some old measuring instruments. Bill never missed a chance to be of help or to learn something. Such people are rare in a large organization. It would have killed me, I am quite sure. I had enormous respect for Bill, and enjoyed his company.

Carl Särndal

Särndal is quite a famous statistician. When I went to UBC for a PhD I particularly wanted to learn more about multivariate analysis, and signed up for a class taught in the business management faculty. Carl taught the class, and at the time I had no idea who he was. I was pretty lost in dealing with the math, but there was a very brilliant young lady in the class that was a natural. I suggested that I understood the logic of this work reasonably, and would help her if she could handle the math. She even corrected Särndal as he was writing equations on the board. She just seemed to instinctively think in matrix algebra, and I absolutely could not do that.

Carl Särndal , who continues to be quite an athlete.

We had class projects, and one was to produce a data set with a "suppressor variable". That was a new variable that you added to a regression, and when it was entered it would flip the sign of one of the previous coefficients from positive to negative (or the reverse). This was because of a strange combination of covariances that sometimes occurs. Our first project was to generate random number sets until we got the necessary covariances, and then demonstrate the affect by doing a regression.

For some reason I was distracted, and forgot the assignment until the night before. That was not a good way to make a first impression on the instructor. There was no chance to get to the computer center to do this assignment, so I sat down and drew out some lines on a simple X,Y graph. Both lines were positive in slope, like the output variable, so they would individually have positive coefficients. On the other hand when one of the lines was subtracted from the second line, the combination exactly equaled the output variable. I measured off the distances on the graph; put them into a regression equation and it flipped the previous coefficient exactly as required. I found that you could also have a third variable that would reverse the coefficient yet again. I wrote it up and went to class the next day.

After class, I went to Särndal to apologize. I explained that I had screwed up the assignment, but had handed it to the graduate student who grades them. Instead, of the random number approach, I did manage to cause the coefficients to reverse using a simple graph and reading off the numbers from it – and could also make the coefficient flip multiple times. I hoped that this would be acceptable without too much penalty on the assignment, and perhaps he could intervene with the person doing the grading. He gave me a strange look, and asked for me to explain that again – then for a 3rd time.

"You know", he said, "*nobody* knows how to do this and has made this connection. You could publish this if you wanted to – and who are you anyway?" I had to explain why a forester would be in his class, and took the opportunity to again apologize for messing up the assignment. "I'll tell you what", he said. "From now on you just ignore the class assignments. You do anything that interests you, and hand it directly to me. Skip the graduate student - I will tell him that we have a different arrangement."

I found this a very interesting response. This was *not* the usual way that professors would act when a student disregarded their instructions. He seemed to really appreciate someone who viewed things differently. I never did publish the method, but did later use it in a chapter for one of my books. I think that it is a nice example of how a very abstract mathematical construction translates well into a logical and perhaps practical situation when you take the right view of it. My lack of organization created a time crunch that gave me an idea I would not have had otherwise. This was not the last time that would happen.

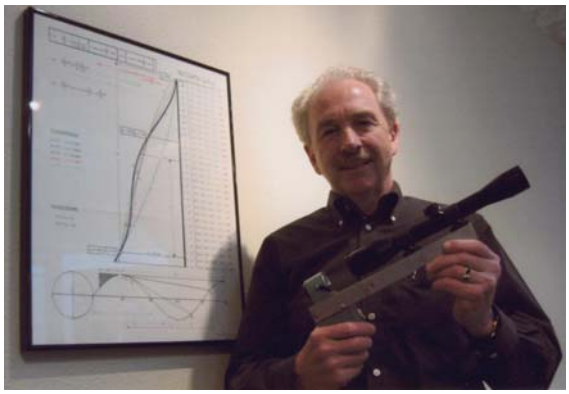
Apparently Särndal had come to Western Canada to polish his English, after spending time in Quebec getting his French more refined. He would eventually have a dual appointment with Statistics Sweden and Statistics Canada. A person at his level can get a job anywhere in the world that they want to. Although I am sure that he had the ear of some of the top people in the world, he had time for a lowly graduate student, and listened as carefully to my idea as if I had been someone of far greater consequence. I have tried to make a habit of doing the same thing, and every really interesting piece of work I have ever done has come from listening to a question someone has asked. Very seldom has the person asking that question been a forest biometrician.

At the end of the course, I presented Särndal with a Con-Tac-Tix game (invented by the poet and Danish mathematician Piet Hein) with a note of thanks, and he seemed to appreciate it. Later, I also asked him to be on my PhD committee, and although he knew nothing about forestry he did that. Many years later he wrote in my copy of his *Model Assisted Survey Sampling* "To Kim Iles, remembering delightful discussions years ago at UBC about imaginative statistical methods".

I once had to deal with a rather puffed-up professional who was citing their view of the world and pompously telling me "Särndal said something like that in his book". "This book?", I said innocently, handing them my copy. When they opened it and noticed the inscription, their view of the world and their place in it changed a bit. Over the years, Carl and I have connected once in a while, and I have obtained copies of his other books – always warmly inscribed.

Jim Arney

Jim was another of John Bell's many graduate students. He put a rifle scope in front of a Relascope and used it for precise upper stem measurements as a practical and inexpensive dendrometer. As Jim tells it, this work prevented Bitterlich from patenting his Tele-Relascope in the US. Jim is primarily a modeler, but one with a very practical bent. He worked with Weyerhaeuser for several years, with Mason, Bruce and Girard, and then formed his own company – which for a time was in partnership with Don Reimer in BC. His growth model, and the attached inventory and data processing module, is used on a massive area of private and public land in the Western US.



Jim, with his adapted Relascope. Behind it is a Walter Bitterlich drawing I gave Jim describing tree form using a Relascope.

At present, he is trying to retire and leave the model and his system to a group which will maintain it for the good of the cooperators now using the model in running their forest inventory and growth projection.

Jim was the first chairman of the modern Western Mensuration group, and has been one of the strongest proponents of trying to keep it practically oriented (a constant struggle). The group he got together many years ago to discuss forest modeling was, perhaps, one of the first meetings of the group.

I especially remember one meeting where he suggested I loosen my tie by the pool. "One wears a tie, or one does not", I said – "one does not *loosen* it". So at that point he pinned me down and removed it by force. I am also informed that there are photos still around of us both trying to demonstrate the proper way to vault the side of a convertible into the back seat, bypassing the use of a door. There were bruises over that, as I recall.

The WFCA talked Jim, me and **Larry Zuller** into giving an integrated course on inventory (me), GIS (Larry Zuller) and modeling (Jim) for forest inventory. It worked because we all had actual experience in doing this work, and an appreciation for all the details of the work – and a few good ideas for avoiding disasters we had all witnessed. It was such a success that we repeated the course quite a few times for several hundred

people by the end of the run (here, again, it was **Richard Zabel** of the WFCA that made things happen). Practical people just kept turning up for it, hungry for practical advice about how to do things (not theory). It was exhausting, but enjoyable.

The problems in each of these fields are not difficult to solve – but the ways to think about the issues are hard to see, and it's always hard to convince people. With the right view and a few practical ideas, success is not so difficult. That was where we might have made a difference. There is simply no substitute for listening to someone who has had to solve and integrate practical problems for many years. Jim is one of those people. The integration of many problems into practical solutions is not as simple as it seems to those who have never done it.

Jim maintains one of the largest sets of permanent plot data that is available, and makes practical use of it in his modeling work. Modeling is not my specialty, and I put considerable store in what Jim says about it. There is a constant discussion about whether models should be adjusted by the users (the potential of abuse is obvious) or whether the model should be considered quite sacred and authoritative (the potential problems here are also obvious). You really have no option but to use (and perhaps to trust) models for combinations of silviculture where you have no data. For other situations, I think the setting of bounds or adjustment of the model makes sense. My impression is that this is Jim's belief too, but his opinion in the matter is superior to mine.

One year, Jim's Biometrics Institute was asked to put on a course on Carbon Credits. It was early days in that process, and we had enthusiastic rookies, some old hands who invested *serious* money, and a mixture in between. I remember one exchange very well. I was talking about a technical issue, and saying that there was actually no way to hope for reasonable clarity on a particular point, when a young enthusiast broke in to say "well, there is actually some research about …". Immediately, the serious older investor who had asked the question (without looking over at the kid) raised his hand to stop him, and said in his southern drawl *"I want to hear ... from the guy ... with the gray hair*". It stopped the kid dead in his tracks. It was actually a wonderful lesson, on several levels, for the people who were listening. Teaching with Jim was always fun.

Craig Anderson and Bruce Stevens

I think of these two as a pair, because they showed up at the OSU short course together. They immediately stood out from the crowd. They were quick thinkers, and missed nothing during the week. They showed up again at John's request to talk about their agency (the BLM, at that time) and what they were trying to do there.

When we were talking at one of the breaks, the idea of doing stratification differently came up. They asked if they could stratify after the fact, or perhaps during the cruise. The average would not change, which was the main issue. I said that there *was* a statistical problem for the Sampling Error with stratification after the fact (that is, putting plots into strata groups based on the tree count on them). On the other hand, the use of a systematic sample often made a reasonable reduction to the *actual* sampling error, and the two issues might just cancel each other out on a practical basis.

While the post-stratification would reduce the *calculated* sampling error, as long as it was done within reasonable limits the reduced calculation might be more appropriate than the larger (and incorrect) random sample formula would compute.

The BLM finally agreed to look at it, but did not actually do any work until a meeting in Portland. It was a typical disaster. The young biometricians who were sent to "help us out" did not know the subject, the players, or the situation – and with one exception did not have enough sense to listen instead of speak. Craig and Bruce could easily have punched them out, but strained to keep their temper. No wonder practical people who actually know the questions and the probable answers are unimpressed with "researchers" lacking both experience and manners.

The BLM, because of the cost savings (which the managers understood), and the pain savings (which the cruisers understood), finally got around the resistance, and the method was accepted. The researchers, of course, had to meddle with it (inserting unnecessary errors) and rename it (so the right people got credit and control). It was such a typical debacle. Here was part of an agency, facing improvement by the working folks who actually knew their way around the real problems, doing their best to resist it. Eventually both of these excellent thinkers went to work in Alaska for the USFS.

They are two great examples of what a good mind and real experience can contribute. I was so impressed with them both that I specifically listed them in the dedication of my third book, and to my *great* embarrassment, Craig's name was dropped off the page at some point. It was a real mortification for me. I did not know until the book arrived from the printer. The details in life can just kill you sometimes.

I remember one discussion with Craig at the dinner John Bell arranged for the students during the short course. Craig had a bet with some of the other cruisers on who could get the best sampling error. Craig just moved the trees between plots until he got a consistent tree count. That did not change anything in the results except the statistics. It was a clever insight. He was a thinker.

Norm Shaw

Norm was both a qualified scaler and accredited timber cruiser, and as practical as they come. During the design of the **Vegetation Inventory of BC** he was a great help. He taught forestry at the 2-year **BCIT** program in Vancouver. The students at BCIT have always been a good bunch. It is my general impression that people who have a technical degree have a much better attitude than many university students, and the technical folks that later go on for a University degree are especially good material. Since most of the people doing the design work were doing it on a volunteer basis, one day Norm put things into perspective for an overly ambitions chairman who wanted to assign him some stupid project by saying "*I'm sorry, **you're confused**. I don't work for you".* The inventory design team had several people who did not play well with the small number of bozos who were mistakenly assigned to it. This had a wonderfully cleansing effect on the process. Norm's teaching talents came in handy when it was time to train field staff for the inventory process.

Norm had some intestinal troubles early in his career, so his doctor suggested that he get into something less stressful. Norm had been a well qualified sailor, so he became the captain of a yacht for a rich owner, and sailed the seas for several years. His medical problems cleared up in the process, and for some reason he came back to forestry. It's lucky for us that he would give up such a delightful life. I think Norm wanted a profession that mattered – and teaching does. In his younger years he and his wife Margaret sailed together into a variety of places, some of them a bit dangerous.

After retirement, he successfully raced cars (a Mazda Miata, mostly), and did his own work on a variety of sports cars. I remember a drive in his Sunbeam Tiger that was quite invigorating on a nice summer day in Vancouver.

⬅ Alec Orr-Ewing and Norm Shaw

Alec Orr-Ewing ➡ during his skinny years

Alec Orr-Ewing

Alec was also on the Vegetation Inventory design team, and is one of the most experienced and talented cruisers in the Province of BC. His father was the first PhD in forestry from UBC, and had a very distinguished career in Genetics. During the Second World War, his father was imprisoned in the famous Colditz prison, because he had a tendency to escape. A forest history book was written about his life, and he was the first recipient of the Outstanding Forester award in BC.

Alec, however, chose to become a timber cruiser, and he is a fine one. He has little patience with fools, and this makes life around him a great deal of fun. One evening we were in a bar when the guy in front of us was acting badly. Alec said "you know, I think someone has to teach this guy some manners …", and he stretched his tall frame up from his chair. "Oh great", I thought, "I am going to be killed in a bar fight" – then he continued his sentence to say "but it doesn't need to be us", and led the way out of the room.

Alec had, quite rightly, little respect for people with degrees or titles instead of experience and ideas. During one meeting, a young Ministry biometrician (who was a good guy, but inexperienced) suggested that we should consider using Fixed Plots instead of Variable Plots for the inventory. We patiently explained that this idea was a *very* stupid one, but he continued to suggest that we should think about it more seriously.

At last, Alec had enough of it. He leaned forward across the table and said "If you say Fixed Plot one more time, I am going to rip your head off and stuff it …" (well, you can imagine the rest). The young PhD, fresh from the University, had never been addressed like this, and sat there in temporary shock. Alec said "I think I need to have a smoke", and walked out of the room. Everything was quiet for a moment, and, as I recall Norm Shaw said "Well, maybe Alec shouldn't have said it *exactly* that way – but **he is right**, of course". It was a beautiful moment, and it did not stop there.

After a short break for lunch, we came back and the young man told us that he had called his previous major professor at the university, "and he too agreed that Fixed …" At this point, Alec quickly raised one finger into the air in warning, and the discussion suddenly stopped and died. Alec's input on the inventory was excellent, and the same was true of the other practical people involved. Their attention to detail and field

experience made all the difference. In a large inventory, the details will not kill you (the wrong ideas do that) but the details *will* grind you down, ruin the budget, and clog up the works to such an extent that you lose momentum and support.

Ray Granvall

I met Ray at the OSU short course in Corvallis Oregon. It was obvious right away that he was different. The course ended on Friday afternoon. On Monday I heard from him. He was impressed with an example I gave showing a graph of the running average and statistics for 100 samples – so he had done it with 1,000 plots over the weekend. Ray was like that. In addition, his staff of **Larry Ismert** and **Craig Amundsen** were the same; innovative, hard working, and good listeners – no fools in that company.

Ray's father worked in the Redwoods, and Ray learned to run everything, fix everything and improve everything on a logging show. That sort of experience on the ground pays off forever. He later got halfway through a Masters degree, but you would never have guessed it (the same was true of some of his crew – they were generally far better educated than the folks they dealt with). That background went into making his first rate consulting firm, which was called Cascade Appraisal Services.

Ray traveled when working, and liked Marlin fishing and Alaska. I invited him to go with me to visit Bitterlich one year. He dropped out at the last minute because of a heart problem – frankly I was relieved that it happened somewhere I did not have to deal with it. Ray not only had a long list of medicines, he knew them by heart and all about how they worked. You would never suspect this, because it is hard to imagine a more hearty and healthy looking guy. He could safely deal with any crowd of Alaska drunks you might run into, and would be a great guy in any tough situation.

Ray, flying in a B-17 over Portland Oregon.

Ray had a large and impressive research library, and wrote a reference book called *Sitka Spruce - An Economic Perspective*, as well as confidential reports on projects that would tell you much of the history of forest inventory in Alaska (and elsewhere) if you saw them. He ran a dendrometer on the famous Redwood Park 3P inventory. He was not just a highly qualified timber cruiser and scaler, but a registered appraiser as well – and he valued many properties and mills throughout the world.

His keen memory (only matched by Mike Fall and Lu Alexander, in my experience), and his really extensive contacts in the industry made for many interesting dinners, although you knew that he never said anything that was actually confidential.

His preparation and extensive experience also served him well in legal testimony, and he is well known as an excellent expert witness. Visiting Ray at his home in Wilsonville was always the highlight of a trip down highway I5. You could just not help but learn a great deal about the inventory business and the historic characters and operations – particularly in the Redwood country or Alaska.

Ray, like Lu Alexander, was that rare breed that had been just about everywhere that counted, was there when things happened, and with the people that did it. His stories were not dulled by the passage of time. His wife Jackie, who sadly passed away from cancer a few years ago, was the kind of lady who causes Italians to be spoken of with such affection in this world.

Rick Crowther

Rick showed up at the OSU short course some years ago. The people who come to the course with 2 or 3 years of experience sometimes think they know it all, but those with 5-10 years of experience have had all the stupid washed off them by the time they come. They are the ones who listen and then change the business. Rick was one of those. He asked about a particular problem they had in his ranger district, and I told him what might work. He went home, did it, and earned an internal cash award for innovation.

Kim and Rick in California.

A year or so later, Rick came back to OSU and he said "So, what else should we try?". 3P sampling was the next thing he took on, and he again made a splash. He later invited John Bell and me to visit the USFS in California to work out ways of verifying their 3P cruises to the satisfaction of the companies that bought their timber. He was well ahead of most of his peers in the profession, and great fun to work with.

These kinds of people are invaluable to the profession. A few years later I asked him to be a guest at the BC timber cruisers meeting. The first thing he did was stand in front of the group and say that he needed proof for his boss that he was really here for work, not just having fun, and took a "selfie"[2] with the group in the background. He was an instant hit with the group. Cruisers know who the real people are, and Rick gave a great talk. He later told me that this was his first real speech to a group like that, but you would think he had given speeches all his life. I think the cruisers were instinctively drawn to someone that was honest and loved the work as much as they did.

On the side, Rick raised waterfowl, and sold them around the country. As we drove along the BC coastline he would say "Harlequin Ducks - $2,500 per pair", Buffleheads - $500 a pair", until we lost sight of the birds. A famous waterfowl artist (Sherrie Russell Meline) lived in Mount Shasta and would often come over to make paintings of his waterfowl collection. She was awarded the Federal Duck Stamp with one of his Ross's Geese. He sent me one of her signed prints of his pintails, and it hangs in my hallway. Many of the people I enjoy the most have outside interests of this sort. It can't always go smoothly at work, and it helps to have something else to think about.

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[2] This was before the term "selfie" was invented – now it would not have the same impact. I think an essential part of the affect was that he used a flash, which somehow "touched" people in the audience.

Ken Desmarais

I met Ken by accident through an article he had written that was cited on the Internet. He had picked up the idea of Big BAF sampling, and was using it at the Fox Forest in New Hampshire where he worked. Like the other people who spread the idea, he understood the principle right away and just started doing it. His experience led others in the area to start using it too.

With Ken at a biometrics meeting.

Ken came out west to give a talk about his use of the technique, and we had a wonderful dinner in Leavenworth Washington; a Bavarian style town that is worth visiting. He also tested "Distance-Variable Estimators" for permanent fixed plots, and found it much more effective than traditional fixed plots. Others have noticed that too.

Ken is a good example of someone who innovates. The first requirement is simply to have an open mind. These people are spread thinly in the world, but there are enough of them to make a difference. They don't "do research", they just go out and do things.

Sam Boyd

Sam Boyd had worked for Don Reimer for several years, and I came to know him through that connection. Sam had worked on the famous Ludwig "Jari" Pine project in South America that was such an enormous disaster in many ways – and in others such a model of imagination and boldness. I gave bits of sampling advice to Don and Sam over the years, and eventually Sam moved to California.

Sam Boyd in California, at the Pacific Lumber Company

In our first real collaboration, Sam had just started with the famous **Pacific Lumber Company** (PLC) - a great Redwood cutting, long-running, company town operation. It was a great slice of Middle America small-town life from a past era. They had their own museum in the middle of the town (along with the theater, store, hotel, etc). Sam had just joined the company when he called me on the phone. "Kim – I have a problem. I have to go tell a Vice-President in the morning that he has just wasted almost a million dollars on a new inventory that we can hardly use. Any suggestions?". Sam was tasked with predicting the logs that the mill would process.

Sam always got right to the point. A quick conversation cleared things up. The previous consulting company had put in thousands of plots, with limited site indexes or ages, and broad types with design problems – they had a total volume, and little else. This has happened before, and will happen again. This took place before Sam arrived, but the VP might assign him the blame anyway. They had lots of planning problems because of a very restrictive Habitat Conservation Plan.

I told Sam to tell the VP "We will not be losing the company again because we don't know what it's worth, and we are now working on the inventory to improve the detailed planning for the land base. The total we have is valuable, and once we spread it out intelligently we will have a very good product. No more field work will be needed".

What we did was to match uncruised stands with similar looking cruised stands, and copy the data into those uncruised stands. We moved those stand volumes up or down a bit, using field staff knowledge, by changing the Basal Area Factors of the data. We then calculated those stand volumes by species and re-balanced them to the total from the previous inventory (with thousands of plots, they were pretty good totals). We now had reasonable stand-specific data, a workable inventory, and an unbiased answer with a valid set of statistics - and with zero new plots. It was one of the first instances of applying the "Total Balancing" technique I would publish years later.

> There is a great chapter from the book *In a Dark Wood* by Alston Chase that describes the earlier Pacific Lumber Company takeover. As I understand it, it goes about like this.

The company did not seem to know what their inventory was (or did not report it for tax purposes – opinions differ). A Texas billionaire sent two different consultants down to check the inventory, and they both gave the opinion that the inventory suggested a company value of about twice as much as the stock market thought. He launched a takeover bid, and by the time the company clued into the situation it was too late. The family company, which had gone public because part of the family wanted more money, was taken over. The billionaire pulled his investment money back out (so he now owned the company at no cost), went looking for other prey, and made PLC continue to make a profit on borrowed money. Under this debt, the company struggled to cope.

When the PL Company was in really big trouble, I went down there again. There was about a billion dollars in the air during the bankruptcy process, and the lawyers needed a quick inventory that would stand up in court. Knowing that the old inventory (large as it was) had problems in their quality control, I suggested a new inventory. We got it done in about 6 weeks, and the numbers probably convinced the court to give the company an advantage of one or two hundred million dollars in the process, although they were still forced into a bankruptcy sale. It was a sad ending for a lovely company.

A family name always improves a company. It never quite operates with the same ethics and attitude once it has gone public. I shudder to think what was lost in the piles of paper stacked in rooms in that company town. They had a set of the book *American Woods* in the museum attic that would have sold for about $30,000 if the rats had not reached them first. A hundred years of old records for the trains, the maps, the tools … all probably junked. If only there had been time to save them – drat.

Kenny Lucas

Ken was working as a contract timber cruiser at the Pacific Lumber Company. He had a furious mind, and got excited by new ideas faster than anyone I have ever known. If you suggested something Friday evening, he had it tested over the weekend. I was so impressed that I put him on the list of people to whom my 3rd book is dedicated.

Kenny, when we visited the replica Nina from Columbus's voyage.

When we needed a supervisor and quality control person for the bankruptcy cruise, I hired Kenny. He knew where the bodies were buried on the former work, and soon we were out at dinner talking to a friend who knew all the details. It was enough to decide on a new inventory. Sometimes the errors of design and execution of an inventory do not result in big errors – but they sound very bad when revealed in court.

Ken was there every morning before the cruisers we hired. He had the plot allocations ready, stayed later than anyone, and noticed every problem before I did. He saved my bacon on that inventory. I could never have done it without him.

Kenny was a voracious mind. It was exhausting just being with him. He wanted to meet with you every breakfast, lunch and dinner that you were free – as well as every minute that you had to spare during the rest of the day. He was one of the first people in California to use Big BAF cruising, and I was soon getting orders for books based on the obvious increase in production that other contractors were now noticing. He never missed testing, improving and using an idea.

Later, he moved into work with GPS and GIS systems, which he learned so well from making them work in forestry. Here again, he was ahead of the pack because he just had to know every detail about the systems, then make them work better. Kenny was a joy. Although some people in the company found him exhaustively intense. I never did.

The really inquisitive minds of the world are seldom attached to PhD's. It has nothing to do with education, although they benefit from it when it happens to be available in their lives. These people are also absolutely reliable, and all you have to do is give them the tools, then step aside and let them make you look good.

Doug Corrin

Doug was a qualified cruiser, and he instructed at Malaspina College, a 2-year college in Nanaimo, BC, where I live. Later it turned into a 4-year university (Vancouver Island University). The college taught a chef school, small engine mechanics, truck drivers, and all sort of practical skills. Consequently, they hired real people who could actually do things as faculty. It will be years before they degrade into a modern university, because they are so healthy at the moment. Doug was one of those practical people, and was hired for their forest technician program. Doug was a great teacher and innovative thinker. He arranged for one of the first Canadian 3P courses to be taught at Malaspina.

It was Doug that suggested the name "Big BAF sampling" for one particular form of distributed VBAR sampling. He was also one of the first to try it out.

Doug was the reason I wrote my first book, *A Sampler of Inventory Topics*. He was at my home for some reason that I have long forgotten.

"You should write a book Kim".

"Yes, I want to do that some time, Doug".

"You should start today".

"No, I'm busy this morning on a project".

"What are you doing *this afternoon*, Kim?

"Well, nothing, so far"

"Tell you what then … if you start writing the outline this afternoon I will bring you a bottle of *good* German wine".

For some reason that I absolutely *cannot* comprehend, I found myself saying "OK Doug, I'll try to get that done …", and I started on my first book that afternoon (*A Sampler of Inventory Topics*) – it took about 6 years to finish. Without that small insistent bribe, I may not have done it at all. Doug is a man who understands people – and perhaps how little it takes to bribe them at the right time.

Doug designed a web-based "app" to diagnose tree health issues guide based on a data base rather than the usual binomial key. He recognized that the traditional binomial key approach was far less flexible than entering what you knew and then checking the remaining options in the database. You could get on the wrong track with a binomial key, or just get stuck making individual choices.

Not many people think in such alternative ways and change a format used for *centuries*. We need people like that. He didn't write a paper about the possibility; he just went ahead and did it. I expect some somber academic paper to appear any day now to suggest the same thing, with a cascade of references in years to come about "the introduction of this revolutionary idea" by that author. Doug's teaching methods are similarly innovative. At the 2017 graduation for the university he was recognized with an award for his innovative teaching.

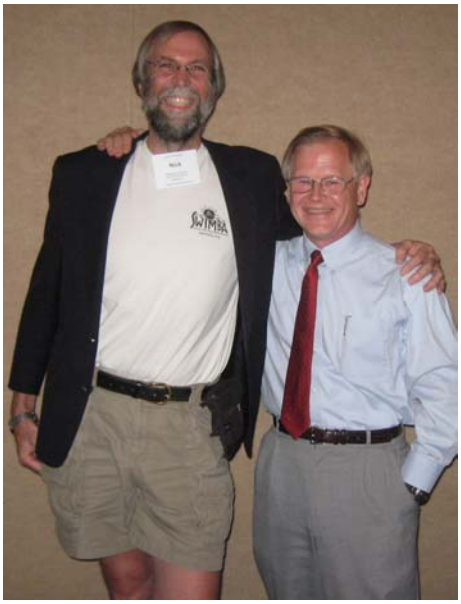
Nick Crookston,

Nick ("tall Nick", to many) is a character. He once wrote a computer model for the recovery of budworm-defoliated trees that survive, based on just two trees that were planted in his yard. It still seems to be in use. He was always on the leading edge of computers, software and current thinking – especially about modeling issues, nearest neighbor methods and the "R" statistical language.

For many years he worked with Al Stage, and he had great respect for Stage (as did anyone intellectually awake, but that is not always the majority). He made it a point to make sure that Al's files in the research station were not thrown out. A better colleague I could scarcely imagine.

I remember running a conference that started at 9:00 in the morning. Nick was there at 7:00 working on final preparations and checking the details. "You may not have that much to say", Nick said, "but there is *never* a reason to be unprepared". He was always good company and fun to be around. Fools probably enjoyed him less. While always polite, he was a quick thinker with little regard for pretentious lightweights.

Nick's contributions to the field were acknowledged by his university, and he was given an honorary Ph.D. In my mind, this is the *most* deserved kind of doctorate. The only other instance I know of is Lew Grosenbaugh. Frankly, I had not known that Nick only had a Masters degree. Certainly, he was more deserving than the majority of Ph.D.'s that I have known over the years. A conference always improves when Nick shows up. So does the conversation at the bar.



Nick Crookston, modeling my jacket.

During a boring conference talk one day Nick slid in beside me and said "Kim, is the Nearest Neighbor method really unbiased?". That's not anything I had worked on, so I said that I didn't know - but it seemed obvious that it was not. "Could you prove that?", he asked. I pulled out a pad of paper, and after about 5 minutes, I had a very simple formal proof, using only a few items in a population, that there was a bias. That would clearly extend to many items, but the size of the bias would obviously not be computable. It was, however, clearly biased.

"Of course I know nothing about the Nearest Neighbor method except the obvious", I said. "Why do you ask?". "Well, Al Stage says it is unbiased", said Nick. This was real trouble. Now on my best day I was not qualified to butt heads with Al Stage on his own ground, and there was the additional possibility of some catfight in the USFS involving this issue. Time for me to leave the field … and in haste.

Al Stage

I suggested to Nick that it was *very unlikely* that Al Stage would be either wrong or sloppy in what he said, particularly in writing, so perhaps he had simply misread what Al had written. Nick insisted that this is what Al had said, and "was it OK with me" to tell Al my opinion? I tried hard to extradite myself from this situation. It was a no-win business, and I was up against a first-rate mind operating in his specialty. Not good.

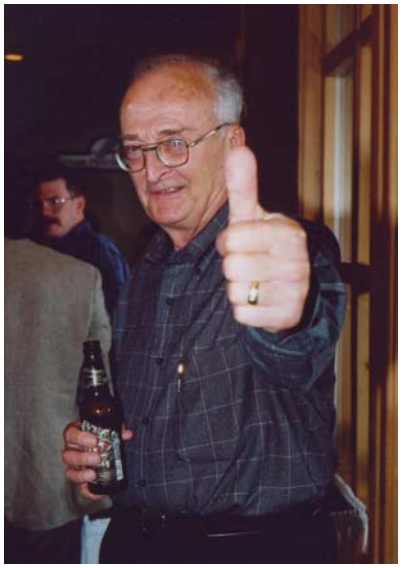
"Are you *right*?", Nick asked. I said that the proof was clear, but perhaps neither of us understood the situation where Al had applied his statement, and I had the greatest reluctance to get caught up in an internal fight of any kind – especially on the wrong side of someone I admired so much. Nick said that he understood my reluctance, but still wanted to tell Al – so I told him to be careful in handling the situation. "It's OK, Kim, I know that Al respects your opinion". Not good, I thought.

A few weeks later, I got a very nice note from Al, with some material he had written. It was along the lines of :

> *Dear Kim, I know how you like these little technical issues and thought you might like to see this paper I wrote a while back. Some people were not convinced that Nearest Neighbor Methods are unbiased, and I think this settles the matter in an interesting way.*
>
> *Best Regards,*
>
> *Al*

Oh crap. At this point, I am obviously in deep water. I don't know what is going on, and Al Stage says I am wrong in what is possibly some internal technical USFS fight. Apparently Nick had told him about my opinion and he was politely telling me I was wrong, and possible that I should put a cork in it.

I read the paper carefully, and found a flawed assumption that invalidated his proof. I wrote an equally polite letter, and suggested something like "avoiding this assumption, the following small proof would perhaps be worth considering". No return letter. Months followed, and I next met him at the Western Mensuration Meeting where he was the honored guest. I met him each day, had several meals with him, and prepared myself for a very bad moment that must soon occur.



We had always had a nice relationship, but Al might have been offended at my interference. On the last day of the conference Al asked if I would join him at a small corner table, obviously restricting the possible audience for a quiet discussion. "Now I'm in for it", I thought. It was a wonderful moment, actually. He said :

"Thanks, Kim - that was a beautiful little proof you sent me. Here is what I am doing next to potentially eliminate or minimize the bias."

⬅ Al Stage, demonstrating the use of his thumb as an angle gauge.

This was an extraordinary lesson, and a great insight into a first-rate mind. In two sentences, he made it clear that he did not mind being corrected, or that I would suggest that he made an error. He did not feel that a correct technical answer to a question would *ever* be inappropriate; and he appreciated the insight.

Clearly whoever was right was not really an issue; the issue is *what to do next* and how to explore the question. This was a very generous attitude and, in my experience, it is typical of the reaction of people in the first rank of our science. What a lovely lesson in professional behavior (I was also greatly relieved, of course).

Many of his former colleagues showed up at that meeting, and he was always very generous in his approach to each of them - and in giving credit to them for their work. There are always some frictions over the course of a career, but you would never know it from Al's conduct.

Al Stage and his forest modeling crew at the conference where we celebrated his work.

Al was best known as a specialist in forest modeling, but his early work included a great deal of sampling (my specialty) and he was excellent at this. He wrote a wonderful paper that was my first introduction to "Sampling from a Sorted List". It was a technique that is probably my favorite sampling method, and I have used it many times over the years. The BC inventory design is also helping to spread this technique. It is among the most efficient methods to employ in sampling, and was exactly the right method to make use of the computer and remote sensing capacity that was still years away. Al saw the potential very early. The paper was a joy to read.

Al's group of researchers at the Intermountain Station developed the Prognosis Model, which morphed into the "Vegetation" models that later dominated the USFS planning. His work was always precise, innovative, and balanced with a sort of wisdom that came across to a careful reader. Because he did so much work *himself*, and in great detail, he saw things that a casual researcher would never detect and often get wrong. His opinion was always rewarding to listen to.

In 1984 (I think**)** we had a meeting of the Western Mensuration group. At that time, we were connected to the Western Forestry and Conservation Association as a small side meeting about measurement and sampling techniques. WFCA was basically a fire group, and they obviously met during a period of low fire danger, and often it was wet and miserable weather. The snow was fierce, and Al Stage and his group had struggled through a snowstorm and joined the group late that night.

Several of us met in the hotel bar at that meeting, and we decided that we were through with this WFCA link and its miserable weather – and we would meet as a group in the summer of 1985. Jim Arney was appointed chairman. As I remember, the hot discussion was whether $25 was too much to charge for the meeting, and whether the USFS people would come at that cost. The WM meetings expanded in size, topics, and geographic attendance since that time (if, perhaps, a bit less practical in some regards).

Al also showed up late at another meeting many years later. It turned out that he had collapsed at the wheel while driving to the meeting. By the greatest of luck, a medivac helicopter was right in the area on another call, and they got him to a hospital very quickly. He joined us the next day, and the medical situation was unclear. I had brought about 20 of his previous publications for him to sign, and each of them was given a nice inscription – often with a clever quip of some sort. He appeared to be the same sharp mind I expected, although one of our group said that during a discussion his memory seemed a bit confused. As I recall, it was later discovered as a brain tumor that eventually ended his life.

Al was capable of great insight, and it was matched with hard work over many years. He could have succeeded in any specialty, and he made a great contribution in the world of forest modeling. This is exactly the kind of scientist that young people need to meet and experience first-hand. Such people are always around, but in small numbers that need to be searched out. It's worth the effort.

Jim Kiser

Jim is one of the treasures at Oregon State University. He was very successful in the GIS and survey field as a consultant, and also raises horses. He was a biometrician at Weyerhaeuser, and headed up a review of their inventory systems (an interesting and informative activity). He brought in new technology and improved things, as well as one can inside a large and bureaucratic company. He then came to OSU to teach. He is a good example of the things you learn by doing, rather than by reading and research.

Driven away by the academic silliness, Jim taught horsemanship for a time, and was later brought back by a Dean smart enough to know good material when he saw it. He introduced field work back into a school which unwisely strayed away from it (in my day we never had a Saturday off). The school is lucky to have him for however long he can stand it. He was a guest speaker at the OSU short course each year, and took over as the director when John Bell retired in 2017.

Jim Kiser, teaching at the Oregon State University short course on Variable Probability Sampling

Steve Fairweather

Steve invited me to give the lead talk at a 1998 international inventory conference in Boise, Idaho. Steve was a different sort of chairman (Mark Hansen was the co-chair), and Steve had a solid practical background. I still think of it as the best talk I have ever given, and that was because of the opening sentence. The talk began like this.

> *Two weeks before Christmas, 1600, some 350 men were killed because of a fool who wanted to be in charge.*

The audience was now awake. It sounded familiar. The ship that this fool sank was raised and featured in National Geographic – and they found secret testimony about the disaster. A lieutenant, who was there, testified this way regarding his captain …

> *The loss was all due to the bad leadership and lack of experience of Dr. de Morga, for trying to be in charge of something he knew nothing about.*

At this point, the audience is actively listening. They knew such people. The fact that he was "Dr." de Morga was great luck. Half the audience immediately responded to the next comment – and you knew right away who in the auditorium had real experience. The talk continued as follows :

> *The ship launched, as ordered. Within a few hours, it sank due to overloading. De Morga, along with many of the rats who so often occupy the upper decks in life, made his way ashore and immediately wrote to Spain to give his stirring account of the battle (before they heard otherwise). You know, of course, what happened. He was promoted. He was rewarded. He was judged a great success (the alternative was simply too embarrassing to consider). He was given a larger command.*

People understood that. While the talk had technical merit, it reminded me that the difference between motivating or influencing people and simply delivering facts is an important one. I also learned what is often said about these situations – leave a lot out of your talk, they can read it later, just deliver the most serious messages.

Because Steve was switching jobs at the time, he and his family ended up doing all the arrangement details for the conference. Only those who have run a conference would recognize what a miracle that was. After some time in industry, Steve became a partner in Mason, Bruce and Girard, and was their Biometrician and then President until his retirement in 2017.

At one of the Western Mensuration conferences at Lake Tahoe, Jerry Allen invited people to bring old and curious instruments. It was an interesting and innovative idea, and put a little emphasis on our technical past. Those touches at meetings make a big difference. Steve Fairweather won the prize with an antique and unusual scaling stick.

Jim Thrower

Jim is another PhD who did not waste his potential. Jim works and lives in the BC interior now, after running a very successful consulting firm in Vancouver and Kamloops for a number of years. He worked with the team on the BC Vegetation Inventory Project, which redesigned the forest inventory system in BC. These things happen very seldom, and people like us train our whole lives without having such an opportunity. He was, in fact, the reason that I took the job of directing that inventory design.

Jim, with his friend Gene Avery. Kindred spirits.

We had heard that an inventory might happen after the hiring of **Dave Gilbert** as the head of the Inventory Branch. We were having dinner in a Victoria Greek restaurant and speculating whether it was likely to work out. "Well", said Jim, "it just needs the right chairman". "Who do you think that should be?", I asked. "Well, stupid, that would be *you*", he said. "The alternatives could be frightening". I don't know if he really used the word "stupid", but it was written all over his face.

Jim, and people like him – by this I mean experienced and knowledgeable thinkers who valued and listened to ideas and who had been on the ground, made that inventory design a great adventure. The BC Inventory Branch still has not managed to do it, but the design was excellent; and the Province has never quite slipped backward to where it was (for which one can only be truly grateful).

Not long after I left McMillan Bloedel, I got a call from Jim to say that there was an overseas gig through the Canadian Government to teach sampling and forest modeling in Argentina. Did I want to join him and split the assignment? It was a great adventure. We taught a few weeks together in the North (jungle area) where Jim had some personal connections to landowners, and then I went south to a small university to teach in the Andes region where they had plantation pines. The terrain looked just like Bend Oregon.

I have never met such hard working and professional people as I did in that course in Argentina. They were still using fixed plots, rather than Variable Plots (let alone 3P sampling). They worked all day (and in English-Spanish translation), then studied in the evening or went out as a group so they could chat with each other and learn more.

I have also never been treated as well as I was on that trip. The people in Europe are well trained in being hosts, but there was something about the warmth of the people in Argentina that was very special. Much of the population is descended from European immigrants, but they formed a very special South American culture. Once, they had a tournament in "paddle ball", and invited me to join them. It soon became apparent that the second-best player in the group had been assigned to me so that I would have a small hope of ever returning the ball. When I finally did, they broke into applause. Such a kind gesture. I would go again in a heartbeat (even without the parrots and waterfalls). The world is just full of wonderful forestry people.

John and Els Armstrong

These two run Infinite Forestry Solution Ltd., a consulting company in the Southern Interior of BC, and do cruising mainly on the **East Side of BC,** though John started his career on the Coast. John is a master cruiser and very imaginative in dealing with practical sampling problems. He has designed several software solutions to help cruisers in the field collect data electronically. Els knows the cruising side of things, ran the compilation end of the business for many years, and designed CompMate, their compilation software program. Both are competent and delightful people, and very little gets past either of them. She is also Dutch, but can be forgiven for that, since it was not actually her choice. It's a joy to see a couple with such combined talents.

John Bell, Els & John Armstrong and myself, in the field (where we belong).

I am often asked to come to the SITCA cruising seminars in the BC Interior, and Els asked Mike Fall and I to give talks one year. As we left, she gave us each a *case* of German Wine. It was a revelation to me. I had never had a whole case of wine at one time (and she did an excellent job of choosing them, too). She had heard Mike and I talking about drinking wine in Germany, and very little gets past Els. I made a note to pick up other ideas for being a host from Els. There are few things that make people as memorable as imagination and careful thought - and gift giving is one of those opportunities to observe that.

John is a listener. After hearing my suggestion for a cruising check that would verify if plots had been moved, he immediately worked out the details, and it is now used in BC for that purpose. Whenever you suggest an idea to John, he begins sorting it out immediately. Such people greatly improve a profession.

Els is a horsewoman, and it was she who decided that the only way for me to complete the outfit I was wearing that year (Bitterlich's cape and hat), and to control husband John during the field session where he and I were presenting field tips, was to use a riding crop. She made me jump into her truck and we roared off to the local store, where she quickly and perfectly backed their pickup into a parking spot. I have always admired people who can do that really well. She would not even let me pay for the riding crop. It turns out that a riding crop gives you quite a whack. On the trip back, I left it in **Alec Orr-Ewing**'s truck (if his wife found it, what she thought is unknown).

Els reminds me a bit of the famous **Betsy**, the secretary for the school forest at UBC. Betsy raised Dobermans (adopting "problem" dogs that needed to be straightened out) and she both raised and professionally judged mules. Do you think she could handle puffed up college kids and graduate students? Some of them would no longer enter the School Forest headquarters building after they had "an incident" with Betsy. She was a great delight.

One day the Armstrong's visited me in Nanaimo, and brought along a bottle of Berncastler Doctor wine. Those who know German wines will understand that. They have improved cruising in BC, and if they were listened to by some people would improve it even more. John was into GPS early, and saw how to use it effectively.

I have often found quick and deep thinkers among timber cruisers. It is true that you can do much of the work without an excess of imagination, but my experience is that timber cruisers are every bit the equal of people who have an advanced degree in Forest Biometrics. The inclination to think and solve problems is a separate issue from the pursuit of formal education. In addition, these timber cruisers develop an instinct that is very often right, and are invaluable in turning a reasonable idea into a well tuned process. Nothing replaces time spent on the ground and knowledge of the details.

Chris Cieszewski

Chris, now living in the USA at the University of Georgia, is Polish. Infectiously Polish - and with the accent to go with it. Lately, he has become more active in Poland, and he has encouraged graduate students from his country, who are a delightful bunch.

John Bell with Chris at the Poland Meeting

I met Chris in 1986 at a talk in Peter Marshall's class at UBC, where he thought some of my comments were a bit outrageous. Unlike others, this caused him to be curious, and we have been friends for a long time. Chris is a fine mathematician, while I have always considered myself a poor one, but we are a good combination when attacking problems. We have published papers together since he has become a professor, and he has been very nice about involving me with the graduate students that he has at Georgia. Chris was a sponge when it came to ideas, and quick to improve on them.

If you meet him, you must ask about the time that he felled a tree in his back yard. I would tell you, but the accent and his telling of the tale cannot be adequately reproduced. Suffice it to say that he has an excellent sense of humor and tells stories well. Like many first rate minds, he is somewhat wasted at a university. All the folks I enjoy in the academic realm struggle to make it better, but are often frustrated with it. The same, of course, happens in companies. It is hard to find an organization of more than 10 people that can maintain a healthy atmosphere, but when you have graduate students you can sometimes create a small environment and insulate it a bit from the institution. In the past few years he has revitalized the Southern Mensuration group, which had died from being too exclusive about their membership.

Chris arranged for John Bell and me to give a short course at an international conference he organized in Poland, and it was a wonderful trip. Poland was impressive to me, and they persist after being invaded by everyone in Europe at one time or another – often repeatedly. Still, it rebuilds, and produces first rate scientists on a regular basis. Visit it if you can. We had a wonderful time, and there are foresters to meet all over the world. These international connections should be pursued whenever you can.

One year I took Chris to meet Walter Bitterlich, and he later had the idea that we should return to Austria and film Bitterlich for historical purposes. Chris got a modern professional digital camera, and we made an effort to film interviews at some important locations with Bitterlich's old friends. Unfortunately, the audio system was faulty, and we did not know that until the trip was over. Still, it was a great adventure, and Chris was right – it needed to be done. I am ashamed not to have thought of it myself.

Chris is an appreciator of people (and not fooled by the pretenders of the profession). That makes him a collector of good experiences with good minds, and no favorite of the 3rd and 4th rate types in the profession (he is a bit like me in that way). We are kindred spirits in many regards, and I greatly enjoy his company. In every business, you find people with great energy and potential. I just wish there were more like Chris.

Bob Keniston

Bob was my professor for Dendrology at Oregon State University in the mid-60s. He required the correct spelling of every Latin name for every tree and bush we dealt with. As the class would follow him around the campus, he would point to a tree to identify, and then keep walking. He was a brisk walker. As the class strung out, you had to judge when to give up and catch the line of students, and sometimes the string would break and part of the class missed the chance to identify a whole set of trees. Could not do it fast enough? How was that his problem? Bob taught students discipline and standards – if they got some knowledge of trees that was good too, but it was not his real contribution.

When I came back from the army in Europe I brought a number of samples with me to give Bob for his collection, but found that he had passed away. You should not wait too long to thank people who are valuable to you in life. I never worked so hard in all my college career as I did for that "A" in Dendrology.

Years later, I got permission to look at his old files at OSU, and found that I had the highest grade in the field lab for the whole class that year. It was an "A *minus*". Bob did not bend his standards. It was a good lesson.

I did manage to obtain one of his old dendrology books to remember him. The name "Bob Smith" had been crossed out and "Bob Keniston" was added below it. John Bell solved that for me. Bob had been adopted, but used his original "birth name" of Smith for a period. He then came to realize that his adopted parents were the ones who taught him how to live and what was important – and he used their name thereafter. I thought it was a nice gesture, and a very appropriate one.

John Bell

John started out as my forest inventory instructor at OSU, and I helped him with his PhD research on 3P sampling one summer. After my time in the army and graduate school, we have continued to teach short courses around the world and were co-authors of technical papers. He is a good friend and a fine example. I owe a lot to John, who is widely considered the nicest guy in our business.

John Bell and his wife Myrna, in Poland

John convinced me to get into the Biometrics profession, although all I got was a "B" in his forest measurements class at OSU. A devoted family man, he taught me to go home at the end of the day and raise my family, even when the work was interesting. As of 2018, at age 93, he has 22 grandchildren and 32 great-grandchildren (I think every one of the male grandchildren is an Eagle Scout). John was one of the instigators of the Pacific Northwest LOGS study (Levels Of Growing Stock) and John had a view to the future It's hard to establish a study that will last decades, and hard to fund it.

John ran the OSU Variable Probability Short Course from 1957 to the 60th year in 2017, and has taught thousands of practical timber cruisers. The people in the course sensed something about John, and he was always in tune with what was happening in the group. He would often say that we needed to cover something again, slow down, add or drop a subject – and he was *always* right. Some people just have a gift for that.

At the end of the week, he typically held a dinner at his house for the instructors, and it was always a great delight. More recently, we would all go to a restaurant, but the fact of gathering and talking about our latest adventures was a critical part of making the team work. Nobody but John Bell could inspire people to take vacation time and volunteer at the course like that. In many cases, they are happy to cover their own costs as well. That went on for nearly 70 sessions at OSU, and several dozen courses done outside of the university. There are not many examples like that.

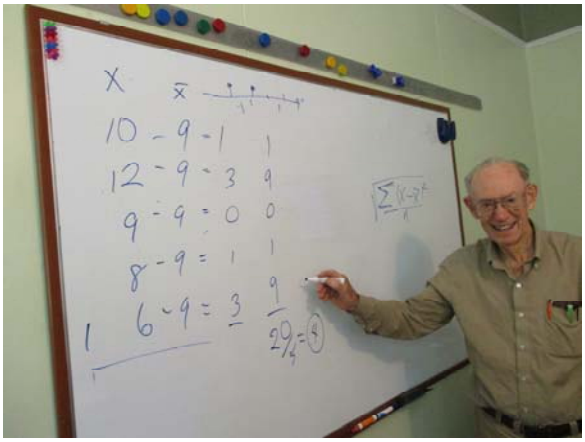
It is just impossible to say no to John. Sometimes you can agree but say it should be done later, but you just *cannot* say no. This was the case with the meeting in Hawaii. After years of John politely and persistently suggesting that "perhaps it was time to do this meeting in Hawaii", **Jim Flewelling** (bless him) took on the hard work of making it happen. There was great concern that it would be too extravagant for people to attend. It was a smashing success. People came from Australia and New Zealand as well (same ocean, right?). In a few years, the people that John met there were having us to Hawaii to give Variable Plot short courses.

John was in the US Army 10th Mountain Division during the war – the famous "ski troops", some of whom started the skiing industry in the US after the war. The WWII 10th Mountain people can still ski free at these places, although in their 90s there is less of that going on. John went through the famous mountain training with the group, but became an officer and was sent to the Philippines when much of the rest of the Division went to Italy.

When John was hired to work in inventory for the Oregon Department of Forestry, he heard about **Lu Alexander** with Mason, Bruce and Girard running around the woods with "some sort of a crystal ball" doing inventory. They were just developing the prism, and were well ahead of the academic work with this new method. John had MB&G do a study and it worked much better than fixed plot sampling. That, of course, was only the beginning of a hard slog to get it accepted. Soon, John and Lu did a publication describing the system. OSU, at least in those days, hired professors for what they knew, and brought in practical people to teach. **Dick Dilworth** at OSU hired John, and the OSU short course started soon after that. It has been done yearly since that time.

The well known pocket-sized forest measurement book by Dilworth was "adapted" (a very close copy) from the book by the retiring OSU instructor **Earl Mason** (*not* of Mason, Bruce and Girard), who apparently did not want to give Dilworth permission to use his book. I knew Dilworth, and he signed one of his books on Variable Plot Sampling for me just before his death from cancer. When John worked at OSU, the 1949 first edition of the Dilworth cruising book became Dilworth and Bell, then with John Bell as the sole author. John still produces the book, and it is used in many places. Lots of people at the short courses were smart enough to get theirs signed.

John, a farm boy and mountain troop soldier, was always fit. He would innocently ask one or two of the husky young people attending the class if they would care to do a little racquetball before class in the morning, and would then whip them soundly. I used to play Badminton with him when I was a student, and I was reasonably good at it, but he was a very smooth and quick player – and that is very hard to beat. One time some fraternity boys saw us playing and asked if we would like to take them on. I suggested that I was a bit tired, and perhaps they could just play John. All they saw was a man older than their father. It was wonderful. These poor twits never knew what hit them. This quiet, gentle older man just drove them into the ground. I finally gave up. I could play Badminton as well as John, but I just could not keep up with him physically.



Someone asked John for a numerical example of calculating Standard Deviation. Off the top of his head, he chose 5 numbers to work with, and the average, variance and standard deviation were <u>all</u> even.

***Nobody* can do that.**

John and I have given courses all over North America, in South America, and in Australia and Europe. It does not matter who teaches in these courses – it's "The John Bell Course", and he is the heart of it. This is because you can say whatever you want in front of a group, and know a great deal – but what they seem to respond to is what you are. John is a fine man, and everybody senses it. They know that he is honest and wants to teach them something useful. When I ask people what they remember about their professors from school, this is the kind of story I hear. Nobody remembers the technical issues – it's always the examples, the stories, their character, or their lessons about life.

John is Mormon, and quite highly connected in the church, although you normally would never know that because he is very quiet about his religion. The Mormons support many of the island cultures in the Pacific, and we visited the Polynesian center in Hawaii several times. It's a good experience if you have the chance.

When he left OSU, John gave me his old "lawyer bookcase" from his office, and I keep it next to my library fireplace with my most prized books in it. He also gave me the leather cruisers vest that Myrna had sewed for him on a treadle sewing machine when he was a young forester. Having mementos like this from people you respect and admire is a nice thing, and the older generation must spend a bit of time thinking about where their things should end up. Remember that when the time comes.

The John Bell Newsletter Team

The John Bell Newsletter was originally a mailed paper publication (1988-2004, for 67 issues), and we also produced a book of the first 50 issues. We got several people to offer articles, and I wrote most of the remainder. **Dave Marshall** did the paperwork and handled the mailing list and the small subscription fee that covered our costs. Because there is nowhere to publish practical and useful work, John Bell just invented one.

The Newsletter crew in Hilo Hawaii for a conference. Kathy Marshall bought us all matching Hawaiian shirts.

(left to right) Kim, Dave, Greg and John

Eventually, it occurred to us that we could do the newsletter without cost, strictly on the Internet. **Greg Johnson** did the initial paper layout and edits for the newsletter and then handled the John Bell Newsletter Internet site. I must admit that the lack of a deadline on the Internet site has made us (me, at least) a bit lazy about writing articles.

It was great fun, and I think many of the ideas we put out there were used. There was virtually nowhere else to publish simple and effective ideas (especially those that corrected the impressions given by "the scientific literature"), and particularly if they were written in plain English. I think the lesson was that the pretentious publications so favored by Forest Science and their ilk are of little use in actually getting things done. This is one of the reasons why working people look desperately for a conference of

sensible people who know the business and have enough experience to offer suggestions during coffee breaks. It becomes increasingly hard to find such conferences.

We are all past graduate students of John, and were happy to be of use to him and the profession in this way. The newsletter feedback from working folks was favorable. None of the academic world read it, I think. That's fine with us.

Bert Husch

Bert was an interesting character. I admired his book, published in the days of typewriters. I cannot imagine the effort typing took, followed by the proofreading of lead type (which was so hard to use in making equations). Illustrations were hard too, and the whole experience was far more difficult than today. He was almost through with the process when he visited his editor – leaving his manuscript in the car. When he returned, he found that the car had been broken into, and his manuscript was gone. At that time, there was no backup, so he started again from scratch (I would just have quit, I admit).

When Tom Beers and Charlie Miller saw the book, they thought it was not as well organized as it might be (not knowing the story of the manuscript), and volunteered to be co-authors for the revised edition. Bert was happy to let them take over. Later, John Kershaw did the same thing with Beers and Miller. They, too, were only too happy to let the hassle of publishing a book fall to someone else. I understand the feeling.

When I once visited with Husch at a conference, he mentioned that he was unhappy with his inventory book, because so much of making an inventory succeed is about problems with people and group psychology - and the issue of forestry is so much bigger. Prodan said the same to me once, and I simply could not understand it. Later, I had the same feeling toward my own first book, which was about the mechanics and details of inventory. I produced my later books to emphasize the other issues, and Bert also wrote a later book (only available in Spanish) about the larger issues of forestry in society.

Bert was in a good position to write his books. He had worked with the UN Food and Agricultural Organization (FAO) in various parts of the world – often those with problems of language, literacy, money and politics. Those in forest consulting get a unique view of many of these issues, and time spent with international consultants is always a very informative opportunity. Who else would know about the problem of land mines in forestry fieldwork?

Bert was with the WWII combat engineers, who came in loaded with explosives on D-day to clear the obstacles (I have a memory of him telling me he was also trained on aqualung diving, but he did not do that on D-day). He then fought his way off the beach and across Germany, watched the bridge fall at Remagan, fought in the battle of the bulge, saw the death camps, and was there for the trials at Nuremburg. During his career he earned a brown belt in Judo in Japan, and I believe that he followed up with a black belt later. He was a serious cyclist before anyone did such things, made his own pottery dinnerware, did bronze sculptures, and made his own furniture from beautiful hardwoods (in a little space in the parking garage for his apartment that could barely hold a sheet of plywood). He was an amazing character, and quite a good artist. His wife, descended from one of the ruling families in that part of the country, was a gracious hostess.

After a professional lifetime of collecting publications, the signed reprints from friends, and books, he donated them to a library in a developing country a few months before I thought to ask him where his library would go when he retired. That was a major lost opportunity. It has been my experience that such people are normally happy to pass along things if they are simply asked – but few of us do, at least at the right time.

We had Bert to the Western Mensuration meeting as a guest one year, and Tom Beers joined us (which is where I heard the story of how they connected as co-authors). Chairman Dave Marshall arranged their attendance, and I picked Bert up at the airport. It was a long drive to the resort, and Bert mentioned several times that he would like to stop at a bathroom – my reply was always "Sure, Bert, there will be one just ahead, but I wanted to ask you about ….", and this went on for several hours, apparently. Finally, this stopped when Bert said "Kim, we need to stop right NOW". All that was available along the side of a connecting road was a large wall of blackberry bushes. Not knowing what else to do, I joined him. I remember thinking "Here I am, peeing in the blackberry bushes with Bert Husch – how great is this?".

Bert must have forgiven me for this youthful stupidity, since he was a very gracious host in Chile when John Bell and I gave a course down there some years later. He was very well thought of by foresters in that part of the world, and was a minor celebrity in Chile because he was the only WWII veteran available to interview on the big anniversaries of D-Day. He wrote an informal account of his service in the army, and his consulting adventures. It was a great thing to leave to his family, and the rest of us have benefitted as well.

Dave Marshall

Dave took over from me as John's graduate student after my Masters Degree. He helped with the short course (and still does) and ran the computer programs I wrote for cruising calculations. Dave was always a delight to work with. He was practical, appreciative, and liked people. He later became a professor at OSU for a number of years, and after that he worked in research for the USFS. He was active in the LOGS study (Level Of Growing Stock). He is a good teacher, and an excellent speaker.

Our carriage awaits, in Salzburg

Dave and Kathy joined John and I for Bitterlich's 90th birthday as we splurged on a concert in Salzburg. The first time the three of us earned some money on a short course (about $3,000 total), we decided to give $1,000 to each of our wives to spend as they wished. Carolyn decided that hers

would be spent on a Salzburg concert for all 6 of us, as well as a horse carriage trip from the Fuggerhof Hotel to the palace in the middle of town. Great choice.

I think the concert was piano and flute, or some such sleep-inducing combination. All three of the men fell asleep during the concert, and we had to be repeatedly prodded into consciousness by our wives. The palace was wonderful, and arriving by carriage could not have been better. It is best to marry women who are better than you are. Our group all did that, and I recommend it.

At the OSU short course one year, Dave slipped in beside me and said "What do you think I just found in the equipment room?". That was obviously an adventure in waiting. He announced that it was a *wooden* Relascope. I said I have never heard of such a thing. "Come with me", he said, and we retired to any empty classroom. Sure enough, it was an original wooden Relascope (which measured many more things than <u>any</u> current instrument). It had a note taped to the outside saying "old instrument – throw away?". It was the nice wooden box that saved it, as is often the case with instruments.

It took us 15 minutes to get it unpacked and assembled, with no clue how it all worked. I remember saying "well, it's not going downstairs to be thrown away, so who will we steal it from?" We asked John Bell. "Oh yes", he said, "Walter left that with me years ago. I guess it is mine, actually". That avoided the theft issue. Now we had to decide who would walk away with it, and each offered it to the other – my view was that Dave had actually found it, so he should keep it. His view was that since I often displayed such things at meetings, I should keep it. I finally kept it.

Years later, when I got another one as a gift from Dave Bruce, I gave that one back to Dave. The USFS Southern Research Station showed up at a meeting, years later, saying that people said I would know what their strange wooden instrument might be. I told them they had another rare Relascope. As far as I know, they still have it. How many others are around the country I have no idea. I only know of a total of 4. My second one was assembled from spare parts in Bitterlich's basement.

An older set of OSU equipment was saved by **Jim Kiser**, who took over and had some idea of what should be put aside for people who would care for it, rather than tossing it out. It is quite true that none of these will ever again be used in the woods, but the design and construction of these instruments has much to say about the clever people involved and the principles that instruments should be built upon.

We now have instruments that operate on principles unknown to the user, can only be fixed at a factory, and in many cases are giving results that are questionable under field conditions. Who decided that this was acceptable? My experience with the groups that build such things is that they know almost nothing about the use of their gear. A call to the factory with a simple suggestion for an improvement might convince you that this is the case. It did for me.

People in charge of equipment should have a sense of history. The number of wonderful things that were tossed out or sold for scrap metal over the years is hard to estimate, and I am sure would make me ill. I prefer not to know.

Dave Marshall appreciated historical paper records as well. He had worked in the USFS and knew Dave Bruce, so when Bruce passed away Marshall asked for the contents of his file cabinets. The material was wonderful, and did not end up as landfill.

Marshall was a natural teacher, although he was not a natural member of what has become a modern university (none of which seem to really value teaching). He was particularly good at making sure that graduate students met the people who built the profession in the past. At the LOGS seminars he would force the young people to sit around with those that not only knew the historic record, but made it happen. Most students would miss such a chance unless firmly pushed in the right direction.

Dave has one of the really fantastic backgrounds of people in forest biometrics. He has seen several budget cycles in academic teaching, research, industry, practical teaching for field people, long range research and data collection, and some consulting with John Bell. This knowledge of the cultures involved can only be put into perspective by being there. A typical academic (if he is unfortunate enough to get what he wants) will tunnel into some specialty hole and never get further afield. The academic world does their young people a great disservice by letting this happen, and often encourage or demand it. If *you* get into that position, *escape*. There is never a substitute for "having been there", and having done real work with real people.

⬅ Dave and Kathy Marshall

Dave's wife Kathy and his daughter Kacey were delightful - and gorgeous blondes. Dave has a photo on his wall with himself between the two of them. I always describe it as "scruffy forester visits the Playboy Mansion". Kathy was from Portland, and is the epitome of quiet class. A very smooth operator and gracious hostess, she often helps to organize the wives attending the Western Mensuration meetings. Everything is better when Kathy is around. She has worked as an assistant to several top people both in university research and state government. It was just the right place for someone of her skills.

Bob Curtis

Bob is a consistent presence at the Western Mensuration meetings each year. He has published a string of reports on the LOGS study. Bob has worked at the Pacific Northwest station since the beginning of time, and knows as much about Douglas-fir and how it grows as anyone in the region. Dave Marshall worked with him for several years. Bob is very quiet, and during that time he is thinking. If you want to know about how trees grow, Bob is the guy to ask. If any research has been done and applies – he either did it or knows about it. His opinion is very valuable.

Greg Johnson

Greg Johnson joined the OSU short course as a student. I gave Greg my photo of him in "hippy hair" working the old Model 33 teletypes that were used for processing crew data at the short course, but wish I had kept it. There is a lesson, here – never give away your only photo of something historic, only give away a copy.

Greg, in shorter hair, running the computers at a Biometrics meeting.

After his Masters degree, Greg went into industrial forestry and has done very well there. He was valued by Willamette Industries. When they were absorbed into Weyerhaeuser, Dave Hyink and others made sure that Greg was taken in as well. Presently, he is the Director of Advanced Forestry Systems at the company. At one point he taught himself how to write HTML code, and it was natural for him to take on the John Bell Newsletter website.

Greg has always had a great appreciation for detail, but works hard at keeping the big picture in mind. Greg, **Dave Marshall** and **Dave Walters** started the forest modeling group that meets regularly here in the Pacific Northwest, and they have managed to keep it practical and well focused - even though the Western Mensuration group has slipped into semi-academic mode. He was active and supportive with several cooperatives in forestry. Greg Johnson is the kind of person with an opinion you can trust when you have to ask the question "I need a person who can …"

Norm Marsh

In terms of cruisers in the Pacific Northwest, I think Norm has to be one of the best. Each year he teaches the short course at OSU, and has done a great number of them – probably about 50 or so. In his 80s, he still puts in about 60 plots in a day. He quickly picked up the Big BAF method, and every other good idea in VP sampling as they came along. He is a great example to the younger cruisers who come to OSU for training, and he often cruises and appraises timber for estate sales and manages land for several landowners.

Norm Marsh at the OSU short course

I served as an expert witness with Norm on an action involving the Bureau of Indian Affairs, and his mere presence was enough to intimidate the opposing cruisers and scalers involved. Norm is a good example of what constant practical work will do for someone with a good mind. He has a depth of understanding that cannot happen any other way, and knows all the players in his end of the business. The best most of us can hope for is to have the advice of such people. You cannot have done it all yourself, but if you know enough people (who think well of you), you can learn whatever you don't know.

Michail Prodan

I have always felt that Prodan's translated 1968 book, *Forest Biometrics* was the most handsome of all the books in forest inventory. It is far better looking without a dust jacket, however much book collectors like to keep dust jackets. It is the standard against which I judge the appearance of my own books. It was also, of course, meticulous and thorough - as foresters in Europe always are. The quality of their books normally far exceeds those in North America, in my opinion.

When I was in Europe, I took the opportunity to go and visit Prodan. He was a very gracious host, and had a small dog, of which he was very fond. Foresters in Europe have a few favorite breeds of dog - mainly for chasing down rabbits or foxes, I believe, which are rightly considered pests for various reasons.

Prodan and his dog on my visit

He wrote a long inscription in my copy of his book, and I had him do the same for a book I planned to give to Dave Marshall. My own copy of his book was previously owned by T.E. Edwardson, and that specific book was the one he used to review Prodan's book for a forestry journal at the time it was published. Unfortunately, it does not seem to have any of the scribbled notes that one sometimes finds in books [3].

I remember Prodan saying that he was disappointed in his book, considering it too technical, and I only appreciated this comment years later when I developed the same feeling about my own book. The technical issues are worth learning and explaining, but they are seldom the most serious issues in forest inventory. Industrial psychology is the most important subject for a forest inventory specialist.

I wish I had visited all the other forest inventory people in Europe – they were all very close to Germany where I was stationed. I am sure that they would all have been as gracious as Prodan, and as instructive to a young forester. I am sure they would have enjoyed such a visit from their own perspective. One must simply make the effort.

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[3] Note to reader – write comments in your books, and put your name in them too. 50 or 100 years from now some reader will be very interested in what you thought about what you read. Forget the librarians telling you never to write in books. They are wrong. Do this.

John Kershaw

John was visiting the Western Mensuration group in 2002. We fell into casual chat, and he mentioned that all the Mensuration groups should get together in 2006 to celebrate the 100th year of the first American forest measurements book published by Graves. "No", I said, "that would have been 1905, by Carl Schenck". "I'm sure I am right", said John, "it's in the first paragraph of my new book about to be printed" (the 4th edition of *Forest Mensuration* by Husch, Beers, and Kershaw, 2003).

The previous year, Bob Curtis had asked me to bring the Schenck book to the meeting, and by chance he was looking at it not 20 feet away. "I suggest you introduce yourself to the bald guy over there, and ask him what he is reading", I said. When John came back a few minutes later it became obvious that we would be friends. He said "Two things piss me off – first, that the first paragraph of my new book is wrong – and second, that you have that book instead of me". This was the right kind of guy.

In a few years, John got a Schenck for himself, and subsequent editions of the book (the 5th being by Kershaw, Ducey, Beers and Husch) have the error corrected. John is probably the other major collector of forest measurement books as a private citizen, and I think has the best alternate collection when compared to my own. He has an eclectic mathematical view of the world, and my impression is that he is a good teacher at the University of New Brunswick.

John has a keen sense of the history of the field, and works hard to get around the country to meet people. Although he is an academic by profession, he is not limited to that view of the world. He has made it a point to do some practical consulting, and there are not many other things that will teach you the field so quickly (except doing every detail of it yourself for many years).

⬅ John Kershaw and I, in my library.

➡ John's former student, Lam,

John had a grad student named **Lam**, who presently teaches in Taiwan, and who was a particular joy– he also liked old publications in forestry. I made it a point to send him some signed papers by Lew Grosenbaugh. Lam was a good speaker whenever I heard him give a talk, and he gives one hope that the next generation of forest measurement professionals has some of the right stuff.

Frank Freese

I first met Frank in 1975, while driving from Oregon to my new teaching job in Michigan right after my Masters Degree at OSU. I have no strong memory of Frank at the time, but I do remember him having an interest in Log Rules. He eventually wrote a readable and detailed station publication on log rules and their history.

His original publications *Elementary Forest Sampling* (tan cover) and *Elementary Statistical Methods for Foresters* (blue cover) were reprinted at OSU and other places because they are not protected by copyright, and they were the essence of an honest attempt to actually explain these techniques to practical users. Frank then left the field to others, and went on to use these techniques in his practical work at the Forest Products Experiment Station in Madison, Wisconsin. It was there that I visited him – and, not being skillful at these things, did a poor job of maximizing my time with him.

Looking back through the books in later years, I was surprised that they were not as clear and simple as I remembered them – but I had the same impression that here was someone that was really *trying* hard to explain the material as simply as he could. That was all that mattered to me. So few people make that attempt, and when the time came to write my own books it was Frank's example that guided me.

Years later, I found a print at Cannon Beach called "the watchers and the doers", and it struck me that the biometrics group ought to frame that and send it to Frank, in thanks for his wonderful and practical books. We also planned to have him as the guest speaker that year, but he was struck with a fast acting cancer that took him with great speed before the meeting. That print, signed by many of the people who had also written books on biometrics, was presented at a lunch for Frank, and he wrote to thank me. He seemed genuinely surprised that people were still using his work, and apparently he was unaware of how many people appreciated it.

We reprinted one of his small publications that preceded his two main books, called "*A Guidebook for Statistical Transients*", in anticipation of his attendance at the Western Mensuration meeting. How can you not like a title like that? We planned to give them to all the people at the meeting that year. Frank passed away quickly and never saw the final bound product (for which **Gene Avery** did a nice foreword[4]). **Jerry Allen** was the force behind getting that re-publication funded and printed, bless him, and he sent a few title pages of the draft manuscript for Frank to sign before it was finalized. Those were bound into a few special copies – and Jerry gave me one. A few months later, Frank's executor and friend asked me if I had any spare copies, since Frank's niece would very much like to have one. I sent her mine, and have been looking for a signed replacement ever since.

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[4] We did 3 drafts of that forward (or is it forword … or foreword?) Each of those was used during the process, and Gene Avery was very patient about correcting me each time. I finally got it right, but have a morbid fear of messing it up every time I use the word.

Another few months later his friend, who was cleaning up so many details after Frank's death, asked me if I would like Frank's personal copies of his books. Quite pleased, I said that I certainly would – and they sit by my fireplace chair in the library. In my surprised and pleased state, I did *not* think to ask what became of Frank's extensive files about log rules. That lesson kept me from making other mistakes later in life, but I regret the error, and hope the files found a keeper rather than a dumpster.

Jim LaBau

Jim was one of John Bell's many graduate students. My first real encounter with him was an international conference where he was the chairman. He made a real effort to drive John and I around Alaska, and at a time when he had a lot of work to do with his conference. I was impressed with this allocation of his time. Even when you are busy, you have to make time for your obligations. I still wear the belt buckle that the SAF distributed at that meeting, and I loved Alaska – partly because of that experience. Jim has written extensively on the history of inventory and of Variable Plot publications.

I only vaguely remember the accommodations at one of the meetings at a University, but clearly recall the fact that there were limited showers available in the building. Being mostly a male conference, one of the showers that would normally have housed women was turned into a men's shower. I am absolutely certain that it had a sign to that effect on the outer door. The lady who came in and politely asked (on the other side of a shoulder high panel, I hasten to say) if I might be in the wrong place, thought otherwise. Jim reminds me of that every time we meet.

Jim and his wife Kay had a lovely home, and asked us to stay there with the kids one time when they were in Hawaii. Jim was that kind of guy. After retirement from the USFS, he worked just as hard, but as a volunteer scientist. Just because you are not drawing a salary does not mean that you don't have a need to work. Everyone needs a job, and some of us are lucky enough to love ours. We have been to several conferences in Alaska, and it gets better every time. The Alaskans, like the Australians, are a no-BS group of people. Living a bit closer to the edge has a good influence on a culture.

At a conference in Anchorage, I arranged a dinner with the Hesske Family in the Captain Cook hotel restaurant. They have a copy of the Captain Cook journals in the lobby under glass – a book set like that would just about cover a 4-year bill for a University degree.

Benno had brought "Relascope ties" with him for all of us. Jim and his wife Kay are on the right side.

We made the arrangements early, and the international conference organizers had the "B" room – where we had the "A" room with the best view of the city. I don't remember the bill, but the tip came to several hundred dollars. The wine steward reminded me that many people are sublime professionals at their job, often more so than those who are

overeducated. I suggested that he choose some good Rhine and Mosel wines for dinner. He asked how many, and I said I didn't know. "OK, he said, "I will bring them until they stop becoming empty".

I was equally impressed with one waiter. When he suggested the snails to one of the women beside me, she said "Oh, I don't really like them that much … although I do love how they smell". He delivered a side dish of them, with the comment "just for the smell, madam". Excellence happens in all professions, and is equally admirable in all of them.

Jim Bones was the chief of the USFS inventory, and we asked him to dinner too. These informal gatherings are a great venue for finding out how things really work in a field. Formal talks are never as full of lessons and key ideas. If you want to find out how to get to the top of a profession, hang out with a few people who made it there - and if something that should be confidential is mentioned, keep your mouth shut about it.

Jim spends part of the year in Hawaii, and each morning he goes down to the sea to take a count of turtles, recording weather, visibility, etc. We are a strange bunch, we inventory people. I bet that you are now thinking that he probably puts the data into EXCEL for graphs and calculations – yup, like all of us would.

Forest Inventory in Alaska is on the edge – of access, of cost, of danger, for effort, for animals, and for weather. That is why Jim was such a practical guy. Why he is such a nice guy, I am not certain, but he must have been raised well. Some people in the profession just seem to understand the idea of being a good host and doing more than your share for the profession. If you can find such people, cultivate them.

Jim Flewelling

There are some people about whom you have never heard a harsh word. There are only a very few about whom you could not *imagine* a harsh word being spoken. Jim is one of those people. He is quiet and soft-spoken - but not lacking in having an opinion or an insightful thought when it is appropriate. Jim helped to popularize the Stand Density Management Diagrams often used in silviculture. Many of you might be familiar with the "Drew and Flewelling" diagram.

Jim and I with a teaching tool given to me by Bitterlich. Jim appreciated the relationships[5].

Jim was originally trained in Aeronautical Engineering. At one point he took work with Weyerhaeuser, and very much enjoyed his work with the company.

Weyerhaeuser seems to have had a practice of hiring a lot of people to work frantically on a project. Then, having learned the main lessons, they waited for that field to develop to a useful state and switched to a new project. People came and went at the company, but they always kept a small overhead group to maintain the corporate lessons and culture.

[5] This photo also ended up as a label on a Biometrics Vineyards bottling.

When Jim became a consultant, he continued to work with the company. He did well as a consultant, and is very competent in statistics and math from his engineering background. Jim is an algebraic thinker (I am a geometrical one). One day he mentioned that the edge effect work I was doing (the toss-back method) didn't seem to *require* an area term. I never thought about the algebra, since I never found that useful in solving problems, but Jim never misses anything. I essentially said "Oh Jim, don't be silly, it's always the next step – volume per acre times acres – that's always the case".

No, he insisted, he did not see that the area term *needed* to be in the equation, so maybe there was a flaw in my reasoning. Did area need to be there? It has been this way several times with Jim. If my explanation is not precise enough, or not thorough enough, he hammers away at it until he sees the details clearly and in what he thinks of as an acceptable equation (and he does so persistently, with a politeness that only a few are blessed with). It has always improved things. Could my technique offer a total, without the necessity of having a volume per acre? – how should we *think* about that?

We regrouped, after the meeting, at my home office in Nanaimo. As I recall, **Dave Marshall** was there with us, and perhaps he can recall the details more clearly. At some point I had an "Aha moment", and saw that the area could be implied by the systematic grid involved, and then produce a total that did not *require* the specific area underlying the systematic sample. I drew a diagram, of course. "Perhaps", said Jim. Ignoring my drawing, he said "let's just do the algebra". When he was done, he said, "OK, that works, look here (at the equation)". I never did see it his way.

Jim insisted that I was the one who had the idea that solved this (and I think that may be correct), but I insisted that he should be the author of the paper that resulted in the "Area-Free Method" of Variable Plot sampling. He, after all, was the person who asked the critical question of "why would stand area be *required?*". Problems in our field are not that hard to solve. The issue is always asking the right question. Jim did that, and partly because he thinks differently than I do. I could answer the question, but I would *never* have thought to ask it. Jim did, and we found a new application.

These kinds of collaborations are a wonderful thing. Find people who do not think the same way as you do (but do think), and examine ideas together. It's the essence of technical collaboration. This also insured that Jim would have to deal with the snotty reviewers of our article, for which he has much greater patience than I do. Politely telling reviewers that they are idiots is a special gift in any field.

Once, at a conference in the mid-west, Jim volunteered to be the chairman of the next Western Mensuration meeting in the state of Washington. It was early days in the process, and we were not sure if the summer meetings would be a success. The word went around that Jim was planning to go to the University of Washington and put us up in the broken-down student cabins of the school forest. I was having dinner with about 8 people when I heard this. "No way that's going to happen!" I said, and just then Jim walked in with half a dozen people and sat down for dinner. I popped up and walked over, and told Jim across the table *that this was dumb idea, and was simply not going to happen*. Jim had a funny look on his face, and said, "OK Kim, I'll think of something else". As I turned around, I saw that my whole table had walked over and were standing behind me. It must had looked like a potential mob hit. I felt a bit silly.

Jim was one of 3 PhD's that were called to review the work of 2 young twits that had produced a silly paper about how systematic sampling was biased and more variable than random sampling – a result never before seen in human history. It is the kind of thing that someone with a Masters Degree will sometimes get themselves into. They had botched their simulation in a number of ways, but one of the simplest was revealed when Jim asked them, with the most innocent of tones, "and how exactly did you weight the results for these different size stands?". It was a knockout punch, and they sat there dazed. Weight the results by stand area? What an amazing idea.

Now you often have to deal with people who need their tail kicked, but I am quite sure that these two would not even *remember* Jim doing that. His manner is just so pleasant that even when he shoots you through the heart you just would *never* think of taking offence. Most of us cannot do that, and you have to admire the few that can.

It was never Jim's job to publish. He gets no pay and no promotions from the process, but continues to publish useful ideas and far outperforms many of the folks who are hired "to do research". Once in a while, you get someone with a PhD who is not educated beyond his capacity – and Jim is one of them. His most recent work is with LIDAR, and he continues to show originality, tenacity and good sense – while the rest of the pack is just chasing after it as the latest fad.

Don Munroe

Don Munroe was my major professor at UBC. I left teaching at Michigan Tech convinced that I needed to get a PhD, just in case I decided to teach and because I needed to know more about statistics. I also wanted to come back to the West Coast to do that. I visited the University of Washington and UBC, and found UBC far more congenial.

My assigned major professor was **J.H.G. (Harry) Smith**, and it took very little time to see that this would not work well for either party. Don was recommended by the current set of graduate students – who always know about these things.

The Biometrics Group at UBC. Don at right, Smith is behind my right shoulder.

Don was a great influence, and along with **Tony Kozak** and **Jules Demaerschalk** ran the student Biometrics Group. We were expected to meet regularly, give papers that were useful and interesting on practical topics, and learn about the business. I can remember giving a talk on Critical Height Sampling and J.H.G. Smith kept interrupting to give citations that he thought were relevant. At some point he appeared puzzled, then

said "Oh – so this is *really* *new*?". He was astonished that there was something about which he could not consider himself an expert.

Don was very different, and a great major professor. He concentrated on what you needed to teach *yourself* to become a useful professional. At the end of my time at UBC he took me on a 2 week trip through the BC Interior to see logging, ride in trucks and observe the business. It was a great experience, and so very good of him to arrange.

When I took a matrix algebra course my first semester at UBC, I refused to do the silly assignments graded by a grad student. He insisted, so I asked what passing was. "50%", he replied. I then arranged to get 53% and got on with actually learning what I could about the topic. Don came up at the end of the term and asked me why I had flunked my first course at UBC. The university had written him a letter suggesting that he dump this fool who could not even pass a 2nd year course. Don then informed me that passing for a graduate student was 65% (or something like that - I never did really know).

Would I like to challenge the course and get a better grade? "Heavens no", I said. I remembered a letter posted on a professor's wall at OSU, suggesting that he leave the university because of his grades. At the bottom, in red ink, he had typed in "everybody has a bad day sometimes", which I thought was a *great* thing for a professor to have on his wall (he later became a very successful and well connected consultant in Forest Engineering). Now I had such a letter - great. Near graduation, the university removed the class from my record, saying (essentially) that PhDs should not be seen to fail in such things. Don asked if I wanted to fight that, and that it was probably illegal for them to do – but it was almost time to graduate, and I already had the letter, so I let them do it.

Don was the one who is frequently cited as first publishing the classification for the various forms of forest models (distance-dependent, individual tree, etc.). Don eventually retired from UBC and grew grapes in the BC interior. I owe him a great debt.

Gene Avery

Gene is well known for his books on Forest Measurements and Aerial Photography. He has also written books and booklets on research techniques and other topics. I met him while I was a graduate student at OSU, and I remember asking him how he managed to have such an interesting career in so many places. He told me that all I had to do was give up a regular paycheck, lose a wife, and make my way financially without a pension. After that, it was easy. Except for keeping my wife, I eventually did all those things, but could not imagine it at the time. Talking about his experiences was great. Gene knew many of the old guard, and had shared apartments with some of them at the Southern Station when Grosenbaugh, Bruce and others were there.

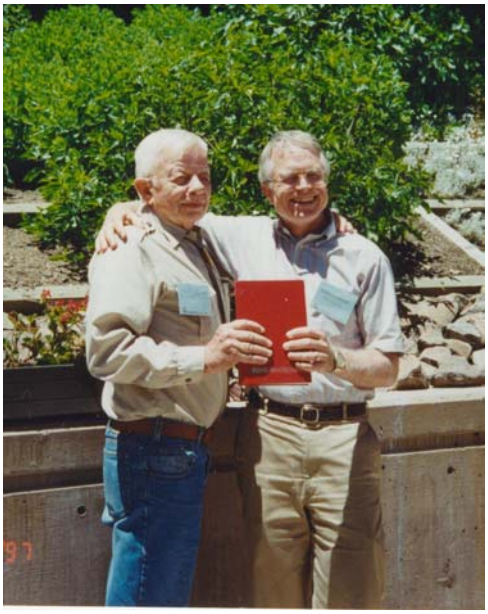
When I had a job with MacMillan Bloedel, I decided to ask Gene to be a consultant to our forest inventory and Growth & Yield studies for a week. He was happy to do it, and he loved to travel and do a bit of consulting work. He came several times, and each time he would remind me that I should find him a condo to buy that looked over the Nanaimo waterfront so he could live here at least part of the year. His favorite thing was to go to the local floating pub and order bacon-wrapped scallops.

We went to the Forest Museum in Duncan, and he loved the trains. As it turned out, they were rolling out a new engine, which they had been overhauling for years, on the day we came. We were soon deep into the details of the restoration. They knew a fellow fanatic when they saw one. He also loved Bolo ties, and the Canadian coins. "Can you have one of those coins made into a Bolo tie, Kim?". "Sure Gene, I'll take care of it". Dave Bruce saw it, and asked for one as well.

According to Gene, who lived in Texas, one of the state legislators was turned away from a restaurant because he only had a Bolo tie on, rather than a regular one. He immediately went to the legislature, and had the Bolo tie declared the official state tie of Texas - problem solved.

Gene went through a couple of wives, and taught at temporary jobs in several universities. In the process he wrote his books. Partly, that was his way out of debt. His first wife had polio (this was back in the iron lung days). At one point, he was in debt to the tune of 10 times his annual salary, and the books were one source of funds. The other was houses – he bought, fixed and sold a great number of them – more than 20, but I am not sure of the final total. Eventually he became solvent. His later marriage to a lawyer ended, he said, "because each of us was so profoundly uninterested in the others profession".

Eventually Gene took coauthors to update his books. He once asked me at dinner how old I was – then said "no offense, Kim, but that's the wrong age – I was looking for a coauthor, but your age won't work". He was thinking of someone to update his Forest Measurement book, perhaps. As usual with Gene, the evening was full of interesting history and topics, and I never did find out what the right age was. A few years later, he had **Harold Burkhart** team up with him on the 4th edition. Harold was more of a forest modeler, and that might have been part of the reason, because forest modeling was a hot topic at about that time. Perhaps, of course, Harold was just the right age.



Gene Avery and Harold Burkhart with their book.

I remember Gene saying that he was partially color blind, but that he kept that to himself inside the aerial photography world. Gene was good enough to leave me his hand stereo viewer, which he told me cost him the equivalent of a weeks salary in the early days of aerial photo work at the university. His book on aerial photos was later coauthored by **Graydon Berlin**, who I have never met. Gene wrote regularly, including opinion pieces and newspaper articles. He considered himself a writer as much as a forester. He loved to travel, and liked to get away from Texas during the hot season there. Gene formed a close professional friendship with Jim Thrower in BC and made several trips to Vancouver to spend time with Jim and others in that consulting company.

Gene was our special guest speaker at the Western Mensuration meeting one summer, and after that he came whenever he could. Once, at Lake Tahoe, he invited us all to come over for beer in the evening. "On the way", he said, "pick up some firewood". Now there is no firewood in a resort area like that, except in the residents' firewood piles – so a ghost force of biometricians floated through the resort that evening pilfering firewood as we came toward Gene's condo. We had to do it – really. This was Gene Avery, you know, and he was counting on us. We had a very adequate fire, I must say. At the end of the long evening, I told him I just had to get some sleep. "Go ahead, Kim", he said, "I'll put the kids to bed", and so he did.

Gene was a child of the depression, and it stayed with him his whole life. Every once in a while I would get odd presents in the mail, and knew that he had just opened a new bank account somewhere and they had given him a calculator or something that he would pass along. He kept a few gold coins around too, just in case. Gene loved the people in the profession, and the younger crowd was naturally attracted to him as well. He was great fun.

Les Reed

I was at a meeting once, when two economists went at it (over Faustmanns formula, if I remember correctly). I had no interest, but there was no polite way to exit the room. Les Reed was up against some academic who I have long forgotten. Les was introduced as the former head of Canadian Forest Research, and was apparently eminent in his field. He demolished the opposition so well that I sat down and wrote out a short note saying :

Game, Set and Match to Dr. Reed.
Well Done - Kim Iles

I left the note with someone in the crowd who said he knew Reed and would shortly see him in another session, and I thought no more of it. Within the hour, Reed found out where I was and came to introduce himself – unusual behavior in such a very senior person, I thought. Who was I? What did I do? Why did I like it? Where were things headed in the field? In some senses, it was like a job interview. Les, as it turns out, was a collector of people. I have little use for economists, in general, but this guy was an exception. No doubt he drove the other economists a bit crazy.

It would seem that Les improved the world by going to the meetings of organizations. He would listen to the discussion, get the drift, and at some point say "What you need is John Doe". The details did not matter – he knew the people that solved problems, and what their specialty was. He read character, and that is often the key issue in technical problems. In addition, if you needed the Chief Executive of your company to give you a year off to solve the problem, he could arrange that. He knew everyone, including the Canadian Prime Minister, and could get things done simply by asking. Over the years, a lot of people would have owed him favors, and they would be happy to lend a hand.

A few years later, he called and said that the NSERC Strategic Grants Committee needed someone with a practical bent to help give away several million dollars each year for research, and they were trying to expand beyond the academic crowd that had been

doing this for some years. He had suggested me to them, and offered to grease any wheels that were necessary. He thought both sides would benefit – so would I be interested? I was.

It was a great experience. NSERC took over about 10 full floors of a hotel for a week in Ottawa whenever it met. Our group met in the Royal Suite on the top floor. We had the key, so I suggested that we take turns staying there because I had never stayed in a suite that costs about $3,000 per night. The committee of specialists in other fields would not consider it. Everything I heard about the snooty Eastern Academic was true - at least for some of them. I found it hard to comprehend. I had never met folks like that before (or since, really). The other practical person on the committee of ten was an engineer, and he had a hard time coping too. Twice a year, for 3 years, I dropped back into Wonderland for another session. Les probably spent 10 minutes setting up that 3-year gig, then moved on to the next committee with a problem. That's leverage.

I was astounded that this small committee which handled Aquaculture, Genetics, Forestry and Agriculture was actually able to clearly evaluate every one of these highly technical proposals. They had a good system, too. One or two people would read the grant, summarize it, and suggest an outcome. The rest would simply review it quickly. In general, it functioned very well. The method worked, in spite of some odd character quirks and pretentious views of the world. I was reminded of the saying "*people* don't fail, *systems* fail", and the same holds for success in some cases.

Les offered me a great experience, and I appreciated it very much. Once in a while I would get a call, field a short question or suggest a name, and I knew that Les was off to make the world work a bit better somewhere. There is an old story about one of the ancient Mediterranean cities that was in danger of being invaded by another city-state in the region. They appealed to Sparta for help. Sparta, they reasoned, could whip anyone. They waited for the army. Sparta responded – and when their ship arrived, out stepped *one man*. One general came to set an example of how to train people, use tactics, appoint staff, and get the job done … because he had done it. He did not talk much, he just picked out a boat and crew, showed them by example what to do, and promoted those who got the message. Whoever sent that general was the Les Reed of his day. He passed away in 2017, at age 89. It was a loss.

The Alexanders (Lu and Anita)

Lu (Lucien) Alexander was one of the second generation at Mason, Bruce and Girard. Don Bruce got the idea of using Variable Plot Sampling, but it was Lu who was the point man for the field crews. When **John Bell**, who was working for the State of Oregon at the time, heard about this field work he contacted Alexander. That was how the method was introduced to the West Coast - then Bell moved to OSU to teach. **Tom Beers** was the same sort of influence on the East Coast. Bell and Alexander produced the first publication on the method in the Northwest. Both were practical users who adopted it because it was clearly useful in the field. Many of the other academics at the time were still saying that it was a flash in the pan, and if it was worthwhile they would have thought of it themselves. It was to OSU's credit that they went looking for someone like John Bell with enough practical experience to teach inventory at OSU.

For many years, there would be a dinner at John Bell's house for the instructors and guests of the short course. Each year, it was the same routine. We would all chat politely for a bit, but the evening soon evolved into listening to Lu Alexander spin stories about the forestry business. He had a nearly photographic memory, and while he never revealed anything confidential, could remember every detail, name and date. M B & G had many major projects, several of them with interesting legal consequences, and his stories were always instructive.

Don Bruce once wrote an M B & G publication called *Prism Cruising*, and it was very good. Their field techniques were ahead of everyone for a long time, and had some insights that are still not well known. I remember suggesting some idea to Lu one night, and he said they already did that. "You should publish that", I said, and Lu advised me that consultants did not always maximize their income by giving away their best ideas. He made a great many interesting observations over those years, and I was privileged to hear them.

It was Lu who thought they should round the top of prisms to make slope correction easier in the rugged Pacific Northwest. That is done to this day, while prisms in the rest of the country are mainly rectangular in shape. There were some prickly exchanges once between Lu and Dave Bruce about who did various innovations with prisms and their design, and I never did get to the root of all of them.

Lu unwound from forestry by keeping bees. When he traveled around the world it was about "bees and trees", and their family farm had a considerable honey production. They harvested wood on their own land, and it probably comforted their clients that the consultants they were employing had actual experience with risking their own money when it came to managing forest land.

Lu was a holder of the Navy Cross for his flying days in WWII. He flew P51 Mustangs and P38s, and was the second person ever to shoot down a German jet fighter - which was far too fast to catch with a P38. He saw one coming below and behind him, dove straight down from a great height to get enough speed, then slipped in just behind the passing jet for the few moments needed to do the job.

I once had an odd call from a lawyer asking me to review some potentially explosive issues about a partner in a very major consulting firm. These were allegations that were serious, and he wanted to employ me to review them. I asked him for someone we might both know so that I could check him out. He mentioned once working with Lu, who had passed away by that time - but he knew **Anita Alexander** too. When I called, Anita said "Lu thought well of him". Good enough for me. The problem was settled out of court, but a member of the firm had counseled his daughter "not to spend her inheritance yet" just in case things went really sour. They could have.

The only person who could hold their own with Lu at John's dinners was Lu's wife, Anita. Later in life, she had an operation on her spine. "I have a titanium spine", she once said. The woman already had a backbone to be admired. Lu had passed away about 20 years earlier when Anita eventually needed a heart value replaced. As I understand it, some medicines that will keep almost everyone from having blood clots can actually *cause* that problem in a very rare percentage of people. It did this time.

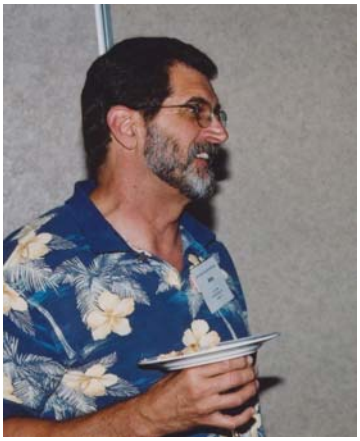
The damage was serious, and the doctor told Anita's daughter Su (now with the USFS in Alaska) that it was absolutely certain that her mother had less than a day to live; and much of that might be a very bad experience. Su had to explain that to Anita. Her mother understood the situation, and indicated that the machines should be turned off. As that was done, Anita gave Su "two thumbs up" and a smile. Imagine doing such a lovely thing for your daughter to support her during your last few moments. Anita was like that.

I sent Su one of my books, and remember inscribing it "To Su, whose father I respected, and whose mother I adored". What a woman.

Anita and Lu Alexander

Jerry Allen

Jerry taught at Humboldt State University in California. He was a practical guy and a joy to know. Tall, fit, and good looking (a bit like a California surfer), he was also a great woodworker and made a series of beautiful plaques for the Best Speaker award at the WM meetings. I am pleased to have one in my library. He arranged to have Frank Freese's book reprinted for the meeting one year, and it was one of the most innovative and enjoyable meetings we ever had. I particularly remember two things – one was the historical and technical biometrics quiz that he gave everyone (the scores were very low indeed). The second was "the incident" with **Ann Camp**, from Yale.



Jerry Allen, at a Western Mensuration conference

It was Ann's first Western Mensuration meeting, and she did not know anyone. She was giving a talk on Fire History, and had to choose "random trees" for measurement. She said that she chose the nearest tree from a random point, which was well known in our business to be wrong, "even though Kim Iles thinks it is biased", she said, a bit dismissively. Now it is pretty well agreed that you can always take a bite out of Kim Iles, but the best part of your day might be behind you at that point. Ann was new, however, so she got a free ride - partly because she had been given bad advice on that technique by someone who should have known better. She was about to be repaid by Karma, however.

This was in the last days of slide projectors. Hers would have been an old one. At any rate, halfway through her presentation, one of the slides being projected began to melt. It was just like in the movies – swirling deformation, a burn spot in the center opens up and the slide is consumed by flame. Fascinating, really. Also at that point, smoke started to come out of the top of the projector. Then, the flames came up.

Ann Camp … fire lady and cool head.

All the Audio Visual geeks from their high school days then leap into action. Now there is no way to compete with a burning slide projector in the middle of the room – so Ann simply steps back and waits in silence. Most of us would try to get the audience's attention and move on as the projector is being stabilized and restarted without the burned slide, but Ann simply waits. It was a stroke of genius. She could not have handled it better. When it was over, and the projector was ready to go, she calmly stepped up and proceeded as if nothing had ever happened. It was perfect. What is better than having your projector burst into flame in the middle of a talk about fire history, and then handling it perfectly?

Jerry Allen gave her the immediately created "Yo-Yo award", for a talk that started out at a reasonable level, went *waaaayyyy* down, and then came back up again. Ann has come to several meetings since that time, and is a delight. Jerry retired to take up commercial photography in the Southwest. He is missed.

George Furnival

George Furnival, of course, was a legend. Little did I know that when I was giving one of my first major conference talks in Fort Collins in 1979. It was the time when I first introduced Critical Height Sampling, and George was in the audience. He came over, introduced himself, and said "that was the most interesting talk at this conference so far". I was pleased, of course, but did not appreciate specifically who I was dealing with. I mentioned it to John Bell, who clued me in.

"If biometrics was a ladder Kim, Grosenbaugh and Furnival would be standing on the top two rungs – then there are seven or eight *empty* rungs and the rest of us are scattered out all the way down". He seemed to imply that perhaps I was on one of the lower rungs at the time, and he was right of course.

At the first opportunity, I began to follow George around. He said little, but seemed to follow things easily. In one instance, the speaker was putting up matrix equations, adding arbitrary numbers, and claiming an advantage that would require a smaller sample size. A local forester stood up and asked if that might be put into simpler language for folks like him. The speaker repeated the equation, the numbers, and the claim in the *same* way. The forester sat down in retreat. George was offended. He did not like this kind of pretention and spoke out from the back of the room (which was unusual, for him).

His approximate comment was "I consider this quite mysterious, of course, and find it interesting that one should jump through all these mathematical hoops to get the same effect that one could get by simply *adding random numbers to the data*". The speaker, sensing danger, simply sat down. It took months to verify that George was quite correct about this comment. He instantly saw the math, the effect, and the equivalence.

Lew Grosenbaugh once said to me "you know, George is the only person I know who can just *think* in matrix algebra". George was clearly a man of considerable consequence. I invited him to my company to review our program, and in the process drove him around to lots of groups that would appreciate him. In some cases, the people we met had been his graduate students at Yale.

George was devoted to his graduate students. That was obvious even to those of us who would never have been admitted to Yale. I remember one evening when he invited me up to have a drink of "Old Forester" (awful stuff, I thought) and to have a chat with the group that was there (wonderful stuff, I thought). One of his graduate students from years long past was there with his newly acquired third (or it might have been his fourth) wife. George wanted his old student to succeed in this new marriage, and spent more than an hour telling this woman what biometrics was about, and how she must learn to cope with its demands on her new husband – and was charming while he was doing it. Nothing would do but for George to try his best to help his former student be happier this time around.

When he was in Canada one time, I suggested that I would like to take his picture. He waited until I had adjusted the camera, focused it and said I was ready. He then turned his head to a partial profile – as might be seen in a Greek statue. I had never seen that before, nor have I seen it since. Walter Bitterlich, I have also noticed, often didn't look directly at the camera in photographs. Walter was probably lost in thought, while pretending to be present.

George, as he preferred to be photographed.

After one visit to Vancouver Island, arranged by his old student in Victoria, George had to get down to Seattle to catch his plane back to Yale. Apparently this arrangement would save the Government some money. The discussion arose about how to get him there. One of the group had a ball game to attend, and others were "busy" in some way. I could not believe it. "I'll take him!", I said. They considered themselves lucky that Kim would volunteer to drive Furnival all that way to Seattle … they would owe me a favor, etc. Imagine – a long day in a truck listening to George Furnival. I couldn't believe that there were not fistfights over the job. We ended up having dinner with one of his old friends at the University, and I sat at their feet and listened. It was grand.

Speaking of feet – I made a point of getting a photo of myself sitting at the feet of both Grosenbaugh and Bitterlich at various times, a kind of symbolic thing – but when there was a mention of "sitting at the feet" of some person in a discussion, George snorted "well nobody ever *sat at my feet*, nor should such a thing ever happen". The notion of being a pretentious person that thought of his students that way offended him. Bummer. I got my photo with George in an unexpected way.

At the 2003 WM meeting in Victoria, George attended and **Lew Grosenbaugh** was planning to attend as well. Unfortunately, Lew had a stroke and died unexpectedly. George came to honor Lew. George was in the early stages of Alzheimers, and knew it. In his case, a gentle man just seemed to become a little gentler. For a man of his intelligence, who had spent an entire life sharpening his mind it must have been very difficult. He attended all of the talks, and was there when I gave mine.

During my talk, I had a photo of Lew on the projector when George slowly rose to his feet. This was very odd behavior, and naturally I stopped my talk and said "Dr. Furnival, did you have a comment, perhaps?". His response is firmly embedded in my memory. It ran like this, in the twang of his characteristic Virginia accent -

> "Now you take a look at the man up there. You probably think he looks like somebody's nice old grandfather … but I'll tell you – if he was after you about something, you would know it. He could rip your throat out."

And he seemed to reflect for a moment on this, and said.

> "Now people used to say that I was a smart guy … Well it's *true*, I was a smart sumbitch …"

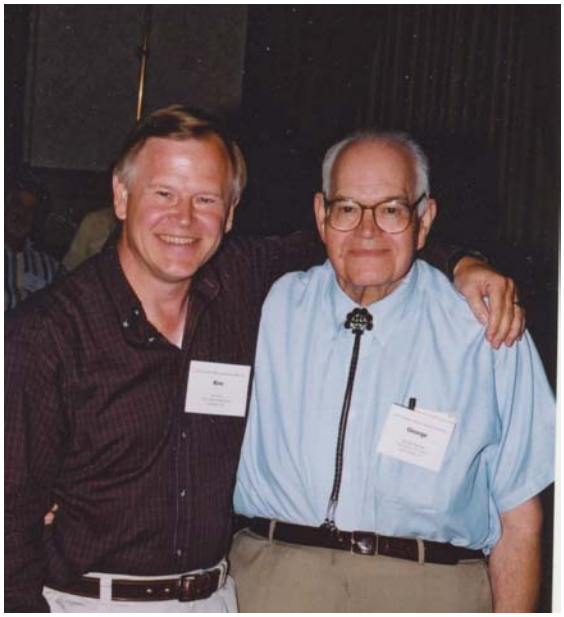
And then George hesitated for another 3 or 4 heartbeats, looked fondly at the image of Lew on the screen … and very gently said:

> "But Lew …… Lew was a *genius*.

And then he quietly sat down.

This was one of the most moving things I have seen between old friends. George wanted us to know how much he thought of Lew. He behaved at variance with his ordinary quiet character in doing so. It was important to him not to miss that chance.

I waited a moment, thanked him, and continued my talk. I imagine that Lew had the same respect for George. Which brings us to the photo I mentioned – a second uncharacteristic moment ...



I was fortunate enough to win the best speaker award that year. As it was handed to me, Dave Marshall took the standard photo of the award winner and the chairman who was presenting it. We then prepared to sit down and go on with the proceedings.

To my *astonishment*, George quietly stood up from the audience and firmly said "I'd like to have *my* picture with Kim too". I am sure that my jaw dropped to my knees. Dave, sensing the situation and the opportunity, grabbed the camera and said "Let's go Kim! " and dragged me off the stage to where George stood. The photo of the two of us is one of my all-time favorites, and has been in my library ever since[6]. He had a great smile when he used it.

When George visited Victoria one year, Tim Gregoire suggested that we put on a lunch and invite his old friends and colleagues that lived on the West side of the continent. Many came, and it was a wonderful gathering. I think George was pleased about the whole thing. In my mind he was always the archetype of the quiet, modest academic; and never showed much emotion – unless someone was acting badly toward someone they wrongly felt superior to.

His wife, Gloria, was quite a historian in North Haven, Connecticut where they lived. It was a historic home, with George's tools hanging on the carport walls and antiques aplenty – many from the family farming history. Gloria wrote a book about the cemetery across from their home, and George took the photos for it. They produced a family history too, I believe, and had a long interest in genealogy. She is a delightful lady, and seemed pretty good about stepping back and letting George go mingle with the boys when they were at conferences.

At one point, George was the Chief Biometrician for the US Forest Service. He did not particularly like being the outside guy who came in to tell people how to do things. Although anyone with talent would benefit from that, bureaucracies are not always full of talented and well adjusted folks. He wrote a very important paper in Technometrics, about his method of "Leaps and Bounds" for doing regressions, and Tim Gregoire tells me that they considered it one of the 10 most important papers done for the journal.

Simply doing forestry was not enough for George, so he became the director of the new computer center at Yale as well. In his spare time he worked on communications issues with computers, in time for the Apple Mac in the early days of its development. I understand that Apple developed some of their machine communication approaches based on his "Tin Can" computer program, which George gave away free.

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[6] It was later used on a Biometrics Vineyards bottling.

One time he told me about attending an Apple convention.

> "There are *thousands* of people, Kim. It's a sea of them, and when you are at a certain level in Apple they give you a special little bag to carry around at these things, and they all recognize it. When you walk into the crowd *it's like the parting of the Red Sea*."

Once we were talking in Nanaimo about a variety of subjects, and Variable Plot Sampling came up. Now if you choose the nearest tree in a fixed plot, you are likely to end up with a larger than average tree. With Variable Plots, on the contrary, it is likely to be a *smaller* than average tree. This is very odd, and not at all intuitive, and I had spent more than a week working this out to be sure that I was correct about it. When the selection of the nearest tree came up in discussion, George said that it was a problem because you were likely to choose a larger tree, so I said "well, I think it is actually likely to be a smaller one with Variable Plots", and prepared to carefully walk through the reasoning. Imagine – being ahead of George Furnival on any topic. Heady stuff.

George hesitated ever so slightly, then said "yes, of course … that's obvious" and went right on with his discussion without missing a beat. Many days of preparation that insight had cost me, and I was ahead of George Furnival for at less than 5 seconds. Good enough for the likes of me, I thought.

The Western Mensuration Meeting asked me one year to compare Critical Height Sampling, Importance Sampling (one of George's methods), and similar topics in a talk. Furnival was to attend that year, and I was not about to explain his method in front of him. I asked George to do the talk, and he told me he was too busy and did not expect to attend that year anyway. I asked if there was anything that he especially wanted me to emphasize. Yes there was. I was to *clearly* state that the Importance Sampling method would sample mainly the lower 1/3 of the tree. I agreed to do that.

The talk went fairly well, but George *did* show up for the meeting. I had to talk about his method with him sitting in the audience – not a comfortable thing. It went OK, I thought, until I walked to the back of the room and sat down with George just as the break started. "How did I do?", I asked. George was irritated. "Dammit, Kim, I just asked you to do that *one* thing, and you didn't do it". I immediately called Dave Marshall over, and he verified that I did, indeed, say that. "Well, dammit, Kim, you missed the *point* of it – when the measurement is in the lower 1/3 of the tree, you can just *reach up and make the damn measurement directly*". Dave and I glanced at each other, and we were both thinking that here on the West Coast it was not quite as easy to reach up 1/3 the height of *our* trees to measure a diameter. I promised to do better next time, but when I took George to see the large old growth trees in Cathedral Grove on Vancouver Island I made it a point to get a photo of George standing next to a tree large enough to make reaching even the bottom $1/30^{th}$ a real problem.

One year I got a letter – the usual thing where an associate editor sends you a paper and asks you to spend hours trying to swallow some authors' undercooked "contribution" to the literature. This one however, was different. The associate editor was Al Stage, I think. "No less a person than George Furnival says you are qualified to review this paper", the letter said. OK, I tried. I read through it and could not understand it. I read it two more times, with little progress. On the fourth try I got the drift. I finally deduced that it was marginally similar in nature to Critical Height Sampling – and then it hit me. I am sure that George Furnival was sent the paper, scanned it very quickly, saw the

similarity to my work (which he had once heard *years* ago) and said "OK, that's close to what Kim did – send it to him for review" so he would not have to bother with it. That kind of quickness is just unheard of in our business. It took a full day for me to do that review, and George had seen it almost instantly. The Yale crowd said they used to frequently see that ability with him.

One time, after years of polite nagging by John Bell, Jim Flewelling agreed to host the Western Mensurationist meeting in Hawaii. There was great angst that nobody would come all that way, etc. It was a major hit. Jim did a fantastic job with the organization, and we were pleased that George came as well. He was still mildly dealing with Alzheimers, and some people might not have noticed – but word got around. I remember having a young man come up and tell me that George had walked past the room, perhaps not remembering the location from the previous day. I nipped out and found George to herd him back - then the message sank in for me. These people considered taking care of George in any way to be a *privilege*, and that privilege belonged to the senior members of the conference. What a nice view of things.

One of the Hawaii field trips was particularly interesting. It was run up by a previous student of George, who ended up in ecology. The trip had some viciously steep and wet steps, so I went ahead in order to stop George if he fell. He was careful on the steps, but on the path below we began to fall behind the group a bit when I noticed the situation. The people behind us simply *would not* walk by George on this narrow path. I believe that they thought it might embarrass him, and simply would not do it. At a slightly wider part, I asked George to step over by a plant for a photo, and that let everyone pass without awkwardness. Once in a while you see just what nice people you have in a profession. That was a lovely example.

When George finally passed away, they waited several months then had a ceremony at Yale – which was in effect a Biometrics-Yale-Family funeral service. I was asked to attend and give a brief talk, along with two of his favorite graduate students (Tim Gregoire and Harry Valentine). Generally, I rehearse well enough not to need notes and can usually hit my time limit within a few minutes, although I write out every sentence I intend to say and practice it (Furnival did that too, and I learned it from him). His former students essentially read their talks – and they were smarter than me.

On this occasion I had worked in John Bell's comment about the ladder of Biometrics, some memories of working with George, and so on. I was ready. Then I blew it. As soon as I got up and looked down at Gloria Furnival and the family in the front row it hit me for the first time that George was really gone, and it unhinged me a bit. Until that moment, this extraordinary man was still out there in some way, and now he was gone – *right then*. I stumbled through it, but was ashamed not to have done a better job on that occasion.

Tim Gregoire was generous about the talk, and said it was OK. Perhaps Gloria understood how much I admired her husband, and maybe that was all that mattered. Still, I wish had done better. We went inside (why we were freezing outside in a gray day in Fall eludes me), and had cookies, etc. I had brought along one of George's important papers, and had everyone there sign it as kind of professional guestbook for the family (and a second one for me to bring back to my own library). I was invited to go to the family home with Tim and the rest of the Furnival clan, and Gloria later insisted that her son drive me back into Yale instead of calling a taxi. On the drive, he graciously told me

how pleased George had been by the lunch that we had put on some years earlier in Victoria, British Columbia; which was very kind of him.

Yale is a wonderful place, and I would encourage anyone to visit there. The famous Beinecke rare book room is beyond belief, and the campus was very impressive to me.

⬅ The Bienecke Rare book library at Yale

George's office at Yale ➡

Furnival had a fabulous office at Yale. The school is housed in the donated mansion of one of the first serious dinosaur hunters, the famous O.C. Marsh. He is buried down the street a few blocks. The circular office on the top floor used by Marsh became George's office. A fireplace, two roll-top desks, stained glass, books everywhere (in this case, Tim Gregoire's books, but I am sure it looked the same when George was there).

Tim Gregoire and I were chatting about things during a visit to Yale, when I glanced up a bit and noticed a lovely decanter on a high shelf. "Tell me about the glassware", I said. Tim said that George used to have it full of sherry, and when his graduate students came to have a chat about their projects, George would sit and discuss it with them "over a glass of sherry". Now how elegant is that, I ask you?

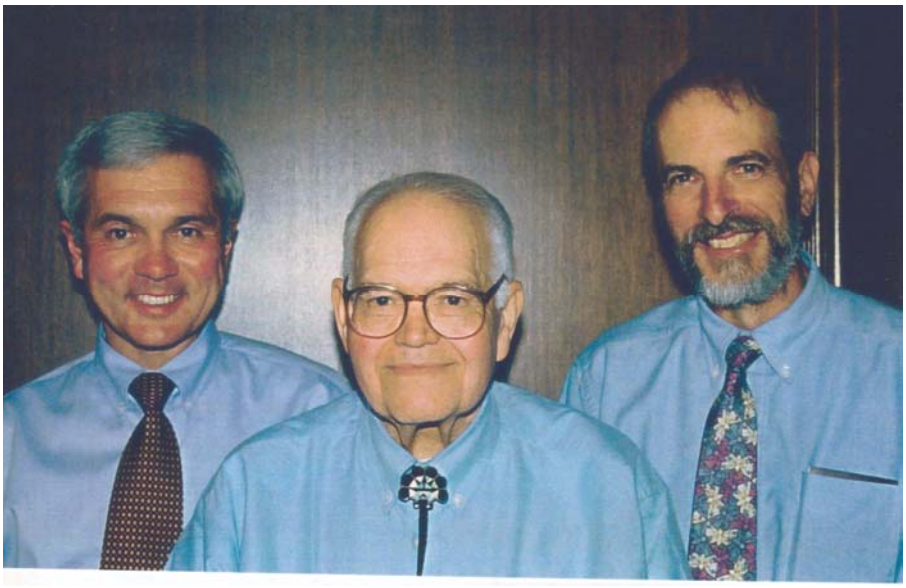
I asked Tim where the sherry was, and he said he didn't have any. I dragged him down to his car, made him drive to the nearest liquor store, and I bought a bottle of sherry. We ended up drinking it out of paper cups, but I *did* have sherry in George Furnival's office, even if I was not one of his students. Later, I sent Tim a proper set of sherry glasses in case I got there again. I did, for George's funeral service, and we drank sherry with several on his friends and former students. I have made sherry a tradition in my own library from that time on.

I have never been able to duplicate the exact sherry container that George had, but one day in Salzburg I asked Bitterlich's daughter Helga to pick out one from a serious glassware shop in the city – one that would be appropriate for a male library. I had it engraved with "WB" on one side, and "OH" on the other. I always think of George when I use it, as well as the two characters with the initials – one unimaginably talented, and the other simply imaginary.

Tim Gregoire

Tim has inherited George Furnival's teaching position at Yale. He is heavily involved with statistics, and has earned several awards from inside the statistics community, but has obviously been very active in Forest Biometrics. I visited him one year to see Yale and the famous Beinecke Rare Book library. He was a kind host, and I have yet to pay him back for that wonderful visit.

After Grosenbaugh passed away, his wife Wilma had sent Tim a lot of paperwork from Lew's office. Tim had his sons scan them so that the letters would be available to everyone on the internet. He also commissioned the building of a special bookcase for some of Lew's books that Wilma had sent, which was the kind of classy response you would hope to get from a place like Yale University. Tim said that he considers Furnival and Grosenbaugh to be his "fathers" in the professional sense. I think they would be pleased to consider him one of their sons in the same sense.



Tim Gregoire, George, and Harry Valentine, at the luncheon we did for George in Victoria, BC.

They used this photo in their book, which they dedicated to George.

While we were looking through some of the books in Tim's office, I noticed *The Relascope Idea* by Bitterlich. When I opened it, I found out that it was a presentation copy from Bitterlich to Grosenbaugh. It contained Lew's personal bookplate, which was a gift to him from a favorite aunt when he graduated from the Naval Academy. Now that was a book to make a book collector's heart nearly stop. Tim said "well, Kim, you knew both of them pretty well, and I never did really meet Bitterlich – so you should probably take that book home with you". It was one of the finest gifts I have ever received. What a lovely gesture. Tim is the real deal, and Yale is lucky to have him.

I wrote about a dinner I had with Tim in one of my books, and it was a wonderful example of how two professionals fight out a technical problem in a perfectly civil but uncompromising manner. It involved a paper by a student of his. It turned out that the paper was critical of a technique that was slightly different than the author assumed it was, and that was the entire problem. As soon as we saw it, the discussion was over, and we were both happy to see the situation clearly. Tim is first-rate stuff. Furnival knew it, and passed several good ideas to Tim so that it would enhance his publication record and to promote him toward the Yale position. Tim has plenty of good ideas of his own, of course, and has written several books on forest measurements and sampling.

Lew Grosenbaugh

I had once corresponded with Lew over some issues of 3P sampling while working as a student for John Bell. The early and unexpected death of Jerry Clutter, who was on my list of people to meet, drove me into my boss's office, where I told him I wanted to hire Lew for about 10 days to consult on our inventory and Growth and Yield systems. He agreed, and the rumors of how Lew could eat young biometricians alive were a concern to us. Not a problem. The neat, quiet, polite fellow that got off the plane was a joy to work with. He charmed the cruisers, the secretaries and the managers alike. He made sure I kept a list of the people he met so he could send thank-you notes to all of them.

One of our first talks was at head office, who had heard that an important person was on tap. Lew, not wanting to bore us with trivial things, gave a talk on the mathematics of leaning trees. The Chief Forester, sitting in the front of the crowd, nodded off. Lew ran out of space on the board and moved to a board on the side of the room – the Chief Forester is now asleep facing the wrong way. This is worrisome, but there is little to be done, so I just waited for it to play out. Near the end of the talk, Lew moves back to the front, makes some trivial point about the tree diagram and taps the board <u>hard</u> … hard enough to politely wake up the Chief. Lew says thanks to them all, and we move off to the usual refreshments. From this I learned that there is a certain level where people are very well aware of their surroundings at all times. Lew was always keenly alert.

We drove Lew around to meet lots of people, and all of them were interested in this character that had changed forestry so much. By the end of the visit he was relaxed and spinning tales about how things really happened in the measurement business. Those stories were far more important than the calculations at which he was so adept. Lew had been trained in gunnery in the military (at the Naval Academy) and was able to calculate 3-dimensional geometry with ease.

Lew's father had taught football and Latin. He did not care what Lew did for a profession, but was insistent that he get a good education first. Dartmouth provided that to him. His degree was in modern European history (that is from the dark ages forward, as I understand it). For his Masters, he applied to the Yale school of forestry. He apparently did not meet all of Yale's requirements, but they knew good material when they saw it, and Lew had a good math background. They let him in. He never did get a normal Doctorate, and was always clear that he was Mr. Grosenbaugh, and not Dr. Grosenbaugh. He managed to completely dominate the field in his day, and is still ahead in some issues many years after his death.

Lew went to work for the US Forest Service, and did field work in fire control, inventory, harvest layout, administration, and all the practical aspects of the field. That served him well over the years. It gave him an instinctive grasp of what would be practical on the ground, and of course he never had any trouble understanding the technical details. He did not particularly like publishing, and hated dealing with reviewers of his work[7], but he soon was promoted in the USFS to research status, so it was now his job. He always tried to publish in practical journals and at conferences when possible, hoping to reach practical people who would actually do something with these ideas and were the ones who would benefit. This is what the first rank of the business does.

Eventually, he moved to the Southern Experiment Station. There was a statistician at each of the stations in those days, and they all corresponded frequently. Statistics was just beginning to transform the business. Lew read Bitterlich's new paper on sampling for basal area, and immediately saw how to expand that to any measurement you wanted by sampling a few trees. He saw the geometry and the potential instantly, as he frequently did. He did the statistics, treating it as a kind of "double sample" with count and measure plots – although Floyd Johnson ended up with his name on the formula used in forestry. Lew was the reason that Variable Plot sampling was introduced into the US, although it was the West Coast that really adopted his ideas before the East and South. The West Coast still leads in the use of the system.

In that day, there was a group of researchers that met once a month to talk about inventory work over beer and shrimp. Lew showed up with a tree branch that had some chewing tobacco can lids for a target and peep sight[8]. **Chuck Minor**, later the forestry dean of Northern Arizona University, was there the night when Lew said that this was the way cruising would be done in the future. "As much as people thought of his ability", he said, "we thought maybe Lew had gone a bit too far that night". Little did they know.

Lew did some really interesting work in field cruising. He came up with the "Big tree" method, used "Surface, Volume and Length" to produce results that would give many log rule results and regressions to estimate mill products. One of my favorites was his "Height Accumulation" method. I once said that you could crack any published work in 2 days if you really worked at it. This one took me right to the wire. I finally deduced that it was a clever series using the volume of cylinders, and hollow partial cones. When I later sent him my work, he replied that he had actually done it by the calculus of shells –

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[7] As Newton once put it – "being baited by little smatterers in mathematicks".

[8] I thought this was an exaggeration, but Lew's wife told me that she was the one who was dispatched to buy the chewing tobacco can for the lids to make the angle gauge. John Bell heard the same story from Lew himself.

an interesting example of how you could do calculus by ordinary geometry if you needed to [9]. He also sent me several pages of corrections where I had done the arithmetic incorrectly. Sloppy calculations never got past Lew.

I have his 1935 student text in forest measurements by Chapman and Demeritt, and Lew checked that work to many digits as well, finding several errors. There were not many notes on pages with just text, but everywhere there were equations he had comments. Even when I sent him a payment for consulting or travel costs, he checked all the math and tax calculations and corrected them. I hesitated to send him anything with calculations in it, although he was always very polite about my mistakes. I would have been stressed to have him referee a technical paper, but it would certainly be clean when he was done. I actually reviewed Lew's last published paper, which was on a missing formula in economics. Tim Gregoire was the Associate Editor and said that he thought I might like to do the review. I sent it back saying that I had nothing insightful to say about *any* work of Lew Grosenbaugh – and Tim accepted that as a positive review.

Lew mostly ignored the publications of other people, since they seldom contained anything of depth. I only saw one instance of him being critical, and on that occasion he ripped the authors apart. When I asked him about this situation, he said that he was working with a young graduate student on similar work, and the comments in that paper would have put her in a very awkward position with her committee if anyone believed them. Imagine being a young Florida biometrics student and having a problem. You would be told to call Lew Grosenbaugh, who would then drop whatever he was doing and come right over to help you solve the problem. What an opportunity.

The authors published the corrections he noted, thanked Lew for pointing out the errors (they did not know him, since they were wildlife folks) and pointed out a few more things that they found wrong. It was such a gracious correction that I wrote to them commending the style with which they had acted. It turned out that the errors were made by the typesetter switching equations on them, and the original work had been correct. They never pointed that out in the letter with the corrections, which was very impressive to me. They simply accepted the blame and sorted it out. I suppose every specialty has a few class acts like these people, but there are not enough of them in the world.

Some very smart person in the USFS [10] eventually went upstairs and told the administration that they were all getting in the way of Grosenbaugh, and needed to step aside and leave him alone. Consequently, they made him, as an individual, the first USFS "Pioneering Research Station". He was given a budget, allowed to go anywhere he wanted, and work on anything he thought appropriate. For a deeply bureaucratic agency to do this was a stroke of genius (in the service of a genius). Lew decided to go to Berkley because of the computer support, and he worked on **3P sampling**.

Lew told me that he imagined 3P as a method of stratifying down to the level of individual trees. However he viewed it, he transformed the business in the only really important way since Bitterlich did Variable Plot Sampling. His real message was to get an exact total for the *wrong* answer, then correct it using some samples. As an example,

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[9] When Isaac Newton published many of his results, he also presented them using the math of his time. This kept the use of calculus his own secret – so he worked out the solution with calculus first, then presented it with standard geometry and algebra.

[10] I remember Lew telling me who this was, but I've forgotten. I have always meant to find out and send his family something nice. He did more for the USFS and forest biometrics than he could imagine.

he went to all the trees and estimated them, then chose a few to sample. He used a random number approach to select them, and this small step of choosing the tree in the field was a very practical contribution. Lew knew a lot about random numbers, and published papers on them.

Lew was instrumental in developing the **Barr and Stroud Dendrometer**, the best high precision instrument we have ever had in forestry. His knowledge of the mathematics of prisms was extensive, as his letters to Dave Bruce showed. He was not able to get the Barr and Stroud Company to do some things about the calibration of that instrument, and that frustrated him, but he used the Barr and Stroud in 3P sampling. His monograph on dendrometry was superb.

I remember being in the crowd for a presentation by **Clem Mesavage** on 3P sampling. Frustrated, a timber cruiser (who was impatient with high cost instruments and math) said "well, if you really want the volume of the tree, cut the darn thing down and measure it". He was made fun of at the time, but the idea of "**Fall, Buck and Scale Cruising**" came out shortly thereafter. Mesavage was a strong proponent of Lew's work, and made a great effort to produce and market his own instrument to replace the Dendrometer, but Mesavage died just before it could be finalized.

I invited Lew to be the first of a series of people in a "Significant Biometrician" series of people that we had as guests for the Western Mensuration meetings. That one was at Harrison Hot springs where I was the chairman. We paid his bills, and insisted on having his wife come along as well. His only requested function was to meet all the young people that were there. The idea was for the kids to meet these legends before they had the funding to travel widely, and perhaps might miss these people during their career. Lew took it seriously, and was patient while I dragged him around to everyone at the meeting – taking photos of them standing with Lew.

He insisted on giving a talk, and did not want to bore us. He started off with fixing the Metric System using octal, and before we knew it there was a Moore-Penrose matrix on the overhead, but it was slightly different than anyone had ever seen before. For a moment, we all saw Lew Grosenbaugh on afterburners. It was impressive. Lew very quickly realized that he had lost us, and dropped back an order of magnitude in his approach. It was just what someone should experience about a person with his capacity.

Lew, in British Columbia at the Western Mensuration meeting – as the first "Significant Biometrician" in the series.

Lew was a really nice guy who had an awesome capacity, including the ability to talk to anyone comfortably, and he knew much of the history of the business. He was just what we wanted in a guest for such a program.

Wilma

His wife, meantime, had charmed the socks off the ladies that were there. The common attitude was that perhaps Lew was a big deal, but Wilma had to be the best biometrics wife on the planet. She said to the wives "some women are slinkers, but I am more of a bouncer". Few women could have handled Lew – but she could. Wilma was a real crowd favorite. She had typed many of his scientific papers on computer cards, which Lew thought was a flexible way to do things before the advent of word processors.

Wilma Grosenbaugh, in Florida

Lew was an expert on computers, simply because he knew that these were going to change the world and he needed to be on top of them. He could go into a computer center, get control of the machine, and get it to work as well as the staff. His FORTRAN programming was excellent, and the regression routines were far ahead of their time.

Besides his other publications, he put together a booklet with trig identities – he said there was nowhere to find them all, so he did it himself. All of his publications are the same. All are thorough, highly original, and had multiple ideas - not just half of one idea, which is the case with most of what you read in places like Forest Science.

Lew had invited me down to Florida several times, but I only got there when **Loukas Arvanitus** took the very sensible step of having the University of Florida give Lew an honorary Doctorate and gave a conference for Lew. Loucas was a great guy, and at one point rented a car for me, and insisted that I drive down to see the Manatees of Florida. People like Loukas, who appreciate the people we have in the field and make an effort to recognize them, are a great asset to forest biometrics. Loukas passed away in 2016.

Photo of the conference in Lew's honor in Gainesville, Florida.

Note Furnival's usual pose in partial profile.

Loukas Arvanitus is at the lower left.

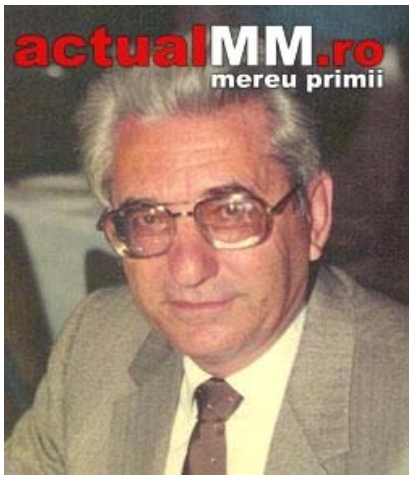
It was a great gathering, and included many of Lew's personal and professional friends over the years. I gave a talk about "driving Mr. Lew", and the joys of hanging around with exceptional people. After that, Lew and Wilma drove me down into the everglades to one of the parks. Lew's driving was a bit of an experience, but we made it. We were walking along a boardwalk when I asked Wilma to take a photo of the two of us. When she said she was ready, I dropped down to the boardwalk – and got a photo of me "sitting at the feet of Lew Grosenbaugh", which I have always enjoyed. It was the last time I saw Lew. I considered Lew to be the top person in the field. **Bitterlich** was excellent, and had many more interests and talents, but nobody could match the intense competence, precision, and mathematical depth of Lew Grosenbaugh.

I commissioned a totem pole drawing depicting things about Lew's life and work, for presentation at the meeting in his honor.

I had arranged to have both Lew and **George Furnival** come to the Western Mensuration meeting in Victoria one year (by telling each of them that the other was coming) and it would have been great – but Lew had a stroke and passed away just before the meeting. That was also the last of our meetings that George attended. Wilma sent a number of his books and papers to Yale. His Dendrometer and other items went to the University of Florida. Several of his books came my way as well, and one of the interesting ones is his book on playing poker, which earned him a fair amount of money in his day, according to the old friends who were foolish enough to play poker with Lew.

Tiberius Cunia,

In 1989, I was asked to give a special extended presentation at a New York forestry conference. It was to introduce and summarize Critical Height Sampling. The invitation came from **Tiberius Cunia**. He was the person who came up with "Sampling with Partial Replacement", along with **Ken Ware**. Their idea was simply that you should balance the remeasurement of some of your permanent plots for growth with the installation of new temporary plots to estimate the total for the inventory (from which the growth estimates will then project). The method led to some complicated statistical issues, but was obviously sensible, and in my mind did not get enough credit.



Tiberius Cunia.

This invitation to me was very flattering for a young professional just starting out, so I checked with my boss at the time, and he approved the trip. He was an idiot - an accountant who knew nothing of inventory and happened to be available when the previous inventory chief retired. A few weeks before I was to leave for New York, he said that he was going to repeal my permission to attend the conference. I informed him that this was not the way it was done in our business, and I certainly would go – just not at his expense, and not in the name of the company.

I called Cunia to tell him that I was coming, but wanted to remove the company name from the title of the talk, and he asked me why. When I explained, he said "Well, then when you come you can stay at my house". It was a wonderful gesture to a young person he did not even know. I should have had brains enough to accept it, which would have meant knowing him better, but stayed in some kind of ordinary accommodations.

Many years later, I wrote to him to ask if he would be good enough to sign some copies of his monograph on Sampling with Partial Replacement. "Of course", he replied, and "did I have a copy of his books on Biometrics?" . I did not know that they existed. It was a 4-volume set, done in the days of typewriters. For every technique, he had a *complete* worked example, and that was very rare indeed (all before hand calculators). I once spent several weeks looking for a worked copy for "Optimal Allocation with cost", and his books were the only place I could find a numerical example to check the equations I had derived. I also asked if he had any other papers I might get copies of, and he sent a box of them.

Some years later, I had another reason to call him, and he mentioned that his daughter had been after him to get rid of the last few boxes he had of his publications – would I like them? Indeed I would. Otherwise, they might have gone into the trash.

After retiring, Cunia left Forest Biometrics and began a new career. He decided to become an expert in linguistics (a variety of the Romanian language, as I understand it). He was very active in the "Farsarotul Society", and was very proud to be the author of its first Aromanian Dictionary, not long before he passed away at age 90. I have little doubt that he did the same technically careful and thorough job he did with forest biometrics.

Don Reimer

Don hired me at a conference, with no formal interview and during a chat over lunch. Don was moving up in the company, and asked if I would like to become the biometrician of the largest forestry company in Canada, with 2,000 permanent plots to oversee and the job of calculating allowable cuts for that company. It was the chance of a lifetime, given to an untested young PhD who had nothing to recommend him. The job was a great opportunity. The chance to observe Don was even better.

He gave me only two pieces of advice about my job.

1) Don't bother the permanent field crew. You can only learn from them, because they know their job.

2) Don't change the allowable cut of the company (especially downward) without being very certain it is the right thing to do.

Then, he left me *entirely* alone. He did not offer advice. He did not interfere. I have seldom seen the like of it, and vowed to try to do the same thing when I had the opportunity. After about 10 years of doing an important job, he was able to simply walk away and let someone else take it on with their own (even very naïve) views. A very impressive lesson, which taught me something about how confident and competent people conduct themselves. I am sure that he knew that I would make mistakes, but he stepped back anyway. I knew I was out there alone and had to take the work seriously, and that I owed him a solid effort for his trust. If I asked, however, he always helped.

Don had his PhD from Purdue in economics (one of the exceptions to my general distain for economists). At Yale for his Masters degree, the students were able to talk to and listen to important economists of the era, many of whom advised presidents and were in the thick of the action. Many of the great managers like Peter Drucker and others were close at hand, and could be studied up close in a situation where comments were very informal and frank. There is nothing like this kind of exposure, and Yale was in the right place with the right contacts to provide that. Don had a fabulous grounding there.

A few months into the job, we both attended a meeting of the company Regional Forest Managers. They were discussing the implementation of the new Geographic Information System, which they obviously knew very little about. In the process, I explained several things they needed to know, without realizing that I had too few stripes on my arm to address this group, rather than quietly listen and clean up their mess as best I could later. As we exited, I mentioned that these people really did not know what they were doing. Don said "perhaps you might have handled that differently, Kim". I said "I am right, Don, you *know* I am right about those issues". "Oh yes", he said, "you <u>were</u>. Now if you had been wrong, Kim, they would forgive you – but you were *right*, and for that they will *never* forgive you". **Big** lesson, that.

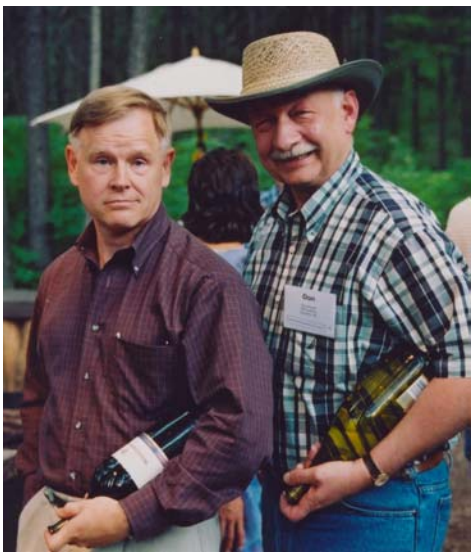
Don was a master at knowing how an organization ran, and perhaps how it should. After we both attended a meeting I would often ask him "what just happened in there?", and he would tell me about a meeting I did not recognize attending. He was able to step back and see the big picture. When he left MacMillan Bloedel, he started his own consulting firm, and is still running it. He will sometimes call me up and involve me in the inventory parts of his projects. It is always an education to hear his views on what is happening, and why. It is a rare talent that I will never be able to master, but I do not need to – I have friends for these things.

A few years ago, the Pacific Lumber Company was going into potential bankruptcy, and they needed someone to value the company. Someone, that is, who could actually gather the numbers needed for the standard equations that anyone can process. A large accounting firm of several capital letters was hired at great cost, and they heard that there were some Canadians who knew about inventory and forest modeling. Don called me in and let me know the lay of the land. Our first instructions were to get a criminal record check, then to come to Seattle where some accountants would give us our instructions. Things did not sound good, but Don's instincts are always right, so I went along with it.

On the way down, I said that I was getting a very bad vibe about working with these bozos, and Don said he was feeling the same. He said "Let's just ride it out for a while, Kim, and if we get too annoyed we will just get up, walk out, and drive home". Our impressions were not good at the meeting – at best marginal. We were finally informed that the paperpushers would now leave us to say goodbye to "the principal" who was paying the costs on this little adventure and was going back home on his jet, then they would return to give us "our instructions". I was very close to walking out, but Don motioned for me to be patient for just a bit longer.

There was soon a rustle of people outside the door, and it was announced that "the principal" had told his personal jet to wait, and was actually coming upstairs to meet …. us! This was entirely unexpected, and the accountants did not know quite what to make of it. The billionaire was going to talk to the "little people" who did technical work. Shocking, really.

So the Texas billionaire walks in, goes to chat with Reimer first (appropriately so) and says how nice it is to meet Don, and he is hoping that he will enjoy the work on this project. He then walks around to my side of the conference table (he does not summon me to his side) and says "Dr. Iles, I am *so* pleased that you would be willing to work with us on this project". There was a short chat about Canada, where I live, my kids … then he says "Well, I should be going now, but I want to make one thing clear Dr. Iles – you do *not* work for this accounting company – you work for *me*. Here is my personal phone number if you should ever need to use it", and off he goes to his waiting jet.



This guy knew what he was doing. He would get the very best from both of us. The accountants, listening to this whole exchange, never quite understood what happened - but backed off on their attitude.

Don and I won the wine prize at a conference. (I do not remember why, but I am sure we deserved it).

Harry Wiant

Harry was from the East Coast, and taught at West Virginia for a number of years. Even though he has a PhD from Yale in ecology, I have always thought well of Harry. In the last few years, after the death of his wife, he moved to Seattle to be nearer to his daughter. Much of his work is of a very practical nature, and quite a bit of it concerns my own interest in Variable Plot Sampling and field inventory.

I am pretty sure that Harry was a good professor, although I have never seen him in that role. I remember him as a model of professional behavior. He is consistently polite, interested in people, accepting of them, and never gives the idea that he is impressed with himself (and there are others in the business, I must say, who often feel very special about themselves). One incident sticks in my mind about Harry.

Dave Marshall, Harry Wiant, and Kim Iles

We were at a meeting, and since you cannot always tell what people will discuss based on their talk titles, two previous speakers discussed the topic that Harry was to cover. He stepped to the podium and said "You know, the previous two speakers adequately covered what I think should be said about this topic, and so I think I will surrender my time to the next speaker – thank you", and stepped down. I have never forgotten that example. I do not remember the other two speakers (who did not impress me) and cannot even remember the actual topic that Harry did not discuss. That example of humility and professional courtesy deeply impressed me, and I have always enjoyed Harry's company.

A few years after he started attending the Western Mensuration meetings in the Northwest, he liked the format and attitude so well that he restarted the regional North-Eastern Mensuration group, (NEMO) which now meets regularly.

When I think of Harry, I am reminded of this comment from the movie "Harvey", by the character Elwood P. Dowd - played by Jimmie Stewart:

> *Years ago my mother used to say to me, she'd say, "In this world, Elwood, you must be" - she always called me Elwood - "In this world, Elwood, you must be oh-so-smart or oh-so-pleasant." Well, for years I was smart. I recommend pleasant. You may quote me.*

Lawyers

Lawyers have a lot to teach us. I prefer to discuss them as a group and anonymously, since people in our business would not likely have any connection to them individually. They are, however, an interesting *group*. They are trained much like people in my field to carefully frame the question, scrutinize the evidence, and trace the logic involved. Their individual talents run the course from excellent to painful, just like biometricians, but they have an interesting culture. Legal work is not happy work, since everyone loses when an issue gets to court, but it is quite fascinating work.

"George" was the first serious lawyer experience that I dealt with. He called from Washington DC, said he was a lawyer, and that he worked in the US Department of Justice, Tax Division. Because I am a US citizen living in Canada and saddled with both tax codes, my life flashed before my eyes. He quickly explained that I was not in any trouble; he just needed some statistical expertise on a hurricane claim by a major company. I suggested that I did not know the area well, was not close enough to get to Washington DC quickly, and perhaps I could suggest some others for him to consider. No, he had already checked me out, and I was the one he wanted. Well, did he have anyone he had previously worked with, then? It is always good to work with a local person. Yes, he did, but that individual had died a few years ago, and he needed a new consultant. Not knowing anyone in my field that had passed away recently I asked who that might be. "Ed Deming", he replied.

Now if you are not stuck in the technical field of statistics you might not have heard of **W. Edwards Deming**, but everyone in statistics has. He was the one who taught the Japanese to build cars through quality control processes, and nearly put Detroit out of business. He has written several books, all of them wonderful to read, and he was one of the most famous statisticians of his day. I quickly informed George that I was <u>not</u> Ed Deming. "That's OK", he said, "I have checked you out and I think you will be fine". When I said I would be a disappointment compared to Deming, he said that I should fly out and meet his team. If I did not like the group or the layout of the case, I could drop the project. I thought this was a very nice offer, and went to meet them.

I arrived at the hotel to be told that the US president would be there later that night for a speech, and I spotted an ancient senator that was being held up by two aides at the foot of the escalator. There is no way to avoid someone when you are coming down an escalator at them. Good technique (but he was too old to be working that beat). George asked if the hotel was nice enough, and said that some of their consultants would only stay in a place if it was north of $700 a night (and that was in about 1985). That told me something about the Treasury Department and their acceptable consulting fees.

The foresters he had working for him were practical and enjoyable people. He ended the trip saying "we will work this project the same as I did with Deming. You do what you think is needed, you charge me anything you like, and I pay it". I immediately signed on and charged him my *minimum* fee (less than the interest on some consultant fees). Who doesn't want to work with a guy like that? I told him early on that they should offer 10 million for the wind damage loss. The opposition's lawyer was good too, and the only one on the other side that had any idea what he was doing. The company people actually said "we have always done it that way" on several occasions, and the lawyer would step in to keep them from saying any more. He could see that their procedures were awful, and would make a terrible impression in court. They held out for more, however, and I was in the air flying back to give testimony after about 3 years of preparation when Carolyn got a phone call that they had settled for 10 million and I could make my way home. It meant, however, that I could not visit the Smithsonian. Rats.

My first major testimony was in a project with one of the Indian tribes and a federal agency that had botched their harvest quality control. There was a **research lawyer** that learned everything we taught him, remembered every detail, and checked everything 3 times. He was a joy. This is often the case. Near the trial, the **partners** showed up to review things – again, quick studies. Last of all came the **litigator**. This is the gunslinger who handles the courtroom theatrics, and they are often the ones who run you through practice testimony and polish your presentation.

He told me the key to testimony.

1) Listen to the question – *carefully.*
2) Answer the question, and *only* that question – *carefully.*
3) Shut up. Wait patiently for the next question.

This is much the same as statistical people are trained. The *exact* question and its answer was drilled into us (and what that also might imply). We do tend to babble after that, so I had to suppress that instinct. The testimony went well and we won the case easily. These folks were masters in taking things to the essentials and focusing clearly on the key points. They would leave out evidence in some cases. "We are not trying to be thorough, instructive or even correct, Kim. We are trying to win the case." In one case they let a poor witness off easily because they thought the judge might start feeling sorry for him, and he was already mortally wounded. No need to beat him up any more. They never lost track of the objectives and how they were getting there.

The most **senior members of the legal firm** (the cost of these folks per hour was beyond my imagination) did not take an interest in the proceedings at all, really. They trusted their staff to do that. They moved around the courtroom asking the tribal elders how they were doing, and what was happening with their family. They knew that the client feeling that "they were being looked after" was the most important part of this very expensive process. A good lesson for senior people anywhere.

Judges, however, are another thing. When I read the judge's opinion more than a year later, it was muddled and seemed to have no clear idea of what went on. The tribe won, but was given a very small amount of compensation. Our lawyer told me that the judge had taken too long, had simply forgotten the case, and was working off his notes. We could still appeal and would get the size of settlement that was appropriate – and we did. On the other hand, I have observed judges that were masters of control over their environment. Lawyers are very sensitive to the judges, who do not need to raise their voice to discipline a lawyer that is out of line. It's a joy to watch, really.

The legal culture has very strict rules of behavior. Very seldom does anyone lose it. It's easier for an expert witness than the other forms of witness. You are allowed to give opinions, and it is a dangerous thing for lawyers to go after an expert that knows his stuff. Mostly, they just drill you on your expert report, and your deposition. I learned from this how to be very careful, very thorough, and very clear in my reports. The legal team often kept a close eye on the **court reporter**. When she would quietly laugh, it was clear that someone had lost points badly. The rest of the courtroom was very careful not to express any kind of emotion.

During testimony in California, I was being questioned by one of that small group of lawyers that fancy themselves as tough guys, and he was a pushy twit (they have some leeway on personal style in the courtroom). He decided to try to trip me up on statistics (they are seldom this stupid), got himself thoroughly rattled, stopped for a moment and said (shouted, really) "what's your problem?!?". The place went motionless for a few moments. Our lawyer *slowly* stood and just put out his arms out, as if to say "what can I say to that, judge?". Most of the rest of the room was trying not to laugh out loud. The judge dealt with the lawyer quietly and clearly, and no more questions were asked. I drank free for a week based on that exchange.

In another proceeding we had a jury trial, also involving about a billion dollars. It was in California, involved cutting trees, and an old company taken over by an outsider who cut their Redwoods without apology. It was a potential nightmare, and some of the top talent available in the nation became involved. I got to work with Don Reimer on this one too, and we stayed in San Francisco for several weeks. Several floors of lawyers were involved, and we were in a corner office working on the numerical details. The other side had botched it badly from a technical perspective, and we looked forward to testimony, but the lawyers knew that anything could happen in a California courtroom with a jury. When it was all arranged, the litigator showed up. This guy had prosecuted "the Unabomber", and was way up in the pecking order. These guys love to go to court, and the number of details and motions was beyond imagining to me. And yet …

At the end of each day, he would show up at the door of our work area. Very politely, he would say something like …

> *Dr. Reimer, Dr. Iles, as you know we are working late in these very few days left before court. Would you consider doing us the favor of staying a bit later tonight in case your technical help is needed by the team?*

He never *assumed* that this would happen (even though we had assured him that he would have our attention at any time of the day or night). With this enormous pressure on his time, and several floors of legal staff running around frantically, he always made it a point to take a few minutes to drop in and let us know that our work was appreciated. This was a great lesson to me, and an interesting insight into the legal culture at work.

A lawyer's attention to detail has much to recommend it. They are good at handling people, and always keep the end game clearly in mind. If you get the chance to work with a legal team, I recommend it. It is true that there is a less capable strata of lawyers out there, but they are generally trained well in logic and organized thinking. <u>Don't</u> put yourself in the position of testifying if you can help it. Often they just need an expert to sort out the technical aspects of the case, and not to testify. Even if you get it right, the judge's summary might indicate just the reverse of what you said, and on the public record. Giving testimony is always dangerous ground.

The legal profession is interesting to observe, and the higher end of that talent pool has lots to teach you. I have benefited from their company. You would too.

E.C. Pielou

Pielou was an ecologist, but she wrote a book on Statistical Ecology, and was closely aligned with our profession. A very early female PhD, she fought her way to some prominence, especially in Canada. I was only a graduate student at UBC when she arrived to give a guest lecture across campus, so my friend **Charlie Thomas** and I went over to see the show. The audience was mostly young, and definitely ecological. She seemed a bit stiff, but it's hard to judge that correctly when someone is a guest and does not know the territory. Eastern academics, in my experience, can be a bit stand-offish. She decided to give an example of a hypothesis test to illustrate the importance of statistics in field ecology.

She suggested that seaweed might be an appropriate example – were the species independent of each other in their distribution along our coast? She then stated a "Null Hypothesis" that the range of the each seaweed species would be equally likely to be overlapping another one completely, overlapping just one edge, or not overlapping at all. Now at this point, it is obvious to me the chance of randomly overlapping is mostly based on the length of the range but … it's just an example. Equality is not obvious in any sense, but we waited patiently for her to finish her matrix algebra.

At the end, she concluded that her data was not adequate to reject the hypothesis that the ranges were randomly distributed (no harm in that) but then she dove into the empty swimming pool. She concluded that we must therefore *accept* the hypothesis that they *were* randomly distributed. This was a bit too much, so I tried to be very polite during the question period at the end, saying that the two of us were mere foresters and might be missing something, but that I did have a question for her. I asked her if it was even geometrically *possible* that these ranges could occur in these 3 categories equally, and if not, how could we <u>accept</u> an impossible hypothesis just because we could not prove it <u>wrong</u>? If it was impossible, it should be rejected on first principles – right?

The other students in the room looked around to see who we were. Pielou looked more closely at the two of us (I cannot believe that she did not understand the logical impossibility of her position) and sniffed "Well, one must start somewhere, *mustn't one*". It was obvious that the issue was now closed.

She had written a lot of books, covering a great deal of ground in a specialty that is not mine, so perhaps she had a lot on the ball – but it was not evident that day. After retirement she lived nearby my home on Vancouver Island (on Denman Island) for several years, then moved to Victoria - perhaps to be near better medical care.
She was apparently well respected among ecologists, and passed away in 2016.

Dennis Swennson

Dennis was the consummate cruising supervisor. His experience in international consulting and long years in the bush gave him a wealth of experience and lots of great stories. He was also the entertainment chairman whenever the Cruiser Supervisors met in Campbell River (in rougher days). His company, **Reid Collins & Associates**, worked all over the world as well as in BC. I remember telling several young people that they should find a way to work with Dennis long enough to learn how inventory field work was set up and well executed. Dennis collected maps when many of them were being thrown away, and he gave me one by the famous BC timber cruiser **Eustace Smith**.

Reid Collins printed a great book about their corporate adventures, with many individuals writing chapters - and some of them were very good writers. When Reid retired, he gave Dennis a lovely old survey compass from the company equipment room, and many years later, when Dennis retired, he passed it on to me at the Cruisers meeting. It was a lovely gesture that I very much appreciated. Dennis was respected and liked by everyone in our business.

Alec Orr-Ewing, Robin Clark, Dennis Swennson and Mike Fall – the founders of the Coastal Cruiser Supervisor Task Force (CCSTF) in British Columbia.

Aaron Weiskittel

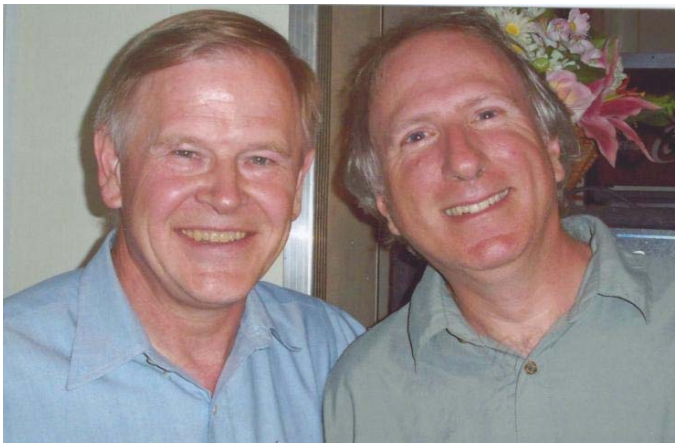
Aaron teaches in Maine, and is one of the young crowd that shows some promise. He arranged to host a John Bell Variable Plot course at the university and we had a great time there. Maine blueberries and Cadillac Mountain during the color season are not to be missed. He is active as an Associate Editor with several publications, and is one of the few people who struggle to keep up standards in a world awash with trivial publications. I particularly appreciated his preparation and ability as a speaker at meetings.

Aaron wrote a book on forest modeling (not at all my game), and has a good grasp of the statistical end of forestry. The NEMO (North-Eastern Mensurationist Organization) has been resurrected during the past few years, and Aaron has been helpful in this endeavor.

Kim and Aaron in the field, in Maine

Guillaume Thérien

"Geeom", as it is pronounced, is from Quebec, and has a PhD in biometrics.



For many years he was a partner with Jim Thrower in the consulting game in Vancouver.

He is almost always in attendance at the Western Mensuration meetings and often the other regional meetings of forest biometrics in the USA. He is *always* fun to have around.

After the Thrower company was sold, he spent about 5 years just traveling around the world. Smart choice.

Guillaume, bless him, was responsible for my acquiring Lew Grosenbaugh's forest measurement text from Lou's student days. **Christina Staudhammer** was kind enough to pass it along to me from the books that came to the university when Lou passed away. Guillaume had spotted it on one of his many trips. We need more folks like this in the business (and not just for the sake of my library).

Nick Smith

Nick is one of the absolute gentlemen of the profession, along with Bell and Flewelling. Soft-spoken and thoughtful, he has several times asked me insightful and critical questions I would never have thought about otherwise. One of them led to "**Sector Sampling**", a method so oddball we had terrible trouble getting it through review.

At a meeting in Poland, the Editor of *Forest Science* at the time (**Ed Green**) was asked what he thought was really surprising in the profession over the past decade or so. His answer was "Sector Sampling", because "it seemed to come out of *nowhere*", and it had no statistical precedents. It came from Nick Smith's interest in quantifying the affect of "variable retention" logging by **Bill Beese**, an ecologist who worked with Nick at MacMillan Bloedel.

Dave Gilbert

Dave was appointed to the position of Director, Inventory Branch, for the BC Ministry of Forests (their name changes about every 6 months). This was after a major report on forestry by chairman **Sandy Peel**, who called for eliminating the MoF entirely, or at least doing a few things like getting a reliable forest inventory, saying ...

> "the Commission believes that the current state of inventory information is a disgrace,"

To be fair, Peel was talking about the data from a number of agencies here, many of whom had no idea what a sample really was (and still do not). The "**Future of our Forests"** Commission thought poorly of the forest inventory too, saying …

> "Sadly, the state of renewable forest resource inventories in this province is inconsistent at best, and woefully inadequate at worst."

Much of this was because field plots, even when taken, were not used to correct simple photo "calls" – and that is still the case. The commission apparently knew about this nearly unbelievable situation, and stated that …

> "Planning and enhanced stewardship will require a greater emphasis on field sampling."

Consequently, they said :

> "The Forest Resources Commission has concluded that a Timber Inventory Task Force comprising a mix of public and private technical experts and inventory users be formed to direct the development of the new inventory program."

Dave Gilbert, the avid golfer

Since the MoF had no experts, this meant using outside people. When I was working for MacMillan Bloedel, Gilbert asked me several times to do this inventory design under several suggested formats, and I refused each time. Finally he said "OK, what do you want? We'll do it your way." Who doesn't want to work for a guy like that?

Dave gave me the freedom to choose the design of the inventory, and backed me entirely – against much opposition from inside the Inventory Branch. Dave could not do very much to reform the Branch, which was too well protected by its union, but he showed a great deal of backbone. The fact that most of the rest of the committee was made up of highly competent people made it worse for a few people from the Ministry who were invited to attend as guests - in the faint hope that they would learn something. Outside groups like the Range and Ecological people were frustrated that they could not get their way (by pseudo-political means) as they usually did. Few government types had ever resisted them like Dave did.

Dave held firm throughout, and there were several times when I suggested that the chances of finishing the inventory design were down to 25%. He took the flak, however, and we managed to finish with a first-class result. As I explained to him several times, we could do a design that was highly efficient, but since we were not in charge of actually *doing* it, there was likely to be a failure on that end of things – and there was.

Dave, however, did his job as well as it could possibly have been done. He was the very opposite of what one expects from a bureaucracy. The government is sometimes blessed with this kind of person, and often does its best to grind them down – and is often successful. Gilbert was well respected by those who were competent. Others floated to the top after he was gone. The same happens, of course, in private companies, who are also sometimes lucky to have someone with integrity. He is remembered well, and was a great example of what a government employee should be.

Peter von Wittgenstein

Peter worked for the Ministry of Forests in BC and made a change in forest inventory. Often, with the government, you cannot get simple things done because there are too many cooks in the kitchen. That was the case with the height up to DBH. Could we use the distance from the high side of the tree to measure DBH? No, and again, and again, and again … no. Many appeals were made – no dice. The excuse was usually that they were sure that some other unit did not like the idea, so *they* could not agree. A silly paper was floated around the province that moving an average of a few centimeters higher would perhaps reduce tree volumes by about 30%. Madness prevailed.

At one large meeting, Peter *again* asked if we could make this change, and if everyone in the room could agree with it. As it happens, all the players were in the room. As the major ministry roadblocker went around asking the outsiders what they did, they found that it was done in the every other country that was represented in the room. In a final bid to stop the process, the Ministry roadblocker asked the visitor from China. That visitor replied that *of course* they used the distance from the high side. The resistance folded up. There was nowhere to hide, and the idea was adopted on the spot. Peter had asked at the right time, and that made all the difference.

Peter, in the field

I have met a great number of good people in the Ministry of Forests operations, and some are well remembered by those that worked with them. **Bruce Markstrom, Rudy Baerg** and **Jack Louis,** and **Ken Richardson** for example, are now retired but others like them are still around. They will be remembered well. They did their job patiently and without becoming unreasoning spokesmen for silly ideas. A blessing upon them.

The defenders of the bureaucratic faith? Perhaps less well remembered. Hard to tell.

Dave Smith

I did not meet Dave Smith. I was standing behind him waiting to introduce myself at a conference when we were called back to the room. It did not seem appropriate to delay him, and I missed my chance to meet this famous silviculturist from Yale, who received two honorary PhDs and numerous types of national recognition for his work. I have no idea what kind of person he was, but was interested in meeting him and talking about the background of his book. Smith took over the original well-regarded silviculture book by Yale's **Ralph Hawley**. In what I always considered a generous and appropriate gesture, Dave Smith dedicated each new edition to his predecessor Hawley (who was apparently a very difficult man).

As it happened, I had received a letter a few years earlier from a Yale grad (class of 1946, I think) who had a specialty book store for architects in that part of the world. He acquired forestry books as he went along, but had few takers among the architects. I picked up several books from him, and one of them was Ralph Hawley's 1921 *personal* copy of his first edition, with notes for the future editions. I also bought the personal copy of H. H. Chapman's 1924 edition of his own book. I loved the Hawley book, of course, and at the time it was one of the high points of my collection - but it really did not belong with a forest sampling geek.

When I heard about Dave Smith retiring from Yale a few years later I sent the book back to Yale to be presented to him at his retirement, and they must have done so because I later got a copy of Smith's most recent edition nicely inscribed by him and thanking me for the book.

Smith passed away in 2009, at age 87, and I have no idea what happened to his books. Perhaps that one will come back on the market one day – and I will have to decide who it should be given to next time. I regret not interrupting Smith, and arranging to meet him for lunch to find out a bit about the history in his specialty. I am sure it would have been fascinating.

You miss a few along the way.

There are, of course, hundreds of other people I could talk about – but these may serve as examples of those who make a difference and are worth meeting for young people in the business (hence the photos, so you can spot them at a meeting). My memory is longer, but these pages are limited. Perhaps over a glass of sherry.

It is worth your time to meet people like these, starting as early in your career as you can. I have sometimes called people up or written them to arrange some time with them, and have always had a positive response. Do this.

My thanks to those who helped to edit these notes [11] – and to the great people I had the pleasure of meeting over a lucky career.

At left, the ever patient Carolyn

[11] The pathetically numerous remaining typos and errors are entirely my own.

This space reserved - for a photo of you
and me in the Intergalactic Library.

Drop by for a glass of sherry.

I now understand why historians say, in effect, “how nice to hear how you think it happened – now can I see the documents and hear the tape recordings, please”.

People remember things differently – not often the central ideas or the consequential parts, but certainly the dialogue and details that take place. In most cases, I checked these short stories with the people involved. If they had a different memory of the details, I tried to use their version. I don’t know if it is more accurate that way, but it seemed polite to do so.

Kim