In memoriam: A tribute to the work and lives of Ron Selvester and Rory Childers☆

Barbara J. Drew, RN, PhD, a Claire E. Sommargren, RN, PhD, a,* Gil D. Tolan, MD, b
Peter W. Macfarlane, DSc, FRCP, FRSE, c Galen S. Wagner, MD, d
David G. Strauss, MD, PhD, e Martin C. Burke, DO, f Paul D. Kligfield, MD, g
Ian Rowlandson, MS, h Robert L. Lux, PhD i

a Department of Physiological Nursing, University of California, San Francisco, CA, USA
b Health Science Center, University of Texas, San Antonio, TX, USA
c Institute of Cardiovascular and Medical Sciences, University of Glasgow, UK
d Duke Clinical Research Institute, Duke University, Durham, NC, USA
e Office of Science and Engineering Laboratories, Center for Devices and Radiological Health, United States Food and Drug Administration, Silver Spring, MD, USA
f Heart Rhythm Center, University of Chicago, Chicago, IL, USA
g Weill Cornell Medical College, New York, NY, USA
h GE Healthcare, Wauwatosa, WI, USA
i Nora Eccles Harrison Cardiovascular Research and Training Institute, University of Utah, Salt Lake City, UT, USA

Abstract

At the April, 2015 International Society for Computerized Electrocardiology (ISCE) Annual Conference in San Jose, CA, a special session entitled Remembering Ron & Rory (Fig. 1) was held to pay tribute to the extraordinary work and lives of two experts in electrophysiology. The session was well attended by conference attendees, Childers’ family members and friends, and additional colleagues who traveled to San Jose solely to participate in this session. The purpose of the present paper is to document the spirit of this special session as faithfully as possible using the words of the session speakers.

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At the April, 2015 International Society for Computerized Electrocardiology (ISCE) Annual Conference in San Jose, CA, a special session entitled Remembering Ron & Rory (Fig. 1) was held to pay tribute to the extraordinary work and lives of two experts in electrophysiology. The session was well attended by conference attendees, Childers’ family members and friends, and additional colleagues who traveled to San Jose solely to participate in this session. The purpose of the present paper is to document the spirit of this special session as faithfully as possible using the words of the session speakers.

Opening remarks by Barbara Drew, Session Chair

I would like to welcome all of you to this special session to honor the work and lives of Ron Selvester and Rory Childers. I was honored when asked by ISCE’s President, Bob Lux, to organize this special session because both of these remarkable men were mentors to me over my career, and they also made major contributions to several PhD nursing students from my research lab at the University of California San Francisco.

We are delighted that Rory’s wife Michele Childers and sons Peter and Daniel Childers could join us here today. Michele, on behalf of the ISCE family, we’d like you to accept this bouquet of flowers with our love.

In the first half of this session, we will honor Ron Selvester (Fig. 2) and in the second half of the session, we will honor Rory Childers (Fig. 3). Following the session, there will be a reception held in the lobby and deck area outside this conference auditorium. If you have not done so already, please write your personal message in the memory books located on tables in the reception area for Ron’s and Rory’s families.

Part I: tributes to Ron Selvester

Remarks by Gil Tolan

Before I start fond memories of Dr. Ron Selvester, I need to explain my casual dress for this auspicious occasion (Fig. 4). I’m wearing the warm-ups of the recently crowned National Champion Duke men’s basketball team because to
acknowledge Ron’s accomplishments, we must also recognize Ron’s team, especially his sidekick Duke professor Galen Wagner. One of Ron’s great talents was to surround himself with talent. Galen is a prime example. Galen was to Ron as Tonto was to the Lone Ranger, as Robin was to Batman, as Pancho was to the Cisco Kid.

So let’s begin with a show of hands by those who knew Ron personally. For the rest of you, the aim of the next three tributes to Ron is to have you share vicariously the pleasure we had in knowing Ron firsthand. Now if Ron were with us right now, how would I introduce him to you?

- I could introduce Ron as Doctor Selvester. After all, he cared well for his patients because he cared deeply about each patient. Although Ron was our Grand Master at interpreting body surface potentials, Ron always considered laboratory tests like the electrocardiogram (ECG) as adjuncts to an in-depth history and physical exam.
- I could introduce Ron as Professor Selvester. After all, he taught well his medical students and fellows. He also taught us well.
- I could introduce Ron as Editor-in-Chief of the Journal of Electrocardiology. Before Ron took over, we had trouble getting speakers at ISCE to submit their manuscripts for our proceedings to be published in our journal. They wanted to publish their paper in a more prestigious publication. When Ron took charge, he recruited the best minds to be co-editors. He also successfully solicited seminal papers for publication.

Fig. 1. Program schedule for the special session.
now it is where most investigators want to submit their manuscripts. After Galen took over from Ron, he continued this upward trajectory of the journal due to the contributions by many of you here today.

- I could introduce Ron as a pioneer in our field of research. For over a decade, I was able to partially fund Ron’s research while I was at the United States Air Force School of Aerospace Medicine (San Antonio, TX). Our aerospace medicine mission was to better identify pilots at risk of sudden incapacitation while in primary control of an aircraft. More than half the aviators were over age 35. Many of these asymptomatic pilots had silent heart disease. Flying jets stressed their hearts with hypoxia and high G-forces. We had long recognized that ECG criteria were grossly insensitive. For example, the frontal plane axis could change from 5° to 85° yet still remain within the broad normal range. The resting 12-lead ECG criteria were notoriously insensitive for old myocardial infarctions (MI), especially in the segments perfused by the posterior descending coronary artery. We needed better criteria.

Ron, along with Joe Solomon, built a high resolution, 3-dimensional, digital forward model of the cardiac signal generator imbedded in an inhomogeneous thoracic conductor based on measurements of human thoracic conductivity. Myocardial infarctions of varying size and location were simulated and then projected to the body surface [1]. This forward model suggested better criteria and better electrode locations [2]. In 1980, at 11 AM on the last day of a Computers in Cardiology conference in Williamsburg VA, Ron’s colleague, Joe Solomon, was scheduled to present their forward model with autopsy confirmations. Just before Joe was introduced, the session moderator announced that failure to checkout of the hotel by 11 AM would cost attendees another day. Joe presented his paper to a mostly empty hall. Ron and Joe deserve recognition for their pioneering forward model.

Next we found X-ray translucent electrodes that allowed Ron to record a 30 electrode body surface map in humans undergoing coronary angioplasty. The voltage changes with balloon inflation validated the forward model simulations that electrodes are needed below the tip of the left scapula and also in the lower right chest. As predicted by the forward model, the standard 10 electrode locations were silent during balloon inflations in several vascular beds. The standard 10 electrodes remained silent even after the limb electrodes were moved proximally to the shoulders and hips and then made unipolar leads [3]. In 2004, Galen Wagner repeated these angioplasty studies again validating the forward model simulations [4].
I could introduce Ron as a visionary extraordinaire. Ron was the first to show how an MI could be diagnosed in patients with a bundle branch block. Ron was the first to take ECG criteria beyond just locating infarcts to sizing infarcts.

If Ron were with us today, I'd introduce him as my dear friend. What an honor it is to count as a close friend one so highly respected by experts in his field. Ron, however, was not always so respected.

Let me take you back to 1975 to our first meeting in the tiny town of Rindge, New Hampshire. Ray Bonner at IBM had built a digital cart that read ECGs. Ray tried to emulate all cardiologists. Because cardiologists differ as to the criteria they claim to use, and because cardiologists inconsistently apply their criteria, Ray was aiming at a moving target. He was continually tweaking his criteria. Ray confessed that he could not predict the ripple effects of tweaks. The United States Food and Drug Administration (FDA) was required by law to certify the accuracy of machines that read ECGs. So, in 1975, the FDA brought us together with the charge to establish once and for all the universal criteria for reading ECGs.

The 12-lead ECG evolved when electrodes were little metal suction cups attached to the skin with silver chloride gel. These suction cups, each with a rubber bulb, precluded putting electrodes on the back of a supine patient. By 1975, suction cups were being replaced with disposable adhesive-type electrodes that could record from the back of a supine patient. Ron recommended adding electrodes to the back and elsewhere. Ron pointed out that only two of the six limb leads were unique; he recommended replacing four superfluous limb leads with unipolar leads on the back and right chest. Ron and his suggestions were not well received.

In 1975, 12-lead ECG criteria had evolved from single lead analog carts. Because analog computers lack memory, signal averaging was impossible. Instead, low pass filters were used to hide high frequency noise. Unfortunately, these same low pass filters mask notches. Ron pointed out that QRS notches often imply pathology, that they should not be ignored. Ron was ignored.

Because analog computers lack memory, cubic splines could not be used to flatten wandering baselines. Instead, high pass filters were used that distorted ventricular recovery. Ron pointed out that on vectorcardiograms (VCGs), the PR segment is never the same as the TP segment because the atria are repolarizing. Ron cautioned that atrial repolarization becomes significant with left atrial hypertrophy; therefore amplitude criteria based on a zero reference in the PR segment differ from amplitude criteria based on a zero reference in the preceding TP segment. Attendees dismissed Ron’s concern as nit-picking because when measuring amplitudes in the QRS-T wave, residual baseline wander distorts the TP segment far more than the PR segment.

Ron pointed out that most amplitudes are measured only at peaks and nadirs which ignores information in between. Ron pointed out that the peaks and nadirs occur at different times after the onset of ventricular depolarization; therefore they measure electrical activity in different levels of the ventricle. Ron again recommended adding electrodes to the back so that 12-lead ECG criteria could include VCG criteria that consider all of the signal. If Ron got any support, I didn’t see it.

There were no head-to-head comparisons of criteria using ECG test sets with gold standard endpoints. Consequently, there was no way to select one criterion over another. After four days, not one criterion had been established. We did, however, eat and drink well. After dinner, the FDA representative was furious with us. Time was running out and he had nothing to show for this conference the FDA co-sponsored with the Engineering Foundation. The session leader cancelled his program and suggested we start with something simple like the QRS duration in left bundle branch block. He took nominations from the floor. There were five durations proposed. Ron’s nomination was the longest. The debate went on for over an hour. When one advocate got fed up and left the room, his nomination was erased from the board.
Ron then stood up to plead his case; he pointed out that if the initial or terminal forces are perpendicular to a lead, then the duration in that lead will be shorter than the true duration as measured in the VCG. There were booing and hissing. Ron proposed that if they did not get a VCG, then they should at least simultaneously record the eight unique leads with the duration measured from the earliest onset in any lead to the latest offset in any lead. This did not endear him to the attendees. The conference adjourned without establishing a single criterion. Four decades later we have still not established a single universally accepted criterion, but we sure have had fun trying.

Today we have simultaneous multi-lead digital recordings with signal averaging from which VCGs can be estimated from the 10 electrodes of the standard 12-lead ECG. We have enhanced criteria based on clinical gold standard endpoints. We have validated forward models and solutions to the inverse problem. For all this, we are all so indebted to Ron for not giving up on us; for teaching us and for leading us by example.

Remarks by Peter Macfarlane

It is an honor and a pleasure for me to pen some words about Ron Selvester. I approach this appreciation from the standpoint of being a member of the Council of the International Society of Electrocardiology.

I first met Ron and his wife Jean at the 8th International Colloquium Vectorcardiographicum, which was held in Vienna, Austria, in September 1967. It was the first international meeting of any type which I had attended, and I felt a little bit in awe of the experienced individuals presenting their research. One of the social events was a "heurigen" which is essentially a visit to a local winery for what, on that occasion, was an evening of wine drinking accompanied by musical entertainment. I well remember that Ron and his wife Jean were kind enough to take me under their wing and spend the evening chatting with me, and so I came to know them relatively well from then on. This was evidence of their kindness and understanding in looking after me on that occasion.

As an aside, I am sure we talked about the fact that half the papers were presented in German and half in English, with the net effect that we felt it would be necessary to learn German if we were to participate in future meetings. I therefore spent two years at evening classes learning the language, but there was never one other paper presented in German at that meeting, which ultimately metamorphosed into the International Congress on Electrocardiology.

The International Society of Electrocardiology was formed in 1993. Ron became its first Vice President and then President from 1995 until 1997, during which time he presided over the 1996 meeting in Cleveland and the 1997 meeting in Bratislava. We often had the chance to chat formally and informally at these meetings, e.g., in Budapest in 1989 (Fig. 5).

From a personal point of view, I greatly appreciated his advice through the years and he contributed in a major way to a chapter on MI which was included in my 3-volume series entitled Comprehensive Electrocardiology [5]. The full updated details of his internationally known scoring system for assessing myocardial damage after MI appeared in the 2nd edition in 2011 [6].

Ron will be sadly missed by many in the field of electrocardiology who owe much to his meticulous work for what certainly must be the order of 70 years since graduation.

Remarks by Galen Wagner

I first met Ron Selvester in the spring of 1973 (Fig. 6). As Director of the Duke coronary care unit (CCU), I had developed North Carolina Heart Association’s 3-day continuing medical education program for community physicians and nurses. I
invited experts in every phase of the care of patients with acute MI, from pre-hospital emergency care to post-hospital rehabilitation. Ron had been recommended for this program, based on his consideration of MI size for prescribing patient-specific rehabilitation programs in his Rancho Los Amigos Rehab Hospital in the Los Angeles suburb of Downey.

Ron was the final speaker, and I noticed that he kept busy comparing QRS waveforms on standard 12-lead ECGs with systolic wall motion on bi-plane left ventricular (LV)-grams. He wrote numbers onto spread sheets and explained to me that the numbers were the estimates of MI size required to prescribe the rehab programs for each patient. For 5 years, I had watched patients on the Duke CCU develop the serial ECG changes from acute to sub-acute infarction and had viewed the hearts of non-survivors during the weekly pathology conferences. However, I had never considered that the standard ECG could indicate MI size. Ron accepted my invitation to Duke to present his QRS scoring system for ECG estimation of MI size that he had developed from computer simulation and then corrected by observation of coronary angiograms and LV-grams.

During the next 10 years, I prepared for testing Ron’s method by studying the relationship between the ECGs and LV-grams of Duke CCU patients, and accumulating the post-mortem hearts from Duke pathologists Don Hackel, Ray Ideker, and their collaborating colleagues. Ron’s scientific methods were so far ahead of my clinical understanding, that I did not publish my first paper addressing his QRS scoring system until 1982 [7]. During these years, Ron wrote to me that: “I have felt stalled getting the idea validated and accepted. A dozen or more abstracts had fallen by the wayside trying to get this before the world.”

Ron invited Ray and me to join him in presenting our initial collaborative studies at ISCE 1982 at the Santa Barbara, CA Miramar Hotel. Ron’s landmark presentation was entitled: Pathological validation of computer model criteria for localizing infarcts in 12 segments of the left ventricle. Of course, Jeannie also participated at the Miramar, and a highlight of the experience for Ray and me was a visit to their home in Long Beach, CA and to Ron’s Labs at Rancho, which included Joe Solomon’s computer simulation lab and Miguel Sanmarco’s cardiac catheterization lab. In a letter to me, Ron referred to his method as “a model of the total body surface ECG in a realistic inhomogeneous torso using measured anatomy, resistivities, and electrical properties of excitation.”

Ron chaired the ISCE 1983 meeting at Banff, Canada where he organized Marie Cowan’s Committee on Nomenclature of Myocardial Wall Segments, and Ron and I presented Ray Bonner’s Validation of on-line QRS scoring for infarct size estimation by an automated ECG analysis program. I became Ron’s “sidekick” through his ISCE leadership and Journal of Electrocardiology editorialship of the 1980s and 1990s, which he described as: “intense decades of searching for a rational basis for the revolutionary vision.” Like Dr. Seuss in his children’s classic, On Beyond Zebra [8], Ron reminded me that: “My alphabet starts where your alphabet ends.” So, I was proud that he acknowledged me as co-pilot on our “great flights beyond zebra” and, at times, tough negotiations. It was not only jolting, startling, stunning, and astonishing; but also deeply rewarding to me to have had this productive time together. I was happy to turn Ron’s perspective into my tribute to his 20 years as Journal of Electrocardiology editor and ISCE Hall of Fame induction at Hutchinson Island in 2004; On Beyond Selvester. But then he had the last word by reminding me: “I am still 20 years older and 20 years wiser.” Indeed, in this new century, Ron has continued “on beyond” both zebra and me to work with Dave Strauss to adapt his understanding of the electrical properties of cardiac activation, even when the ECG waveforms are confounded by bundle branch blocks.

Remarks by David Strauss

Over Ron Selvester’s last decade, I was extremely fortunate to work closely with him. While we only met in person three times, we spoke so often by phone while I was pursuing my PhD that his phone number is one of the few that I know by heart. Twice I had the pleasure and unforgettable experience of visiting Ron in Long Beach, CA. During my first trip in 2007, I was quite taken by this young 87-year-old with long white hair who was still driving his old Volkswagen bus. The walls of his office were covered with old ECG tapes that he assured me were of much better quality than anything acquired today. Sitting next to his desk there was also a full-sized human torso model for electrophysiology experiments.

In one desk drawer Ron pulled out a VCG workbook he had made for his fellows in the 1970s. In another was his approach to the ECG inverse solution, and in a third were draft score sheets for his famous “Selvester QRS score” to size myocardial infarcts, but in the presence of “confounders” such as bundle branch block. While Ron and Galen Wagner had long ago thoroughly tested the Selvester QRS score for use in the presence of normal conduction, no one had tested these modified criteria for use in the presence of confounders. Therefore, Ron and I developed a plan for me to test these criteria using cardiac magnetic resonance imaging as the “gold standard” for myocardial scar size.

In 2008, Ron and I published a paper on the history, rationale and development of these Selvester QRS scores to quantify infarct size, which I believe may hold a record for largest age difference between the authors on a two-author peer-reviewed paper (63 years) [9]. As detailed in that paper, the QRS scores had their origin over 40 years before, in 1965, when Ron first published in Circulation his computer model of the heart, which was run on an analog computer [10]. Over the next few years, my good fortune continued and Ron and I published many more papers, re-visiting what most thought were accepted truths in, but for which Ron had different ideas based on his unparalleled understanding of cardiac pathophysiology, electrophysiology and the genesis of the ECG. This included proposing a new definition for left bundle branch block and demonstrating that proximal occlusion of the left anterior descending artery most commonly causes right (not left) bundle branch block [11,12].

This final celebration for Ron at the 2015 ISCE meeting is especially meaningful for me because four years ago, Ron made his final trip to ISCE at that same location, and it was the last time that most of us in the ISCE family saw him. Ron was able to attend that ISCE meeting because I had visited him in Long Beach, rented a car, and drove the two of us the
6+ hours’ trip to San Jose. I especially remember our discussions about how Ron was introduced to the field of medicine. Halfway through college as a physics major, World War II broke out. Ron was drafted into the army and assigned to become a pathology assistant. In that role he performed numerous autopsies, which Ron said grounded him in his understanding of pathology. After the war he managed to enroll directly into medical school, without completing his undergraduate degree. According to Ron, he brought his extensive set of pathology slides from the war with him to his medical school interviews, making the case that he should be admitted. This type of trail-blazing approach – combining a quantitative physics background with his deep understanding of pathophysiology – helped him make immense contributions to the field of electrocardiology and medicine. I will always remember and treasure that last drive to ISCE in 2011. It wasn’t a VW bus, but everything else about it was classic Ron Selvester.

Following these invited speakers, the session was opened up to the audience for informal remarks. Milan Horacek, Rob MacLeod, and Alan Andresen recalled their close associations with Ron over the years.

**Part II: tributes to Rory Childers**

**Remarks by Martin Burke**

As a student, colleague and friend of Rory and his family both close and extended, it is a privilege to memorialize a giant of a man with an insatiable intellect.

**Major contributions in electrocardiology.** Rory’s interest and contributions in electrophysiology and electrocardiography commenced in the mid 1960’s with a National Institutes of Health R01 grant entitled, *The Electrophysiology of the Single Beat*. During this seminal period in his career, Rory was a fellow in Gordon Moe’s electrophysiology laboratory and became an expert on *supernormality*. From his work during this fellowship, the pursuit of understanding supernormal conduction led to investigation and publishing on topics such as extrasystoles, concealed conduction, R wave amplitude, atrial repolarization, influences on the QT interval, and back to the ultimate manifestation of supernormality, torsade de pointes. Rory became a regular contributor to the ISCE where his scholarly pursuits were recognized and where he was awarded the Rory Childers Cardiovascular Teaching Award in 2005. He helped set the stage for future contributors and was a champion of the ISCE’s mission to promote excellence in cardiovascular education.

As a teacher and clinician, for all his passions and clinical ability, nothing was more important to Rory than teaching cardiology and electrocardiography to medical students, residents and fellows. Rory was revered by 50 years of students for his brilliance, theatrical delivery, and Irish humor. He received teaching recognition by 14

University of Chicago Pritzker Medical School graduating classes. He won a master teacher award from the cardiology section so often that in 2005 they renamed it *The Rory Childers Cardiovascular Teaching Award* in order to allow other faculty a chance to win the award. Part of Rory’s teaching charm was that he kept students, fellows, and colleagues laughing by telling them the irreverent nicknames Dublins bestowed on their city’s monuments to Anna Liffey, peddler Molly Malone, Dublin’s waterways, a clock, and two women shoppers. They were, respectively: “the floozy in the Jacuzzi, the tart with the cart, the box in the docks, the chime in the slime, and the bags with the bags.”

**Random artistic Rory.** Very much a Renaissance man, Rory was a member of the founding actor troupe of the University of Chicago Court Theatre, distinguishing himself internationally as one of the only parts of the troupe having a day job, that of being a faculty cardiologist. His entertaining persona and Irish heritage led to his yearly performance of *Joyce’s Ulysses on Bloomsday* on the radio and stage. Along with his usual theatrics, Rory was fluent in Gaelic, English, French, and Russian. Using the latter, he became an internationally recognized expert on the Russian Poet Osip Mandelstam. He jumped in with both feet, audited Slavic study courses at the University, taught himself Russian and subsequently, was recognized by Russian scholars as producing very exact translations of Mandelstam’s poems.

Rory also had a talent few knew about, according to his son Peter: “He couldn’t cook, but he could make bananas flambé. Rory enjoyed that it was a very flamboyant dish, and he prepared it with great fanfare, always nearly setting himself and things about him on fire using the brandy.”

**My mentor.** Given my long professional relationship with Rory, I will now craft, using a series of questions, a better understanding of the path and style of Rory’s remarkable achievement in being relevant as a scientist, clinician and teacher for over 50 years!

- **Must one Love?**

Rory was a lover, not a fighter, although he loved the drama of a good fight, because, of course, he was IRISH! He channeled all that he loved passionately, which was almost everything in life. The only thing that he loved more than his interests was his family and friends, and his family and friends usually had something to do with his interests. He loved the University of Chicago—not the buildings but the community, people and intellect. His love, even when required, for knowledge and like-minded people kept him strong and effective. Without doubt, he found art, science, literature, beauty, fire, water, whiskey, air and passion in the electrocardiogram, and this came out each time that he spoke of it. Students loved him for it.

- **How does one find the energy to persevere?**

Well you can’t live on love alone, so there is the lecture at lunch! My first introduction to Dr. Childers was in the fall of
1994 at the first cardiology grand rounds, a noon conference on Fridays. I was an electrophysiology fellow and knew of Dr. Childers but had never met him. The meeting was in J103 off of Ellis Avenue. There was one entrance in the back of the room where it was well catered, creating a long line. Here came a scruffy bearded man walking with intention in scrubs cutoff at the ankles because none were short enough for his legs. He proceeded past every attending, nurse, post doc, fellow, resident, and student to the buffet, passing all the food to pick up a cake knife and take a heaping portion of Eli’s Cheesecake. Nobody was fazed nor said a word. In the end, I think we all realized the needs of a brilliant mind!

- Is it important to be exact?

Brilliant minds can often wander and be abstract. This was not the case in Rory, though his office was a little messy. He was very exact; extremely exact to every inflection. It was his exactness that made him a legendary teacher, speaker, and most important, teller of jokes. No teacher, that I have ever had, was able to be expert, self-deprecating, explicit in their points with perfect inflection, and all with a sense of humor. Every word and syllable was punctuated with humor, and always brilliant.

- Is there value in being a consummate rascal?

Rory was most proud of himself (outwardly, because otherwise he understated) when he was being a rascal and got away with it. Case in point!! One Saturday in the late 1960’s or early 1970’s, Rory came into the dog lab to perform an animal study. He and Mort Arnsdorf were investigating the role of the premature atrial complex in initiating atrial fibrillation. Now telling a story about ground-breaking visionary work in this area was not the point of his revealing the story to me. For Rory, the best part of the story was that, midway through the experiment, the lab tech came in and nearly passed out to find that the dog Rory was working on was the Chief of Cardiology Hans Hecht’s dog who was being housed in the kennel over the weekend. It instantly made the experiment more interesting to Rory (and, I always hoped Dr. Hecht). Both the dog and Rory’s career survived. Rory always kept everyone interested using his humor and rascality in getting his points across and keeping our interest and his intact.

- When teaching…true or false?

Rory always fought hard to find the beauty in life; the more abstract the better. Beauty in all forms was truth to Rory. His interest in reading an ECG or Joyce to perfection found truth for him and with his students. The path for Rory’s passion was in his ability to speak his mind and be open to new thoughts and find new truth. This powerful teaching ability worked to perfection for generations of medical students and with me at the University of Chicago.

- Can one be quiet and still carry a big stick?

Rory was a quiet mentor for me, but undyingly supportive. He worked his magic where he imagined value. He introduced like-minded people; my best work is due to relationships that Rory started. For example, he made a simple call to an internationally renowned electrophysiologist to get me onto a panel of speakers and let me sink or swim. Good God!!! He never expected you might need a life preserver.

Plato relates in the final moments of his mentor’s death, “Such was the end of our comrade, Socrates; a man who, we would say, was of all those we have known the best, and also the wisest and the most upright.” [13]

Thank you Rory for your passion in life, beauty, science, and knowledge in all its forms, and for being my friend and teacher.

Remarks by Paul Kligfield

Rory was one incredible piece of work and a most unforgettable character. I mean character in the sense of exuberant puckishness, impish delight; not quite the classic curmudgeon, because his humor trumped the actual sense of outrage. But he was a bit of a curmudgeon, nonetheless, and that is a good thing: As Santayana observed, “To knock a thing down, especially if it is cocked at an arrogant angle, is a deep delight of the blood.” [14] That was in Rory’s blood, no
doubt. Rascal is certainly a good descriptor. He was fierce on the outside, soft somewhere just below the surface, entirely tuned to the big and little absurdities of life. This was apparent in his twinkling and penetrating eyes—there was laughter there and some sadness at the same time. Nothing seemed to please him as much as a good story told with enthusiasm and wit, so long as the timing was right. He was the absolute master of the tale well-told, even the same story again and again, especially when there was even one uninhibited acquaintance listening in astonishment. Yes, there were jokes, some classic, some not, mostly irreverent. But more typical stories on his part were personal adventures from a rich and eclectic life. These were funny, sad, revealing, quirky, political, and social. There were stories of Ireland and family especially, but also of America.

Late evenings with Rory were the very essence of ISCE, all summatting in repeated stretches of magical camaraderie that now blend together as decades of unabashedly roaring belly laughs, enjoyment, and maybe even a few tears among friends (Fig. 7). What a gift, and what memories to treasure. I, among many others here, am privileged to have known him.

Remarks by the Childers’ Family

Rory’s wife, Michele, and sons Peter and Daniel expressed their appreciation for the special session. They were deeply moved by the remembrances and tributes, which were so very cherishing of who Rory was as a scientist, clinician, mentor and friend of other scientists and clinicians. The family especially wished ISCE to know how grateful they were for the many years of happiness Rory enjoyed as a member of a community of electrocardiologists and engineers who not only shared his dedication to science, but afforded him the company and deep authentic friendship of peers he admired and who truly appreciated his intellect, personality and passion for life.

More photographs and stories can be found at: rorychilders@tumblr.com. Then, the family delighted the audience with excerpts from a recently-discovered letter describing Rory at age 9 by his mother, Ruth Ellen Dow:

Dearest Auntie Dulce, Rory is the *enfant terrible*, with wicked laughing eyes, mischievous mouth and a terrific sense of humor. He makes up limericks and plays practical jokes. He is strong as a horse, knows no fear. Hangs off branches of tall trees which he climbs like a monkey, leaps across rocky mountainsides. He [does] stunts on his bicycle and terrifies us, rides down to the sea at 5 in the morning in the summer unbidden. Rory adores animals, trains the dog to [do] wonderful tricks, cannot bear to see an animal in pain, but enjoys the kill at a hunt paradoxically. He likes everything to do with the life of a country gentleman. Wants to learn to fish and shoot and hunt, is interested in farm life of all kinds, keen on growth of plants and gardens, on insects and experiments with animals. Wants to understand all the workings of animal life, to see their insides, brains and organs, etc.

He is very keen on geography and all that goes with it — maps, geographical features, etc. Reads animal books — all that he can put his hands on and reads them over and over. We found a book he had marked the other day... he had put marks on Victoria Falls, the buildings of the Greeks and other natural and built wonders. [He] is a year ahead in [school] work but without much effort. Is always inventing games — much more self-contained than the others. He will play outdoors making submarines all day by himself. Is not naturally polite but can be very much so if he thinks about it. Is rather naturally wild and untamed, and for this reason terribly loveable. Cares nothing about his appearance and is quite willing to go around anywhere in an old jersey and a pair of corduroy trousers with his seat half worn-out. Completely unself-conscious and asks the most astonishing questions about natural phenomena.

Remarks by Ian Rowlandson

Dr. Rory Childers fostered excellence in clinical electrocardiography. He began working with Marquette Electronics after attending a medical advisory board meeting in 1984. Each year
his relationship with Marquette grew until he was hired by Mike Cudahy to be the “Manager of the Office of Grants” from 1993 until GE acquired the company. In this role, Rory made key funding decisions for the company, which led to such innovations as the pre-hospital ECG that is now widely used for the diagnosis of acute myocardial infarction by ambulance staff. The pre-hospital ECG alerts hospital staff so they can be prepared to open the culprit artery before permanent damage has occurred to the heart. This care pathway has been found to be so effective that metrics associated with it are required to be reported to the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and the Centers for Medicare & Medicaid Services (CMS).

Some of us at Marquette were fortunate enough to be trained by Rory who motivated us to do our best via his biting wit. Rory had a keen intellect. Not only did he know more about the ECG than anybody else, he had an extensive background in history, French and Russian literature, music, and the arts. Rory loved humor, especially when it was tinged with satire or situational irony. For instance, at the Marquette Electronics medical advisory board meeting in 1984, we took a boat trip. As a young, fledgling company we were out to impress. However, as soon as the boat left the dock, all you could hear was retching. Everybody got seasick, except of course, Rory. At one point, Mike Cudahy’s wife knocked on a restroom door asking if she could do anything to help. From inside, one of the doctors from India said: “Oh please, just let us die alone.” More than ten years later, Rory would love to tell that story in great detail, perfectly imitating each dialect and then fall into a deep belly laugh. Rory, we were blessed to know you and we will certainly miss you.

Following these invited speakers, the session was opened up to the audience for informal remarks. Justin Mortara recalled his close associations with Rory early in his career and how helpful his wisdom in clinical electrocardiology was for his work in industry.

Closing remarks by ISCE President, Robert Lux

When I asked Barbara Drew to take on the task of planning a tribute to honor Ron Selvester and Rory Childers, I knew it would be well done. But today’s session has been exceptional. Thank you Barbara and thanks to all of you for your thoughtful and heartfelt remembrances.

If Ron and Rory had been here, I think they both would have been just a little critical about the discussion portion of the session! I can clearly hear their retorts: 

“The questions and responses were too soft!”

“What were the hypotheses?”

“Show us the data!”

“What were your gold standards?” or,

“If I’ve told you once, I’ve told you a hundred times, that is an S wave, NOT an inverted R wave!”

Ron and Rory represented the essence of ISCE! Always thinking! Always questioning! Always learning! Always sharing their innovative ideas, creative insights, and lucid understanding!

Early in their careers, these pioneers were at the forefront of the movement to elevate electrocardiography from a medical art to an applied science. They welcomed and promoted the emerging electronics and computing technologies, and envisioned how they could transform all aspects of electrocardiography — recording, measuring, analyzing,
interpreting, visualizing and connecting ECG waveforms to their underlying pathophysiologies.

Their vision of an improved diagnostic and prognostic tool relied on critical, creative, and open thinking that was securely anchored by the history, wisdom and science of the field. They weren’t afraid to challenge the “current wisdom” in order to ensure success in achieving the objectives of an improved electrocardiographic examination. Ron and Rory were truly giants of modern electrocardiology and of ISCE. Until their final days, they pursued their passions for understanding and furthering the utility of the ECG.

ISCE has a Hall of Fame Award that is given in honor and recognition of those individuals who by outstanding achievement have produced lasting contributions to the field of computerized Electrocardiology. The first recipient of this award was Ron Selvester in 2004. Here at this 2015 ISCE Annual Conference, we are adding Rory Childers posthumously to the Hall of Fame (Fig. 8).

Thank you Ron and thank you Rory for sharing your knowledge, insight and wisdom! Thank you for inspiring us in our careers to carry the standard that you helped to forge! Thank you for over a century’s worth of excitement, discovery and direction! And, thank you for your friendship.

Reception following special session

A champagne toast was led by David Mortara (Fig. 9) and a champagne “chaser” (beer) toast was led by Dewar Finlay (Fig. 10). A sing-along of “When Irish Eyes Are Smiling” was led by Mary Carey and Rebecca DiMaio (Fig. 11). There were bursts of laughter and tears of sadness as stories and memories were shared. The special session came to a close and the spirit of Ron and Rory accompanied us to the poster session.

References