

Advocates for People living with Alzheimer's and Dementia, Inc. (APLAD)

Statement of Purpose

APLAD, unlike the Alzheimer's Association, is unique in that it deals primarily with the experiences and feelings of the people affected by the disease and attempts to provide resources to inform, educate, and equip both the person with dementia and their caregiver(s) to enable them to be able to live a good life for as long as possible. Compared to the purpose of the Alzheimer's Association and others which are dedicated to eliminating Alzheimer's disease and other dementias through research; providing and enhancing care and support; and reducing the risk of dementia through the promotion of brain health.

APLAD's purpose is to be a proactive advocate through a limited number of initiatives, some short in duration and others long term. The intent is to maintain a tight focus and pursue with excellence a few initiatives that require a minimum amount of facilitation and minimal capital resources. The initiatives may change as time passes but they currently include the following:

1. The primary initiative is to maintain the web-based "My Journey with Dementia"(MJD) established in January 2014, substantive, monthly first-person autobiographical video journals or "digital journals of Dr. Robert "Bob" O'Donnell" (diagnosed with Alzheimer's in 2014) and other people diagnosed with dementia. The video running time is limited to approximately 20 to 30 minutes and content is presented by a person living with Alzheimer's or other dementia. The videos present the personal, extremely difficult, terrible, actual experience of progressive dementia in real time and how the subjects deal with it. Videos are recorded live with no written script but with a list of points to cover as a guide. – you can see examples at <http://ftda.cs.unh.edu>
 1. a. Alternate video subjects. Recruit and equip individuals with dementia who have the desire and ability to substitute for Dr. O'Donnell when necessary
2. In late 2015 we intend to facilitate the production of videos of caregivers of loved ones with dementia who will give candid accounts of their journeys. The videos present the personal, extremely difficult, terrible, actual experience of progressive dementia in real time and how the subjects deal with it. Videos are recorded live with no written script but with a list of points to cover as a guide.

The videos present the emotional FEELING or perception issues experienced and communicated by those afflicted by dementia and their caregivers. For example: How they experience guilt, fear, anger, etc., or other similar issues. Procedures have been established so no vulgarity will be put on web. But, many tears will be shed and much

APLAD has applied for an EIN tax number, applied as a non-profit Corporation with the state of New Hampshire and as soon as it receives the EI and number that will of complete and file an IRS form 1023-EZ. We expect that will have full ability to accept donations within a month. \$1500 has already been pledged, so they will be able to carry their weight of replacing the server and their fundraising has just begun.

This IEEE and AESS History of Service

Since many of the AESS BOG members are not familiar with my long association with IEEE/AESS, I am including my history with the IEEE/AESS. I have been an IEEE member since about 1970. I was elected to the AESS Radar Systems Panel in 1979, was vice-chairman of the panel for 1983-1984, and chairman of the Panel for 1985 through 1986. I served as Chairman of its Awards Committee (1987 through 1993) and its Laser Radar Committee (1981 through 1986) was an active member of the Panel until through 2003. I was appointed, by the Society President, as a member of the Board of Governors of the AESS in 1997 to fill the term of BOG member who resigned, and was elected to that office for several terms, until reasons of health caused me to curtail the necessary travel to board meetings. I held several positions on the board during that time. I was appointed VP Technical Affairs in 2000 and VP of Education, each for several years. In addition, I was a member of the Award Committee for the IEEE Dennis J Picard Medal for Radar Technologies and Applications for several years. I was elected IEEE Fellow in 2003 "for contributions to advanced surveillance and tracking radar systems." and am presently, a Life Fellow.

Few Words about My Health.

As many of you know, I suffer from chronic fatigue syndrome (CFS) which I will have till I die. Its main symptom is that I have a diminished number of hours that I can perform sedentary work, usually about 4 to 5 hours a day; if I exceed that number I become extremely fatigued and have to get bedrest. If I exceed the 4 to 5 hour a day limit; say 8 or 9 hours in a day, I will suffer from a from a symptom of the disease called post exertion malaise. This takes about a week of constant bedrest to overcome. The other illness that I have is that of Dementia. It typically takes about 10 years to kill you. The type of dementia that I have has not been precisely diagnosed. I have even consulted with the head of the Dementia and Alzheimer's Department at the Massachusetts General Hospital. In time, the exact diagnosis will become more apparent. My neurologist says that its progression appears to be slow. Presently my short-term memory is not good but I can get along quite well and when I am talking with someone on the telephone, a lot of the time, the people at the other end of the line don't believe that I have dementia, but, yup believe me, it has truly affected my short-term memory. However, my long-term memory is superb and my cognitive skills are quite good, so sayeth the neuro- psychologist and my neurologist. I hope to be able to finish the 2 radar lectures before the dementia attacks those vital cranial brain functions. I've learned to take life one day at a time. I joke that I don't worry about yesterday because I forget what I did, I don't worry about today because I've got the tasks written on a list, and if I need to know about tomorrow, I look at the calendar.

Radar Systems Course History

While I was employed at MIT Lincoln Laboratory, I was a member of the Laboratory's Education Committee and started teaching parts of radar courses and organizing other radar courses, until I left the Laboratory in 1983. While as was employed by RCA Missile Systems Division, in Moorestown, that New Jersey, taught an introductory radar course to the members of radar systems engineering department that I managed there. After I returned to Lincoln Laboratory I developed a video Radar Systems course for Lincoln Laboratory Assistant Staff, who typically have a BS degree in science, engineering or the equivalent. That course was subsequently modified into a second intense three-day course (admission this course was by invitation only) for military officers and government personnel (typically at the Major or Lt. Col. or civilian equivalent position). The second of the two courses was presented to at a lower technical level suitable for many military offices whose degrees were not in science or engineering. These courses are still being offered extensively at MIT Lincoln Laboratory (the first course is available on disk at the Laboratory's library and the second course is now offered yearly with live instructors who are Lincoln staff members. The second course is still being offered yearly at MIT Lincoln Laboratory. An unclassified version of the elementary course is available for viewing on the MIT external website and the IEEE New Hampshire Section website.

It was at this time, that I started developing an advanced Radar Systems Engineering course that would be useful for any radar engineering professionals or new graduates with advanced degrees, MS or PhD, in science or engineering. I started the course in earnest, just after I retired in late 2007. I received significant financial, as well as collegial, support for this initiative from the AESS Board of Governors. I wanted the course to be available Free of Charge to the entire worldwide Electrical Engineering community; at universities as well as individual radar engineers in industry (i.e. Raytheon, Lockheed Martin, Boeing, Northrop Grumman, etc.). The only restriction is that the course material could not be used to generate taxable profit or compensation. I have not received any personal financial compensation of any kind for this endeavor, from the IEEE or any other source.

The funding channel for financial resources used was a grant by IEEE AESS to the IEEE New Hampshire Section for the necessary computer hardware and software for course development and for a server (cost of server was \$8948.19) which links the developed course software in HTML, which then uploads the HTML course material to the server located at either a for profit company or the University of New Hampshire (which agreed to hosting the course and to perform software interfacing tasks at no cost on their website cs.unh.edu. The IEEE AESS also sufficient funding for a desktop and a backup laptop to house the necessary applications software software that would via the web interface with the IEEE funded server located at the University of New Hampshire. Mr. Scott Valcourt, then a UNH Computer Science Instructor and the software guru of the CS department, and is presently his position at the University is Director of Strategic Technology, reporting to the VP for Information Technology at the University of New Hampshire), was incredibly helpful in performing, voluntarily, at no cost, the software interface tasks between the Dreamweaver output, the IEEE purchased Dell server, and the UNH domain (CS.UNH.EDU), Scott is an IEEE AESS member, as well

as a IEEE Computer Society member. He performed this work at no cost and is still performing related work for us even with increased responsibilities that come with his promotion. The CS Department faculty and College management have been solidly behind the effort.

. Several years earlier, before my retirement, I had taught a similar course several times before at Lincoln laboratory for the use of incoming MS, PhD staff members to bridge the gap between what someone learns in graduate school (physics, electrical engineering, computer science and physics majors) and what one needs to jump into the radar systems engineering field with as little discontinuity as possible. It has been very useful for electrical engineers who have specialties like signal process signal processing or microwave engineering to be brought up to speed in the field of radar systems quickly using this course. Many of the users of this present course, which is on the web, have been with the latter type of engineer. Presently, the course consists of 19 lectures (about 1800 view graphs) encompassing 26 hours of lecture.

Since users can download the entire course free and copy it onto a DVD, the course has reached many other people, in addition to those noted above. In addition there are a number of graduate schools in the country that use the course as the main lecture material in teaching a radar systems course this set of lectures.

Each lecture is very well documented with references and I have meticulously obeyed intellectual property rules law Items generated by me are licensed under Creative Commons license 'RMOD Radar Systems' (which stipulates that any reuse requires attribution, it may be used only for noncommercial use, and the stipulation that it can be shared and share alike. I use used a large number of photographs and JPEG's from other sources that are copyrighted by commercial radar vendors such as Raytheon, Northrop Grumman, Lockheed Martin, etc. and other sources. I have received written permission for the use, in the course, from all of these sources. Drawings and viewgraphs, etc. that originated from other sources have been re-rendered from copyrighted drawings by myself using Adobe Illustrator, so that there has been no copyright infringement. Please note that the only exemption from other people using the course is that universities may use it (it's called the exemption clause in copyright usage law) free of charge, when the material is used at a University where the students pay tuition and get a grade for the course, do homework problems, and take a final exam. Several individuals (in behalf of profit/consultancies) have asked to use the material either as a basis for or to augment courses that they are preparing, usually for countries abroad for presentation, charging the usual very high consultant fees for such services. I have denied all of them usage rights, even though they have offered me monetary compensation for allowing them use of radar course material. I reiterate I have received not one penny of compensation for this effort

When the present IEEE purchased server the University of New Hampshire dies, the University of New Hampshire does not have the funds to replace it. As you all know state funded universities are pinching their pennies very much this year and the University of New Hampshire is no exception to that. The other computer equipment which resides at my home is quite new, are in good shape having been newly repaired or replaced because of the recent lightning damage. As mentioned earlier this has strained the funds in my account with the IEEE New Hampshire section. The operational IEEE computer (the one that was there before the lightning strike and was

totally trashed power supply and motherboard, that is resident in my home) is operational and should last for quite a while.

. I reiterate again: **This course is intended to be my gift to the radar community free of charge and done without any compensation to me.**

Radar Course Recognition

Over the past 4 1/2 years, the course has received many e-mails/awards noting the importance of this IEEE AESS educational venture. (Obviously, the AESS, by their financial support shares note in these following awards)

1. In 2007 the IEEE AESS issued a proclamation stating "whereas the IEEE started preparation and distribution of electrical engineering video tutorials called IEEE Expert Now at a cost to the Society of \$20,000 per tutorial, Let it be known that Dr. Robert O'Donnell of MIT Lincoln Laboratory with significant support from Lincoln Laboratory conceived of a method to do this at 1/10 the cost and allow IEEE student members at the University of New Hampshire to work and gain experience in this endeavor. Therefore let it be proclaimed the Dr. Robert O'Donnell be identified as the IEEE aerospace and electronic systems society quote 2007 innovator of the year" signed James Leonard (May he rest in peace), AESS President.
2. Also, I was received an award by the IEEE New Hampshire Section as the 2012 Crusader of the Year (I don't know where they dreamed up the name of that award) "In recognition for his dedication and contributions as an educational leader resulting in accomplishments not only as an educator, but in the academic structuring of a radar technology curriculum, which is reaching students, engineers, and scientists throughout the entire international community". The award was presented by Peter Staecker, then President Elect of the IEEE for the year 2013
3. Finally, I received in 2013 the IEEE Region 1 Outstanding Teaching Award "For exceptional leadership and vision and advancing radar systems engineering education" I bring up the fact of these awards so that members of the AESS Board, most of whom I have not met personally would understand that these awards were only possible because of the collegial and fiscal support of the IEEE AES society in this effort

Radar Course Anecdotes

My two youngest sons Brian and Andy recently received PhD's in electrical engineering from Arizona State University and the Ohio State University. They received through their own hard work offers, to work at some of the best companies/institutions in the country that do sensor system work. Andy is an amazing theoretician who did his thesis in in electromagnetic theory at the Ohio State University, probably one of the best if not the best center of academic electromagnetism research in the country; Brian, whose interests are more balanced between theory, hands-on work, and analytical studies, chose to go to work at the Georgia Technical Research Institute and Andy went to MIT Lincoln Laboratory. They appear to be both very happy with their choices.

Andy had also noted to me that before he started graduate school at the Ohio State University he watched the entire radar systems engineering course on the web.

He noted that it was very easy to get an A the OSU radar systems course, taught by Prof. Joel Johnson, an IEEE fellow. If any of you are familiar with Joel's work he is no softy and was a student of the late Prof. Kong at MIT, where he received his PhD (before his tragic and early death at the age of 65; Kong was the PhD thesis advisor to 137 students and authored several noted texts and electromagnetic theory.

While they were waiting for their clearances to come through one of Brian's colleagues who was also a new hire, came to him and asked him if Robert O'Donnell was his father because he was learning about radar using the IEEE AESS radar system engineering course. Andy had a similar experience. His Lincoln Laboratory office mate asked the same question and also noted that another new hire was taking the course at his office down the hall. I guess that made me feel pretty good. The course has made a significant impact.

Shortly after the course was launched Igor, who I believe was a former AESS BOG member, sorry but I forget his last name, sent me a wonderful e-mail saying good thing about the course and included a whole bunch of JPEG's of Russian radar systems that I had not seen anywhere on the web but were used by him in a paper published in an eastern European radar Journal. Remarkably, only about 1 in 10 electrical engineering universities in the country have a radar systems course and half of those universities, teach it only as it pertains to remote-sensing radars (sophisticated Doppler processing techniques are not included)

Proposal to the IEEE Aerospace and Electronic Systems Society for a Grant to the IEEE New Hampshire Section for Supplemental Funding for Operation and Maintenance for the of 'Radar Systems Engineering' Website

Dr. Robert M O'Donnell, IEEE Life Fellow

September 16, 2015

I have created a quite useful body of radar systems engineering lecture material with AESS support over the years. It is hosted, free of charge on the website of the University of New Hampshire. Presently, it consists of 19 lectures (two more are being added); about 1800 view graphs and is about 26 hours long. It has received a lot of usage over the 4 1/2 years of its operation and has been accessed by 25,000 to 35,000 unique URLs, most of the viewers are from the United States but about 15 to 20% of the usage is from users overseas It is viewed by the large companies like Raytheon, Northrop Grumman, Boeing, and Lockheed Martin, the FFRDC's (such as The MITRE Corp., MIT Lincoln Laboratory, etc..) the Naval Research Laboratory, GTRI and other similar corporations, and government institutions, as well as by a very large number of individuals. Access to the course material is free of charge. The users are allowed to download the video course material, as well as PDFs of the lectures viewgraphs. In total, about 4 1/2 Terabytes of courseware material have been downloaded in the 4 1/2 years. Users range from professional radar engineers who are moving from one type of radar work to another type of radar work and need to polish up on a particular technique such as a surveillance radar engineer who is moving on to SAR work and those fresh out of universities who need to develop radar skills.

The server at the University of New Hampshire on which, the course runs through, and which the IEEE paid for (~ \$8900) is reaching the end of life. A replacement server will cost about \$2500 -\$3000. The new server would also be shared

with ALPAD (see Attachment 1), a new nonprofit Corporation that is being set up, to do the web based Alzheimer's diary work that I also am involved with. APLAD already has the funds pledged to cover their half of the cost of a new server. The IEEE share of the server replacement is about \$1000 – 1500. No IEEE funds will be used for APLAD, the dementia diary initiative. As of August 1, I had a quite reasonable surplus in my account at the IEEE New Hampshire section credit union. The treasurer of the section maintains a separate line item for AESS grant expenditures. On August 3, lightning struck about 70 feet from our home. It destroyed just about all electronic circuit boards in our house. We did not have a computer rider on our insurance coverage. The surplus, in the New Hampshire IEEE section credit union, was drained by the damage assessment, repair, and replacement of the IEEE owned equipment. The present account balance is in the AESS New Hampshire section account about \$80.

As mentioned earlier, two additional lectures are under development by me. One lecture covers Over the Horizon Radar (75% complete) and the Second on adaptive signal processing (about 50% complete). That would increase the total number of lectures in the course from 19 to 21. In addition, I will also be adding to the website tutorials that were developed by Simon Ward and Hugh Griffiths that, with apologies to them, I haven't had the time or physical energy to get up on the website. I will get them up on the website in the next couple of months.

I am asking for a grant of \$2000 to the IEEE New Hampshire section to find a replacement server for the aging one. Without this funding the radar systems engineering course material will not be available soon as the server, purchased in 2007, is likely to fail at any time. The remainder of the \$2000 grant will be used for operations and maintenance of equipment and software during the coming year. None of that \$2000 grant will be used for my dementia initiative. All of that funding will come from APLAD (see attachment5)

For those of you who are new to the board of governors IEEE whom I haven't met, I am attaching a number of documents which will give you much more detail about the radar course history, evolution, and other information that will be useful in your deliberation

A Final Note

I received the following e-mail on 9/6/2015 from Joseph Kreitinger@gmail.com

Dear Dr. O'Donnell,

Hi, my name is Joe. I just graduated from college, and I started my career as a radar engineer. While waiting for my security clearance, I watched your video lectures to learn and refresh my knowledge on radar systems. I have to thank you for uploading these lectures for free. I found them to be very helpful.

Thanks, Joseph Kreitinger

In conclusion, I couldn't have said anything better than Joe in his e-mail. The AESS BOG made this possible and I wish the Board to provide the small funding to continue this great educational work both for the "Joe"s of the future but also for their employers.

Thank you for your consideration.

I request that the grant be approved and the funds be sent to the IEEE NH Section Treasurer as soon as possible after the late September AESS Board of Governors meeting. Please e-mail me at rodonnell209@gmail as soon as a decision is reached at the BOG meeting so that I can either breathe easier or figure out another way of receiving funding to keep course on the air.

Attachment 1 - APLAD information, Attachment 2 - IEEE AESS Service History, membership on the BOG, Offices held and Status of Health Issues . Attachment 3-Radar Course History & Health Issues, Attachment 4- Radar Course Recognition, and Attachment 5- Anecdotes.

Blessings and Regards, Bob O'Donnell