

NCRAR Newsletter

VOLUME VII, ISSUE 3

JULY 2007

SPECIAL POINTS OF INTEREST:

- Article by Debra Wilmington Ph.D., and colleagues "Ototoxicity: Identification and Prevention"
- NIH-NIDCD funding awarded for NCRAR conference 2007

INSIDE THIS ISSUE:

- Wilmington et al 2-3 article (cont.)
- Community 3 Lecture
- Upcoming Events 4
- NIH-NIDCD 4 conference funding
- NCRAR News 5
- Research funded 5 4/07 to 7/07
- Meet Gaby 5 Saunders Ph.D.
- NCRAR 7-8 Publications
- Musings of an 8 Au.D. Student intern

Message from the Director: Stephen Fausti Ph.D.



Since the NCRAR was established in 1997, we have experienced remarkable growth and development as a national institute for auditory rehabilitation research. We have a unique combination of multi-disciplinary doctoral level research investigators and educators, working together in world class facilities and the vast VA network of hospitals and clinics to focus on the rehabilitation of auditory dysfunction and translation of research findings into auditory rehabilitative practice.

Core funding has been key to the NCRAR becoming one of the country's premier centers for auditory research, and has facilitated the acquisition of investigator-initiated research funds from diverse sources. It gives me great pride and pleasure to announce that we were recently awarded RR&D funding through 2012 to continue as the only VA National Center dedicated to the discovery and delivery of cutting-edge solutions to auditory dysfunction. These core funding resources will support and expand the NCRAR's research to respond to the needs of veterans.

Hearing loss and tinnitus are the most common service-connected disabilities in veterans. To meet the needs of current and future veterans, the NCRAR will expand its focus on rehabilitative auditory research. Several new research initiatives are beginning within the NCRAR in response to high priority rehabilitation needs of the VA. One such area involves the growing incidence of hearing loss

(Continued on. on p6)

OTOTOXICITY: IDENTIFICATION AND PREVENTION

Debra Wilmington, Ph.D., Dawn Konrad-Martin, Ph.D., Jane Gordon, M.S., Wendy Helt, M.A. and Stephen Fausti, Ph.D.

Ototoxicity is the damage to the inner ear caused by toxic agents commonly used to treat cancer and life-threatening infectious diseases. This damage results in hearing and/or balance problems that are often permanent. Symptoms of ototoxicity include tinnitus, dizziness, and difficulty understanding speech in noise. Approximately four million patients in the U.S. are at risk for hearing loss from the nearly 200 prescription and over-the-counter drugs that can potentially cause ear damage. The most common of these agents are aminoglycoside antibiotics (such as gentamicin) and platinum-based chemotherapy drugs (such as cisplatin). In addition, loop diuretics often prescribed for congestive heart failure, renal failure, cirrhosis and hypertension can cause ototoxicity. The effect of these drugs can be additive, so combinations of drugs may cause more hearing loss than taking one alone. A significant percentage of patients who receive ototoxic drugs experience hearing loss. For veterans treated

Cont. on p2

**NCRAR Newsletter
July 2007**

General information

**NCRAR is located at:
Building 104, level P5, at
the Portland VA Medical
Center, Portland Oregon**

Address:

**3710 SW US Veterans
Hospital Road,
Portland OR 97239-2964**

Phone Numbers

**Portland VAMC:
(503) 220 8262**

Extensions

**Director, Stephen Fausti
Ph.D. , ext. 53306**

**Special Assistant,
Bonnie Becker, ext.
54525**

**Front Desk, Marcia
Collins, ext. 55568**

**Deputy Director of
Administration, Patrick
Helt M.A. , ext. 58260**

**Deputy Director of
Research, Marjorie Leek
Ph.D. , ext. 54692**

**Deputy Director of
Education, Outreach and
Dissemination, Gabrielle
(Gaby) Saunders Ph.D.,
ext. 56210**

Fax: 503 721 1402

**Newsletter editors:
Gabrielle Saunders
Carolyn Landsverk**

OTOTOXICITY: IDENTIFICATION AND PREVENTION (continued from Page 1)

with ototoxic drugs, the presence of pre-existing hearing loss places them at an even greater risk.

The NCRAR has been a pioneer in the field of ototoxicity. Our research efforts have led to the establishment of early identification testing procedures and the development of testing equipment. To minimize the effects of ototoxic agents, the earliest changes in hearing sensitivity must be detected, enabling health care providers and patients to make informed treatment decisions. Because ototoxic hearing loss occurs initially at the highest frequencies an individual is able to hear, ototoxic hearing loss may go unnoticed until a communication problem becomes apparent, signifying that hearing loss has progressed to the frequency range important for speech understanding. Similarly, by the time a patient complains of dizziness, balance function is probably already impaired. Early identification and monitoring of ototoxic hearing loss are critical to facilitate alternative treatments, whenever possible, that can minimize or prevent communication impairment.

Early Identification

Symptoms of ototoxicity are poorly correlated with drug dosage and other laboratory values. Therefore, the only way to detect ototoxicity is by assessing auditory and balance function directly. Symptoms resulting from ototoxic changes vary from patient to patient and can follow administration of a single dose, or may not occur until after weeks or even months of treatment. Identifying ototoxic damage early can improve treatment outcome by minimizing hearing loss progression, and by providing opportunities to counsel patients and their families regarding ototoxicity-induced hearing loss, tinnitus, dizziness, and rehabilitation strategies. In addition, exposure to loud noises while undergoing treatment, and up to six months after treatment, can intensify ototoxic damage to the inner ear. Therefore, identification of ototoxic hearing loss is essential for practitioners to counsel patients regarding

hearing conservation techniques.

Measures of Ototoxicity

NCRAR has pioneered the use of high-frequency audiometry focused on minimizing and preventing ototoxicity which has been adopted by the American Speech-Language-Hearing Association guidelines for the management of treatment when using these agents. Extending audiometric testing to include frequencies from 9,000 to 20,000 Hz is the most effective way to detect the early stages of ototoxicity. Since testing all frequencies is time-consuming, the NCRAR has developed a testing technique to identify the range of frequencies at the upper limit of each person's hearing that will typically show initial ototoxic hearing changes (sensitive range for ototoxicity, SRO). Monitoring for early indications of ototoxicity using only the individualized SRO is effective and dramatically reduces testing time.

Despite this discovery of a clinically efficient, sensitive and reliable shortened protocol, there are no commercially available portable audiometers capable of evaluating hearing using this technique. The NCRAR is currently developing a portable, hand held device for the early identification of ototoxicity. The device will be suitable for both onsite (hospital wards and clinics) and distant site (other hospitals, clinics and patients' homes) testing by audiologists, non-hearing health care professionals and patients themselves. Ultimately, the computer-automation of this system will permit remote transmission of test results to a centralized database for analysis, interpretation *Cont. on p3 opposite*

Research Reaches the Community

NCRAR Investigators Dave Lilly, Ph.D. and James Henry, Ph.D., were the featured speakers at the first presentation of the NCRAR Community Lecture Series held May 17 in the PVAMC Auditorium. The topic was “Treatment for Hearing Loss and Tinnitus: State of the Art”, and focused on new developments in hearing aid technology and newly developed options for tinnitus treatment. The diverse audience of 86 people included veterans and their families, PVAMC employees, members of organizations serving people with hearing loss, such as the Hearing Loss Association of America and the American Tinnitus Association, and others who had learned of the lecture through “May is Better Hearing and Speech Month” outreach activities. In the audience were several young adults who were interested in the topic due hearing loss associated with exposure to loud music, iPods and MP3 players. The PVAMC Auditorium, with its newly installed FM system and two large flat screen monitors, was an excellent venue. Closed captioning and FM receivers were provided, and attendees with hearing loss felt supported in their efforts to hear and see the presentation. The next NCRAR community lecture will take place on **September 6th**. For more details see the NCRAR website: www.ncrar.research.va.gov



OTOTOXICITY: IDENTIFICATION AND PREVENTION (continued from Page 2)

and follow-up. Advances of this nature are needed to make ototoxicity early detection a standard of health care.

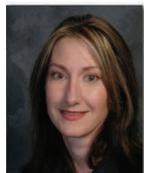
Prevention

Finally, the key to minimizing ototoxic damage is to find ways to prevent these agents from damaging the inner ear.

Currently there is a great deal of auditory research to find ways to protect the ear from ototoxicity. The NCRAR is beginning a new research study to determine the effect of an antioxidant to reduce ototoxic hearing loss. Results from this research may lead to new strategies for the prevention of ototoxicity, improving treatment options for patients. Early detection and monitoring programs along with preventative therapy may significantly reduce the number of patients who suffer disabling hearing loss requiring costly rehabilitation. The prevention of ototoxicity would also reduce the potential for medical, legal, and socioeconomic consequences of hearing loss and ultimately allow patients to retain a better post-treatment quality of life.



Debra Wilmington, Ph.D. is a NCRAR Investigator and Asst. Professor, Dept. Otolaryngology at Oregon Health & Science University (OHSU). Her research focuses on the use of otoprotectants for the prevention of ototoxicity and noise damage, ototoxicity monitoring, and auditory system plasticity.



Dawn Konrad-Martin, Ph.D. is a NCRAR Investigator and Assistant Professor, Dept. Otolaryngology at the OHSU. Her research focus is aimed at understanding physiological contributions to impaired speech comprehension in the elderly.



Jane Gordon, M.S. is a NCRAR Research Audiologist who is involved in research projects concerning the detection and monitoring of ototoxicity, objective measures of ototoxicity and hearing loss prevention.



Wendy Helt, M.A. is the Lead NCRAR Research Audiologist who is involved in research projects concerning the detection and monitoring of ototoxicity and the development of a portable ototoxicity monitoring unit.



Stephen Fausti, Ph.D., is the ACOS and Director of the NCRAR at the Portland VA Medical Center, and Professor of Otolaryngology at the OHSU. He has a 35 year history of ototoxicity research and is the head of the ototoxicity research program at the NCRAR. His other research interests are the study of auditory function, its relationship to pathology and communication, and hearing loss prevention.

Upcoming NCRAR Events

We are pleased to announce that most NCRAR seminars are broadcast via v-tel to other VA facilities. Contact Gabrielle.saunders@va.gov if you wish to view them

July 13: NCRAR Seminar. **Christopher Stecker Ph.D.** University of Washington, Seattle. Sound localization and binaural discrimination of high-frequency click trains: implications for bilateral cochlear implant users.

August 17: NCRAR Seminar. **Terry Chisolm Ph.D.,** Department of Communication Sciences & Disorders, University of South Florida. Use of FM Systems in Adults with Hearing Loss

September 1: Early registration

for NCRAR conference ends.

September 27-28: NCRAR Biennial conference: Hearing Therapies for the Future at the Portland World Trade Center, Portland OR

October 12: NCRAR Seminar. **Arthur Boothroyd Ph.D.,** Distinguished Professor Emeritus City University of New York, NY & Scholar in Residence San Diego State University CA. Modeling the effects of noise and reverberation on phoneme recognition in the reverberant field.

November 9: NCRAR Seminar. **Robert Shannon Ph.D.** Scientist III and Head, Dept. of Auditory Implants and Perception, House Ear Institute CA. Restoration of Hearing by Electric Stimulation of

the Human Cochlea, Brainstem, and Midbrain.

December 7: NCRAR Seminar. **Brian Gygi Ph.D.** Scientist, Martinez VA, CA. Title: TBA

Seminars take place from 12 to 1 pm in PVAMC Building 101 Room 109. for v-tel broadcast.

NCRAR Conference Update

Information and registration for the NCRAR conference **Hearing Therapies for the Future'** on September 27th & 28th 2007 is available online at:

www.ncrar.research.va.gov/Education/Conf2007/Index.asp

NIH NIDCD funding awarded for NCRAR conference 2007

The NCRAR has been awarded NIH/NIDCD funding for the upcoming NCRAR Conference titled 'Hearing Therapies for the Future' (PIs: Gabrielle Saunders & Dawn Konrad-Martin).

The conference will take place in Portland Oregon on September 27th and 28th 2007. It will address prevention, treatment and rehabilitation of noise induced hearing loss (NIHL) focusing upon new and emerging methods. There will be presentations by invited speakers who are leading researchers in the field, round table discussions among scientists, clinicians and hearing-impaired persons, and a display of posters by clinicians and researchers. In addition, there will be keynote

addresses by Peter Steyger Ph.D., a scientist that has a profound hearing impairment, to provide participants with an understanding of NIHL from his unique perspective and Col .David Chandler Ph.D., Deputy Chief Consultant for Rehabilitation Services for the VA. He will address research needs from the perspective of the military and the VA.

Invited speakers are Micaela Cornis-Pop Ph.D., Douglas Cotanche Ph.D., Robert Dobie M.D., Andrew Groves Ph.D., Tom Helfer Ph.D., Jonathan Kil M.D., Henry Lew, M.D., Ph.D, Richard Salvi Ph.D., Mark Stephenson Ph.D., Peter Steyger Ph.D.

Registration fees have been kept to a minimum. They cover the cost of the Opening Reception on September

26, refreshments during the meetings and dinner at the Poster Session on September 28th.

Online registration and additional information is available at **www.ncrar.research.va.gov/Education/Conf2007/Index.asp**

Registration will be limited to 200 individuals in order to promote interaction and learning in a non-threatening environment. ASHA and AAA CEUs are available.

The conference will be preceded by a one-day workshop titled "Best practices in hearing loss prevention" at which the presenters will be Theresa Schultz Ph.D., Kyle Dennis Ph.D. and David Chandler Ph.D.

NCRAR News

Welcome to:

Mathew Marble BA who joined the NCRAR in April to work as a Research Assistant with Drs. Gallun and Konrad-Martin.

Justin Howell, Anna Diedesch, Eric Hoover, and Kelly Watts, our recipients of the NIH-funded Au.D. Summer Research Internship experience. They will be working at the NCRAR over the summer.

Josh Triska, Andrew McGuinness and Jordan Tabayoyon, this year's summer interns.

Recent Seminars

Paula Myers, Ph.D. from James A. Haley Veterans' Hospital, Tampa, Florida presented a seminar titled "*Polytrauma and Audiology at the VA.*" on April 13th.

George Frye of Frye Electronics, Tigard, OR presented a seminar titled "*Acoustic reflections: Measurement and Control*" on May 11th

Harvey Dillon of National Acoustic Laboratories, Sydney, Australia presented a seminar titled '*A potpourri of recent research at NAL*' on May 18th.

Other News

Stephen Fausti Ph.D. received the Association of VA Audiologists (AVAA) award for Research. The award recognizes special contributions to the AVAA and VA Audiology. Dr. Fausti said that it is truly an award for the entire staff of NCRAR, which has worked so diligently to make NCRAR the outstanding research center it is today.

Congratulations to:

Jim Henry Ph.D on receiving his 20 year VA employee pin. Since joining Dr. Fausti's research lab at the Portland VAMC in 1987, Jim has obtained a Ph.D. from OHSU, has completed numerous clinical trials to evaluate methods of treatment for tinnitus, and has developed a computerized tinnitus evaluation system.

Dave Lilly Ph.D on receiving his 10 year VA employee pin. Dr. Lilly joined the NCRAR to continue his investigation of speech intelligibility in a background of people talking, that he had begun 3 years earlier as part of an NIH grant at OHSU's Oregon Hearing Research Center. Since then he has been PI on a grant examining hearing and multiple

sclerosis and on another evaluating the effects of ototoxic drugs.

Gabrielle Saunders Ph.D. & Anna Forsline M.A. whose article "The Performance-Perceptual Test (PPT) and its Relationship to Aided Reported Handicap and Hearing Aid Satisfaction" was one of the papers selected in the Hearing Journal's "The Best of 2006" in hearing aid publications

V-Tel broadcast of NCRAR seminars:

George Frye's seminar was the first NCRAR seminar to be broadcast via v-tel. The broadcast as viewed by VA audiologists at American Lake WA, Bay Pines FL, Erie PA, and Seattle WA. Future seminars to be broadcast are listed above. We hope more sites will join for other seminars.

Contact Gabrielle.saunders@va.gov for instructions.

NCRAR Research funded between 4/07 & 7/07)

Gabrielle Saunders, Ph.D. & Dawn Konrad-Martin received NIH (NIDCD) support for the upcoming NCRAR conference. The award and conference is titled "Hearing Therapies for the Future" and will provide funding from 7/1/07 to 6/30/08.

Stephen Fausti, Ph.D and Dennis Bourdette M.D. received funding from VA RR&D to fund the NCRAR for the upcoming 5-year period. The title of the grant is "National Center

for Rehabilitative Auditory Research". Funding will begin 10/1/07 and end 9/30/12. The grant received exemplary reviews and an excellent score. This funding supports the infrastructure of the NCRAR and will enable the center to continue its mission of benefiting veterans by alleviating the communicative, social and economic problems that result from auditory system impairments.

Erick Gallun, Ph.D. received funding for a 4-year VA Career Development II Award titled "Modeling auditory integration in people with impaired hearing"

NCRAR received preliminary approval for our request for equipment to support research-related to OIF/OEF. This includes research addressing hearing and tinnitus, traumatic brain injury and other noise- and blast-related issues.

Meet Gabrielle (Gaby) Saunders, Investigator and Deputy Director of Education, Dissemination and Outreach

I was born in England and lived there, mostly in the London area, until 1990. During that time I completed my undergraduate degree at the University of London and my Ph.D. at the Medical Research Council Institute of Hearing Research in Nottingham with Mark Haggard. In 1990 I came out to America to do a 3-year post-doc under the guidance of Harry Levitt at the City University of New York in Manhattan. Seventeen years later I am still here and no longer have any intention of leaving! After my post-doc in New York I spent 3 years working at the East Orange VA in NJ on a VA RR&D-funded hearing aid study, 2 years working at Scientific Learning Corporation in San Francisco with Mike Merzenich in their R&D department and another three years as Manager of Research and Development at Decibel Instruments in Fremont, CA with Don Morgan.

In 2000 I moved to Portland to be an Investigator at the NCRAR. Last year I also became the Director for Education Outreach and dissemination for the NCRAR and do this in addition to being an Investigator. I enjoy my new role as Deputy Director of Education, Dissemination and

Outreach for several reasons. First, it is highly satisfying to work on projects that have immediate and tangible products, such as this newsletter, patient education brochures, and our professional conferences. Second, it is rewarding to see patients' excitement at learning new information and finding solutions to hearing-related problems they've encountered for many years. Third, I thoroughly enjoy the networking and interaction this position brings. For instance, I have been communicating with VA audiologists across the country to set up v-tel broadcast of the NCRAR seminars. Their appreciation of this is very gratifying. It has been educational and interesting working with the PVAMC website team, medical media and the Employee Education System (EES) while planning events such as the upcoming NCRAR conference and our community lecture series.

Throughout my research career I have been lucky enough to have wonderful mentors, beginning with Mark Haggard, my Ph.D. supervisor, who shared his phenomenal knowledge of everything (both academic and life-related) with me, through Don Morgan, with his wise advice, sense of humor and joy of



teaching, to now, Steve Fausti, who cares so much about his employees and the NCRAR. I hope I offer students and others I supervise the same support and wisdom.

At home I lead an incredibly busy life running around after my two children, Sarah age 14 and Daniel age 8. Soon, I'll also be a step-mom to Ruby age 10 and Amelia age 9. Drew, my soon-to-be-husband, and I are in the process of moving to a home in NE Portland that is large enough for all of us. We are selling my previous house and enjoying the summer in the great Northwest. Our wedding is mid-August, so don't expect any communication from me between August 12th, our wedding day, and August 25th, the day we return from our honeymoon!

Director's Message (continued from P 1)

in our nation's warfighters. One out of every four military personnel returning from Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) complains of hearing impairment and/or tinnitus. Exposure to high-explosive blasts, which often results in hearing loss, is more common than in previous conflicts. New initiatives involving collaborations between the NCRAR and the DoD have been approved to investigate mild traumatic brain injury as a result of blast exposure. In addition, the NCRAR is examining ways to deliver hearing health care by telemedicine and web-based services. This technology will improve access for veterans and military service members in remote locations and for patients unable to travel. Distance medicine can address many aspects of auditory rehabilitation, such as hearing aid programming, tinnitus management, ototoxicity monitoring, and hearing conservation. Finally, we are exploring ways to tap into the inherent plasticity of the auditory system and the brain to develop new rehabilitative therapies. The continued innovation and expertise of the NCRAR and its many collaborators will improve treatment options, rehabilitation strategies and hearing loss prevention, improving the quality of life for hearing-impaired veterans.

NCRAR Presentations & Publications 4/07 - 7/07

PUBLICATIONS:

Best, V., Gallun, F., Carlile, S. and Shinn-Cunningham, B. Binaural interference and auditory grouping," *J Acoust Soc Am*, 121 (2), 1070-1076.

Henry JA. Roadmap to a cure: Measuring tinnitus perception. *Tinnitus Today* 32(2):8-21, 2007.

Henry JA, Trune D, Robb MJA, Jastreboff PJ. Tinnitus Retraining Therapy: Clinical Guidelines. San Diego: Plural Publishing, Inc., 2007.

Henry JA, Trune D, Robb MJA, Jastreboff PJ. Tinnitus Retraining Therapy: Patient Counseling Guide. San Diego: Plural Publishing, Inc., 2007.

Lewis, M.S., Hutter, M., Oliver, S.R., & Lisowski, M. (2007). Tools to help with hearing. Portland: Patient and Family Education Portland VA Medical Center.

Pankow JF, Watanabe KH, Toccalino PL, Luo W, Austin DF. Calculated Cancer Risks for Conventional and "Potentially Reduced Exposure Product" Cigarettes. *Cancer Epidemiology, Biomarkers and Prevention* 2007;16(3):594-602

Summers, V., Makashay, M., Leek, M., and Molis, M. (2007). Effects of masker phase on tone detection as a measure of cochlear compression in normal-hearing and hearing-impaired listeners. *Journal of the Acoustical Society of America*, 121, 3197.

Tufts, J.B. & Molis, M.R. (2007). Perception of roughness by listeners with sensorineural hearing loss, *J Acoust Soc Am* 121 (4), EL161-167.

SUBMITTED MANUSCRIPTS:

Lewis, M.S., Hutter, M., Lilly, D., Musiek, F., Bourdette, D., Fitzpatrick, M., & Fausti, S. Temporal resolution in individuals with multiple sclerosis. *Submitted to Ear Hear*

Reavis KM, Phillips DS, Fausti SA, Wilmington DW, Helt WJ, Gordon JS, Bratt GW, Konrad-Martin D. Factors affecting sensitivity of distortion-product otoacoustic emissions to ototoxic hearing loss. *Submitted to Ear Hear*

Saunders, GH & Echt KV. Rehabilitation Strategies for Dual-Sensory Impairment. *Submitted to Trends in Amplific*

Saunders, GH and Lewis, MS. Sound Localization, Aging and Hearing Impairment. *Submitted to Int J Audiol*.

Suhler EB, Lloyd MJ, Choi D, Rosenbaum JT, Austin DF. Incidence and Prevalence of Uveitis in Veterans' Affairs Medical Centers of the Pacific Northwest. Submitted to *American Journal of Ophthalmology*

Vaughan, N, James, K, McDermott, D, Griest, S, Fausti, S. Auditory Brainstem Response Differences in Diabetic and Non-diabetic Veterans. *Submitted to J Am Acad Audiol*

Wilmington DJ, Lewis MS, Myers PJ, Gallun FJ, Fausti SA. Hearing Impairment Among Soldiers: Special Considerations for Amputees. *Submitted to: In Combat Care of the Amputee, Borden Institute Textbook of Military Medicine*.

PRESENTATIONS:

Fausti SA and Saunders GH. The National Center for rehabilitative Auditory research (NCRAR) and VA Audiology: Communication, Collaboration, Mentoring and Education. Paper presented at the 7th Annual Meeting of the Association of VA Audiologists Denver, CO April 18 2007.

Forsline, A & Saunders, GH (2007) The Performance-Perceptual Test (PPT) as a counseling tool - An Update. Poster presented at the American Academy of Audiology convention Denver, CO, April 19th - 21st 2006

Henry JA. Treatment for Tinnitus: What is the 'State of the Art'? NCRAR Community Lecture, Portland VA Medical Center, May 17, 2007.

Henry JA, Schechter MA, Myers, PJ, Zaugg TL, Kaelin C, Owens K. Tinnitus Research and Education Activities at the NCRAR. Seventh Annual Meeting of the Association of VA Audiologists, Denver, Colorado, April 18, 2007. (poster)

Jacobs, PG. Noninvasive Blood Glucose Monitoring Using Otoacoustic Emissions. OGI/OHSU, May 18, 2007.

Leek, M. "Audibility of envelope and fine structure." Invited presentation at Symposium on the Role of Temporal Fine Structure in Auditory Processing, Loyola University Chicago, May 31, 2007

Leek M, Saunders G, Gallun F, and Fausti S. A Unique Approach to Hearing Loss Prevention: Joint Project Between VA and DoD. Presented to DoD Hearing

Musings of an Au.D. Student Intern by Justin Howell

I have completed one month of my summer Au.D. Traineeship at the NCRAR. During this month I have begun to develop a greater understanding of research and the research process. I have done several reviews of the literature and background research. Now that I have obtained my VA clearances I have begun to observe and assist in several projects that are in various stages of completion. This has allowed me to see each step of the research process from beginning to end. Being able to observe and participate in research has given me a greater understanding of research that is being conducted and published. The opportunities I have here at the NCRAR are expanding my understanding and grasp of research. The staff at the NCRAR are friendly and eager to share their knowledge and experiences. My experiences with research in the NCRAR have provided me with a greater desire to develop my own research skills. The city of Portland has been an interesting place to explore during my time off.



A Photo Collage: NCRAR, Portland VAMC, and Portland



NCRAR Presentations & Publications cont. from P 7

Conservation Working Group Meeting, Portland, Oregon, April 2007.

Lewis, M.S. Sensory aids 2007: What is hot and what is not. Discussion group topic facilitated at AudiologyNOW!, Denver, Colorado, April, 2007.

Lilly DJ. Treatment for Hearing Loss: What is the 'State of the Art'? NCRAR Community

Lecture, Portland VA Medical Center, May 17, 2007.

Saunders, GH. (2007) Research Overview. Invited presentation to students and faculty at San Diego State University, San Diego California, May 7, 2007

Summers, V., Makashay, M., Leek, M., and Molis, M. "Effects of masker phase on tone detection as a measure of cochlear

compression in normal-hearing and hearing-impaired listeners." poster presented at 153rd meeting of the Acoustical Society of America, Salt Lake City, Utah, June 8, 2007.

Zaugg TL, Henry JA, Schechter MA, Myers, P. "Tinnitus and U.S. Military Veterans." Presented to DoD Hearing Conservation Working Group Meeting, Portland, Oregon, April 2007