The University of Michigan Model SCI Care System team recently received a grant to continue their study of spinal cord injury (SCI). The U-M Model SCI Care System has been funded since 1985 to provide comprehensive services for persons with SCI and to promote their quality of life through state-of-the-art research. By collecting and analyzing data, the U-M Model SCI Care System assists researchers and professionals across the country to better understand the needs of those who sustain a traumatic SCI. A total of 14 centers were awarded grant funding as an SCI Model System by NIDRR (National Institute on Disability and Rehabilitation Research) for the 2006-2011 cycle. The U-M Model SCI Care System has had 21 consecutive years of federal funding and partnerships with the Department of Psychiatry, the newly founded Depression Center and the Ann Arbor Center for Independent Living (AACIL), the fourth CIL established in the country.

During the 2006-2011 cycle, researchers will focus on depression, as it affects persons with SCI at an average rate three times higher than the general population. When untreated, it can lead to self-neglect, pressure sores, substance abuse, and many other problems. Depression is also often associated with pain in SCI and a loss of motivation to engage in and pursue therapies to promote functional recovery. The study of treatments for depression is much needed since treatment is often prescribed without evidence-based knowledge. In other words, one rarely knows if the treatment actually works! To our knowledge, no clinical trials have been conducted to evaluate the use of antidepressant medications on people with SCI. Thus, our core Model System’s study will focus on preventing depression before it develops into a full blown condition. A separate collaborative project involving our center has also been funded by NIDRR to investigate the treatment of depression using an antidepressant medication once one has developed a major depression disorder. This study will focus on outpatients with SCI and will be lead by our colleagues at the University of Washington in collaboration with the University of Alabama and the Rehabilitation Institute of Chicago.

The U-M team consists of experienced investigators in the Departments of Physical Medicine and Rehabilitation and Psychiatry collaborating with colleagues from the AACIL.

(Continued on page 5)
Anthony Chiodo, MD: New Co-Director of U-M Model SCI Care System
By Mary Burton, MS

Dr. Chiodo became Co-Director and Medical Director of the Model SCI Care System in April 2006. Former Co-Director Dr. David Gater left in spring 2006 for the opportunity of becoming Chief of the SCI Service at Veterans’ Administrative Medical Center in Richmond, Virginia.

Dr. Anthony Chiodo brings a wealth of knowledge and education concerning SCI to the position of Co-Director of U-M Model SCI Care System. In 1987, he came to Michigan from his home state of Connecticut to serve as a resident in Physical Medicine and Rehabilitation. Dr. Chiodo broadened his experience, working as a practicing physician and medical director in New Mexico and Indiana. Returning to the University of Michigan Health System in 1998, he was appointed SCI Clinical Director in 2002.

Board Certified in SCI Medicine and Pain Medicine and an Associate Professor at UM, Dr. Chiodo is well liked and respected by his patients. He provides medical care in the U-M acute rehabilitation unit and outpatient clinic for people with SCI.

Dr. Chiodo is an active member of the American Paraplegia Society, the International Society of Physical Medicine and Rehabilitation and the American Spinal Injury Association (ASIA). He has written and co-authored many professional journal articles on SCI and pain management. His calm, easygoing manner and sense of humor have made him a great colleague and team leader. In his free time, Dr. Chiodo enjoys jogging, water and snow skiing, and spending time with his family.

Deep: Real Life with Spinal Cord Injury
By Mary Burton, MS

Deep, a collection of narratives by people with SCI is the creation of former postdoctoral fellow Marcy Epstein, PhD. Dr. Epstein, now an Associate Professor of English at the University of Windsor, Canada, envisioned this book as a way for people with SCI to tell their stories.

Travar Pettway and Dr. Epstein co-edited Deep, contributing their own narratives and working with eight individuals with SCI to help them put their thoughts on paper. Each person’s story illustrates an aspect of life with SCI, such as sexuality, reconnection to one’s community, risk taking, faith and others.

UM Press is now publishing Deep, lending national and international exposure to the work. Proceeds from all book sales go to the Julie Harrison Research Fund which was created after Ms. Harrison’s death in 2005. The fund supports new research into SCI, mental health and depression.

Deep is $21, including $3 shipping. To order by check or charge, call 734.936.9334 or e-mail us at Spinalcordinjury@med.umich.edu.

Mr. Gary Karp of National Spinal Cord Association Coming to U-M

Mr. Gary Karp, a writer, editor of several books and SCI Life will be lecturing at U-M. He is an internationally recognized speaker and consultant on disability issues in the workplace who had an SCI at the age of 18.

Mr. Karp will speak April 4, 2007 from 3:00-4:30 PM in the U-M Maternal and Child Health Center (MCHC) Auditorium, on the second floor of Mott Hospital. His presentation will cover adjusting to SCI and how to make the most of one’s resources to move on after a traumatic change. Mr. Karp incorporates juggling into his talk, which is sponsored by the Christopher Reeve Foundation.

You can call 734.936.9334 for more details. Please note that visitors’ parking is available in the structures near the Taubman Center or Main Hospital only. The Mott entrance is currently closed.
The basic question addressed in this paper is: After SCI, can injured spinal cord nerves be regrown by repeating the method of their original development? (And thus truly cure the paralysis?) Around the world it is a question of intense interest and deepening research. This article looks at the problem by drawing on 252 reports of original research and analysis that were recently published in peer-reviewed professional journals examining nerve growth and interactions, even down to interactions at a molecule to molecule level.

Terminology note: Neurons (nerve cells) are special cells that can rapidly receive and send information over distances in the body via “dendrites” (receive) and “axons” (send) thin extensions of themselves.

Spinal cord development is complicated interplay

In the embryo, certain cells develop into the central nervous system (CNS), consisting of the brain and spinal cord. The development is a very complicated interplay of many growing cells and extending nerves, with various special molecules that cue what goes where and when — including neurons from the brain’s “motor” area sending axons into the spinal cord.

During development, for two-way communication, the spinal cord also makes neuron connections with the body’s other developing structures. Activity feedback to the still immature spinal cord (like from muscles when we learn to walk) helps to “fix” the immature spinal cord into its “adulthood” state.

If there is a spinal cord injury (SCI), the complex spinal nerve development of the past doesn’t happen again (as nerve regeneration can happen with the “peripheral” nerves, those outside of the CNS). SCI repair likely doesn’t exist because during evolution “in the wild,” SCIs were so soon fatal that regeneration processes never had a chance to develop.

But now that people usually survive a SCI, why can’t the SCI problem be fixed too? To begin with, the nerve axons die and don’t regrow. Even if they could, the adult spinal environment is hostile to new nerves. Injury also brings inflammatory and scar forming cells which can interfere with growth.

Are stem cells the answer?

While the post-injury spinal cord environment lacks the many molecules that cue steps in original development, animal research suggests stem cells (from embryos or places like the nose olfactory bulb) do have some axon growing capacity. If there is 1) an absence of inflammation, 2) certain nerve growth factors are administered, 3) there are some remaining natural neurons in the area, and 4) the “target” connections are still intact, transplanted neurons can be incorporated into the host CNS.

But incorporation does not mean regeneration of all the lost functions. Nerve growth often goes into haphazard pathways. Nonetheless, animals often show some functional improvements in motor coordination and locomotion. If it could be transferred with similar results to humans with SCI, it would be a significant improvement in our current level of clinical recovery.

Progress has been made, and more will follow

There was another hopeful note: Existing in the lower spinal cord are “central pattern generators” which handle the coordination of all the various leg, hip, etc. muscles involved in things like walking. If the level of SCI is above the lower thoracic/rib area, and if the person has an incomplete SCI (with some sensory feedback from the legs) then body-weight-supported treadmill training can lead to “some” walking recovery.

So, what’s to realize from this publication? That progress has been made and more will certainly follow. It is made by researchers perusing the very fine details of reports, raising new questions, and refining and building on the research advances of what has already been done.

For most “lay” people, it should be reassuring that deep scientific reviews like this one exist, and that the many professionals in the area of SCI research and care do indeed try to keep track of what the others are doing and of any new developments. For scientists working in the SCI area let me recommend this article. It is an accessible and substantial “up to date” on many areas and gives numerous leads to connected care areas you may also want to go.
Dr. Wise Young, an advocate for SCI cure and restorative therapy, recently announced plans to promote research trials in China. Dr. Young, originally from Hong Kong, was the keynote speaker at the U-M Model Systems 2005 conference, “Connection to SCI Cure.” He was the physician of the late actor and advocate, Christopher Reeve and is a prominent scientist and neurosurgeon at Rutgers University.

A Wall Street Journal article dated November 28, 2006 reported that Dr. Young will coordinate clinical trials in China with financial support from donors in Hong Kong.

Cure and restorative treatments have been taking place in China for many years by doctors who have reported impressive results using novel techniques. However, these results have not been evaluated using the strict standards of the mainstream scientific community.

Evaluating these treatments in clinical trials would help determine how effective they are and what risks they might involve. As this nation has the largest SCI population in the world, China has a tremendous need for research on effective treatments.

Dr. Young and scientists from Hong Kong have developed a network of 20 Chinese hospitals for the studies. Developing this project is a major step forward as well as a vast undertaking, one that will be a great challenge to coordinate and manage. Dr. Young faces the prospect of dealing not only with the country’s bureaucracies but a large number of scientists and physicians.

To learn more about Dr. Young, and new treatments, go to the Care Cure forum on the Internet at http://sci.rutgers.edu. Here, Dr. Young describes current findings on cure therapy and addresses other topics. People with SCI, friends and families members also share stories, information and encouragement.

Smile Sun Motor is a metro Detroit area group for adults who have a physical disability. Mr. Roger Long, who manages the group says, “Getting to know other people with disabilities helped me realize there was a whole lot of life to be lived and that has changed my attitude.”

Smile Sun organizes recreational and social activities, including playing pool, adapted bowling, and many others. To learn more, contact Mr. Long at 248.506.7374.

Dr. Edward A. Hurvitz
Appointed New Department Chair
By Shonnie Becker, BGS

The Department of Physical Medicine and Rehabilitation gained a new Departmental Chair last fall. Dr. Edward A. Hurvitz, Associate Professor, took the position held by Dr. James A. Leonard since 1994. Dr. Hurvitz is only the fourth Chair of the Department since it was founded in 1950.

Dr. Hurvitz specializes in pediatric rehabilitation, has authored over 85 publications and book chapters, and received the department’s Silver Crutch Excellence in Teaching Award.

Hoping to improve a department already nationally recognized for its clinical care, education and research, Dr. Hurvitz is assisting Dr. Joseph Hornyak in setting up a human performance lab. “In our future, we will highlight the role of fitness, activity and overall health in improving function in a wide range of disabilities and musculoskeletal problems. We will work to be at the forefront of offering new therapies and new technologies to our patients. We will also strive to be the first choice for anyone seeking education and training in rehabilitation care,” says Dr. Hurvitz.
The Latest Update on Model System Research

By Marty Forchheimer, MPP

U-M Model SCI Care System researchers have had another busy year. Our research has resulted in eight professional publications and 11 presentations at national conferences, addressing a wide variety of topics. The major areas of study for the past five years have been community participation (a person’s involvement with the community beyond their own residence) employment, wellness, alcohol use and ventilator use.

Although research studies can appear removed from everyday life, these projects are designed to enable us to have a better understanding of the physical and emotional health of people with SCI. Eventually, programs, treatment and education can be shaped by these results. Below are examples of the work that took place during the 2000-2006 grant cycle.


This book chapter was written with a colleague from Wright State University and addresses the unique issues faced by people who have both substance misuse and physical disabilities, focusing on those with SCI. There appears to be a double stigma from having a disability and a substance abuse problem. Low self esteem and other barriers can keep people from seeking treatment. This study extends a project on the effects of alcohol and substance abuse in SCI, which included two previous journal articles and a conference presentation.


In this paper, we found that spiritual well-being helps to explain quality of life. This was true even after taking into account a person’s level of depression, health perceptions, and the social support they had. This paper was part of a 15-year study on aging that we did together with researchers from Craig Hospital, the University of Alabama at Birmingham, Santa Clara Valley Medical Center, and the Shepherd Center. The results were presented at the American Congress of Rehabilitation Medicine conference in September, 2006. As a part of this study, Mr. Forchheimer was also the co-author of a paper on quality of life during the last years of life.


This study explored the medical tests that are used to predict weaning from mechanical ventilation; that is enabling a person to safely transition to breathing on their own. Results showed that some diagnostic tests could help predict weaning, while others were not useful. These findings could help physicians make decisions about the best way to wean an individual patient. Previous studies on the people with SCI who depend on ventilators and their quality of life has produced two papers and two conference presentations.

Our SCI research program is within of the Department of Physical Medicine and Rehabilitation which is establishing a human performance laboratory that will provide people with disabilities with opportunities to actively participate in clinical trials. In addition, scientists can conduct research on exercise physiology, functional electrical stimulation (FES) and motor activity.
Mark McMenamy, Another Survivor in the World of SCI
By Eric A. Appleberry, MS, DDS

Meet Mark McMenamy, of Melvindale, Michigan. Mark is now 34 years old but when he was 19, he was doing what many of us did when young — playing around with friends at a pool party and not paying much attention to what he was doing. Mark remembers hitting his head after doing a “flip” into the pool. He thought he’d lost all muscle movement but his friends saw an arm moving and thought Mark was just fooling around at the pool bottom. Mark thought he was drowning. Before it was too late, his friends realized something was amiss and pulled him out.

In an instant Mark’s world was turned upside down. “I didn’t know what to think. I’d just finished my first year at Eastern Michigan University; I had wanted to major in criminal justice. But what would my life be like now? I didn’t know anyone in a wheelchair.”

Mark went to nearby Oakwood Hospital for initial care. He then went to University of Michigan Hospital for surgery to fuse C4-5-6, so as to stabilize his C4-5, complete, spinal cord injury. Including his initial rehabilitation in the U-M Model SCI Care System it was four months before he was back home again.

At home, the first floor living room became his bedroom. An addition on the back of the house became the family’s new living room, with a deck and ramp for getting to the backyard. Doorway widening made the rest of the first floor accessible, including the bathroom.

Mark was lucky to have an understanding, available and capable support network of family and friends to help with his care — which is a significant undertaking for someone with tetraplegia. With an injury as high as Mark’s, he doesn’t have the muscle use needed for getting up, getting dressed, doing transfers or personal care, (etc., etc.) — the many movements of his body that are needed for even “relative” independence.

But as most of you readers know, rehab is not just about being able to get around or having people that can help you. It’s about what’s going on in your head. “You have to start your whole life over again, picking up bits & pieces where you can,” Mark said, which he found he wasn’t doing at home.

Wanting to make things better for him, a close friend of Mark’s, a fellow he’d known since high school days, offered to help with Mark’s personal care so they could join with another friend in sharing a house. Feeling very unsettled with his life as it was, Mark took the offer. But again, the same problem was there. His friends were doing things, finishing school, getting jobs and moving on, but he wasn’t. “My life was being wasted,” Mark said, “There’s only so much watching TV, drinking beer and playing cards that you can do. I was getting nowhere on what I had always planned. I wanted to have a family and home of my own and that meant I needed to be able to earn income to support it. I had to get going on my life desires again.”

Mark moved back home, restarted rehab to improve his strength as well as he could and went back to school, at Henry Ford Community College. Through a combined Internet-based program that Henry Ford C.C. has with Franklin University (Columbus, Ohio), Mark received his B.S. degree in Computer Sciences two years ago.

Mark now is an “IT Recruiter” for Pegasys Systems & Technologies, Inc., of Bingham Farms, Michigan. As Mark describes it, “I can place people in computer-related jobs anywhere in the country.” He drives himself each way of the 20-mile commute from home.

When asked what advice he would give to a young person who’s new to SCI and trying to make sense of this world, Mark said, “Learn to find the good with the bad, have patience and know there’s still more out there to experience. Get educated, find work; enjoy your life.”
Is This Your Year to Ski?
By Rob Wolfe, CTRS

If our temperatures stay low and we continue to have snow, this may be the year you hit the slopes and learn to ski. As with any physical activity, you need to be prepared.

- **Get a clean bill of health from your physician.** You should have an overall evaluation from your doctor before you try any physical activity.
- **Wear the proper clothing.** Make sure your skin is covered with warm waterproof clothing. Your SCI may make it difficult to sense temperature changes in the environment.
- **Have a partner with you.** Skiing can be risky, and you shouldn’t be alone when doing this activity.
- **Be sure to set realistic expectations for yourself.** Don’t feel the need to spend an entire day on the slopes; a half of a day can be more than enough.

Ask The Doctor
By Anthony Chiodo, MD

What can I do to prevent getting pressure sores on my feet? What does a doctor do to treat them?

Pressure sores on the feet have the same causes as those elsewhere on the body: too much time with pressure on the skin without adequate pressure relief.

We usually do "pressure relief" in our feet by wiggling our toes, just like we do regular pressure relief in sitting by wiggling in our chairs. However, people without sensation in their feet from an SCI do not feel the need to do pressure relief and are unable to wiggle their toes. Therefore, pressure sores on the feet can occur.

The most common cause of pressure sores while wearing shoes is the pressure on the inside and outside of the big toe. The nail serves as a hard surface where the nearby tissue, called the paronychia, gets irritated and can actually break down. This invariably leads to infection. With the associated swelling, there is more opportunity for pressure at the nail causing even more skin breakdown. Common places for pressure sores on the feet when not wearing shoes are on the bottom of the foot when sitting and on the heel when lying down.

The prevention of pressure sores on the feet relies on keeping pressure off the common pressure points. Ways to do that include wearing shoes one size larger than usual and using moon or L'Nard boots to keep pressure off when not wearing shoes. Keeping the nails trimmed, but not too short, is also helpful in keeping wounds from developing on the feet.

Pressure sores need to be checked by a physician so they can determine if the wound needs to be debrided (cleaned) or if there is infection that requires treatment. Chronic calluses should be inspected to be sure that they are trimmed. There is a risk that they might break down and cause a sore.

Inspect your feet regularly for any wounds (or have someone else do it for you) and dry carefully between your toes. Taking care of your feet is an often overlooked part of an SCI health routine.
The University of Michigan Model Spinal Cord Injury Care System publishes SCI access bi-annually. This newsletter is designed to provide information on research, treatment, and social issues related to rehabilitative care, spinal cord injury and disability. Established in 1985, the UM Model SCI System receives funding from the National Institute on Disability and Rehabilitation Research (Award #H133N060032). It is one of 14 Model SCI Systems in the United States. The purpose of this research and demonstration project is to improve outcomes of medical and rehabilitative care provided to individuals with spinal cord injury.

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We hope you enjoy this publication. You can request removal from the mailing list or report a change of address by calling 734.763.0971.

2006 Neubacher Award at University of Michigan

The Neubacher Award, named for UM alumnus James Neubacher, was presented Oct. 27, 2006 to Mr. Dennis Borel. He is Executive Director of the Coalition of Texans with Disabilities and received the award for his extensive work for people with disabilities regarding policy, practice and advocacy. Mr. Borel created Trek ’03, a cross-disability group of mountain climbers including four wheelchair users who ascended Mt. Everest in 2003.

The Michigan Council for Disability Concerns also presented Certificates of Appreciation to other individuals, including U-M Model SCI Care System Co-Director Dr. Denise Tate.

Jane Walters Achieves Clinical Research Professional Certification by Martin Forchheimer, MPP

We are pleased to announce that Ms. Jane Walters, Model System Research and Database Coordinator, has recently achieved certification through the Society of Clinical Research Professionals. She attained the status of Certified Clinical Research Professional. To become certified, one must have worked extensively in clinical research and passed a lengthy test covering many topics. These include protecting the privacy and rights of human research subjects as well as understanding the many government and university regulations that govern research. The training also covers the history of human subjects’ research and why these rules are needed for the ethical treatment of humans in research. Ms. Walters has been with the Model System since 1990.