



FERNE Overview

Mission statement

The Foundation for the Education and Research in Neurological Emergencies is an independent not-for-profit organization committed to the following principles:

- Patients with neurological emergencies deserve quality emergency care
- The emergency care for neurological emergencies can be enhanced through quality scientific research
- Emergency medical care providers can provide optimal medical care for patients with neurological emergencies through participation in quality medical education that highlights state-of-the-art neurological care.

Philosophy

FERNE is “Dedicated to improving the care of patients with neurological emergencies”. This is the philosophy FERNE follows to deliver high quality educational and research information to emergency medicine physicians and residents, private practitioners, and health care professionals.

Major Activities

- Educational meetings
- Research Support
- Curriculum development
- Internet-based remote learning

Administrative Information

History

FERNE was initially started through an endowment granted from Parke-Davis.

Incorporation status

FERNE was incorporated in Delaware in 1997 as a Not-for-profit organization (501-C3) and registered to do business as well as a not-for-profit in the state of Illinois.

Affiliation with UIC

University of Illinois is the academic affiliation of Edward P. Sloan, MD, MPH, FACEP who is the Founder and President of FERNE – The Foundation of Education and Research in Neurological Emergencies. Dr. Sloan is a Professor at the University of Illinois, Chicago campus, in the Department of Emergency Medicine. FERNE utilizes office space provided by the Department of Emergency Medicine. Additionally, FERNE's website and all of its content is housed on the university supported server where protection and support of the materials is maintained 24 hours per day, seven days per week.

Executive Board

The executive board at FERNE consists of Emergency Physicians who have proved to be leaders in Emergency Medicine and who have either contributed to or shown a marked interest in the area of neurological emergencies through research and education.

Edward P. Sloan, MD, MPH, FACEP Chairman and President

Dr. Sloan received his Medical degree from the University Of Cincinnati College Of Medicine in 1984, completed his residency in Emergency Medicine in 1987 at the University of Illinois Affiliated Hospitals and received his MPH degree in Epidemiology and Biostatistics in 1992 from the University of Illinois at Chicago School of Public Health. He is currently the Director of the Research Development Office in the Department of Emergency Medicine at the University of Illinois at Chicago. His neurological research has focused on emergency seizure therapy as well as the use of fosphenytoin in the treatment of acute seizures. Dr. Sloan was also lead investigator for the Traumatic Hemorrhagic Shock Phase III clinical trials investigating the efficacy of diaspirin cross-linked hemoglobin as a blood substitute.

Dr. Sloan has been involved with the development of educational programs that highlight the management of seizures in the acute setting and he has written book chapters on acute seizure management and chronic neurological disorders. He is currently a reviewer for multiple publications including Annals of Emergency Medicine, Academic Emergency Medicine, Chest, and Prehospital and Disaster Medicine. He is on the Research Committee and the Scientific Review Committee for

the American College of Emergency Physicians and is a member of the American Medical Association, the Illinois State Medical Society and Chicago Medical Society. He is actively involved in the ACEP Neurological Emergencies Interest Group as a co-chair, as well as the regional chapter, Illinois College of Emergency Physicians as the President-elect.

Andy S. Jagoda, MD, FACEP
Treasurer

Dr. Jagoda received his Medical degree from Georgetown University in 1982, completed an internship at the Naval Hospital in Bethesda Maryland (NHB) in Basic Medicine in 1983, and completed his residency in Emergency Medicine at Georgetown University / George University / MIEMMS in 1987. Dr. Jagoda is currently the Residency Director, in the Department of Emergency Medicine at the Mount Sinai School of Medicine in New York. His neurological research has focused on the diagnosis and management of seizure disorders in the emergency department, and the management of traumatic brain injury. His other research interests focus on practice guideline development and implementation.

Dr. Jagoda is the co-author of the textbook, Neurological Emergencies (McGraw-Hill) and of The Prehospital Management of Traumatic Brain Injury (Brain Trauma Foundation Publication). He has edited several issues of Emergency Medicine Clinics of North America dealing with neurological emergencies including Seizures in the Emergency Department, Neurological Emergencies, and Psychiatric Emergencies. He was the editor of the Neurological Emergencies section in the textbook Emergency Medicine published by Saunders. He is Associate Editor of the monthly publication Emergency Medicine Practice, and is currently on the Editorial board of Annals of Emergency Medicine. Dr. Jagoda is a member of the Executive Committee of the Brain Attack Coalition at the National Institute of Neurological Diseases and Stroke, and he is the Co-Director of Clinical Policies Committee of the American College of Emergency Physicians. He was on the Advisory Panel for the Guidelines for the Management of Severe Brain Injury, and for the Stroke Workshop Syllabus developed by the American Academy of Neurology. Dr. Jagoda is an active member of the American College of Emergency Physicians, the Society for Academic Emergency Medicine, the Council of Residency Directors, and the New York Academy of Medicine.

J. Stephen Huff, MD, FACEP
Secretary

Dr. Huff received his Medical degree from Indiana University School of Medicine in 1979, completed his residency in Neurology at the University of Cincinnati Medical Center in 1983, and completed his residency in Emergency Medicine at the University of Cincinnati Medical Center in 1985. Dr. Huff's writing efforts cover the gamut of neurological emergencies including material on status epilepticus, myasthenia gravis, stroke, neoplasm's, and altered mental status. Dr. Huff's research interests include acute seizures and computer-aided education.

Dr. Huff is a past chairman of the Neurological Emergencies Interest Group of SAEM and he is a member of the American Academy of Neurology, Critical Care and Emergency Neurology section, the American College of Emergency Physicians, and the Society for Academic Emergency Medicine.

**William G. Barsan, MD, FACEP
Executive Board**

Dr. Barsan received his Medical degree from Ohio State University School of Medicine in 1975, completed two years of postgraduate training at the University of Virginia and completed his residency in Emergency Medicine at the University of Cincinnati. Dr. Barsan was a founding member of the Greater Cincinnati Northern Kentucky Stroke Team and his research has focused on the effect of thrombolytic agents in stroke.

Dr. Barsan was the former President of the Society of Academic Emergency Medicine and is currently the President of the American Board of Emergency Medicine. He also serves the American Board of Emergency Medicine as the Chair of the Academic Affairs Committee, a delegate for the American Board of Medical Specialties, a member of both the Longitudinal Study Advisory Committee and the Executive/Finance Committee, and an Editor for In-Training Examination. Dr. Barsan is a current editor for the journal *Annals of Emergency Medicine*. He recently was inducted as a member into the Institute of Medicine.

**E. Bradshaw Bunney, MD, FACEP
Executive Board**

Dr. Bunney received his Medical degree from Boston University School of Medicine and finished his residency in Emergency Medicine at Cook County Hospital, Chicago, Illinois in 1993. His research is NIH funded and focuses on the neuropharmacologic effects of alcohol and illicit drugs on dopaminergic neurons in the midbrain.

Dr. Bunney has lectured numerous times on the pharmacotherapy of acute seizures at national meetings and recently he has served on the Regional Curriculum Planning Forum discussing the treatment of seizure disorders in the acute care setting. Dr. Bunney is a member of the American College of Emergency Physicians, the Massachusetts Medical Society, and he is a member of the Board of Directors for the Illinois College of Emergency Physicians as well as the current Chairman for the ICEP Research Committee.

**Scott Michael Silvers, MD, FACEP
Executive Board**

Dr. Silvers received his Medical degree from University of Rochester School of Medicine and Dentistry in Rochester, New York and then completed his residency in Emergency Medicine in 2001 at Brigham and Women's Hospital and Massachusetts General Hospital (Harvard) in Boston, Massachusetts. He received an award for his service as the Chief Resident in 2000-2001. Dr. Silvers has participated extensively in resident education and has himself received multiple academic awards and honors, including Best Teacher of Emergency Medicine in 2004. He has been a long-standing member of the national and international Office of Emergency Preparedness teams.

Dr. Silvers' additional clinical interests lie in the areas of heat illness, hyperbaric medicine, and stroke. Before becoming a physician, early career choices for Dr. Silvers included being a paramedic and a hyperbaric chamber inside attendant. In 1999 he completed his hyperbaric medicine training at the Jefferson Davis Wound

Care and Hyperbaric Medicine Center in San Antonio, Texas. He is active in stroke research and participates in clinical trials as a site principal investigator.

**Sydney Starkman, MD, FACEP
Executive Board**

Sidney Starkman, MD, FACEP is affiliated with the University of California Los Angeles, Department of Emergency Medicine. In addition to his EM certification, Dr. Starkman also is Board certified in Psychiatry and Neurology. Dr. Starkman was a Research Associate for two years at the NIH. Dr. Starkman was appointed last year as a FERNE Executive Board Member.

Advisory Board

The extended advisory board at FERNE consists of 30 Emergency Medicine Physicians. Compiled below is a list of current members for the year 2007-2008.

Steven Aks, DO, FACMT, FACEP

Mark I. Langdorf, MD, MHPE, FACEP

Michelle Blanda, MD, FACEP

Joseph R. Lex, Jr., MD, FAAEM

David Bordo, MD

Thomas W. Lukens, MD, PhD, FACEP

Shu B. Chan, MD, MS, FACEP

Susan Nedza, MD, MBA, FACEP

Carlos A. Camargo, Jr., MD, DrPH

Robert W. Neumar, MD, PhD, FACEP

Andrew K. Chang, MD, FACEP

Richard Nunez, MD, FAAEM

William C. Dalsey, MD, MBA, FACEP

Robert E. O'Connor, MD, MPH, FACEP

Wyatt W. Decker, MD, FACEP

Brian J. O'Neil, MD, FACEP

Marc Dorfman, MD, FACEP, MACP

Heather Prendergast, MD, MPH, FACEP

John E. Duldner, Jr., MD, FACEP

Silvana Riggio, MD

Christopher J. Finley, MD, FACEP

James R. Roberts, MD, FACEP

Steven A. Godwin, MD, FACEP

Philip H. Shayne, MD, FACEP

Jonathan A. Handler, MD, FACEP

Gary R. Strange, MD, FACEP

Edward C. Jauch, MD, MS, FACEP

Stephen J. Wolf, MD, FACEP

A. Antoine Kazzi, MD, FAAEM

Robert Zalenski, MD, MA, FACEP

David W. Wright, MD, FACEP

Leslie S. Zun, MD, MBA, FACEP

Administrative Staff**Charrise M. O'Neill, RN, BS, CCRC - Executive Director**

Charrise M. O'Neill received her Nursing degree in 1981 from the College of DuPage in Metropolitan Chicago. She completed her Bachelor of Science in Health Arts in 1994 at St. Francis College in Joliet, Illinois. In 1994 Ms. O'Neill obtained certification as a Clinical Research Coordinator from the ACRP. She returned again to the University of St. Francis in 1999 to undertake her Master of Science in Health Services Administration.

Ms. O'Neill has practiced clinically in the areas of medical/surgical/coronary critical care and psychiatry. Her management experience includes charge nurse, head nurse, and clinical research manager.

The bulk of her career has been spent in academic clinical research in the area of trauma/critical care performing both pharmaceutical and original clinical trials with a focus on head trauma, hypovolemic shock, and sepsis. Ms. O'Neill was the Lead Clinical Research Coordinator at Cook County Hospital's Trauma Unit for 7 years. From 1996-1999, she was a Regional Coordinator for Rush Medical Center in Chicago, where her primary responsibility was monitoring the NIH "ALLHAT" Hypertension trial at 30 various clinics throughout the Midwest and South. In 2000 she established her own consulting company, Clinical Research Resources. Ms. O'Neill joined FERNE in May 2003.

Carla Sloan, MBA – Business Manager

Carla Sloan graduated from Dartmouth College in 1980 with a major in Government. Following two government-related internships in college, she decided to pursue a career in the private sector. Ms. Sloan's interest in consumer marketing led to her to a Product Management position at The Quaker Oats Company. She also began the evening MBA Program at Northwestern's J.L. Kellogg Graduate School of Management.

In 1984, Ms. Sloan brought her product management expertise to the financial services sector, joining Citibank in Chicago. She served in various international marketing positions, managing travel-related products and Diners Club International programs. Ms. Sloan completed the MBA program at Kellogg in 1986, with a focus on Marketing, Finance and International Business.

From 1990-92, Ms. Sloan was Vice President in charge of the North American region for Citicorp-brand and Visa Travelers Checks. Upon the birth of her third child, she left Citibank to start a new career as an "at-home" mom.

In addition to raising four children, Ms. Sloan has applied her business experience to many volunteer roles. She has served on numerous Boards, headed fundraising efforts, volunteered in the children's school, and contributed time to Dartmouth College. In March, 2005, Ms. Sloan became the Business Manager for FERNE.

Fang Fang – *Webmaster*

In 2005 Fang Fang obtained her Masters in Education at the University of Science and Technology of China in Computer Science and Technology where she specialized in Computer Application Technology. Currently she is a Ph.D. student in Computer Science at the University of Illinois at Chicago. Ms. Fang is a student member of the Association for Computing Machinery; ACM is the world's oldest and largest educational and scientific computing society. Currently she is a volunteer in the Computer Science Graduate Students Association at the UIC @ Chicago. In 1998 she received the Second Award in Advanced Mathematics Contest at Dalian University in Liaoning Province, China. Ms. Fang has been working in the capacity of webmaster since May 2007.

Ting Huang – *Technical Support Consultant & Website Archivist*

Ting Huang obtained his Masters of Science degree in Aerospace Engineering at the Chinese Academy of Space Technology in Beijing, China. Currently he is a Ph.D. student in Electrical & Computer Engineering at the University of Illinois at Chicago. Among his many honors and awards are the 2007 International Student Service Award and 2007 Chancellor's Student Service Award from the University of Illinois at Chicago, 2006 Walter Karplus Summer Research Grant from the IEEE Computational Intelligence Society and the 2003 Excellent Graduate Thesis Scholarship from the Chinese Academy of Space Technology. He has been a member of the Chinese Students & Scholars Friendship Association at the University of Illinois at Chicago since 2005 and currently serves as the association's President. Mr. Huang has been working in the capacity of a consultant for technical support issues since May 2007.

Education

Objectives

FERNE is dedicated to initiatives related to education and research in neurological emergencies. Emergency Medicine professional education is one of FERNE's primary missions. FERNE strives to provide educational information to (i) emergency medicine physicians, academicians, and private practitioners, and (ii) emergency medicine residents.

In the past, FERNE has sponsored symposiums that have used case based teaching and also distributed material content related to the case. Materials developed for the symposiums have been provided to participants in order to facilitate the transfer of information when professionals return to their institutions. FERNE meets its education mission by hosting on its website, materials from symposiums in a format that can be easily downloaded and used by individuals. All materials are available for viewing and/or downloading free of charge.

Educational impact

Currently the FERNE website hosts over 414 educational lectures given at 66 meetings (as of November 15, 2006) in the United States of America and also internationally at Chile, Crete-Greece, Cuba, France, Italy, Netherlands, Spain, and Sweden, including a stroke meeting presented in conjunction with NINDS.

Over 180 different speakers have presented lectures at FERNE meetings and more than 3500 physicians and residents have attended these meetings. As of November 1, 2006 the number of contact hours issued via FERNE events is 8472.

We have received and documented over 1300 evaluations from individuals who have attended FERNE meetings. Using the weighted average method, FERNE received a 3.5 rating on a scale of 4 for overall course and faculty.

FERNE, in collaboration with the University of Illinois at Chicago, College of Medicine, distributed 1102 Category I, CME certificates through November 1, 2006.

Today, the website receives 695 visitors per day and approximately 61,435 hits per month.

A critical component to the educational sessions conducted by FERNE is the production and distribution of learning aides. During its past meetings, FERNE had provided the following education materials:

- Binders that contained printed education materials, which were handed out to participants of the meeting.
- CDs that contained all the educational materials in the form of PDF printable files and PowerPoint Presentation files.

There are 130 Residency Directors in the United States. At each education session at the SAEM and ACEP meeting, FERNE developed a binder and a CD-Rom and mass mailed it to all Residency Directors.

Description of written content

Each case is developed by individual authors and practitioners based on current medical literature.

A typical "FERNE" lecture includes:

- Case Presentation
- Key Learning Points / Key Clinical Questions
- Introduction
- References
- Patient Outcome
- Annotated Bibliography
- Questions and Answers

Each patient case is accompanied by a discussion of the patient, ED diagnosis and management, an annotated bibliography, and questions and answers.

All information is available to view online in the form of web pages. Individuals can also download a printable version using adobe acrobat. In addition each lecture contains a PowerPoint presentation and video file of the PowerPoint presentation

Research

Objectives

FERNE's research objective is to give the medical community new knowledge relating to the diagnosis and management of neurological emergencies. FERNE strives to promote the following:

- 1) Increase the number of emergency medicine physicians who conduct research in neurological emergencies.
- 2) Present research in neurological emergencies at national scientific meetings
- 3) Publish research in neurological emergencies in peer-reviewed publications
- 4) Fund long-term research in neurological emergencies

Total awards / recipients

FERNE has funded \$300,000 through the Directed Neurological Emergency Research Grant and \$25,000 through the Research Seed Grant. Updated information about the project and its progress is incorporated in the website on a timely basis. We will continue to support research in Neurological Emergencies through this venue.

EMF Grants

To fulfill the research objectives, FERNE co-sponsors a \$50,000 Directed Neurological Emergency Research Grant with the Emergency Medicine Foundation (EMF), an affiliate of the American College of Emergency Physicians (ACEP).

The goal of this Directed Neurological Emergency Research Grant is to give the medical community new knowledge relating to the diagnosis and management of neurological emergencies. The Directed Neurological Emergency Grant will go to researchers in established emergency medicine research programs.

Past EMF grant recipients:

The following is a listing of individuals who have received past EMF grants, the titles of their projects, and an accounting of the current status of the project or a listing of publications and/or presentations that ensued from the project.

1) Christopher Barton, MD

**2007-2008 EMF/FERNE Directed Research in Neurologic Emergencies
Grant. \$25,000**

Title: Emergency Department Assessment of Secondary Brain Insults in Intracerebral Hemorrhage

2) Jane Brice, MD, MPH

**2007-2008 EMF/FERNE Directed Research in Neurologic Emergencies
Grant. \$25,000**

Title: STAT 911: Stroke Assessment Tool for 911

3) Andrew W. Asimos, MD

**2006-2007 EMF/FERNE Directed Research in Neurologic Emergencies
Grant. \$25,000**

Title: A Prospective Validation Study of the ABCD Score and Kaiser Criteria for Short-term Stroke Risk After ED Diagnosis of TIA

4) Michael Ross, MD

**2003-2004 EMF/FERNE Directed Research in Neurologic Emergencies
Grant. \$50,000**

Title: The Emergency Department Transient Ischemic Attack Accelerated Diagnostic Protocol

5) John Duldner, MD

**2002-2003 EMF/FERNE Directed Research in Neurological Emergencies
Grant. \$50,000**

Title: Spontaneous Intracerebral Hemorrhage - Compliance, Hyperacute Management, and Mortality After Published Guidelines

Abstracts:

The following abstracts were presented at the American Stroke Association's 28th International Stroke Meeting on February 12-16, 2003:

"Non-traumatic Hemorrhagic Stroke in the Prehospital Setting"

"Emergency Management and Outcome in Spontaneous Intracerebral Hemorrhage"

Publications

Emergency Department Management and Outcome of Spontaneous Intracerebral Hemorrhage

Non-traumatic Hemorrhagic Stroke in the Prehospital Setting

6) Edward Jauch

2002-2003 EMF / FERNE Directed Research in Neurological Emergencies Grant. \$50,000

Title: Functional Proteomics Identification of Serum Proteins Associated with Intracerebral Hemorrhage Following Thrombolytic Therapy for Acute Ischemic Stroke

Updates:

The project is still underway. Initially the project was delayed as much as 6 months at some centers due to the implementation of the new HIPPA regulations. Patient enrollment is now complete, but he is still processing the samples from the 42 patients entered. Dr. Jauch anticipates at least three subprojects to be performed on the data and completed this year.

Abstracts to date:

Acute Plasma Protein Expression Patterns After Ischemic Stroke
Jauch EC, Wagner, KR, Dean C, Smulian AG, Carrozzella J. 2003 ACEP Scientific Assembly Annals of Emergency Medicine 42:4:S23, October 2003

Second abstract submitted for World Stroke Congress meeting in June in Vancouver.

7) Kevin Curtis

2000-2001 EMF/FERNE Directed Research in Neurological Emergencies Grant. \$50,000

Title: Mitochondrial Calcium Overload in Acute Neuronal Injury

Posters: Curtis KM, Andrews SB, Neumar RW. Modulation of Neuronal Mitochondrial Ca²⁺ after Oxygen-Glucose Deprivation. ACEP Research Forum, October 2002.

Lawrence EJ, Curtis KM, Neumar RW. Delayed Hypothermia is Neuroprotective After Simulated Ischemia. ACEP Research Forum, October 2003.

Publications: Lawrence EJ, Curtis KM, Neumar RW. Delayed Hypothermia is Neuroprotective After Simulated Ischemia. Ann Emerg Med 2003;42:S17.

Lawrence EJ, Dentcheva E, Curtis KM, Roberts VL, Siman R, Neumar RW. Neuroprotection with Delayed Therapeutic Hypothermia after Simulated Transient Global Brain Ischemia. (Submitted 12/03 to Stroke)

8) Andrew Chang - 2002-2003 EMF / FERNE Emergency Medicine Basic Research Skills (EMBRs) Grant. \$5,000

Title: The Efficacy of Epley's Maneuver in Patients Presenting to the Emergency Department with Vertigo

Publications: A randomized clinical trial to assess the efficacy of the epley maneuver in the treatment of acute benign positional vertigo. Acad Emerg Med. 2004 Sep;11(9):918-24.

Abstracts: Chang A, Schoeman G. The Efficacy of the Epley Maneuver in Patients Presenting to the Emergency Department with Benign Positional Vertigo: A Prospective, Randomized, Controlled Trial. Oral presentation at the Second Mediterranean Emergency Medicine Congress, Sitges, Spain, September 2003;

Oral presentation at the Annual Meeting of the Society of Academic Emergency Medicine, St. Louis, MO, May 2002;

Poster presentation at regional CAL-ACEP, Long Beach, CA, June 2002;

Poster presentation at 9th Annual UCI Undergraduate Research Symposium, Irvine, CA, May 2002.

Seed grants

In addition, FERNE also provides Research Seed Grants of \$5,000 and encourages grant recipients to (i) Present their work at a national EM conference within 1 year of receiving funding (ii) Produce a publishable quality manuscript

Past seed grant recipients:

- 1) **Mona Lal, MD and Jarrod Wright, MD – 2005 FERNE Neurologic Emergency Research Seed Grant. \$5,000**

Title: Head Injury in Sport Karate Competition

Abstracts: " Head Injury in Sport Karate Competition "

Publications: Presented at the 2006 ICEP Academic Forum,
2nd Place Research Award

- 2) **David Newman-Toker, MD -2002 FERNE Neurologic Emergency Research Seed Grant. \$5,000**

Title: Building a New Model of ED Dizzy Patients

Abstracts: "Common Misconceptions In The Evaluation Of ED Dizzy Patients Parallel Those Found In Emergency Medicine Texts"

Publications: Acad Emerg Med. 2003 May;10(5):491-2.

- 3) **Jonathan E. Duldner, Jr., MD – 2001 FERNE Neurologic Emergency Research Seed Grant. \$5,000.**

Title: Subarachnoid Hemorrhage

Abstracts: The following abstracts were presented as posters at the 2002 ACEP Research Forum:

"Emergency Department Management and Outcome of Spontaneous Intracerebral Hemorrhage"

"Emergency Department Variables that Predict Outcome in Subarachnoid Hemorrhage"

Results of this research project were also presented in the following abstract at the 2002 SAEM Annual Meeting:

"Subarachnoid Hemorrhage: Effect of Published Guidelines on Compliance and Mortality"

Publications : Emergency Department Variables that Predict Outcome in Subarachnoid Hemorrhage

Title: Out-of-hospital Evaluation and Management of Spontaneous Subarachnoid Hemorrhage

Emergency Department Evaluation and Management of Spontaneous Subarachnoid Hemorrhage

Spontaneous Subarachnoid Hemorrhage: Compliance with Published Guidelines and Mortality

Institutional Variation of Management and Outcome of Spontaneous Subarachnoid Hemorrhage

Initial Management of Spontaneous Subarachnoid Hemorrhage in the Intensive Care Unit: The first 6 hours after admission

Outreach

FERNE's outreach efforts includes Practitioners whom we educate on state-of-the-art diagnosis and treatment of neurological emergencies – many which they may have no experience with - to educate them about FERNE and encourage them to use materials provided by FERNE. We reach out to Academic Physicians to encourage them to utilize FERNE materials to educate others. We work with other Foundations and Institutions in ongoing collaboration and funding toward research in neurological emergencies, as well as patients and individuals affected by Neurological diseases to educate them to pursue optimal health care.

Organizations with which FERNE has worked include:

Adam Williams Initiative

American Academy of Emergency Medicine

American College of Emergency Physicians

American College of Emergency Physicians
Clinical Policy Committee

American Stroke Association

The Clinical Decision Making in Emergency Medicine Consortium

Emergency Medicine Foundation

Emergency Medical Associates

Emergency Medicine Residents Association

Epilepsy Foundation of America

European Society for Emergency Medicine

France Foundation

Illinois College of Emergency Physicians

International Brain Injury Association

Journal Abstracts Delivered Electronically (JADE)

Mount Sinai Department of Emergency Medicine

National Institute of Neurological Disorders and Stroke

Pain in Emergency Medicine Initiative Consortium

Pharmedica Communications, LLC

Resuscitative Hypothermia Academic Industry Roundtable

Society of Academic Emergency Medicine

Society of Academic Emergency Medicine
Neurological Emergencies Interest Group

Society of Academic Emergency Medicine
Web Educators Interest Group

University of Illinois @ Chicago Emergency Medicine Residency Program

Website

Individuals can access the FERNE website directly through the three URLs listed below.

www.ferne.org

www.neuroemergencies.org

Currently, the FERNE website has 403 educational lectures on its website. This number will continue to increase as we include additional content from future educational activities.

Our web pages are hosted by VERIO, Inc., a commercial web-hosting company. VERIO has support staff 24 hours per day, 7 days per week and they ensure that the website has 99% availability. Additionally, VERIO has experienced security staff to thwart and respond to attacks on the website.

While most of our HTML pages and base website is located at VERIO, FERNE uses the Media Servers of the University of Illinois @ Chicago (UIC) to store all the printable documents and media content. This includes the PDF files, PowerPoint shows, and Narrated Slideshow files. UIC has its own ISP and very high speed internet bandwidth which allows for the storing of FERNE's media content including both video and audio elements. The university has both a Real Media and a Windows Media server available.

FERNE has the capability of tracking statistics for its website usage. For the HTML (web) pages, we utilize the service provided by Urchin Enterprise which helps us keep a log of the website usage. Using this tool, FERNE can track such usage statistics on a daily, weekly, monthly, and yearly basis. This information includes and is not limited to

- number of visitors, hits and pages viewed
- top pages, top referrals, top keywords, search engines
- browsers and operating systems used by the audience of the website.

As mentioned previously, the website currently receives 695 visitors per day and approximately 61,435 hits per month.

For the files stored on University of Illinois server, the Academic Computing and Communications Center (ACCC) provide services that help us maintain a log of data usage.

Uniform lecture Content: ppt, video, pdf, pps, webtext of pdf file

Each educational lecture posted on the website has contents in the form of:

- i) Web pages – All educational material is posted to the website in the form of HTML pages, which enables viewers to view the contents while they are connected to the Internet.
- ii) PDF files – Educational materials are also available in PDF format, which can be downloaded and viewed while not connected to the internet. PDF files can also be printed out and distributed to others interested in the lecture.
- iii) PPS files – All power point presentation files used during the lecture are converted into PowerPoint Shows and posted to the FERNE website. These files can be easily downloaded from the website where the viewer can utilize them in their presented format, or they can alter them in their effort to further educate other individuals.
- iv) Video files – All lectures given at the meetings are video streamed and converted into a real media file, which can be viewed and downloaded by the viewer. This enables individuals to simultaneously view the PowerPoint slides along with the speech that was delivered at the meeting.

How educational lectures are sorted

All FERNE lectures are sorted according to (1) the meeting where the lecture was presented, (2) the speaker who presented the lecture, (3) the title of the lecture, (4) the subject of the lecture, and (5) the location, city where the lecture was presented. This better helps individuals to locate particular lectures they intend to visit and results in reduced search time and increased learning time.

Free website access and downloading of materials

FERNE provides user-friendly guides for the viewer to help them access information from the FERNE website. This includes links to download software applications used to view the content, links to system requirements and compatibility information.

J.A.D.E. abstract access

FERNE strives to provide state of the art information and research news to its audiences. This objective has been the catalyst that drives our web content to reflect the latest updates in the field of Neurological Emergencies.

Currently we provide user's access to Journal Abstracts Delivered Electronically (j.a.d.e), which allows individuals to get weekly email notifications of Medline weekly updates in their field of interest.

Palm application programs

Many Emergency Physicians utilize personal digital assistants (PDAs) to assist in the management of their patients. FERNE's PDA programs put evidence-based treatment protocols for complex neuroemergencies into the hands of these front-line physicians.

Since May, 2002, HANDi Stroke Rx has been available from the FERNE website. It is compatible with all handheld computers running the Palm Operating System (OS). This program allows a clinician to determine a stroke patient's NIH Stroke Scale (NIHSS) score and then assess the indicators and contraindications for the administration of t-PA. If the patient is eligible to receive t-PA, a dosing calculator and sample continuation of care orders are also incorporated into the program.

Groups such as the Brain Attack Coalition and the American Stroke Association have posted links to HANDi Stroke Rx.

Currently FERNE is developing Seizure Stat©, a PDA software program designed to assist EM physicians when managing a patient having seizures. The physicians in this situation will no longer need to search for resource materials to assist him in his clinical decision making.

The Seizure Stat© program will include:

- Written Seizure / SE information – 9 Seizure / SE topic areas
- Therapies for urgent ED use – 10 therapies highlighted
- ACEP clinical policy recommendations
- Stat SE Treatment Protocol: 0-120 minutes

Clinical Assessment Tools

The FERNE website contains information on various Neurological Assessment Scales. These include:

- Folstein Mini Mental State Examination
- Glasgow Coma Score
- Pediatric Glasgow Coma Score
- National Institutes of Health Stroke Scale
- Quick Confusion Scale

Technology

FERNE emphasizes and recommends the use of state-of-the art technology. Use of the latest applications and software has enabled FERNE to deliver educational content and information in the most precise manner. Currently FERNE has the following technology and ability to provide the following services:

- **Computer Infrastructure**
FERNE's infrastructure includes 6 computers – four use the operating system Windows XP with Office 2003 and two use Windows 98 with Office 2000. Security software includes Norton Anti-Virus and Zone Alarm firewalls.
- **Simulcasting Capabilities for Live International Participation via Centra 7**
Centra 7 is an application software designed to enable real-time enterprise collaboration, communication & learning. Centra 7 can be used to make educational meetings and events more cost-effective and convenient by reducing travel and extending reach to globally dispersed health care professionals over low-bandwidth network connections through a simple browser interface. FERNE is able to provide this service through the University of Illinois at Chicago, Instructional Technology Lab. Currently there are 30 seats available to accommodate 30 participants.
- **Microsoft Producer**
Microsoft Producer is the state-of-the-art tool FERNE employs to create engaging multimedia presentations of the lectures we produce. Using Producer we capture the Video and/or Audio of the lecture, synchronize it with the PowerPoint slides for automatic transition of the associated slides, arrange all media elements into one screen and publish the presentation including slides, images, text, video and audio to the website or for distribution via CDs.

Producer allows us to use multiple templates for presentations. FERNE has customized two types of templates providing a consistently uniform approach and look to all lectures. Currently all the lectures we produce consist of a video element which contains the "talking head" of the speaker as well as a template consisting of a slide with voiceover of the speaker, a textbox containing information pertaining to the lecture, as well as a table of contents for the lecture. The table of contents is particularly useful as it allows the user the option to listen to the specific parts of the lecture they are interested in without binding them to listening to the entire lecture. This can be achieved by clicking on the specific line of interest in the table of contents.

"Talking head" video of early speakers does not exist for lectures that were created prior to the availability of Producer. In these cases, the viewer will see the FERNE logo in place of the speaker. The remaining elements of the template and the functions that can be performed with it remain the same.

- **Mp3 production**

FERNE offers its lecture content in a wide variety of formats so that the user may pick a method that is most convenient for their immediate use. We provide a document pertaining to the lecture, a producer presentation of the lecture which gives a realistic feel of the lecture with all the associated multimedia elements. We also provide the audio component of the lecture in the MP3 format. This facilitates the user's ability to listen to the lecture using personal equipment such as an Apple IPOD, his/her car stereo, or their home stereo system. Riverpast advance audio converter is utilized to achieve this purpose.

- **Video Cameras**

Canon XL1 digital camcorder: - This equipment is used to capture video and audio onto mini digital video cassettes. The digital video and audio are then captured through an IEEE 1394 port (fire wire) to be edited and converted into various media files, such as .mp3, .rm, .avi, .trainer.rm, etc.

Sony Cameras- FERNE utilizes two portable Sony cameras to capture the video and audio of the lectures that we produce. The advantage of these cameras over the Canon camera is their portability.

The cameras are used primarily in two modes. In one mode they are used to tape the lectures for post production - where the materials are converted into a Producer presentation and MP3 format. Additionally, it is possible to create Producer presentations onsite which allows for the rapid distribution of the product through availability on the FERNE website.

Live production is also possible. To perform live production, the camera is connected to the computer and the presentation is broadcast live through Centra Symposium.

- **Einstruction equipment**

FERNE is pro interactive education – we use technology to foster the interaction process between the lecturer and the audience, thereby providing a more stimulating and entertaining learning process. The primary tool we utilized in this process is the E-Instruction's Classroom Performance System (CPS). This is a response system that obtains immediate feedback from every member in the audience. The lecturer can ask questions during a presentation and the user's key in their responses using the CPS remote utility provided to each of the audience members. Currently we have 200 remotes responders. The advantages of this system are immediate feedback for the lecturers and anonymity for the responders. Additionally, the results can be collected, statistical analysis provided, and the results presented in bar graph format immediately after the poll. This information can be stored and used later to provide documented feedback to clients.

- **CD printer & burner**

FERNE has an automated system for large-scale CD production including printing custom labels and copying CD media content.

Label printing is accomplished by utilizing MICROBOARD'S PRINT FACTORY. Features of MICROBOARD'S PRINT FACTORY include:

- It's fast, easy, and a hands-free operation
- 50 Disc capacity per run
- 4800 x 1200 dpi printing giving high quality print
- Print Speed: Normal Mode, about 12 seconds per CD; Best Mode, about 20 seconds per CD
- Print Quality: Black, 600 x 600 dpi; Color, 4800 x 1200 optimized dpi providing excellent contrast.
- Label editing software, and the ability to create custom logos utilizing Surething First Edition Software for Windows
- Uses state-of-the-art HP Thermal Inkjet printing technology

CD media copying is accomplished via MICROBOARDS ORBIT II.

Features of MICROBOARDS ORBIT II include:

- Completely standalone, no PC required, very stable.
- 50 disc input capacity for automated copying
- "Insert and Duplicate" button less operation
- High performance auto loading mechanism
- Support for up to 52x recording speed
- Small desktop footprint
- Support for almost all CD formats
- Variable Record speed control (up to 48x) - can select for stability over speed.

- **Posters**

FERNE has the capability of in-house poster printing for advertising at educational meetings, or to print abstract presentation posters for academic meetings. Publisher Software is used to create the poster document. The printing is completed on a Hewlett-Packard Design Jet 755 CM Poster Printer.

- **Dedicated technology staff**

FERNE is constantly improving its technical capabilities by working with graduate students and others within the UIC system. These people continue to expand FERNE's technical capabilities as new technologies evolve and are available to breakdown the barriers of space and time in educating practitioners in improving the care of patients who present with neurological emergencies.

Conclusion

FERNE remains committed to improving the care of patients who require emergent treatment for neurological emergencies through providing state-of-the-art case-based educational content, supporting directed neurological emergencies research, and using technology to make learning easy and efficient.