

# CURRICULUM VITAE

## **BERNHARD J. HERING M.D.**

Professor of Surgery  
Eunice L. Dwan Chair in Diabetes Research  
Director, Islet Transplantation  
Scientific Director, Diabetes Institute for Immunology and Transplantation

### **OFFICE ADDRESS**

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### **HOME ADDRESS**

12308 Hilloway Rd West  
Minnetonka, MN 55305

July 30, 2007

**DATE OF BIRTH** March 11, 1959

**PLACE OF BIRTH** Hachenburg, Germany

**CITIZENSHIP** German, U.S. Permanent Resident

**MARITAL STATUS** Married to Nicole Kirchhof, D.V.M;  
One child (Sidney Christina)

**EDUCATION**

1968-1977 Secondary Education  
Private Humanistic Gymnasium at the Cistercian Abbey in Marienstatt, Germany

1977-1983 Medical School  
Justus Liebig University Medical School Giessen, Germany

1981 Clinical Clerkship  
Endocrinology (Ronald A. Arky, M.D.), Department of Medicine, Mount Auburn Hospital, Harvard Medical School, Cambridge MA

1981 Clinical Clerkship  
Endocrinology (Frederick C. Goetz, M.D.), Department of Medicine, and General Clinical Research Center, University of Minnesota, Minneapolis MN

**MILITARY SERVICE**

1984 Army Medical Officer, Munich and Stade, Germany

## **POSTGRADUATE TRAINING AND FELLOWSHIP APPOINTMENTS**

1985-1986	Research Fellow Islet Transplantation Laboratory Reinhard G. Bretzel, M.D., Ph.D.), Dept. of Medicine, Justus Liebig University, Giessen, Germany
1986-1995	Residency in Medicine 3 <sup>rd</sup> Dept. of Medicine (Chair: Konrad F. Federlin, M.D., Ph.D.), Justus Liebig University, Giessen, Germany
1995-1996	Fellowship in Endocrinology 3 <sup>rd</sup> Dept. of Medicine (Chair: Konrad F. Federlin, M.D., Ph.D.), Justus Liebig University, Giessen, Germany

## **LICENSURE AND BOARD CERTIFICATION**

1983	German Licensure
1995	German Board of Internal Medicine
1998	Minnesota Board of Medical Practice

## **ACADEMIC APPOINTMENTS**

1996-2002	Assistant Professor, Department of Surgery and Medicine, University of Minnesota, Minneapolis MN
1996-present	Director, Islet Research and Transplantation Program, Departments of Surgery and Medicine, University of Minnesota, Minneapolis MN
1997-present	Associate Director, Diabetes Institute of Immunology and Transplantation, University of Minnesota, Minneapolis, MN
2001-present	Associate Member of Department of Surgery Graduate Program, University of Minnesota, Minneapolis MN
2002-present	Eunice L. Dwan Chair in Diabetes Research
2002-present	Associate Professor with tenure, Department of Surgery, University of Minnesota, Minneapolis, MN

2005-present	Scientific Director, Diabetes Institute of Immunology and Transplantation, University of Minnesota, Minneapolis, MN
2006-present	Professor with tenure, Department of Surgery, University of Minnesota, Minneapolis, MN
2007-present	Member/Advising of the Graduate Faculty in the field of Clinical Research, Graduate School, University of Minnesota, Minneapolis, MN

## **HOSPITAL APPOINTMENTS**

1996	Staff, with tenure, Diabetes Section, 3 <sup>rd</sup> Dept. of Medicine, Justus Liebig University, Giessen, Germany
2000-2005	Director, Islet Transplantation, Fairview-University Medical Center, Minneapolis, MN
2005-present	Director, Islet Transplantation, University of Minnesota Medical Center, Minneapolis, MN

## **HONORS AND AWARDS**

1997	American Diabetes Association Travel Grant
1998-2005	Trustee, Insulin-Free World Foundation
1999-2003	Councilor, International Pancreas & Islet Transplant Association
1999-2001	Councilor, Cell Transplant Society
2001-2003	President-Elect, Cell Transplant Society
2000	Mary Jane Kugel Award, Juvenile Diabetes Foundation
2000	Kroc Lectureship, Univ. of Colorado Health Sciences Center, Denver, CO
2002	Billingham Lectureship, Vanderbilt University, Nashville, TN
2003-2004	President, Cell Transplant Society

2005 American Diabetes Association Minnesota Health Award  
2005- Councilor, International Xenotransplant Association

## **PROFESSIONAL SOCIETIES**

1991-present Cell Transplant Society (Founding Member;1999-2001 Councilor; 2001-2003 President-Elect; 2003-2004 President)  
1993-present German Transplantation Society  
1993-present International Pancreas and Islet Transplant Association (Founding Member;1999-2003: Councilor)  
1994-present German Diabetes Society  
1994-present The Transplantation Society  
1994-present American Diabetes Association  
1997-present Juvenile Diabetes Foundation International  
1998-present Immunology of Diabetes Society  
2000-present American Society of Transplantation  
2000-present International Xenotransplant Association (2005-2007: Councilor)

## **GRANT REVIEW COMMITTEES**

1997-2000 Member, Immunology/Transplantation Study Section, Juvenile Diabetes Foundation International  
1998 Chairman, Special Grant Ad-Hoc Review Committee, Juvenile Diabetes Foundation International  
1999 Chairman, Program Project Grant Ad-Hoc Review Committee, Juvenile Diabetes Foundation Int'l  
1999 Ad-Hoc Reviewer, Medical Research Council of Canada

1999-present	Member, Scientific Review Committee, Collaborative Network for Clinical Research on Immune Tolerance (Immune Tolerance Network), National Institute for Allergy and Infectious Diseases, National Institutes of Health
2000-present	Ad-Hoc Reviewer, NIH-National Institute for Diabetes and Digestive and Kidney Diseases
2001-present	Ad-Hoc Reviewer, Juvenile Diabetes Research Foundation, Program Project Grant and Center Grant applications
2001-2006	Member, Scientific Review Committee, NIH-NIDDK Type 1 Diabetes TrialNet
2001-present	Member, Scientific Review Committee, NIH-NCRR Islet Cell Resource Centers (ICRs)
2002-2004	Ad-Hoc Member, Surgery, Anesthesia, and Trauma Study Section, National Institutes of Health
2006	Member, Scientific Review Committee, Centers of Excellence Awards, German Research Council
2006-2007	Member, Scientific Review Panel, Small Business Innovation Research Grants, National Institutes of Health

## **EDITORIAL ACTIVITIES**

1989-1996	Associate Editor	Islet Transplantation Registry Newsletter
1994-1999	Member, Editorial Board	Cell Transplantation
1996-present	Reviewer	Transplantation International
1996-present	Reviewer	Hormone and Metabolic Research
1997-2003	Associate Editor	Graft (Responsible for Islet Section)
1997-present	Member, Editorial Board	Clinical Transplantation
1998-present	Reviewer	Transplantation
1998-present	Reviewer	Xenotransplantation
1998-present	Reviewer	Diabetes
1999-2002	Section Editor	Cell Transplantation Section: Islets and Other Endocrines
2000-present	Reviewer	Diabetologia
2000-present	Reviewer	American Journal of Transplantation

2002-present	Reviewer	Surgery
2002-present	Reviewer	Lancet
2003-present	Reviewer	New England Journal of Medicine
2003-present	Reviewer	Nature Reviews Immunology
2003-present	Member, Editorial Board	Transplantation
2004-present	Reviewer	Immunity
2005-present	Reviewer	Nature Medicine
2005-present	Reviewer	Journal of Experimental Medicine
2005-present	Reviewer	Nature Biotechnology
2006	Reviewer	PNAS

## **MAJOR COMMITTEE ACTIVITIES AND RESPONSIBILITIES**

### **LOCAL**

1998-present	Transplant Strategy Council, Fairview-University Medical Center, Minneapolis, MN
2002-present	Member, Translational Research Advisory Group, Academic Health Center, University of Minnesota Medical School
2003-present	LifeSource Midwest Organ Procurement Kidney-Pancreas Committee, St. Paul, MN
2005-present	Member, Executive Research Council, Department of Surgery, University of Minnesota
2005-present	Member, Promotions and Tenure Committee, Department of Surgery, University of Minnesota

### **NATIONAL AND INTERNATIONAL**

1989	Co-Founder, International Islet Transplant Registry
1989-1996	Coordinator, International Islet Transplant Registry
1996-2001	Director, North American Office of the International Islet Transplant Registry

1998	Chair, 1 <sup>st</sup> Workshop on Clinical islet Transplantation, New Orleans
1999-2001	Councilor, Cell Transplant Society
1999-2003	Councilor, International Pancreas & islet Transplant Association
1999-present	Member, Steering Committee, Collaborative Network for Clinical Research on Immune Tolerance (Immune Tolerance Network), National Institute for Allergy and Infectious Diseases, National Institutes of Health
1999-present	Co-leader, Islet Transplant Subgroup, Collaborative Network for Clinical Research on Immune Tolerance, National Institute for Allergy and Infectious Diseases, National Institutes of Health
2000/2003	Consultant, Biological Response Modifiers Advisory Committee, Center for Biologics Evaluation and Research, Food & Drug Administration
2001-2003	President-Elect, Cell Transplant Society
2001-present	Member, Steering Committee, National Institutes of Health Type 1 Diabetes TrialNet, a national diabetes trial network to perform intervention studies to preserve pancreatic beta cell function and prevent type 1 diabetes
2001-present	Medical Director and Chair, Scientific Advisory Committee, Collaborative Islet Transplant Registry, a National Institutes of Health- initiated and sponsored collaboration to expedite progress and promote safety in islet/beta cell transplantation through the collection, analysis, and communication of comprehensive and current data on all insulin-producing cellular transplants performed in North America
2001-present	Member, Steering Committee, Human Islet Cell Resource Center Program, National Center for Research Resources, National Institutes of Health
2001-2005	Member, Cell Transplant Committee, American Society of Transplantation
2002	Co-Chair, 1 <sup>st</sup> Human Islet Isolation and Transplantation Techniques Workshop, Miami, FL

2002	Co-Chair, 2 <sup>nd</sup> Human Islet Isolation and Transplantation Techniques Workshop, Banff, Alberta, Canada
2002-2003	Chair, Basic Islet Science Subcommittee, National Institutes of Health National Center for Research Resources Islet Cell Resources Program
2002-2003	Member, American Diabetes Association 63 <sup>rd</sup> Scientific Sessions Planning Committee
2002-present	Advisor to the National Institute for Diabetes, Digestive, and Kidney Diseases on the Use of Special Congressional Funds for Diabetes Research
2002-present	Member, Steering Committee, Nonhuman Primate Transplantation Tolerance Collaborative Study Group, National Institutes of Health
2002-present	Member, Clinical Standards Subcommittee, National Institutes of Health National Center for Research Resources Islet Cell Resources Program
2003	Chair, 3 <sup>rd</sup> Human Islet Isolation and Transplantation Techniques Workshop, Minneapolis, MN
2003	Co-Chair, 45 <sup>h</sup> Human Islet Isolation and Transplantation Techniques Workshop, Miami, FL
2003	Co-Chair, 1 <sup>st</sup> Islet Transplant Congress, Miami, FL
2003-2004	President, Cell Transplant Society
2003-2004	Member, American Diabetes Association 64 <sup>th</sup> Scientific Sessions Planning Committee
2004-present	Member, Steering Committee, NIH Consortium for Clinical Islet Transplantation
2005	Co-Chair, 5 <sup>th</sup> Human Islet Isolation and Transplantation Techniques Workshop, Banff, Alberta, Canada
2005-present	Councilor, International Xenotransplantation Association
2005-present	Member, Steering Committee, NIH NIH Immunobiology of Xenotransplantation Coop. Research Program

- 2006 Co-Chair, 6<sup>th</sup> Human Islet Isolation and Transplantation Techniques Workshop, Snowbird, Utah,
- 2007 President, Joint Meeting Board and Conference Co-Chair, Joint Meeting of the Cell Transplant Society, the International Pancreas and Islet Transplant Association, and the International Xenotransplant Association, Minneapolis, MN, September 15-20, 2007
- 2007 Member, Planning Committee, The University of Minnesota Salutes 40 Years of Pancreas Transplantation, An International Collaboration. December 8-9, 2006

## **OTHER COMMITTEE ACTIVITIES AND RESPONSIBILITIES**

### **LOCAL**

- 1998 Founding Member, Center for Molecular & Cellular Therapy, Academic Health Center, University of Minnesota
- 1999 Member, Search Committee, Pancreas Transplantation Faculty, Division of Transplantation, Department of Surgery
- 2000-present Member, Scientific Advisory Board, Stem Cell Institute, University of Minnesota
- 2000-present Member, Search Committee, Director of the Minnesota Molecular and Cellular Therapeutics Facility, Academic Health Center, University of Minnesota
- 2001 Member, Stem Cell Biology Program Strategic Planning Committee, University of Minnesota
- 2001 Member, Search Committee, Stem Cell Institute Pancreas/Hepatic Stem Cell Tenure-Track Faculty Search, University of Minnesota Medical School
- 2001-present Member, Ph.D. Thesis Committee for Laurie Brewer, Ph.D. student, Molecular Veterinary Biosciences Graduate Program at the College of Veterinary Medicine
- 2001-present Member, Ph.D. Thesis Committee for James V. Harmon, MD, Surgical Graduate Program, University of Minnesota Medical School

- 2002 Member, Search Committee, Stem Cell Institute Pancreatic Islet Stem Cell Faculty Search, University of Minnesota Medical School
- 2007 Member, Search Committee, Department of Surgery Faculty Search, University of Minnesota Medical School

## **NATIONAL AND INTERNATIONAL**

- 1989 Co-Chairman, International Symposium on "Methods in Islet Transplantation Research", Bad Nauheim, Germany
- 1990 Co-Editor, Methods in Islet Transplantation Research: Hormone and Metabolic Research Supplement Series Volume #25. Thieme Medical Publishers, Inc. New York
- 1991 Founding Member, The Cell Transplant Society
- 1993 Founding Member, International Pancreas and Islet Transplant Association
- 1993 Co-Founder, Diabetes Research International Network (DRINET), Miami, Florida
- 1994-1996 Member, Pancreas organ Committee, Study Group of German Transplant Centers
- 1994-1996 Member, Eurotransplant Pancreas Advisory Committee
- 1996 Co-Chairman, International Congress on "Endocrine Cell Replacement and Genetic Engineering", Giessen, Germany
- 1998 Member, Abstract Review Committee, Transplantation Society XVII World Congress, Montreal, Canada
- 1999 Member, Abstract Review Committee, 59<sup>th</sup> Annual Meeting and Scientific Session, American Diabetes Association, San Diego, CA
- 1999-present Member, Medical Advisory Board, Juvenile Diabetes Foundation International, Minnesota Chapter
- 2000 Member, Abstract Review Committee, XVIII International Congress of the Transplantation Society, Rome, Italy

2000	Member, Abstract Review Committee, 60 <sup>th</sup> Annual Meeting and Scientific Session, American Diabetes Association, San Antonio, TX
2000-present	Member, Publications Committee, Collaborative Network for Clinical Research on Immune Tolerance, National Institute for Allergy and Infectious Diseases
2000-2001	Member, Pancreatic Islet Subcommittee, United Network for Organ Sharing
2000-2001	Member, Islet Transplant Subcommittee, American Society of Transplantation
2001	Member, Abstract Review Committee, 8 <sup>th</sup> Congress of the International Pancreas and Islet Transplantation Association, Innsbruck, Austria
2001	Member, Abstract Review Committee, 61 <sup>st</sup> Annual Meeting and Scientific Session, American Diabetes Association, Philadelphia, PA
2001	Member, Abstract Review Committee, 10 <sup>th</sup> Congress of the European Society for Organ Transplantation, Lisbon, Portugal
2001	Member, Planning Committee, Islet Transplantation 2001 and Beyond: From Research to Clinical Application, Rancho Mirage, CA
2001-2003	Member, Metabolic Assessment Committee, NIH Type 1 Diabetes TrialNet, a national diabetes trial network to perform intervention studies to preserve pancreatic beta cell function and prevent type 1 diabetes
2001-2005	Member, American Society of Transplantation Kidney-Pancreas Committee
2002	Member, Abstract Review Committee, American Transplant Congress 2002, Washington, D.C.
2002	Member, Abstract Review Committee, 62 <sup>nd</sup> Annual Meeting and Scientific Session, American Diabetes Association, San Francisco, CA

2002-present	Advisor, Technical Expert Panel, Technology Evaluation Center of the Blue Cross and Blue Shield Association, a designated Evidence-Based Practice Center of the Agency for Healthcare Research and Quality
2003	Member, Abstract Review Committee, 11 <sup>th</sup> Congress of the European Society for Organ Transplantation, Venice, Italy
2003	Member, Abstract Review Committee, 63 <sup>rd</sup> Annual Meeting and Scientific Session, American Diabetes Association, New Orleans, LA
2003	Member, Abstract Review Committee, American Transplant Congress 2003, Washington, D.C.
2003	Member, International Organizing Committee, 9 <sup>th</sup> Congress of the International Pancreas and Islet Transplantation Association, Dublin, Ireland
2003	Member, Abstract Review Committee, 9 <sup>th</sup> Congress of the International Pancreas and Islet Transplantation Association, Dublin, Ireland
2003-2005	Member, Compliance Committee, Collaborative Islet Transplant Registry
2003-2005	Member, Data Monitoring Committee, Collaborative Islet Transplant Registry
2003-present	Chair, Scientific Advisory Committee, Collaborative Islet Transplant Registry
2003-present	Member, Executive Committee, Collaborative Islet Transplant Registry
2003-present	Member, Publications/Presentations Committee, Collaborative Islet Transplant Registry
2004	Abstract Reviewer, American Transplant Congress 2004, Boston, MA
2004	Member, Abstract Review Committee, American Diabetes Association 64 <sup>th</sup> Scientific Sessions, Orlando, FL
2004	Member, Abstract Review Committee, XX International Congress of the Transplantation Society, Vienna, Austria

2004	Member, International Organizing Committee, 7 <sup>th</sup> International Congress of the Cell Transplant Society, Boston, MA
2005	Member, Abstract Review Committee, 10 <sup>th</sup> Congress of the International Pancreas and Islet Transplantation Association, Geneva, Switzerland
2005	Abstract Reviewer, American Transplant Congress 2005, Seattle WA
2005	Member, Abstract Review Committee, American Diabetes Association 65 <sup>th</sup> Scientific Sessions, San Diego, CA
2005	Member, Abstract Review Committee, 8 <sup>th</sup> International Xenotransplantation Congress, Goteborg, Sweden
2005-2006	Member, International Organizing Committee, 8 <sup>th</sup> International Congress of the Cell Transplant Society, Milan, Italy
2006	Abstract Reviewer, World Transplant Congress 2006, Boston, MA
2006	Member, Abstract Review Committee, 8 <sup>th</sup> International Congress of the Cell Transplant Society, Milan, Italy
2006	Member, Abstract Review Committee, American Diabetes Association 66 <sup>th</sup> Scientific Sessions
2006-2007	Member, Cellular Transplantation Committee, American Society of Transplantation
2006-present	Director, Outreach Committee, International Xenotransplantation Association
2005	Abstract Reviewer, American Transplant Congress 2007, San Francisco, CA
2007	Member, Abstract Review Committee, American Diabetes Association 67 <sup>th</sup> Scientific Sessions

## **TEACHING AND MENTORING ACTIVITIES**

### **Graduate Course Faculty**

2003-present                      Stem Cells. Genetics, Cell and Developmental Biology  
Graduate Program. Course #8212. University of Minnesota

### **Training Workshops Co-Chaired**

2002                                  1<sup>st</sup> Human Islet Isolation and Transplantation Training  
Workshop (HIITT\*), Miami, FL

2002                                  2<sup>nd</sup> Human Islet Isolation and Transplantation Training  
Workshop (HIITT), Banff Alberta, Canada

2003                                  3<sup>rd</sup> Human Islet Isolation and Transplantation Training  
Workshop (HIITT), Minneapolis, MN

2004                                  4<sup>th</sup> Human Islet Isolation and Transplantation Training  
Workshop (HIITT), Miami FL

2005                                  5<sup>th</sup> Human Islet Isolation and Transplantation Training  
Workshop (HIITT), Banff, Alberta, Canada

\* HIITT workshops cover over 3 days all topics pertinent to human islet isolation and transplantation. Registration is limited to 100 participants to facilitate an interactive workshop setting. To date, a few hundred transplant surgeons and physicians and basic science investigators from around the world have received training. The workshop is endorsed by the Cell Transplant Society, the International Pancreas and Islet Transplant Association, the American Society of Transplant Surgeons, and the American Society of Transplantation. More detailed information is available at [www.islets.us](http://www.islets.us).

### **UNDERGRADUATE STUDENTS SUPERVISED**

1996-2000                          Sameer Nevile  
Degree: BS  
Title: Isolation and Transplantation of Porcine Islets  
*Hering (Supervisor), Zhang (Co-Supervisor)*  
[Admitted to University of Minnesota Medical School, Class of 2001](#)

1998-1999                          Eric Eckman  
Degree: BS

Title: Islet Transplantation in Murine Models  
*Hering (Supervisor), Zhang (Co-Supervisor)*  
Admitted to University of Minnesota Medical School, Class of  
1999

1998-1999

Patti Y. Jordan  
Degree: BS  
Title: Quality Control of Isolated Pancreatic Islets  
*Hering (Supervisor), Zhang (Co-Supervisor)*  
Admitted to University of Minnesota-Duluth Medical School,  
Class of 1999

2003-2005

Forum Kamdar  
Degree: BS  
Title: Laser Capture Microdissection of Transplanted Islets  
*Hering (Supervisor), Levay-Young (Co-Supervisor)*  
1st Prize, Life Sciences Undergraduate Research  
Symposium 2004,  
Honors Program, College of Biological Sciences, University of  
Minnesota  
Admitted to University of Minnesota Medical School, Class of  
2004

## MSC/PHD STUDENTS SUPERVISED

- 1989-1992 Daniel Brandhorst  
Degree: PhD  
Title: Isolation, Purification, and Transplantation of Porcine Islets of Langerhans  
*Bretzel (Supervisor), Hering (Co-Supervisor)*  
[Sylvia King Prize 1992](#)
- 1989-1992 Heide Brandhorst  
Degree: PhD  
Title: Culture and Cryopreservation of Porcine Islets of Langerhans  
*Bretzel (Supervisor), Hering (Co-Supervisor)*  
[Sylvia King Prize 1992](#)
- 1997-1998 Jeff Kronson, MD  
Degree: MSc  
Title: Posttransplant Nonfunction of Canine Islets in PVG Rats Deficient in Complement Component C6  
*Sutherland (Supervisor), Hering (Co-Supervisor)*
- 2000-2002 James V. Harmon, MD  
Degree: MSc  
Title: Induction of Mixed Chimerism Prior to Islet Transplantation in Non-human Primates  
*Sutherland (Supervisor), Hering (Co-Supervisor), Blazar (Co-Supervisor)*
- 2001-2005 Laurie Brewer  
Degree: PhD  
Title: Encephalomyocarditis Virus Disease Transmission in Xenotransplantation  
*Njenga (Supervisor), Hering (Advisor)*
- 2003- Lukas Chase  
Degree: PhD  
Title: Pancreatic Stem Cells  
*Verfaillie (Supervisor), Hering (Co-Supervisor)*
- 2005- Nicole C. Close  
Degree: PhD  
Title: Predicting Clinical Outcomes: An Exploratory Analysis of the Collaborative Islet Transplant Registry  
*Hunting (Supervisor), Hering (Co-Supervisor)*

- 2006- Lucas Chase  
Degree: PhD  
Title: Expansion and Characterization of Pancreas-Derived Progenitor Cells  
*Hering (Committee Member)*
- 2006-present James V. Harmon, MD, MSc  
Degree: PhD  
*Sutherland (Supervisor), Hering (Co-Supervisor), Blazar (Co-Supervisor)*

### **MD/DVM STUDENTS SUPERVISED**

- 1987-1989 Mathias Brendel  
Degree: MD Thesis  
Title: Isolation of Bovine Islets of Langerhans  
*Federlin (Supervisor), Hering (Co-Supervisor)*
- 1990-1992 Nicole Kirchhof  
Degree: DVM Thesis  
Title: Evidence for Breed-Dependent Differences in Porcine Islets of Langerhans  
*Weiss (Supervisor), Hering (Co-Supervisor)*
- 1992-1994 Dorit Gramberg  
Degree: DVM Thesis  
Title: Isokinetic Gradients Decrease Islet Graft Immunogenicity  
*Bretzel (Supervisor), Hering (Co-Supervisor)*
- 1992-1994 Edwin Ernst  
Degree: DVM Thesis  
Title: Optimization of Media for Porcine and Human Islet Preparation  
*Bretzel (Supervisor), Hering (Co-Supervisor)*
- 1992-1995 Michael Eckhard  
Degree: MD Thesis  
Title: Isopycnic Human Islet Separation  
*Bretzel (Supervisor), Hering (Co-Supervisor)*
- 1998-2001 Peter Matthew Eckman  
Title: Islet Transplantation in Type 1 Diabetes – Clinical Operations and Regulatory Affairs  
*Hering (Supervisor), Sutherland (Co-Supervisor)*

- 2000-2001 Hannes Kalscheuer  
Degree: MD Thesis, University of Greifswald, Germany  
Title: Induction of Tolerance Pretransplant Reduces the Islet Mass Required to Reverse Diabetes  
*Hering (Supervisor), Guo (Co-Supervisor)*
- 2000-2001 Tobias Berg  
Degree: MD Thesis University of Freiburg, Germany  
Title: Gene Expression Profiling of Human Pancreatic Islets  
*Hering (Supervisor), Levay-Young, (Co-Supervisor)*
- 2000-2001 Britta Gebauer  
Degree: MD Thesis University of Freiburg, Germany  
Title: The Optimization of the ELISPOT Assay for Monitoring Immune Responses to Transplanted Islets in Preclinical and Clinical Islet Transplantation  
*Hering (Supervisor), Heeger (Co-Supervisor)*
- 2002-2005 Dylan Zylla  
Title: Islet Transplantation in Type 1 Diabetes – Clinical Operations and Regulatory Affairs  
*Hering (Supervisor), Sutherland (Co-Supervisor)*

#### **MPH STUDENTS SUPERVISED**

- 2005-2006 Melanie Graham  
Is there evidence of a health impact (e.g., acquired clinical infections, biological markers of inflammation, behavioral change, and mortality) associated with the use of indwelling catheters in a population of long term immunocompromised macaques  
*Hering (Advisor), Hirsch (Advisor)*
- Incidence of zoonotic influenza infections in swine populations  
*Bender (Advisor), Hering (Co-Advisor)*

#### **RESEARCH/POSTDOCTORAL FELLOWS SUPERVISED**

- 1996 Yasuko Tanicka, MD, PhD  
Degree: Post-doctoral Fellow  
Field of Study: Effect of Pancreatic Warm Ischemia on Islet Yield and Viability in Dogs

*Sutherland (Supervisor), Hering (Co-Supervisor)*

- 1996-1999 Shinichi Matsumoto, MD, PhD  
Degree: Post-doctoral Fellow  
Field of Study: Novel Media for Isopycnic Separation of Porcine, Non-human Primate, and Human Islet Purification  
*Hering (Supervisor), Sutherland (Co-Supervisor)*
- 1998-2000 Junichero Sageshima, MD  
Degree: Post-doctoral Fellow  
Field of Study: Evaluation of Non-diabetogenic Immunosuppression in the Pig Islet Allotransplant Model  
*Hering (Supervisor), Sutherland (Co-Supervisor)*
- 1998-2000 Satochi Shibata, MD, PhD  
Degree: Post-doctoral Fellow  
Field of Study: Evaluation of Non-diabetogenic Immunosuppression in the Pig Islet Allotransplant Model  
*Hering (Supervisor), Sutherland (Co-Supervisor)*
- 1998-2000 Kunihiro Hiroaka, MD, PhD  
Degree: Post-doctoral Fellow  
Field of Study: Simplified Two-layer Method without Continuous Oxygenation for Human Pancreas Preservation  
*Hering (Supervisor), Sutherland (Co-Supervisor)*
- 2000-2001 Tetsuya Sakai, MD, PhD  
Degree: Post-doctoral Fellow  
Field of Study: Two-layer Pancreas Preservation Prior to Human Islet Isolation  
*Hering (Supervisor), Sutherland (Co-Supervisor)*
- 2000-2002 Song Cheol Kim, MD  
Degree: Post-doctoral Fellow  
Field of Study: Human Islet Processing and Product Testing  
*Hering (Supervisor), Sutherland (Co-Supervisor)*
- 2000-2003 Masahiko Nakano, MD, PhD  
Degree: Post-doctoral Fellow  
Field of Study: Approaches to Improved Engraftment of Transplanted Islets  
*Hering (Supervisor), Sutherland (Co-Supervisor)*
- 2000-2003 Toshiya Sawada, MD, PhD  
Degree: Post-doctoral Fellow

Field of Study: Human Pancreas Preservation and Processing  
for Clinical Islet Transplantation  
*Hering (Supervisor), Sutherland (Co-Supervisor)*

2000-2003

Martin Wijkstrom, MD  
Degree: Post-doctoral Fellow  
Field of Study: Pig-to-Rat and Pig-to-Non-human Primate  
Islet Xenotransplantation  
*Hering (Supervisor), Sutherland (Co-Supervisor)*  
Young Investigator Award, International Congress of the  
Transplantation Society, Rome, Italy, 2000  
Young Investigator Award, American Transplant Congress,  
Washington, D.C., 2002

2001-2003

Ippei Matsumoto, MD, PhD  
Degree: Post-doctoral Associate  
Field of Study: Implementation of the Two-layer Method as  
Routine Approach for Human Pancreas Preservation  
*Hering (Supervisor), Sutherland (Co-Supervisor)*

2002-2004

Saida Abdelli, PhD  
Degree: Post-doctoral Fellow  
Field of Study: Enhancing Islet Beta Cell Defense  
Mechanisms  
*Hering (Supervisor), Sutherland (Co-Supervisor)*

2002-2004

Andrea C. Bauer, MD  
Degree: Post-doctoral Associate  
Field of Study: Process Monitoring in Human Islet Isolation  
*Hering (Supervisor), Sutherland (Co-Supervisor)*

2002-2005

Maria Hardstedt, MD  
Degree: Post-doctoral Associate  
Field of Study: Monitoring Immune Responses to  
Transplanted Hematopoietic and Islet Cells in Non-human  
Primates  
*Hering (Supervisor), Sutherland (Co-Supervisor)*

2002-2005

Baolin Liu, MD  
Degree: Post-doctoral Fellow  
Field of Study: New Culture Techniques for Human Pancreatic  
Islets  
*Hering (Supervisor), Sutherland (Co-Supervisor)*

2002-2005

Tun Jie, MD  
Degree: Post-doctoral Fellow

	<p>Field of Study: Islet Allo- and Xenotransplantation in Non-human Primates  <i>Hering (Supervisor), Sutherland (Co-Supervisor)</i>  <a href="#">Young Investigator Award, International Congress of the Transplantation Society, Vienna, Austria, 2004</a>  <a href="#">Resident Award, Minnesota Surgical Society, 2005</a></p>
2003-2004	<p>Lukas Guenther, MD  Degree: Post-doctoral Associate  Field of Study: Human Pancreas Procurement and Preservation  <i>Hering (Supervisor), Sutherland (Co-Supervisor)</i></p>
2003-2004	<p>Sung-Hee Ihm, MD  Degree: Post-doctoral Associate  Field of Study: Effect of Donor Age on Posttransplant Human Islet Function  <i>Hering (Supervisor), Sutherland (Co-Supervisor)</i></p>
2003-2005	<p>Irene Hong-McAtee, MD  Degree: Pediatric Endocrinology Fellow  Field of Study: Analysis of Stimulated and Pulsatile Insulin Secretion and Hepatic Insulin Action in Type 1 Diabetic Islet Allograft Recipients  <i>Moran (Supervisor), Hering (Co-Supervisor)</i>  <a href="#">Recipient of JDRF Fellowship Award Entitled "Metabolic Outcome of Pancreatic Islet Transplantation"</a></p>
2003-2005	<p>Tor Aasheim, MD  Degree: Post-doctoral Associate  Field of Study: Pig-to-non-human Primate Islet Xenotransplantation  <i>Hering (Supervisor), Sutherland (Co-Supervisor)</i></p>
2004-2005	<p>Dilip Nath, MD  Degree: Post-doctoral Associate  Field of Study: Human Pancreas Procurement and Preservation  <i>Hering (Supervisor), Sutherland (Co-Supervisor)</i></p>
2005-2006	<p>Matthew Graczyk  Degree: Post-doctoral Associate  Field of Study: Mixed Chimerism in Non-human Primates  <i>Hering (Supervisor), Sutherland (Co-Supervisor)</i></p>
2005-present	<p>Tomohiro Tanaka, MD</p>

Degree: Post-doctoral Associate  
Field of Study: Optimization of Enzyme Blends for Human  
and Porcine Islet Transplantation  
*Hering (Supervisor), Sutherland (Co-Supervisor)*

2006-present

Shuichiro Matsumoto, MD, PhD  
Degree: Post-doctoral Associate  
Field of Study: Islet Engraftment  
*Hering (Supervisor), Papas (Co-Supervisor)*

2006-present

Yukihide Yonekawa, MD, PhD  
Degree: Post-doctoral Associate  
Field of Study: Porcine Islet Isolation and  
Xenotransplantation  
*Hering (Supervisor), Papas (Co-Supervisor)*

2007-present

Takayuki Anazawa, MD, PhD  
Degree: Post-doctoral Associate  
Field of Study: Islet Isolation  
*Hering (Supervisor), Appakali (Co-Supervisor)*

## **MAJOR RESEARCH INTERESTS**

**To innovate, improve, and implement cell-based therapies to restore normoglycemia and insulin independence in individuals in whom diabetes is complicated by frequent acute or progressive chronic complications.**

**The research program's CORE BELIEFS are that:**

- Islet cell transplantation is the preferred treatment for a selected group of patients with type 1 diabetes despite the need for continued immunosuppression
- A more widely applicable cell replacement therapy for type 1 diabetes will emerge from the synergy created by integrating transplant immunobiology, tissue engineering, and islet cell transplantation, thereby facilitating the development of immune privileged islet implantation sites allowing diabetes reversal (and possibly islet beta cell regeneration) without the need for sustained systemic immunosuppression (the "Islet Sanctuary")
- Cell-based diabetes therapy will become commonplace through progress both in porcine-to-human islet xenotransplantation and in islet stem cell research, thereby providing an unlimited supply of islet beta cells for transplantation

**Accordingly, the PRINCIPAL GOALS of the research program are:**

- To continue to improve the outcomes and availability of islet cell transplantation in immunosuppressed type 1 diabetic recipients
- To optimize strategies for the construction of cytoprotective and immune privileged islet implantation sites for the purpose of minimizing systemic immunosuppression
- To expand the supply of human islet beta cells by maximizing utilization of cadaver and living donor pancreases, by generating suitable source pigs as well as developing tailored anti-rejection protocols for porcine-to-human islet xenotransplantation, and by improving our understanding of the critical events in islet beta cell replication and neogenesis

## GRANT SUPPORT

### PREVIOUS

- 1 NIH (PI: Duquette PH) 5/1/99-10/31/99  
NIH SBIR (Phase I) SurModics, Inc. \$29,424 (subcontract direct)  
**Photoinitiated Conformal Islet Encapsulation Matrices**

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- 2 NIH R43 DK56504-01 (PI: Pierschbacher MD) 6/1/99-12/31/99  
NIH SBIR (Phase I), Integra Life Sciences, Inc. \$50,000 (subcontract direct)  
**Synthetic RGD Matrix to Support Islet Transplantation**

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- 3 NIH R43 DK55465-01 (PI: Mabley J) 10/15/99-4/15/00  
NIH SBIR (Phase I), Inotek, Inc. \$50,000 (subcontract direct)  
**Evaluating the Efficacy of the PARS inhibitor INH2BP in Experimental Models of Pancreatic Islet Transplantation**

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- 4 JDRF #197024 (PI: Hering BJ) 7/1/97-6/30/99  
Juvenile Diabetes Research Foundation Research Grant \$90,909 (avg annual direct)  
**Studies in Pigs on a Low-Risk, Non-Diabetogenic Anti-rejection Protocol Targeted to the Specific Problems Posed by Free Islet Allografts**

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- 5 JDRF #4-1998-212 (PI: Hering BJ) 7/1/98-6/30/00  
Juvenile Diabetes Research Foundation Research Grant \$253,416 (avg annual direct)  
**Novel Immunotherapy Toward Safe and Successful Islet Replacement in Early Diabetes**

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- 6 JDRF Islet Transplantation Center at Harvard Medical School 9/1/98-8/31/00  
(PI: Auchincloss H) \$20,000 (annual direct)  
Harvard Medical School Subcontract  
**Immunological Monitoring of Human Islet Transplantation Recipients**

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- 7 DFG He 1503 1-1, 1-2, 1-3 (PI: Hering BJ) 7/1/86-6/30/92  
German Research Council Priority Project \$95,000 (avg annual direct)  
**Isolation of Human and Porcine Islets of Langerhans**

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- 8 BMFT FKZ 0702480a (PI: Bretzel RG) 4/1/89-3/31/96  
German Ministry for Research and Technology Network: \$275,000 (avg annual direct)  
Bioartificial Pancreas  
**Project B: Porcine Islet Auto-, Allo-, and Xenotransplantation**

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- 9 (PI: Federlin K; Co-PI: Hering, BJ) 7/1/92-6/30/96  
University Hospital and Clinics, Justus Liebig University, \$350,000 (avg annual direct)  
Giessen, Germany  
**Clinical Islet Transplantation Program**

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- 10 Novartis Pharmaceuticals, Inc. (PI: Hering BJ) 11/15/00-12/31/01  
\$125,181 direct  
**Islet Allograft Transplantation in Non-Human Primates Immunosuppressed with FTY720, SDZ RAD Basiliximab and TP10**

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- 11 NIH-NIDDK R01 DK55351-2 (PI: Bluestone JA) 9/1/01 – 5/31/02  
Co-Investigator: Hering BJ \$114,485 (avg annual direct)  
**Tolerance Induction in Non Human Primates to Islet Allograft Transplantation**

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- 12 JDRF #9-1998-1008 (PI: Hering BJ) 7/1/98-6/30/03

JDRF-Cooperative Agreement \$627,840 (avg annual direct)

**Human Islet Processing and Distribution Initiative**

The purpose of this project was to further basic research projects consistent with the mission of JDRF by providing high quality human islet tissue to diabetes investigators. Isolated human islets position investigators to enhance and significantly promote verification of preliminary observations in animal models and translation of research from bench to bedside.

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- 13 JDRF #4-1999-841 (PI: Bluestone JA) 9/1/00-8/31/04  
JDRF Islet Transplantation Center at the University of \$242,916 (avg annual direct)

California, San Francisco and the University of Minnesota  
**Core A (PI: Hering BJ): The Islet Procurement Core**

The objective of the Islet Procurement Core was to provide islets for clinical islet transplant trials and for basic and applied research projects.

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- 14 JDRF #4-1999-841 (PI: Bluestone JA) 9/1/00-8/31/04  
JDRF Islet Transplantation Center at the University of \$495,080 (avg annual direct)

California, San Francisco and the University of Minnesota

**Project #2 (PI: Hering BJ): Clinical Application Of Tolerance Induction Protocols In Islet Transplantation**

The objective of project 2 was to improve the results and applicability of islet transplantation early in the course of type 1 diabetes through the attenuation of non-specific inflammatory responses, induction of allo-tolerance, and the restoration of self-tolerance.

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- 15 Roche RO49272 (PI: Hering BJ) 9/21/00-4/30/03  
Roche Laboratories \$519,203 (avg annual direct)

**Single-Donor, Solitary Islet Allotransplantation in Patients with Type 1 Diabetes**

The primary objective of this study was to test the safety and efficacy of steroid- and calcineurin inhibitor-free immunosuppressive protocols in human islet allotransplantation.

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- 16 Immerge BioTherapeutics, Inc (PI: Hering BJ) 12/01/01 – 12/31/02  
\$610,166 (annual direct)

**Porcine Islet Transplantation in Diabetic Nonhuman Primates**

The objective of this proposal was to investigate the safety and efficacy of novel immunotherapeutic protocols in maintaining functional survival of porcine islets transplanted into streptozotocin-diabetic, nonhuman primates.

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- 17 Novartis Pharmaceuticals (PI: Hering, BJ) 6/13/03-12/31/03

**Efficacy of FTY720 in Murine Mass Islet Transplant Model**

The goal of this project was to determine whether FTY720, a new immunosuppressive agent developed and provided by Novartis will reduce the number of pancreatic islets required to reverse diabetes in murine islet transplant models.

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- 18 Children with Diabetes Foundation (PI: Hering BJ) 11/15/03-11/14/04  
\$100,000

**Preclinical Porcine Islet Xenotransplantation**

The objective of this project was to evaluate the safety and efficacy of novel immunotherapeutic regimens for the prevention of islet xenograft rejection in the pig-to-nonhuman primate model.

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- 19 JDRF 4-2004-372 (PI: Bluestone JA) 2/1/04-1/31/05  
JDRF Islet Transplantation Center at University of  
California-San Francisco and University of Minnesota

### **Core D – Metabolism Core (Core Leader: Hering, BJ)**

The main objective of the Metabolic Monitoring Core was to employ novel metabolic surveillance methods to allow clinical investigators to track the underlying metabolic status of human islet grafts. The critical function of Core D was to phenotype islet transplant recipients with particular emphasis on insulin secretion and insulin action.

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- 20** NIH-NIAID N01-AI15416 (PI: Bluestone JA) 1/1/04-12/31/04  
NIAID-Immune Tolerance Network \$49,597 (annual direct)  
**Clinical Trial (C950) Infrastructure (PI: Hering BJ)**  
**Evaluation of the tolerogenic efficacy of hOKT3 $\gamma$ 1 (Ala-Ala) Combined with Sirolimus in Type 1 Diabetic Islet Allograft Recipients**  
This grant provided the infrastructure set up costs for a pending clinical trial. A trial in this clinical population enables a robust test of tolerance in a favorable risk/benefit setting. The study was designed to provide a platform for assessing state-of-the-art mechanistic studies as a guide to the withdrawal of immunosuppression following induction immunotherapy proven to have tolerogenic potential in the preclinical settings of new-onset autoimmune diabetes and islet transplantation.
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- 21** Academic Health Center-University of Minnesota 1/01/03 – 6/30/05  
(PI: Hering, BJ) \$99,331 (annual direct)  
**Reversing Diabetes in Nonhuman Primates with Xenogeneic Porcine Islets**  
The objective of this proposal was to develop a successful porcine islet xenotransplant protocol in nonhuman primates.
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- 22** Novartis Pharmaceuticals (PI: Hering, BJ) 5/1/03-4/30/05  
COLO400A2413 \$242,255 (annual direct)  
**Furthering Clinical Islet Transplantation 2**  
The proposed project was intended to further the transition of islet transplantation from clinical research to clinical care.
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- 23** Novartis Pharmaceuticals (PI: Hering, BJ) 6/1/03-6/30/05  
OLO400A \$39,730 (current annual direct)  
**Furthering Clinical Islet Transplantation CTA**  
The purpose of this project was to facilitate the conduct of the clinical trial supported by DK56963 in full compliance with Good Clinical Practices and all federal and local regulations.
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- 24** NIH-NIDDK 1U19 DK61244-01 (PI: Verfaillie C) 8/1/04 – 7/31/05  
\$1,112,002 (annual direct)  
NIDDK Beta Cell Biology Consortium  
**Core D: Transplant and Imaging Core (PI: Hering B)**  
\$79,896 (annual direct)  
The objective of this interdisciplinary program project cooperative agreement was to improve our understanding of the genetics, cell surface and behavioral characteristics of islet stem cells from the pancreas proper, embryonic stem cells, and adult tissue specific stem cells for the purpose of providing a source of stem cell derived islet beta cells suitable for clinical therapy of diabetes.
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- 25** NIH-NIAID N01-AI15416 (PI: Bluestone JA) 9/30/99-8/31/06  
NIAID-Immune Tolerance Network \$34,074 (current annual direct)  
**Member, Steering Committee**  
Co-Director, Islet Subgroup: Hering BJ

This network was designed to represent a comprehensive approach towards the advancement of clinical applications of tolerogenic therapies in kidney and islet transplantation, autoimmunity and asthma/allergies.

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- 26 NIH-NIDDK 1 U01 DK61036 (PI: Moran A, Co-Inv.: Hering BJ) 9/29/01 – 6/30/08  
NIDDK Type 1 Diabetes TrialNet \$11,976 (current annual direct)

**Trial Net-University of Minnesota: Type 1 Diabetes – A Proposal for Prevention & Intervention**

The University of Minnesota is one clinical site of the NIH Type 1 Diabetes TrialNet, a national diabetes trial network to perform intervention studies to preserve pancreatic beta cell function and prevent type 1 diabetes.

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- 27 NIH-NIDDK N01-D-2472 (PI: Hering BJ) 6/21/02-9/16/06  
NIDDK Collaborative Islet Transplant Registry (CITR) \$1,894 (current annual direct)  
EMMES Corporation Contract

**Long Term Follow-up and Database of Islet Transplant Recipients**

As a participating center in the Collaborative Islet Transplant Registry, the University of Minnesota, Department of Surgery submits data on enrolled islet transplant recipients to the EMMES Corporation in support of the Registry.

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- 28 NIH-NIDDK N01-D-1-2472 (PI: Anand R.) 9/1/01 – 12/1/06  
NIDDK Collaborative Islet Transplant Registry (CITR) \$39,957 (current annual direct)  
EMMES Corporation Contract

**Islet/Beta Cell Transplant Registry**

Medical Director and Chair, Scientific Advisory Committee: Hering BJ

The purpose of this contract is to provide medical and scientific leadership for the Collaborative Islet Transplant Registry.

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- 29 NIH-NIAID NHPTCSG (PI: Hering BJ) 04/01/05 - 03/31/07  
NIH Nonhuman Primate Transplantation Collaborative Study Group (NHPTCSG)  
Opportunities Pool, Sc 5-24012-C4 \$137,307 (annual direct)

**Preemptive Tolerization in Preclinical Transplantation**

The objective of this grant is to test the concept of preemptive tolerance induction to islet allografts in nonhuman primates with donor antigen, rapamycin, and costimulation blockade.

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**ACTIVE**

- 1 NIH-NIDDK R01 DK56963 (PI: Hering BJ) 9/30/00–8/31/07  
\$1,032,058 (current annual direct)

**Tolerance to Islet Allografts in Type 1 Diabetes**

The goal of this grant is to improve the results and applicability of islet transplantation in type 1 diabetes. The major objective of is to improve immunotherapeutic protocols as well as our understanding of autoimmune and alloimmune responses directed at transplanted islets.

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- 2 NIH-IAID UO1 AI-065193 (PI: Hering BJ) 10/1/04-9/30/09  
NIH Consortium for Clinical Islet Transplantation \$388,600 (annual direct)  
**Advancing Islet Transplants for Type 1 Diabetes Care - Infrastructure**

The goal of this Consortium is to conduct a series of clinical trials to test innovative concepts in islet transplantation and to obtain approval for human islets as biologic drug from the Food and Drug Administration.

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- 3 NIAID UO1 AI-065193 (PI: Hering BJ) 09/01/2005 - 08/31/2010  
NIH Consortium for Clinical Islet Transplantation \$4,892,977 (annual direct)  
**Advancing Islet Transplants for Type 1 Diabetes Care – Clinical Trial**  
The goal of this Consortium is to conduct a series of clinical trials to test innovative concepts in islet transplantation and to obtain approval for human islets as biologic drug from the Food and Drug Administration.
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- 4 NIH-NIDDK 5R01 DK62932 (PI: Hering BJ) 7/15/02 – 5/31/08  
\$383,605 (annual direct)  
**Mixed Chimerism in Haploidentical Non-human Primates**  
The objective of this project is to evaluate the safety and efficacy of novel tolerance induction regimens, with particular emphasis on mixed chimerism; elucidate the mechanisms of the induction, maintenance and loss of tolerance; and to develop and validate biomarkers for induction, maintenance, and loss of tolerance in the relevant preclinical non-human primate islet allograft model.
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- 5 NIH-NIAID U19 DK057958 (PI: Hering BJ) 9/30/03-7/31/08  
\$278,780 (annual direct)  
**Anti-CD3 Immunotoxin in Hematopoietic Stem Cell Grafting**  
The goal of this project is to reverse diabetes in nonhuman primates with islet allografts in the absence of chronic immunosuppression.
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- 6 NIH-NIAID 1 U19 AI067151-01 (PI: Thomas J) 07/1/05 – 6/30/10  
\$603,103 (annual direct)  
**Pig to Non-human Primate Islet Xenografts**  
**Project 3 (PI: Hering BJ): Islet Xenografts with Triple Costimulatory Blockade**  
The goal of this project is to evaluate the safety and efficacy of triple costimulatory blockade in preventing rejection of porcine islet xenografts in rhesus macaques.
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- 7 NIH-NIAID N01-AI15416 (PI: Bluestone JA) 09/1/99-09/30/07  
NIAID-Immune Tolerance Network \$425,668 (fee for service)  
**Multicenter Trial of Solitary Islet Transplantation in Type 1 Diabetic Patients Using the Edmonton Protocol of Steroid-free Immunosuppression**  
C99B90125; PI: Shapiro AMJ, Co-PI: Hering BJ  
The primary objective of this grant is to test whether the results achieved in Edmonton using a novel islet transplant protocol can be confirmed in additional institutions.
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- 8 NIH-NCRR 1 U42 RR016598 (PI: BJ Hering) 09/01/01 – 07/31/09  
\$615,000 annual direct  
**Human Pancreatic Islet Cell Resources**  
The University of Minnesota Pancreatic Islet Cell Resource Center is responsible for Specific Aim #1: To distribute human islet products - manufactured and characterized in adherence to cGMP regulations - to eligible clinical investigators for approved transplantation protocols. Specific Aim #2: To distribute human islet products to eligible basic scientists for approved laboratory research studies according to allocation algorithms implemented by the Administrative and Bioinformatics Coordinating Center (ABCC). Specific Aim #3: To develop improved methods for assessment of human islet products and employ standardized measures to identify characteristics of such products that are predictive of clinical efficacy. Specific Aim #4: To optimize pancreas procurement, preservation, and processing procedures as well as islet storage and shipment protocols based on islet product testing

prospectively validated in Aim #3. Specific Aim #5: To support the overall mission of the NCCR ICRs Program by coordinating activities with other ICRs and the Steering Committee; interacting with the ABCC on design and statistical evaluation of planned studies; transmitting islet assessment, basic laboratory, and clinical data to the ABCC in a timely manner; and by sharing patentable concepts with the Steering Committee members for use by other ICRs. Contact Info: Richard Knazek, MD richardk@ncrr.nih.gov (301) 435-0792

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- 9 NIH-NIDDK (PI: Papas K; Co-Investigator: Hering BJ) 7/1/04-6/30/08  
1R01 DK068717-01 \$125,000 (annual direct)  
**Magnetic Separation of Islets During Isolation**  
This proposal seeks to exploit the principles in the development of magnetic separation-based techniques for porcine and human islet processing for the purpose of maximizing the utilization of donor pancreases for islet transplantation.
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- 10 JDRF 4-2004-372 (PI: Bluestone JA; Co-PI: Hering BJ) 2/1/04-1/31/09  
JDRF Islet Transplantation Center at University of California-San Francisco and University of Minnesota \$1,800,000 (annual direct)  
**Core A – The Islet Processing and Product Testing Core (PI: Papas K)**  
\$228,700 (annual direct)  
The purpose of this project is to provide human islets meeting islet release criteria for use in clinical islet transplant trials. This will be achieved by a thorough assessment of the human islet product by using Standard Operating Procedures that have been developed for all steps in the preparation and quality control of human islets for transplantation, and protocols for “Determination and Characterization of Human Islet Cell Populations for Administration” that have been approved by the FDA. Correlation of islet product testing results with posttransplant beta cell function will assist in the identification of predictive islet potency assays.
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- 11 JDRF 4-2004-372 (PI: Stock, PG; Co-PI: Hering BJ) 2/1/04-1/31/09  
JDRF Islet Transplantation Center at University of California-San Francisco and University of Minnesota \$1,800,000 (annual direct)  
**Core E – Clinical Operations & Regulatory Affairs Core (PI: Hering BJ)**  
\$94,267 (annual direct)  
The goal of this project is to establish a Clinical Operations and Regulatory Affairs Core to develop an efficient mechanism for performing islet transplant trials in compliance with the current regulatory framework. The implications of these actions exceed the meeting of minimum requirements for study review and reporting. They will help to set the stage for the eventual licensure of allogeneic human islets for routine transplantation and advance the standard of care for persons afflicted with type 1 diabetes mellitus.
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- 12 JDRF 4-2004-372 (PI: Hering BJ) 2/1/04-1/31/08  
JDRF Clinical Investigation Research Grant \$499,402 (annual direct)  
**hOKT3y1 (Ala Ala), Sirolimus and Low Dose Tacrolimus Therapy in Islet Allograft Recipients**  
The aim of this clinical trial is to study the safety and efficacy of hOKT3, (Ala-Ala), tacrolimus, and rapamycin in type 1 diabetic islet allograft recipients with particular emphasis on frequency and function of circulating effector and regulatory T cells.
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- 13 JDRF 7-2005-1167 (PI: Hering BJ) 9/1/05-8/31/08  
JDRF Program Project Grant \$600,000 (annual direct)  
**Islet Sanctuary**

The objective of this Program Project Grant is to develop a prevascularized, cytoprotective, regeneration-promoting, and immune-privileged implantation site for islet allografts and porcine islet xenografts in baboons.

JDRF (PI: Pakala, P) 11/1/05-10/31/08  
 JDRF 7-2005-1167 \$10,805 (annual direct)

**Islet Sanctuary - Project 3: Pig-to-Primate Islet Xenograft Survival with Temporary Systemic Immunotherapy** (Co-Investigator: Hering, B)

Project 3 will combine pretransplant administration of donor antigen under the cover of costimulation blockade with localized immunotherapy at the islet implant site to facilitate long-term survival of islet allografts and xenografts in baboons without chronic systemic immunosuppression.

JDRF (PI: Hering BJ) 11/1/05-10/31/08  
 JDRF 7-2005-1167 \$27,751(annual direct)

**The Islet Sanctuary – Core C: Administrative Core**

**14** Juvenile Diabetes Research Foundation (PI: BJ Hering) 01/01/2007 - 12/31/2009

Program Project Grant Total \$1,018,422 current annual total

**Triple Immunopreemption for Islet Xenotransplantation - Project 1**(PI: BJ Hering)  
 \$377,207 annual direct

n/a (PI: BJ Hering)  
 Juvenile Diabetes Res. Found.

**Triple Immunopreemption for Islet Xenotransplantation - Core C** (PI: BJ Hering)

\$39,143 annual direct

**15** EMMES Corp./NIH 12/01/2006 - 09/14/2013  
 \$34,183 current annual total

**Islet/Beta Cell Transplant Registry**

Total Award: \$391,577. Dr. Hering is a co-investigator and the Medical Director and Chair of Scientific Advisory Committee. The goal of this contract is to provide medical and scientific leadership for the Collaborative Islet Transplant Registry.

**16** (R44 DK069618 (PI: U Staerz)) 10/01/2006 - 09/30/2009  
 NIH-NIDDK/Isogenis, Inc. \$251,030 annual direct

**Protecting Pancreatic Islet Grafts from Rejection**

Total Award: \$1,160,562. Dr. Hering is a co-investigator. Isogenis proposes to use a nonhuman primate model to test the functionality, pharmacology and toxicity of the clinical version of a veto vector and thus to complete the pre-clinical trial stage of veto vectors in pancreatic islet transplantation. In parallel, Isogenis will optimize protocols of veto vector production and purification and veto vector-based immune suppression regimens

**17** (PI: BJ Hering) 07/01/2007 - 06/30/2008  
 NIH \$6,000 annual direct

**CTS-IPITA-IXA Joint Conference**

Total award: \$34,940. This grant will fund 20 US non-member speakers travel, hotel and per diem at the 2007 CTS-IPITA-IXA Joint Conference.

**PENDING**

(n/a (PI: B Hering))

10/01/2006 - 09/30/2008

**Novartis Pharmaceuticals Corp.**

\$39,087 annual direct

Clinical Follow up of A one-year , cingle-center, prospective, open-label study of the safety, tolerability, and preliminary efficacy of Thymoglobuline, Neoral, and RAD00

Total Award: \$100,000. The scope of this project will be to provide long-term follow up of study patients for the clinical trial "A one-year, single-center, prospective, open-label study of the safety, tolerability, and preliminary efficacy of anti-thymocyte globulin, cyclosporine, and RAD in type 1 diabetic patients". We will provide ongoing monitoring of subject immunosuppression, will garner ongoing data regarding subject health status, as well as disseminate, collect and enter data from quality of life assessments. Alquest, Inc. will be responsible for set up and conduct of an on-site close-out visit and will generate final monitoring/closeout report.

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## INVITED LECTURES SINCE 1995

- 1995** Hering, B.J.: Clinical Islet Transplantation: The Giessen results. Eurotransplant Wintermeeting, Fuegen, Austria, Jan 19, 1995
- Hering, B.J.: Innovative Verfahren in der Transplantationsmedizin: Inselzelltransplantation. 112. Kongreß der Deutschen Gesellschaft für Chirurgie, Berlin, Germany, Apr 18-22, 1995
- Hering, B.J.: Stand und Perspektiven von Pankreas- und Inseltransplantation. Seminarreihe "Immunologie und Zellbiologie", Universität Leipzig, Leipzig, Germany, June 26, 1995
- Hering, B.J.: Clinical Islet Transplantation. Plenary Lecture at the 5th International Congress on Pancreas and Islet Transplantation, Miami, USA, Jun 18-22, 1995
- Hering, B.J.: Islet transplantation: Past, presence and future. Seminar on Clinical Islet Transplantation. INSERM Unite 437: Immunointervention dans les Allo et Xenotransplantation, Nantes, France, Oct 19, 1995
- Hering, B.J., Ricordi, C., Sutherland, D.E.R., Pozza, G.: Panel Discussion on „Immunosuppressive Therapy for Clinical Islet Transplantation“, Beta-Cell, Islet & Pancreas Transplants, Orvieto, Italy, Nov 3-4, 1995
- Hering, B.J.: International Islet Transplant Registry. 11th Annual University of California at Irvine Diabetes research Program's Retreat on Pancreatic Islet Transplantation. Big Bear Lake, California, USA, Dec 2-3, 1995
- 1996** Hering, B.J.: Round-Table Discussion: Clinical islet transplantation: How to prevent early islet allograft failure? 15th Workshop of the Study Group on „Artificial Insulin Delivery Systems Pancreas and Islet Transplantation“ of the European Association for the Study of Diabetes, Igls, Austria, Jan 28-30, 1996
- Hering, B.: Pankreas-Insel-Transplantation als Modell für neue immunsuppressive Konzepte. Kieler Seminar zur Transplantations-Immunologie. Arbeitskreis Transplantationsimmunologie der Gesellschaft für Immunologie. Kiel, Germany, Feb 2-3, 1996
- Hering, B.J.: Update on clinical islet transplantation worldwide. Cryobiology Research Institute at Methodist Hospital of Indiana, Inc., Indianapolis, Indiana, USA, Mar 20, 1996
- Hering, B.J.: Inseltransplantation: Aktueller Stand. 14. Diabetes-Seminar der Diabetes Akademie Bad Mergentheim e.V., Bad Mergentheim, Germany, Apr 27, 1996
- Hering, B.J.: International Islet Transplant Registry Update. International Symposium on Endocrine Cell Transplantation and Genetic Engineering, Giessen, Germany, Jun 16-19, 1996

- 1997** Hering, B.J.: Clinical Pancreas and Islet Transplantation. National Diabetes Research Coalition Center Directors Meeting, Miami, FL, March 7, 1997.
- Hering, B.J.: Islet Transplantation as a Therapeutic Modality for IDDM. Invited lecture, 16<sup>th</sup> Annual Meeting of the American Society of Transplant Physicians, Chicago, IL, May 10-14, 1997.
- Hering, BJ: Update on Clinical Islet Transplantation. Transplantation Conference, Barnes/Jewish Hospital, Washington University, St. Louis, MO, July 8, 1997.
- Hering, BJ: Diabetes Update: Insulin-Free Therapy Through Transplantation, Grand Rounds, St. Luke's Medical Center, Duluth, MN September 18, 1997.
- Hering, BJ: Cellular Grafts. The International Congress on Immunosuppression, Orlando, FL, November 11-13, 1997.
- 1998** Hering, BJ: Islet Transplantation For The Treatment Of Type 1 Diabetes: New Perspectives. Citywide Endocrine Conference, Minneapolis, MN, April 2, 1998.
- Hering, BJ.: Pancreas Allocation For Islet Transplantation. 1st Workshop on Islet Preparation. New Orleans, LA, April 17-19, 1998.
- Hering, BJ: Future Directions in Clinical Islet Transplantation. 1st Workshop on Issues in Clinical Islet Transplantation. New Orleans, LA, April 17-19, 1998.
- Hering, BJ: "Islets" Luncheon workshop, 17th Annual ASTP meeting, Chicago, IL, May 9-13, 1998
- Hering, B.J.: Encapsulated cells and cellular grafts. Invited plenary speaker, XVII World Congress of the Transplantation Society, Montreal, Canada, July 12-17, 1998
- Hering, B.J.: Pancreatic islets: Xenotransplantation for treatment of diabetes. 25th Anniversary Allen D. Leman Swine Conference, Brooklyn Park, MN Sept 18-22, 1998
- Hering B.J.: Pancreatic islet cells. U of M/ARCBS Cell Therapy/Cell Processing Center Development Program, St. Paul, MN, Sept 21, 1998
- Hering, B.J.: Islet cell transplantation. Celebration of University of Minnesota 5,000th Kidney Transplant. Minneapolis, MN, Sept 25, 1998
- Hering, B.J.: Discussion of Prospects for Development of Clinical Islet Transplantation. Transplant Conference, Departments of Surgery and Medicine, London Health Sciences Center, University of Western Ontario, London, Ontario, Canada, Sept. 28, 1998

- 1999** Hering, B.J.: Future of Islet Transplantation. 3rd Annual Winter Symposium of the American Society of Transplantation. Kapalua, HI, January 14-18, 1999
- Hering, B.J.: Islet Transplantation for Patients with Type 1 Diabetes: Obstacles and Opportunities. New York Society of Nephrology. New York, NY, Feb 10, 1999
- Hering, B.J.: Islet Transplantation for the treatment of type 1 diabetes: results, research priorities and reasons for optimism. 4th International Congress of the Cell Transplant Society, Montreaux, Switzerland, March 21-24, 1999
- Hering, B.J.: Islet Cell Transplantation: Translation of Research into Practical Benefits for People with Type 1 Diabetes. JDFI Research Update Conference, Denver, CO, April 17, 1999
- Hering, B.J.: The Future of Islet Transplantation. Juvenile Diabetes Foundation 29<sup>th</sup> Annual Conference: Mission Possible, San Francisco, CA, June 3-6, 1999
- Hering, B.J.: Overview of current clinical islet transplant trials. Juvenile Diabetes Foundation Center for islet Transplantation at Harvard Medical School. Annual Retreat, Providence, RI, June 24-25, 1999
- Hering, B.J.: Clinical Islet Transplant Will Work. 7<sup>th</sup> World Congress of the International Pancreas and Islet Transplant Association, Sydney, Australia, August 22-25, 1999
- Hering, B.J.: Porcine Islet Transplantation in Nude Mice and Humans. 26th Anniversary Allen D. Leman Swine Conference, Brooklyn Park, MN, September 17-21, 1999
- Hering, B.J.: Back to the future: From 2010AD – a retrospective look at how diabetes was cured. Insulin-Free World Foundation Seminar, St. Louis, MO, September 25, 1999
- Hering, B.J.: What's New in Islet Transplantation? Open Meeting of the Juvenile Diabetes Foundation New York Chapter, New York, NY, October 28, 1999
- Hering, B.J.: "Update on What's New in Islet Transplantation" Chapter meeting of the Greater Kansas City Chapter of the JDF, Kansas City, KS, November 10, 1999
- Hering, B.J.: Islet Transplantation: Sweet life without suppression. 8<sup>th</sup> Annual Meeting of the German Transplantation Society, Dresden, Germany, November 25-27, 1999
- 2000** Hering, B.J.: "Update on What's New in Islet Transplantation". Kick Off for the Walk for the Cure" Greater Iowa Chapter, Des Moines, IA January 6, 2000.

Hering, B.J.: "Update on What's New in Islet Transplantation". Cedar Rapids Juvenile Diabetes Research Foundation, Cedar Rapids, IA January 13, 2000.

Hering, B.J.: "Lessons from the International Islet Transplantation Registry (ITR) and Recommended Quality Standards for Islet Preparations". Biological Response Modifiers Advisory Committee, Bethesda, MD, March 20, 2000.

Hering, B.J.: "Islet Cell Transplantation". Expanding Options for Diabetes Care Symposium, Minneapolis, MN March 14, 2000

Hering, B.J.: "Islet Transplantation: The Future has Arrived" Seminar, Barbara Davis Center for Childhood Diabetes at the University of Colorado Health Sciences Center, Denver, CO, April 18, 2000

Hering, B.J.: "Islet Transplantation for the Treatment of Type 1 Diabetes" Kroc Lectureship, Barbara Davis Center for Childhood Diabetes at the University of Colorado Health Sciences Center, Denver, CO, April 19, 2000

Hering, B.J.: "Technology vs Transplant: Advances in Islet Transplantation", Mini Course for Transplant Coordinators & Nurses, American Society of Transplantation Meeting, Chicago, IL, May 13-17, 2000

Hering, B.J.: "Islet Cell Transplant—Current Status of Clinical Application and Experimental Results", North American Transplant Coordinators Organization, National Meeting, Orlando, FL, August 8, 2000

Hering, B.J.: "Novel Strategies for Tolerance Induction with Islet Allotransplantation", XVIII International Congress of the Transplantation Society, Rome, Italy, August 27—September 1, 2000

Hering, B.J.: "Critical Factors in Islet Transplantation", Combined Islet Basic Science and Transplantation Meeting, Eilat, Israel, September 21-24, 2000

## 2001

Hering, B.J.: "Islet Transplantation", Juvenile Diabetes Research Foundation, Dallas, TX, February 24, 2001

Hering, B.J.: "Islet Transplantation", Pancreas Transplantation Workshop, Farmington, PA, March 29-April 1, 2001

Hering, B.J.: "Islet Transplantation", Immunobiology and Transplantation Seminar, Cornell University, New York, NY, April 3, 2001

Hering, B.J.: "Islet Transplantation for Type 1 Diabetes: Process and Prospects", Southdale Hospital Medical Staff Grand Rounds, Edina, MN, April 12, 2001

Hering, B.J.: "Breakthrough: Pancreatic Islet Transplantation", Second Annual Cutting Edge: New Frontiers in Transplantation Conference, by Fairview-University Medical Center, Minneapolis, MN, April 18, 2001

Hering, B.J.: "Islet Transplantation 'Now'", Federation of Clinical Immunology Societies 1<sup>st</sup> Annual Patient Education Meeting, Boston, MA, May 5, 2001

Hering, B.J.: "Update on Clinical Trials of Islet Transplantation", Sunrise Symposia, American Society of Transplantation Meeting, Chicago, IL, May 12-16, 2001

Hering, B.J.: "Islet Transplantation", Co-Moderator Luncheon Workshop, Transplant 2001, The Joint American Transplant Meeting, Chicago, IL, May 12-16, 2001

Hering, B.J.: "Islet Transplantation: Challenges for Future Implementation", 8<sup>th</sup> Congress of the International Pancreas and Islet Transplant Association Meeting, Innsbruck, Austria, June 12-16, 2001

Hering, B.J.: "Update on Islet Transplantation", Association of Organ Procurement Organizations, Minneapolis, MN, June 20-22, 2001

Hering, B.J.: "The Minnesota Islet Transplant Experience", Juvenile Diabetes Research Foundation Center for Islet Transplantation at Harvard Medical School Annual Retreat, Newport, RI, June 21-22, 2001

Hering, B.J.: "New Approaches to Immunosuppression for Islet Transplantation", Recent Advances in Islet Transplantation Symposium, 61<sup>st</sup> Scientific Sessions, American Diabetes Association Meeting, Philadelphia, PA, June 22-26, 2001

Hering, B.J.: "Progress in Islet Transplantation", Progress and Hurdles in Cell Transplantation, 10<sup>th</sup> European Society of Transplantation Congress, Lisbon, Portugal, October 6-11, 2001

Hering, B.J.: "Inseltransplantation—Meilenstein oder Muhlstein in der Therapie des Typ-1-Diabetes?", Neue Trends in der Diabetologie, XVI Internationales Donausymposium und VII Kirchheim-Forum Diabetes, October 11-13, 2001

Hering, B.J.: "Immunosuppression Targeted to Islet Transplantation", Cell Transplant Society 10<sup>th</sup> Anniversary Congress, Keystone, CO, October 14-17, 2001

Hering, B.J.: "The Minnesota Islet Transplant Experience", Transplant Immunosuppression 2001: The Complete Care of the Transplant Recipient, Minneapolis, MN, October 24-27, 2001

Hering, B.J.: "Modified Immunosuppressive Drug Regimens for Islet Transplantation", Islet Transplantation and Beyond: From Research to Clinical Application, Rancho Mirage, CA, November 29—December 1, 2001

Hering, B.J.: "Stem Cells and Transplantation", Tissues of Life Kickoff Celebration, Science Museum of Minnesota, St. Paul, MN, November 10, 2001

Hering, B.J.: "Multicenter Update on Recent Islet Transplantation Results", Islet Transplantation and Beyond: From Research to Clinical Application, Rancho Mirage, CA, November 29—December 1, 2001

## 2002

Hering, B.J.: "Update on Islet Cell Transplantation", City-Wide Conference in Endocrinology and Diabetes, Minneapolis, Minnesota, January 24, 2002

Hering, B.J.: "Novel Immunosuppressive Protocols in Islet Transplantation", New Trends in Immunosuppression, Geneva, Switzerland, February 7-10, 2002

Hering, B.J.: "Pancreas Shipment: UW vs. Two-Layer Method", Human Islet Isolation and Transplantation Techniques First Annual Training Workshop, Miami, Florida, February 25-28, 2002.

Hering, B.J.: "Islet Isolation Facility-Minneapolis", Human Islet Isolation and Transplantation Techniques First Annual Training Workshop, Miami, Florida, February 25-28, 2002.

Hering, B.J.: "Islet Purification", Human Islet Isolation and Transplantation Techniques Training Workshop, Miami, Florida, February 25-28, 2002.

Hering, B.J.: "Discontinuous vs. Continuous Gradients", Human Islet Isolation and Transplantation Techniques Training Workshop, Miami, Florida, February 25-28, 2002.

Hering, B.J.: "Gradient Variants and Selection", Human Islet Isolation and Transplantation Techniques Training Workshop, Miami, Florida, February 25-28, 2002.

Hering, B.J.: "Rescue Process and Rescue Gradient Selection", Human Islet Isolation and Transplantation Techniques Training Workshop, Miami, Florida, February 25-28, 2002.

Hering, B.J.: "Recombining Layers after Purification", Human Islet Isolation and Transplantation Techniques Training Workshop, Miami, Florida, February 25-28, 2002.

Hering, B.J.: "Screening Tests During Candidate Work-Up", Human Islet Isolation and Transplantation Training Workshop, Miami, Florida, February 25-28, 2002.

Hering, B.J.: "Novel Immunotherapeutic Strategies in Pre-Clinical and Clinical Islet Transplantation", Horizons in Transplantation, From Theory to Practice, Amelia Island, Florida, April 21-25, 2002

Hering, B.J.: "Update on Islet Transplantation", Juvenile Diabetes Research Foundation Annual Conference, Washington, D.C., May 15-17, 2002

Hering, B.J.: "Islet Transplantation", Johns Hopkins Endocrine Grand Rounds, Baltimore, Maryland, May 29, 2002

Hering, B.J.: "Immunotherapeutic Strategies in Pre-clinical and Clinical Islet Transplantation", American Diabetes Association 62<sup>nd</sup> Scientific Sessions, San Francisco, California, June 14-18, 2002

Hering, B.J.: "Current Status of Islet Transplantation", Advances in Hepatic, Biliary, and Pancreatic Surgery, Minneapolis, Minnesota, June 12-15, 2002

Hering, B.J.: "Tolerance and Pancreatic Islet Cell Transplantation", Approaches to Clinical Tolerance Induction, 2002 FASEB Summer Research Conference on Transplant Immunology, Saxtons River, VT, June 15-20, 2002

Hering, B.J.: "Islet Transplantation from Living Donors: Dream or Reality?", Abdominal Organ Transplantation from Living Donors: State of the Art, Gubbio, Italy, June 21-23, 2002

Hering, B.J.: "Immunosuppressive Protocols for Islet Transplantation", XIX International Congress of the Transplantation Society, Miami, Florida, August 25-30, 2002

Hering, B.J.: "Cell-based Diabetes Therapy: from Concept to Clinical Trial to Clinical Care", Billingham Lecture, Vanderbilt University, Nashville, Tennessee, September 20, 2002

Hering, B.J.: "Update on ITN Trial and New Developments in Immunosuppressive Regimens for Islet Transplantation", Advances in Islet Cell Biology: From Stem Cell Differentiation to Clinical Transplantation, 2002 Annual Rachmiel Levine Diabetes Symposium, Anaheim, California, October 10-12, 2002

Hering, B.J.: "Using New Immunosuppressive Drugs in Nonhuman Primates", Nonhuman Primate Transplantation Techniques Workshop, National Institutes of Health, Bethesda, Maryland, October 31-November 1, 2002

Hering, B.J.: "Collaborative Islet Transplant Registry", Islet Transplantation 2002 and Beyond: 2<sup>nd</sup> Annual Symposium, Rancho Mirage, California, December 5-7, 2002

## 2003

Hering, B.J.: "Update on Islet Transplantation", JDRF Chapter, Dallas, Texas January 22, 2003

Hering, B.J.: Islet cell xenotransplantation. Secretary's Advisory Committee on Xenotransplantation, Bethesda, MD, February 3, 2003

Hering, B.J.: What is the future of islet replacement? 7<sup>th</sup> Annual Winter Symposium, American Society of Transplantation, Naples, FL, February 13-16, 2003 Hering BJ

Hering, B.J.: The Minneapolis islet transplant experience. 6th International Congress of the Cell Transplant Society, Atlanta, GA, March 2-5, 2003

Hering, B.J.: Porcine islet xenotransplantation in nonhuman primates. 6th International Congress of the Cell Transplant Society, Atlanta, GA, March 2-5, 2003

Hering, B.J.: Islet cell transplants. 43<sup>rd</sup> Conference on Taking Control of Your Diabetes, Minneapolis, MN March 15, 2003

Hering, B.J.: Islet Isolation Facility: Minneapolis. 3<sup>rd</sup> Human Islet Isolation and Transplantation Techniques, Minneapolis, MN, March 27-29, 2003

Hering, B.J.: Immunosuppression at the University of Minnesota. 3<sup>rd</sup> Human Islet Isolation and Transplantation Techniques, Minneapolis, MN, March 27-29, 2003

Hering, B.J.: Adjunctive Treatment in the Peri-Transplant Period. 3<sup>rd</sup> Human Islet Isolation and Transplantation Techniques, Minneapolis, MN, March 27-29, 2003

Hering, B.J.: Metabolic Monitoring. 3<sup>rd</sup> Human Islet Isolation and Transplantation Techniques, Minneapolis, MN, March 27-29, 2003

Hering, B.J.: Collaborative Islet Transplant Registry. 3<sup>rd</sup> Human Islet Isolation and Transplantation Techniques, Minneapolis, MN, March 27-29, 2003

Hering, B.J.: Clinical Operations and Regulatory Affairs. 3<sup>rd</sup> Human Islet Isolation and Transplantation Techniques, Minneapolis, MN, March 27-29, 2003

Hering, B.J.: Applying for Basic and Clinical Research Funding. 3<sup>rd</sup> Human Islet Isolation and Transplantation Techniques, Minneapolis, MN, March 27-29, 2003

Hering, B.J.: Islet Transplantation: Current and Future Trials. Diabetes Dialogue. Geneva, Switzerland, April 4-5, 2003

Hering, B.J.: How to establish an Islet Transplant program. Transplant Society of Michigan, Detroit, MI, April 18, 2003

Hering, B.J.: National Institutes of Health Nonhuman Primate Conference, Bethesda, MD, June 23, 2003

Hering, B.J.: Testimony on Research Opportunities in Pancreatic Islet Transplantation and Thoughts on "The Pancreatic Islet Cell Transplantation Act of 2003" (S.518) before the UNITED STATES SENATE COMMITTEE ON GOVERNMENTAL AFFAIRS, Washington, D.C., June 24, 2003

Hering, B.J.: Setting up a clinical islet programme. 9<sup>th</sup> Congress of the International Pancreas and Islet Transplant Association, Dublin, Ireland, July 8-11, 2003.

Hering, B.J.: Overview of Clinical Trials. 9<sup>th</sup> Congress of the International Pancreas and Islet Transplant Association, Dublin, Ireland, July 8-11, 2003.

Hering, B.J.: Islet transplants for type 1 diabetes: progress and prospects. The Ethics and Science of Transplantation, New York, NY, September 12, 2003

Hering, B.J.: How I do it: pancreas and islet transplantation. Transplant Immunosuppression 2003: the Continuing Challenges, Minneapolis, MN, October 1-4, 2003

Hering, B.J.: Recent developments in islet transplantation. Frontiers in Diabetes Research 5<sup>th</sup> Annual Conference, Columbia University, New York, NY., November 1, 2003

Hering, B.J.: Immunosuppression in islet transplantation. Robery J. Corry Pancreas Transplantation Workshop, Pittsburgh, PA, October 30-November 2, 2003

Hering, B.J.: Cell-based therapies for type 1 diabetes. "Cell-based Therapeutics: from Stem Cell Biology to Clinical Immune Tolerance, London, Ontario, Canada, November 4-5, 2003

Hering, B.J.: Islet isolation facility: Minneapolis. Islet Summit Conference Series, 4<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Miami Beach, FL, November 12-15, 2003

Hering, B.J.: Pancreas donor criteria. Islet Summit Conference Series, 4<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Miami Beach, FL, November 12-15, 2003

Hering, B.J.: Selecting lots of enzymes for human islet isolation. Islet Summit Conference Series, 4<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Miami Beach, FL, November 12-15, 2003

Hering, B.J.: Islet Purification. Islet Summit Conference Series, 4<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Miami Beach, FL, November 12-15, 2003

Hering, B.J.: Discontinuous vs continuous gradients. Islet Summit Conference Series, 4<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Miami Beach, FL, November 12-15, 2003

Hering, B.J.: Gradient variants and selection. Islet Summit Conference Series, 4<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Miami Beach, FL, November 12-16, 2003

Hering, B.J.: Recombining layers after purification. Islet Summit Conference Series, 4<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Miami Beach, FL, November 12-15, 2003

Hering, B.J.: Product release and post release assays. Islet Summit Conference Series, 4<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Miami Beach, FL, November 12-15, 2003

Hering, B.J.: Clinical operations and regulatory affairs. Islet Summit Conference Series, 4<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Miami Beach, FL, November 12-15, 2003

Hering, B.J.: Novel strategies in clinical islet transplantation: What is in the pipeline. Islet Summit Conference Series, 4<sup>th</sup> 1<sup>st</sup> Annual Islet Transplant Congress, Miami Beach, FL, November 12-15, 2003

Hering, B.J.: Islet transplant databases—how we do it in Minneapolis. Islet Summit Conference Series, 4<sup>th</sup> 1<sup>st</sup> Annual Islet Transplant Congress, Miami Beach, FL, November 12-15, 2003

Hering, B.J.: The Future of Islet Cell Transplantation. Diabetes Journal Club, St. Cloud, MN, December 3, 2003

Hering B.J.: Islet Transplants for Type 1 Diabetes. Molecular Medicine Forum, Medtronic, Inc., Shoreview, MN, December 16, 2003.

2004

Hering, B.J.: Islet Transplant for Type 1 Diabetes: Challenges and Opportunities, Program in Immunobiology, University of Alabama-Birmingham, Birmingham, AL, January 30, 2004

Hering, B.J.: Present & Future of Transplantation in the Diabetic Patient, The Andalusian Society of Organ and Tissue Transplantation, Marbella, Spain, March 8-11, 2004.

Hering, B.J.: Islet Transplants for the Treatment of Type 1 Diabetes, Japan Pancreas and Islet Transplantation Meeting, Okayama, Japan, March 26-27, 2004

Hering, B.J.: Islet Transplantation-Progress and Future Directions, Hennepin County Medical Center Continuing Medical Education Program, Minneapolis, MN, May 28, 2004

Hering, B.J.: Preclinical and Clinical Islet Transplantation – Progress and Prospects, 2<sup>nd</sup> Scientific Symposium of the Juvenile Diabetes Research Foundation (JDRF) Center for Prevention of Beta-Cell Destruction in Europe, Lausanne, Switzerland, June 18, 2004

Hering, B.J.: Islet Transplant Innovations, National Kidney Foundation Transitions in Transplantation: A Continuum of Care, Minneapolis, MN, July 28-31, 2004

Hering, B.J.: New Developments in Islet Transplantation for Type 1 Diabetes, American Association of Diabetes Educators Annual Meeting, Indianapolis, IN, August 11-14, 2004

Hering, B.J.: New developments in Islet Transplant Technologies, International Congress of the Transplantation Society, Vienna, Austria, September 5-9, 2004

Hering, B.J.: Immunosuppressive Protocols for Islet Transplantation, International Congress of the Transplantation Society, Vienna, Austria, September 5-10, 2004

Hering, B.J.: Clinical Islet Transplantation, Cell Transplant Society, Boston, MA, November 17-20, 2004

Hering, B.J.: Pancreatic islet xenotransplantation: mechanisms of rejection and potential for the clinic, 2<sup>nd</sup> Australian Health & Medical Research Congress, Sydney, Australia, November 22-26, 2004

Hering, B.J.: Islet Transplantation. National University of Singapore, Singapore, November 29, 2004

Hering, B.J.: Xenotransplantation, Islet Cell Transplant, Prelude to the Future, In Honor of Paul Lacy in his 80<sup>th</sup> Year, Philadelphia, PA, December 1-2, 2004

Hering, B.J.: Islet Protocols for Tolerance Induction, 3<sup>rd</sup> International Congress on Immunosuppression, San Diego, CA, December 8-11, 2004

Hering, B.J.: Islet Transplantation-Progress and Prospects, Storrs, CT, December 14, 2004

## 2005

Hering, B.J.: Islet Xenotransplantation-Why and When?, Transplantation Grand Rounds, University of Pittsburgh Medical Center, Pittsburgh, PA, March 18, 2005

Hering, B.J.: Update on Islet Transplantation and Future Directions, JDRF Fellows Research Forum 2005, Chantilly, VA, March 18-20, 2005

Hering, B.J., Setting Up an Islet Transplant Program, Islet Summit Conference Series, 5<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Banff, Canada, March 20-23, 2005

Hering, B.J., The University of Minnesota Islet Processing Facility, Islet Summit Conference Series, 5<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Banff, Canada, March 20-23, 2005

Hering, B.J., Human Islet Product Release and Post-Release Assays, Islet Summit Conference Series, 5<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Banff, Canada, March 20-23, 2005

Hering, B.J., Islet Transplant Candidate Selection, Islet Summit Conference Series, 5<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Banff, Canada, March 20-23, 2005

Hering, B.J., Immunosuppressive Protocols for Clinical Islet Transplantation, Islet Summit Conference Series, 5<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Banff, Canada, March 20-23, 2005

Hering, B.J., Metabolic Monitoring of Post-Transplant Human Islet Function, Islet Summit Conference Series, 5<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Banff, Canada, March 20-23, 2005

Hering, B.J., Monitoring Immune Responses to Transplanted Human Islets, Islet Summit Conference Series, 5<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Banff, Canada, March 20-23, 2005

Hering, B.J., Update on the Collaborative Islet Transplant Registry (CITR). The 10<sup>th</sup> World Congress of International Pancreas and Islet Transplant Association, Geneva Switzerland, May 4-7, 2005

Hering, B.J., Immunosuppressive Strategies for Islet Xenotransplantation in the Nonhuman Primate, The 10<sup>th</sup> World Congress of International Pancreas and Islet Transplant Association, Geneva Switzerland, May 4-7, 2005

Hering, B.J. The Nexus of Cell Transplantation, Tissue Engineering and Gene Therapy: Integrating Basic Science and Medicine, Seattle, WA, May 21-25, 2005

Hering, B.J.: New Frontiers in Type 1 Diabetes: Islet Transplantation. Pediatric Diabetes Symposium, International Diabetes Center, Minneapolis, MN, June 17, 2005

Hering, B.J.: Pig Islet Xenotransplantation in Non-human Primates. 8th Congress of the International Xenotransplantation Association (IXA), Göteborg, Sweden, September 10-14, 2005

Hering, B.J.: What's New in Islet Transplantation? Transplant Immunosuppression 2005: Improving Recipient Outcome. Minneapolis, MN, September 28 – October 1, 2005

Hering, B.J.: Islet Transplantation and Cell Therapy for Beta-cell Function Restoration: Are We Progressing as Expected? 2<sup>nd</sup> Joint Meeting of the American Diabetes Association and the Spanish Endocrinology and Diabetes Society. Barcelona, Spain, September 30, 2005.

Hering, B.J.: Update on Islet Transplantation. Transplanta Conference. University of Virginia, Charlottesville, VA, November 4, 2005

Hering, B.J.: Immunobiology of Islet Transplantation. 6<sup>th</sup> Annual Levine Symposium. Los Angeles, CA, November 12, 2005

## 2006

Hering, B.J.: Islet Transplantation – Time for Transition. Grand Rounds, UCLA Department of Surgery Transplant Division. Los Angeles, CA, January 12, 2006

Hering, B. J.: The Vanishing Islet. American Society of Transplant Surgeons, Winter Meeting, Scottsdale, AZ, January 21, 2006

Hering, B. J.: Single Donor Islet Transplantation. Keystone Symposium "Pancreatic Islets: From Development to Transplantation", Taos, New Mexico, Feb 23 - 28, 2006

Hering, B.J.: Islet Transplantation for Type 1 Diabetes. Dr. Nina Poretzky Memorial Lecture. Beth Israel Medical Center, New York, NY, March 7, 2006

Hering, B.J.: Update and New Features in CGMP Facility, Equipment and Structure of the Clinical Islet Transplant Program at the University of Minnesota. 6<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Snowbird, UT, April 9-12, 2006

Hering, B.J.: Donor Pancreas Availability, Acquisition Fees, and Opportunities. 6<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Snowbird, UT, April 9-12, 2006

Hering, B.J.: Islet Purification: Continuous Gradients. 6<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Snowbird, UT, April 9-12, 2006

Hering, B.J.; Papas, K.K., Zhang, H.Z.: Oxygen Consumption Rates, ATP and Beta cell Enumeration. 6<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Snowbird, UT, April 9-12, 2006

Hering, B.J.: Promoting Islet Engraftment. 6<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Snowbird, UT, April 9-12, 2006

Hering, B.J.: Establishing an Efficient and Streamlined Islet Transplant Candidate Screening Program. 6<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Snowbird, UT, April 9-12, 2006

Hering, B.J.: Post Islet Transplant Metabolic Assessment. 6<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Snowbird, UT, April 9-12, 2006

Hering, B.J.: Management of the Islet Transplant Recipient: Immune Monitoring. 6<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Snowbird, UT, April 9-12, 2006

Hering, B.J.: Islet Xenotransplantation. 6<sup>th</sup> Human Islet Isolation and Transplantation Techniques Training Workshop, Snowbird, UT, April 9-12, 2006

Hering, B.J.: Islet Transplantation – At the Crossroads. Grand Rounds, Alberta Transplantation Institute, University of Alberta, Edmonton, Alberta, Canada; May 3, 2006

Hering, B.J.: Progress in Islet Xenotransplantation. Minnesota JDRF Chapter; Minneapolis, MN; May 15, 2006

Hering, B.J.: Collaborative Islet Transplant Registry Report. Meeting of the Cell Transplant Society. Milan, Italy, May 18-20, 2006.

Hering, B.J.: Pig-to-Human Islet Xenotransplantation: Why, Where, Who, and When? International Symposium Xenotransplantation. Berlin, Germany, June 8-9, 2006.

Hering, B.J.: Current Status of Islet Transplantation. 70th Annual Course: Advances in Hepatic, Biliary & Pancreatic Surgery. Minneapolis, MN; June 14-17, 2006

Hering, B.J.: Islet Xenotransplantation. National Biotechnology Conference. Boston, MA; June 18-21, 2006

Hering, B.J.: Senate Briefing. Diabetes Research and Wellness Foundation. Washington, DC; June 28, 2006

Hering, B.J.: Cellular Transplantation. World Transplant Congress. Boston, MA. July 23-27, 2006

Hering, B.J.: Islet Allograft Survival in Type 1 Diabetes with Anti-thymocyte Globulin, Etanercept, Cyclosporine, and Everolimus. World Transplant Congress. Boston, MA. July 23-27, 2006

Hering, B.J.: Preclinical Islet Xenotransplantation: Immunobiology and immunointervention. Satellite Symposium. World Transplant Congress. Boston, MA July 22, 2006

Hering, B.J.: Spring Point Project: A Bold Plan to CURE Diabetes. Diabetes Research & Wellness Foundation Event. Los Angeles, CA. August 10, 2006.

Hering, B.J.: Xenotransplantation of Pancreatic Islets. Genzyme Corporation. Boston, MA. September 1, 2006.

Hering, B.J.: Islet Auto Transplantation: The Minnesota Experience. Oxford Annual HPB Symposium. Templeton College, Oxford UK. October 5, 2006.

Hering, B.J.: Islet Cell Transplantation: At the Crossroads. Mayo Clinic Grand Rounds. Rochester, MN. October 9, 2006.

Hering, B.J.: Islet Transplantation – Potential, Progress, Problems, and Prospects. University of Minnesota Department of Medicine Division of Endocrinology City-Wide Conference. Minneapolis, MN. October 19, 2006.

Hering, B.J.: Cellular Therapeutics for Diabetes. Diabetes Society 12th Annual Diabetes Symposium For Health Professionals. Santa Clara, CA. November 11, 2006.

Hering, B.J.: Minimally Invasive Beta Cell Replacement: History of Human Islet Allograft Transplantation and New Opportunities: Porcine Islet Xenotransplantation. The University of Minnesota Salutes 40 Years of Pancreas Transplantation, An International Collaboration. December 8-9, 2006.

## 2007

Hering BJ: Spring Point Project: A Bold Plan to CURE Diabetes. Research Update sponsored by Diabetes Research and Wellness Foundation, Pacific Palisades, California, March 20, 2007

Hering BJ: Progress in Islet Transplantation. Annual Meeting of the Japanese Society of Pancreas and Islet Transplantation, Osaka, Japan, March 31, 2007

Hering BJ: Current Status of Islet Transplantation – From Basic to Clinical. Hokkaido University, Sapporo, Japan, April 2, 2007

Hering BJ: Islet Transplantation in Non-human Primates – New Directions in Immunosuppression. American Transplant Congress, San Francisco, California, May 7, 2007

Hering BJ, Oberholzer J: Progress in Islet Transplantation. American Transplant Congress 2007, San Francisco, May 8, 2007

Hering BJ: A Bold Plan To Cure Diabetes. 88th Multiple 5M Convention of the Lion's Club, Willmar, Minnesota, May 19, 2007

Hering BJ: Islet Cell and Pancreas Transplants: What is the Latest? Taking Control of Your Diabetes Conference, Minneapolis, Minnesota, May 19, 2007

Hering BJ: Islet Xenotransplantation: The Impact of the Donor Pig Strain. Pig-to-Man Islet Transplant Summit at the Nobel Forum, Stockholm, Sweden, June 4-5, 2007

Hering BJ: Islet Allo- and Xenotransplantation: Update on Preclinical Studies and Clinical Trials. Scientific Colloquium of the Study Group 'Xenotransplantation', University Hospital Großhadern, Ludwig Maximilian University, Munich, Germany, June 6, 2007

Hering BJ: Pig Islet Xenotransplantation: Current Concepts, Challenges, and Chances. 10<sup>th</sup> Minisymposium Xenotransplantation of the German Working Group Xenotransplantation (DAX), Berlin, Germany, June 8, 2007

Hering BJ: The Promise and Limitations of Current Islet Transplant Approaches. 67th Scientific Sessions of the American Diabetes Association, Chicago, IL, June 22-26, 2007

## PUBLICATIONS: PEER REVIEWED ARTICLES

1. Hoell E, **Hering BJ**, Bretzel RG, Federlin K: Influence of cryopreservation on islet allograft survival in diabetic rats. *Life Support Systems* 1995; 3 (Suppl. 1): 675-9
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