# Mark J. Jaroszeski, Ph.D.

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## *RESEARCH INTERESTS:*

Physical Systems for Drug and Gene Delivery (Non-Viral)
Pulsed Electric Fields for Drug and Gene Delivery
Plasma Mediated Drug and Gene Delivery
Cell-Cell Electrofusion
Novel Cancer Treatments
*In Vivo* Electrophoresis for the Mass Transport of Molecules
Silicon Carbide Biocompatibility for Sensors and Implants
Biomedical Instrumentation
Microfluidic Devices for Biological Analysis

## *PROFESSIONAL EXPERIENCE:*

2002-Present **Associate Professor** Department of Chemical Engineering, University of South Florida, Tampa, FL. 1999-present, Member of the USF Center for Molecular Delivery. NIH MARC U-STAR Program Director (2005 to 2009)

*1996-2002* **Research Assistant Professor** Department of Surgery, Division of Surgical Research, University of South Florida, Tampa, FL.

*1993-1996* **Associate in Research** Department of Surgery, University of South Florida, Tampa, FL

*1989-1993* **Graduate Research Assistant** Department of Chemical Engineering, University of South Florida, Tampa, FL

*1984-1987* **Engineering Technician** Advanced Separations Technology, Lakeland, FL

## *EDUCATION:*

**Ph.D. Engineering Science, 1993**
Department of Chemical Engineering, University of South Florida, Tampa, FL (Co-administered with the USF Department of Surgery)

Dissertation: Mechanically Facilitated Cell-Cell Electrofusion

**M.S. Chemical Engineering, 1990**
Department of Chemical Engineering, University of South Florida, Tampa, FL

Thesis: An Instrument System for the Acquisition and Analysis of Arterial Pressure and Flow Waves

**B.S. Chemical Engineering, 1990**
Department of Chemical Engineering, University of South Florida, Tampa, FL

## *AWARDS/HONORS:*

Tau Beta Pi Engineering Academic Honor Society

Outstanding Dissertation of the Year Award, 1993, University of South Florida

Distinguished Alumnus Award, Polk Community College, December 13, 2002

USF Department of Chemical Engineering Professor of the Year for 2005, Awarded by vote of undergraduate students

USF Outstanding Undergraduate Teaching Award for the 2005-2006 Academic Year

Elected to the Polk County Florida Public Schools Hall of Fame, June 4, 2009

## *UNIVERSITY SERVICE:*

Member of USF Institutional Animal Care and Use Committee (IACUC) which reviews applications for animal research use and assures compliance with federal, state, and university laws/guidelines. (1996-2005)

Alternate Member of USF Institutional Animal Care and Use Committee (IACUC) (2005-Present)

Member of the USF Lab Safety Committee (2005)

American Instituted of Chemical Engineers (AICHE) student Chapter Advisor and the University of South Florida (2002-2006)

## *COURSES / CURRICULA DEVELOPED*

Bioseparations. ECH 4931 and ECH 5931: Developed and taught in Fall 2003. This course and the corresponding graduate course are aimed at introducing the student interested in biomedical engineering to laboratory and industrial methods for separating biochemicals, biomolecules, cells, and cell fractions.

Engineering of Biological Systems. BME 4406: Fist developed and taught in Fall of 2004 as a special topics undergraduate course. The course is aimed at teaching the essentials of biology to biomedical engineering students with emphasis on lab and industrial applications. This course was formalized through the USF Undergraduate Council and the State of Florida. It received the BME 4406 designation in the 2005-2006 academic year.

Biomedical Engineering Minor: This minor is housed in the College of Engineering and is open to all engineering majors as well as the rest of the university. This minor was the first ever for the College of Engineering or any Engineering Department and consists of 15 credit hours of course work. Six of these hours are required. The remaining 9 credit hours can be chosen from a large selection of undergraduate and graduate courses. The minor has been approved by the USF undergraduate council and officially started in Fall 2005. The first student received the minor in Spring 2006.

***COURSES TAUGHT:***

Undergraduate
BME 4406: Engineering of Biological Systems
ECH 4931: Bioseparations
ECH 3023: Material and Energy Balances
ECH 4936: Undergraduate Seminar
ECH 4931: Introduction to Biomedical Engineering
ECH 3702: Instrument Systems
ECH 4931: Research Design, Methods, and Interpretation

Graduate
ECH 5931: Bioseparations
ECH 5740: Bioprocesses
BME 6000: Biomedical Engineering

***STUDENTS MENTORED (as Major or Co-Major Professor):***

***Ph.D.***

Ph. D. Co-major Professor for Joseph Hickey, M.S.Ch.E. at the University of South Florida (2000-2004).

Major Professor for Ph.D. student Niraj Ramachandran (Biomedical Engineering) in the University of South Florida Chemical Engineering Program (2002-2008).

Major Professor for Ph.D. student and NSF IGERF Fellow Richard Connolly (Biomedical Engineering) in the University of South Florida Chemical & Biomedical Engineering Program (2005-2010).

Major Professor for Ph.D. student John Elliot (Biomedical Engineering) in the University of South Florida Chemical & Biomedical Enginerring Program (2010). Note: only major professor for 1 year, last year before graduation.

Co-Major Professor for Ph.D. student Ophir Ortiz (Electrical Engineering) in the University of South Florida Electrical Engineering Department (2005-2009).

Co-Major Professor for Ph.D. student Norelli Schettini (Electrical Engineering) in the University of South Florida Electrical Engineering Department (2007- present).

Co-Major Professor for Ph.D. student Alexandra Oliveros (Electrical Engineering) in the University of South Florida Electrical Engineering Department (2008- 2010).

Co-Major Professor for Ph.D. student Alisha Peterson (Chemical Engineering) in the University of South Florida Chemical & Biomedical Engineering Department (2012-2015)

Major Professor for Ph.D. student Reginald Atkins (Biomedical Engineering) in the University of South Florida Chemical & Biomedical Engineering Department (2013-present)

***Masters***

Co-Major Professor for M.S.Ch.E. student Joseph Hickey at the University of South Florida (1998-2000).

Major Professor for M.S. B. M. E. student for Jennifer Lengham in the University of South Florida Chemical Engineering Program (2002-2004)

Major Professor for M.S.Ch.E. student for Ronald Castle in the University of South Florida Chemical Engineering Program (2002-2003)

Major Professor for M.S.B.M.E. student for Joythi Fernandez in the University of South Florida Chemical Engineering Program (2004-2005)

Major Prodessor for M.S.B.M.E. student Kate Johnson-Shoos in the University of South Florida Chemical Engineering Program (2005-2007)

Major Professor for M.S.B.M.E. student Joshua Stein in the University of South Florida Chemical Engineering Program (2005-2007).

Major Professor for M.S.B.M.E. student Mahmoud Alabraham in the University of South Florida Chemical & Biomedical Engineering Program (2008-2009)

Major Professor for M.S.B.M.E. student Justin Stuart in the University of South Florida Chemical & Biomedical Engineering Program (2008-2010).

Major Professor for M.S.B.M.E. student Mona Chehab in the University of South Florida Chemical & Biomedical Engineering Program (2015-present).

***Undergraduate/ Other***

Faculty Mentor for McNairs Scholar Program student Janese Latimer at the University of South Florida. (2001-2002)

Summer Research Mentor for Mr. William Ward (International Baccalaureate Biology Teacher, King High School, Tampa, FL) under the Research Experience for Teachers program (Summer 2003)

Summer Research Mentor for Ms. Mary St. Dennis (USF student in the College of Education, Tampa, FL) under the Research Experience for Teachers program (Summer 2003)

Summer Research Mentor for USF undergraduate (College of Arts and Sciences) Fatima Gurdeze (Summer 2005)

Summer Research Mentor for USF Undergraduate (College of Arts and Sciences) Monica Elmshat (Summer 2004)

Summer Research Mentor for USF Undergraduate (College of Arts and Sciences) Noori Syed (Summer 2004)

NIH USF MARC U-STAR research mentor for undergraduate Gabriel Lopez (2006-present)

Summer Research Mentor for High School Student Ms. Sonia Joseph (Summer 2006)

Summer Research Mentor for Ms. Diane Vickstrom (Middle School Teacher) under to USF Research Experience for Teachers program (Summer 2007)

***Committee Membership***

Member of 27 additional Ph.D. and M.S. Committees for biomedical engineering oriented students in the USF Colleges of Engineering and Medicine

***PROFESSIONAL SOCIETIES:***

American Association for Cancer Research
Bioelectrical Chemical Society
American Institute of Chemical Engineers (National)
American Institute of Chemical Engineers (Central Florida Section)
American Society for Gene Therapy

***MANUSCRIPT REVIEWS:***

Biophysical Journal
Molecular Biotechnology
Nature Biotechnology
European Biophysics Journal
Technology in Cancer Research and Treatment
International Journal of Cancer
Journal of Cancer Therapy
Clinical Orthopedics
IEEE Transactions on Biomedical Engineering
DNA & Cell Biology
Histology and Histopathology
IEEE Transactions on Dielectrics and Electrical Insulation
Journal of Medical and Biological Computing
Vaccine
Journal of Membrane Biology
Histology and Histopathology
Journal of Biomedicine and Biotechnology
Bioelectrochemistry
Future Medicine
IEEE Transactions on Plasma Science

***GRANT REVIEWS:***

National Institutes of Health, National Cancer Center Office of Complimentary and Alternative Medicine

National Institutes of Health, National Institute of General Medical Sciences Minority Biomedical Research Support.

US Civilian Research and Development Foundation

National Institutes of Health, National Institute of Allergy and Infectious Disease

***GRANT SUPPORT:***

1. *In Vivo* Delivery of Competent Genes for the Treatment of Human Disease
   Role on Project: Co-Investigator
   Granting Agency: CBR Laboratories, Inc.
   Effective Dates: February 1, 1994 - January 31, 1995
   Total Costs: $20,000

2. Effectiveness of Electrochemotherapy as an Antitumor Treatment
   Role on Project: Co-Investigator
   Granting Agency: Genetronics, Inc.
   Effective Dates: February 1, 1995 - June 30, 1997
   Total Costs: $ 346,000

3. A Randomized Controlled Study of Intratumor Bleomycin Versus Intratumor Bleomycin with Electroporation Therapy (EPT) using the Genetronics, Inc. Medpulser System in Patients with Squamous Cell Carcinoma of the Head and Neck and who Have Received Conventional Curative Therapy.
   Granting Agency: Genetronics, Inc. via an NIH SBIR Phase II grant
   Role on Project: Co-Investigator
   Effective Dates: September 13, 1997 - September 12, 1999
   Total Costs: $104,000

4. *In Vivo* Electrophoresis for the Delivery of Genes
   USF Research and Creative Scholarship
   Role on Project: Principal Investigator
   Effective Dates: January 1, 1999 - December 31, 1999
   Total Costs: $3,065

5. *In vivo* delivery of genes to skin
   Granting Agency: National Institute of Diabetes, Digestive, and Kidney Diseased, National Institutes of Health
   Role on Project: Co-Investigator
   Effective Dates: January 1, 2000 - December 31, 2001
   Total Costs: $288,400

6. Electrochemotherapy for Treating Soft Tissue Sarcomas
   Granting Agency: National Cancer Institute, National Institutes of Health
   Role on Project: Co-Investigator
   Effective Dates: April 1, 1999 - March 31, 2004
   Total Costs: $712,450

7. Feasibility of DNA Delivery with Microelectrodes
   Granting Agency: National Center for Research Resources, NIH
   Role on Project: Principal Investigator
   Effective Dates: October 1, 2002- September 30, 2004
   Total Costs: $100,000

8. Pine Cone Extract as an Adjuvant to Chemotherapy
   Granting Agency: Nat. Center for Complimentary and Alternative Med., NIH
   Role on Project: Principal Investigator
   Effective Dates: July 1, 2002 – May 31, 2006
   Total Costs: $362,500

9. Novel Electrode for Targeted Electroporative Delivery
   Granting Agency: National Cancer Institute, National Institutes of Health
   Role on Project: Principal Investigator
   Effective Dates: October 28, 2002 – May 1, 2004
   Total Costs: $99,000

10. Evaluation of Multiple Effect Distillation for Treatment of Reclaimed Water
    Granting Agency: City of Tampa
    Role on Project: Co-investigator
    Effective Dates: October 1, 2002 – September 30, 2006
    Total Costs: $95,000

11. Corona Charge for Delivering Agents to Cancer Cells
    Granting Agency: National Cancer Institute, NIH
    Role on Project: Principal Investigator
    Effective Dates: July 31, 2003 – July 30 2007
    Total Costs: $435,000

12. USF MARC U-STAR Scholars Program (T34)
    Granting Agency: National Institute of General Medical Science, NIH
    Role on Project: Principal Investigator/Program Director
    Effective Dates: June 6, 2005 – May 31, 2009
    Total Costs: $1,073,525

13. Center of Excellence – Biomolecular Identification and Targeted Therapeutics.
    Granting Agency: State of Florida
    Role on Project: Co-investigator, Director, Tissue Toxicity and Testing Core Lab
    Effective Dates: December 1, 2006 – November 30, 2008
    Total Costs: $8,000,000

14. Electroporation System for Cutaneous Gene Transfer
    Granting Agency: National Institute of Biomedical Imaging and Bioengineering, NIH: R01EB005441
    Role on Project: Co-Investigator
    Effective Dates: September 1, 2006 – June 30, 2010
    Total Costs:$1,300,000

15. Electrically Mediated Gene Delivery to the Heart
    Granting Agency: Center of Excellence in Biomolecular Identification and Targeted Therapeutics Seed Grant
    Role on Project: Co-Investigator
    Effective Dates: June 1, 2007 – May 31, 2008
    Total costs: $75,000

16. Cardiovascular Battlefield Injury Diagnostic Sensor and MEMS Technology Development W81XWH-05-1-0585
    Granting Agency: USF Army Medical ACQ activity
    Role on Project: Co-investigator (Pi's: Strom, Lee)
    Effective Dates: September 1, 2005 - September 1, 2008
    Total costs: $1,474,000.

17. Non-Thermal Helium Plasma for *In Vivo* Gene Delivery for Vaccines and Cancer Therapy.
    Granting Agency: Florida Center of Excellence in Biomolecular Identification and Targeted Therapeutics Seed Grant
    Role on Project: Principal Investigator
    Effective Dates: May 1, 2008 – April 30, 2009
    Total costs: $75,000

18. Title: Electro-Gene-Transfer for Coronary and Peripheral Artery Disease.
    Granting Agency: NIH/National Heart Lung and Blood Institute
    Role on Project: Co-Investigator
    Effective Dates: September 9, 2008 – September 8, 2011
    Total costs: $500,000

19. Title: Novel Islet-Sertoli Cell Hybrid Construct that is Immunoprotected and Secretes Insulin
    Granting Agency: Florida Center of Excellence in Biomolecular Identification and Targeted Therapeutics Seed Grant
    Role on Project: Principal Investigator
    Effective Dates: February 10, 2009 – February 9, 2011
    Total costs: $51,400

20. Title: Development of Streamed Ion Deposition for Efficient Plasmid DNA Delivery
Granting Agency: NIH/National Institute of Allergy and Infectious Diseases
Role on Project: Principal Investigator
Effective Dates: August 5, 2010 – July 31, 2013
Total costs: $392,500

21. Title: Topical Charge Driven DNA Delivery to the Skin
Granting Agency: NIH/National Institute of Allergy and Infectious Diseases
Role on Project: Principal Investigator
Effective Dates: July 5, 2010 – June 20, 2013
Total costs: $367,500

22. Title: Impedance Changes as an Indicator of Successful Skin Electroporative DNA Delivery
Granting Agency: NIH/National Institute of Arthritis and Musculoskeletal and Skin Diseases
Role on Project: Principal Investigator
Effective Dates: February 17, 2011 – December 31, 2014
Total costs: $393,017

***PENDING RESEARCH GRANT PROPOSALS:***

1. Title: Therapeutic Approaches for the Treatment of Wound Infections and the Acceleration of Wound Healing
Granting Agency: Department of Defense Congressionally Directed Medical Research Programs , Deployment Related Medical Research Program (DRMRP). Advanced Technology/Therapeutic Development Award
Role on Project: Principal Investigator (Large Grant with Old Dominion University)
Effective Dates: July 1, 2009 – May 31, 2014

2. Title: Breast Cancer, Carcinogenesis, Gamma-Glutamyl Transferase (GGT) and the Micro Coffee Complex Redoxital®®.
Granting Agency: Bankhead-Coley Cancer Research Program
Role on Project: Principal Investigator
Effective Dates: June 1, 2011 – May 31, 2012
Total costs: $100,000 (will be submitted in early January 2011)

***PATENTS:***

***U.S. Patents Issued and Allowed***

1. 9,014,800, 04/21/2015, Passive Electric Field Focus Sytem for in vivo and in vitro Applications. Rey, J.I., Gilbert, R., Jaroszeski, M.J., and Heller, R. Assignee USF Research Foundation

2. 8,914,102, 12/16/14, Method and Device for Anesthesiology Measurement and Control. Inventors: Rey, J.I. Connolly, R.J., Llewellyn, J.A., Jaroszeski, M.J., and Gilbert, R. Assignee: USF Research Foundation

3. 8,738,125, 05/27/14, Devides and Methods for Deliverying Molecules to the Heart with Electric Fields. Inventors: Heller, R., Marshall, W., and Jaroszeski, M.J. Assignee: USF Research Foundation

4. 8,348,942, 01/08/13, Device and Method to Prevent Hair Growth. Inventors: Jaroszeski, M.J., Lopez-Diaz, G., Connolly, R., and Hoff, A.M. Assignee: USF Research Foundation.

5. 8,455,228, 06/04/13, Method to facilitate directed delivery and electroporation using a charged stream. Inventors: Jaroszeski, M.J., Lopez-Diaz, G., Connolly, R., and Hoff, A.M. Assignee: USF Research Foundation.

6. 8,235,966, 08/07/12, Electromanipulation Method. Inventors: Hoff; A., Gilbert, R., Heller, R., *Jaroszeski, M.J. Assignee: USF Research Foundation.*

7. 8,017,368, 09/13/11, Molecular Delivery to cells using aspirin-related compounds. Inventors: Jaroszeski, M.J., Langham, J., Heller, R., Gilbert, R. Assignee: USF Research Foundation

8 7,879,610, 02/01/11, Electroporation System and Method for Facilitating Entry of Molecules Into Cells in Vivo. Inventors: Heller, R., Jaroszeski, M.J., Gilbert, R. Assignee: USF Research Foundation.

9. 7,781,195, 08/24/10, Electroporation Device. Inventors: Heller, R., Jaroszeski, M.J., Gilbert, R. Assignee: USF Research Foundation.

10. 7,769,440, 08/03/10, Electromanipulation device and method. Inventors: Hoff, A.M., Gilbert, R., Heller, R., Jaroszeski, M.J. Assignee: USF Research Foundation.

11. 7,668,592, 02/23/10, Electroporation and electrophoresis system and method for achieving molecular penetration into cells in vivo. Inventors: Heller, R., Gilbert, R., Jaroszeski, M.J., Heller, L.C., and Lucas, M.L. Assignee: USF Research Foundation.

12. 7,713,740, 05/11/10, Method of using electric fields to facilitate the entry of molecules into cells in vivo. Inventors: Jaroszeski, M.J., Gilbert, R., Heller, R. Assignee: USF Research Foundation.

13. 6,637,890 B2., 08/30/05, Nonpenetrating Electroporation Device. Inventors: **Mark J. Jaroszeski**, Richard Gilbert, and Richard Heller. Assignee - USF.

14. 6,929,949,B2., 08/16/05 Corona Ion Generating Method and Apparatus for the Manipulation of Molecules and Biological Cells. Inventors: Andrew Hoff, **Mark J. Jaroszeski**, Richard Gilbert, and Richard Heller. Assignee: USF

15. 6,778,853, 08/17/04 Electroporation Device. Inventors Richard Heller, Richard Gilbert, **Mark J. Jaroszeski.** Assignee: USF

16. 6,714,816, 03/30/04 Electroporation and electrophoresis system and method for achieving molecular penetration into cells in vivo Inventors: Richard Heller, Richard Gilbert, **Mark J. Jaroszeski**, Loree C. Heller, Melinda L. Lucas. Assignee: USF

17. 6,569,149 05/27/03 Method of treatment using electroporation mediated delivery of drugs and genes. Inventors: S. B. Dev, Gunter A. Hofmann, Richard A. Gilbert, Richard Heller, **Mark J. Jaroszeski.** Assignee: USF

18. 6,451,002 B1, 09/17/02, Method of Treatment Using Electroporation Mediated Delivery of Drugs and Genes. Inventors: Dev, S.B., Hofmann, G.A., Gilbert, R.A., Hayakawa, Y., Heller, R., and **Jaroszeski, M.J.** Assignee: Genetronics, Inc.
19. 6,418,341 B1, 07/09/02, Needle Electrode Assembly for Electroporation Mediated Delivery of Genes and Drugs. Inventors: Hofmann, G.A., Gilbert, R., Heller, R., **Jaroszeski, M.J**. Assignee: Genetronics, Inc.

20. 6,355,485 B1, 03/12/02, Electrofusion Chamber. Inventors. **Jaroszeski, M. J**., Gilbert, R., Heller, R., Assignee: University of South Florida.

21. 6,221,665 B1, 04/24/01, Electrofusion Chamber. Inventors: **Jaroszeski, M.J**., Gilbert, R., Heller, R. Assignee: University of South Florida.

22. 6,314,316 B1, 11/06/01, Nonpenetrating Electroporation Device and Method.

Inventors: Gilbert, R., Heller, R., **Jaroszeski, M.J**. Assignee: University of South Florida.

23. 6,135,990, 10/24/00, Electroporation Device and Method. Inventors: Heller, R., Gilbert, R., and **Jaroszeski, M.J**. Assignee: University of South Florida.

24. 5,993,434, 11/30/99, Method of Treatment using Electroporation Mediated Delivery of Drugs and Genes. Inventors: Dev, S. B., Hofmann, G.H., Heller, R., Gilbert, R., and **Jaroszeski, M.J**. Assignee: Genetronics, Inc. (The procedure for adding Heller, Jaroszeski, and Gilbert as inventors is in progress)

25. 5,827,736, 10/27/98, Purified and Isolated Sertoli Cell-Secretory Cell Hybrid. Inventors: Heller, R., Cameron, D. F., Sanberg, P.S., **Jaroszeski**, M.J. Assignee: University of South Florida.

26. 5,702,359,12/30/97, Needle Electrodes for Mediated Delivery of drugs and Genes. Inventors: Hofmann, G.A., Gilbert, R., Heller, R., **Jaroszeski, M.J**. Assignee: Genetronics, Inc.

***US Patent Applications Currently Filed***

1. 20090131994 (Application Number) Passive Electric Field Focus System for In vivo And in Vitro Applications. Inventors: Jose Rey, Richard Connolly, Richard Gilbert, Tony Llewellyn, **Mark J. Jaroszeski**. Assignee: USF.

2. no number as of 12/18/10. Device and method to prevent hair growth. Inventors: **Mark J. Jaroszeski**, Andrew Hoff, Richard Connolly, Gabriel Lopez and Garrett Weigerif. Asignee: USF (Filed 09/15/09)

2. 20090004717 (Application Number) Device and Method to Facilitate Directed delivery and Electroporation Using a Charge Stream. Inventors: **Mark J. Jaroszeski**, Richard Connolly, Gabriel Lopez, Andrew Hoff. Assignee: USF.

3. 20080033340 (Application Number) Electroporation and Electrophoresis System and Method for Achieving Molecular Penetration into Cells in Vivo. Inventors: Richard Heller, **Mark Jaroszeski**, Richard Gilbert. Assignee: USF.

4. 20070167903 (Application Number) Nervous Tissue Electrode Device. Inventors: Juan Sanchez-Ramos, Richard Heller, **Mark J. Jaroszeski**. Assignee: USF.

5. 20070122908 (Application Number) Molecular Delivery to Cells Using Aspirin-Related Compounds. Inventors: **Mark J. Jaroszeski**, Jennifer Lengham,

Richard Heller, Richard Gilbert. Assignee: USF.

3. 20070060521 (Application Number) Inhibition of STAT3 Signal Transduction for Human Cancer Therapy. Inventors: Richard Jove, William Dalton, Said Sebti, Hua Yu, Richard Heller, **Mark Jaroszeski**, Richard Gilbert, Andrew D. Hamilton. Assignee: USF.

4. 20060270620 (Application Number) Method of Enhancing Therapeutic Effect of Nucleic Acids. Inventors: Loree Heller, Richard Gilbert, **Mark J. Jaroszeski**, Richard Heller. Assignee: USF.

5. 20050277868 (Application Number). Electroporation Device and Method for Delivery to Ocular Tissue. Inventors: Richard Heller, **Mark J. Jaroszeski**, Richard A. Gilbert, William H. Hauswirth Assignee: Joint application between USF and UF.

6. 20050192542 (Application Number). Method of treatment using electroporation mediated delivery of drugs and genes. Inventors: S. B. Dev, Gunter A. Hofmann, Richard A. Gilbert, Yasuhiko Hayakawa, Richard Heller, **Mark J. Jaroszeski**. Assignee: Genetronics, Inc

7. 20050054969 (Application Number). Electromanipulation Device and Method. Inventors: Andrew M. Hoff, Richard Gilbert, Richard Heller, **Mark J. Jaroszeski**. Assignee: USF.

8. 20030216784 (Application Number). Cellular electromanipulation waveforms. Inventors: Richard Heller, Richard Gilbert, **Mark J. Jaroszeski**. Assignee: USF

9. 20030141294 (Application Number). Electrofusion chamber. Inventors: **Mark J. Jaroszeski**, Richard Gilbert, Richard Heller. Assignee: USF

10. 20030044985(Application Number). Electroporation system and method for facilitating entry of molecules into cells. Inventors: **Mark J. Jaroszeski**, Richard Gilbert, Richard Heller. Assignee: USF.

11. 20020198485 (Application Number). Method of treatment using electroporation mediated delivery of drugs and genes. Inventors: Sukendu B. Dev, Gunter A. Hofmann, Richard Gilbert, Richard Heller, **Mark J. Jaroszeski**. Assignee: Genetronics, Inc.

12. 20020042588 (Application Number). Nonpenetrating electroporation device and method Inventors: **Mark J. Jaroszeski**, Richard Gilbert, Richard Heller. Assignee: USF.

## ***PCT Publications***

1. WO01/62337. 08/30/01. Electroporation and Electrophoresis System and Method for Achieving Molecular Penetration into Cells *in Vivo*. Inventors: Heller, R., Gilbert, R., **Jaroszeski, M. J**., Heller, L. C., Lucas, M. L. Applicant: University of South Florida

2. WO00/44774. 08/03/00. Inhibition of STAT3 Signal Transduction for Human Cancer Therapy. Inventors: Jove, R.,Dalton, W., Sebti, S., Yu, H., Heller, R., **Jaroszeski, M**. Applicant: University of South Florida

3. WO00/35532. 06/22/00. Nonpenetrating Electroporation Device. Inventors: Gilbert, R., **Jaroszeski, M. J.**, Heller, R. Applicant: University of South Florida

4. WO01/43817. 12/15/99. Electroporation Device and Method. Inventors: Heller, R., Gilbert, R., **Jaroszeski, M. J**. Applicant: University of South Florida.

5. WO97/07826. 03/06/97. *In Vivo* Electroporation of Cells. Inventors: Nicolau, C. Y., Heller, R., Adkin, A., Gilbert, R., and **Jaroszeski, M.J**. Applicants: CBR Laboratories, Inc. and University of South Florida

6. WO96/39226. 12/12/96. Method of Treatment using Electroporation-Mediated Delivery of Drugs and Genes. Inventors: Dev, D. B., Hofmann, G. A., Gilbert, R. A., Hayakawa, Y., Heller, R., **Jaroszeski, M. J**. Applicant: Genetronics, Inc.

## ***Foreign Patents and Patent Applications***

1. Method of Treatment Using Electroporation-Mediated Delivery of Drugs and Genes. Inventors: Dev, D. B., Hofmann, G. A., Gilbert, R. A., Hayakawa, Y., Heller, R., **Jaroszeski, M. J**. Applicant: Genetronics, Inc. Designated States: Europe EP0874663, United Kingdom GR19990403056T 19991125, Canada CA 2218255, Australia AU702054 & AU5925996, China CN1187145, Korea KR260238, Spain ES2140096T, Germany DE69604509T & DE69604509D, Austria AT185083T, Denmark DK874663T.

2. Electrofusion Chamber. Inventors: **Jaroszeski, M.J**., Gilbert, R., Heller, R. Applicant: University of South Florida. USF Ref. #97A012. Designated States: Europe EP1093515, Australia AU4553599.

3. Nonpenetrating Electroporation Device and Method. Inventors: Gilbert, R., Heller, R., **Jaroszeski, M.J**. Applicant: University of South Florida. USF Ref. #98A004. Designated States: Europe EP1140282, Australia AU2053600.

4. Electroporation Device and Method. Inventors: Heller, R., Gilbert, R., and **Jaroszeski, M.J**. Applicant: University of South Florida. USF Ref. #97B049. Designated States: Australia AU2189000.

5. Purified and Isolated Sertoli Cell-Secretory Cell Hybrid. Inventors: Heller, R., Cameron, D. F., Sanberg, P.S., **Jaroszeski, M.J**. Applicant: University of South Florida. USF Ref. #94B031. Designated States: Australia AU5396696.

6. Inhibition of STAT3 Signal Transduction for Human Cancer Therapy. Inventors: Jove, R.,Dalton, W., Sebti, S., Yu, H., Heller, R., **Jaroszeski, M**. Applicant: University of South Florida. Designated States: Europe EP1146869, Australia AU2736400.

7. *In Vivo* Electroporation of Cells. Inventors: Nicolau, C. Y., Heller, R., Adkin, A., Gilbert, R., and **Jaroszeski, M.J**. Applicants: CBR Laboratories, Inc. and University of South Florida. Designated States: Australia AU6855796.

## ***PUBLICATIONS:***

### ***Peer Reviewed Manuscripts***

1. **Jaroszeski, M. J.**, Gilbert, R., and Heller, R. (1991) Simplex optimization applied to electrofusion biotechnology. *Proceedings of the IEEE EMBS Conference* **13**:951.

2. **Jaroszeski, M. J.**, Heller, R., and Gilbert, R. (1994) Detection and quantitation of cell-cell electrofusion products by flow cytometry. *Analytical Biochemistry* **216**:271-275.

3. **Jaroszeski, M. J.**, Heller, R., Fallon, P., and R. Gilbert (1994) Mechanically facilitated cell-cell electrofusion. *Biophysical Journal* **67**:1574-1581.

4. Heller, R., **Jaroszeski, M. J.**, Leo-Messina, J., Perrott, R., Van Voorhis, N., Reintgen, D., and Gilbert, R. (1995) Treatment of B16 mouse melanoma with the combination of electropermeabilization and chemotherapy. *Bioelectrochemistry and Bioenergetics* **36**:83-87.

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6. Reintgen, D. S., **Jaroszeski, M. J.**, and Heller, R. H. (1996) Electrochemotherapy, a novel approach to cancer. *Journal of the Skin Cancer Foundation* **XIV**:17-19.

7. Glass, L. F., Fenske, N. A., **Jaroszeski, M.**, Perrott, R., Harvey, D. T., Reintgen, D. S., and Heller, R. (1996) Bleomycin-mediated electrochemotherapy of basal cell carcinoma. *Journal of the American Academy of Dermatology* **34(1)**:82-6.

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10. **Jaroszeski, M. J.**, Messina, J., Perrott, R., Van Voorhis, N., Gilbert, R., and Heller, R. (1996) Effectiveness of treating B16 melanoma with multiple treatment electrochemotherapy. *Melanoma Research* **6**:427-433.

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12. **Jaroszeski, M. J.**, Gilbert, R., and Heller, R. (1997) *In vivo* antitumor effects of electrochemotherapy in a hepatoma model. *Biochemica et Biophysica Acta* **1334**:15-18.

13. Gilbert, R., **Jaroszeski, M. J.**, and Heller, R. (1997) Novel electrode designs for electrochemotherapy. *Biochemica et Biophysica Acta* **1334**:9-14.

14. Glass, L.F., **Jaroszeski, M. J.**, Gilbert, R., Reintgen, D.S., and Heller, R. (1997) Intralesional bleomycin-mediated electrochemotherapy in twenty patients with basal cell carcinoma. *Journal of the American Academy of Dermatology* **37(4)**:596-599.

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malignant tumors by electrochemotherapy. *British Journal of Cancer* **77(12)**:2336-2342.

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20. Heller, R., **Jaroszeski, M.J.**, and Gilbert, R. (1999) Clinical applications of electrochemotherapy *Advanced Drug Delivery Reviews* **35**:119-129.

21. **Jaroszeski, M.J.,** and Radcliff, G (1999) Fundamentals of Flow Cytometry *Molecular Biotechnology* **11(1)**:37-53.

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27. Heller, L.C., Pottinger, C., **Jaroszeski, M.J.**, Gilbert, R., and Heller, R. (2000) *In vivo* electroporation of plasmids encoding GMCSF and interluekin-2 into existing B16 melanomas combined with electrochemotherapy induces long term antitumor immunity. *Melanoma Research* **10**:577-583.

28. Somiari, S., Glasspool-Malone, J., Drabick, J.J., Gilbert, R.A., Heller, R., **Jaroszeski, M.J.**, and Malone R. W. (2000) Theory and *in vivo* application of electroporative gene delivery. *Molecular Therapy* **2(3)**:178-187.

29. **Jaroszeski, M.J.**, Coppola, D., Nesmith, G., Pottinger, C., Hyacinthe, M., Benson, K., Gilbert, R., and Heller, R. (2001) Effects of electrochemotherapy with bleomycin on normal liver tissue in a rat model. *European Journal of Cancer* 37:414-421**.**

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36. **Jaroszeskl, M.J.,** Heller, L.C., Gilbert, R., and Heller, R. (2004) Electrically mediated plasmid DNA delivery to solid tumors in vivo. *Methods Mol. Biol*. **245**: 237-44

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38. Khanna, P., Villagra, A., Kim, S., Seto, E., **Jaroszeski, M**., Kumar, A., and Bhansali, S. (2006) Use of nanocrystalline for microfluidic lab-on-a-chip. Diamonds and Related Materials **15**:2073-2077.

39. Ramachandran, N., **Jaroszeski, M.**, and Hoff, A. M. (2008) Molecular Delivery to Cells Facilitated by Corona Ion Application. *IEEE Transactions in nano bioscience*

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41. Khanna, P., Ramachandran, N., Yang, J., Wang, J., Kumar, A., **Jaroszeski, M**., and Bhansali, S. (2009) Nanocrystalline diamond micropyramids increase the efficiency of ultrasonic cell lysis in a microfluidic lab-on-a-chip. *Diamond and Related materials*. 18:606-610 (Note first published online November 6, 2008)

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44. Marshall, W.G., Boone, B.A., Burgos, J.D., Gografe, S.I., Baldwin, M.K., Danielson, M.L., Larson, M.J., Caretto, D.R., Cruz, Y., Ferraro, B., Heller, L.C., Ugen, K.E., **Jaroszeski, M.J**., and Heller, R. (2009) Electroporation-Mediated Delivery of a naked DNA plasmid expressing VEGF to the porcine heart enhances protein expression. Gene Theapy Epub ahed of print PMID 19956270.

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49. Connolly, R. J., Rey, J. I., Lambert, V. M., Wegerif, G., **Jaroszeski, M. J.,** and Ugen, K. E. (2011) Enhancement of antigen specific humoral immune responses after delivery of a DNA vaccine through a contact-independent helium plasma. *Vaccine,* 29:6781-6784. PMID: 21195804. (Accepted for Publication Epub ahead of print December 31, 2010))

50. Heller, R., Cruz, Y., Heller, L., Gilbert, R., and **Jaroszseski, M.J.,** (2010) Electrically Mediated Delivery of Plasmid DNA to the Skin, using a Multielectrode Array. *Human Gene Therapy* 21:357-362

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52. Connolly, R. J., Chapman, T., Hoff, A. M., Kutzler, M. A., **Jaroszeski, M. J**., Ugen, K. E. (2012) Non-contact helium-based plasma for delivery of DNA vaccines: Enhancement of humoral and cellular immune responses. Human Vaccines and Immunotherapeutics, 8 (11). PMID: 22894954.

53. Shah, K., Connolly, R. J., Chapman, T., **Jaroszeski, M. J.**, Ugen, K. E. (2012) Electrogenetherapy of B16.F10 murine melanoma tumors with an interleukin-28 expressing DNA plasmid. Human Vaccines and Immunotherapeutics, 8:(11). PMID: 23151446.

54. Peterson, A.D., **Jaroszeski, M.J**., and Gupta, V.K. (2015). Fluorometric assay to compensate for non-viable cells during electroporation. J. Flourescence 11:25(1): 159-65. Epub Dec 11, 2014.

55. Connolly, R.J., Hoff, A.M., Gilbert, R., and **Jaroszeski, M.J**. (2015) Optimization of a plasma facilitated DNA delivery method. Bioelectrochemistry 13;103:15-21 Epub Oct. 13, 2014. PMID:25455213 PMCID:PMC4346600.

## ***Books***

1. Protocols for Flow Cytometry (1998) (**Jaroszeski, M. J.** and Heller, R. Eds.) Humana Press, USA.

2. Electrically Mediated Delivery of Molecules to Cells - Electrochemotherapy, Electrogenetherapy, and Transdermal Delivery by Electroporation (2000) (**Jaroszeski, M. J.**, Gilbert, R., and Heller, R., Eds) Humana Press, USA.

***Book Chapters***

1. **Jaroszeski, M. J.**, Gilbert, R., and Heller, R. (1995) Cytometric Detection and Quantitation of Cell-Cell Electrofusion Products *in* Protocols of Electroporation and Electrofusion of Plant and Animal Cells (Nickoloff, J. A., Ed.), pp. 355-363, Humana Press, Totowa, NJ.

2. Heller, R. and **Jaroszeski, M. J.** (1995) Cell-Tissue Electrofusion *in* Electrical Manipulation of Cells (Lynch, P. T., and Davey, M. R., eds.), pp. 119-137, Chapman and Hall, New York.

3. **Jaroszeski, M. J.,** Gilbert, R., and Heller, R. (1998) Flow Cytometric Detection and Quantitation of Cell-Cell Electrofusion Products *in* Protocols for Flow Cytometry (**Jaroszeski, M. J.** and Heller, R. Eds.), pp. 149-156, Humana Press, Totowa, NJ.

4. Radcliff, G. and **Jaroszeski, M. J.** (1998) Basics of Flow Cytometry *in* Protocols for Flow Cytometry (**Jaroszeski, M. J.** and Heller, R. Eds.), pp. 1-24, Humana Press, Totowa, NJ.

5. Heller, R., **Jaroszeski, M. J.**, and Gilbert, R. (2000) Clinical Trials for Solid Tumors using Electrochemotherapy *in* Electrically Mediated Delivery of Molecules to Cells *in* Electrochemotherapy, Electrogenetherapy, and Transdermal Delivery by Electroporation (**Jaroszeski, M. J.**, Gilbert, R., and Heller, R., Eds), pp. 137-156, Humana Press, Totowa, NJ.

6. **Jaroszeski, M. J.**, Gilbert, R, and Heller, R. (2000) *In vivo* gene delivery by electroporation *in* Electrically Mediated Delivery of Molecules to Cells *in* Electrochemotherapy, Electrogenetherapy, and Transdermal Delivery by Electroporation (**Jaroszeski, M. J.**, Gilbert, R., and Heller, R., Eds), pp. 173-186, Humana Press, Totowa, NJ.

7. Heller, R., **Jaroszeski, M. J.**, and Gilbert, R. (2000) Treatment of murine melanoma with electrochemotherapy using intratumor drug administration *in* Electrically Mediated Delivery of Molecules to Cells *in* Electrochemotherapy, Electrogenetherapy, and Transdermal Delivery by Electroporation (**Jaroszeski, M. J.**, Gilbert, R., and Heller, R., Eds), pp. 253-257 Humana Press, Totowa, NJ.

8. Gilbert, R., **Jaroszeski, M. J.**, and Heller, R. (2000) Electrochemotherapy for the treatment of soft tissue sarcoma in a rat model *in* Electrically Mediated Delivery of Molecules to Cells - Electrochemotherapy, Electrogenetherapy, and Transdermal Delivery by Electroporation (**Jaroszeski, M. J.**, Gilbert, R., and Heller, R., Eds), pp. 299-303, Humana Press, Totowa, NJ.

9. **Jaroszeski, M. J.**, Gilbert, R., and Heller, R. (2000) Treatment of liver malignancies with electrochemotherapy in a rat model *in* Electrically Mediated Delivery of Molecules to Cells *in* Electrochemotherapy, Electrogenetherapy, and Transdermal Delivery by Electroporation (**Jaroszeski, M. J.**, Gilbert, R., and Heller, R., Eds), pp. 319-326, Humana Press, Totowa, NJ.

10. **Jaroszeski, M. J.**, Gilbert, R., Nicolau, C., and Heller, R. (2000) Reporter gene transfer into normal liver tissue *in* Electrically Mediated Delivery of Molecules to Cells *in* Electrochemotherapy, Electrogenetherapy, and Transdermal Delivery by Electroporation (**Jaroszeski, M. J.**, Gilbert, R., and Heller, R., Eds), pp. 333-338, Humana Press, Totowa, NJ.

11. **Jaroszeski, M.J.**, Heller, L.C., Gilbert, R., and Heller, R. (2002) Electrically mediated plasmid DNA delivery to solid tumors *in vivo in* Gene Delivery to Mammalian Cells: Methods and Protocols (Heiser, W., Ed.).

***PRESENTATIONS:***

***Invited Presentations:***

1. USF Chemical Engineering Department Biomedical Engineering Seminar Series. Biomedical Applications of Pulsed Electric Fields. University of South Florida, April 1996.

2. Georgia Tech. Bioengineering Seminar Series. Electroporation for the Delivery of Molecules to Cells *in Vivo*. Georgia Institute of Technology, December 1996.

3. *In Vivo* Electroporation for the Delivery of Genes to Normal Liver and Cancerous Tissue Second World Congress for Electricity and Magnetism in Biology and Medicine. Bologna, Italy, June 1997.

4. Annual International Conference of Life Sciences 1999 and Congress of Slovenian Pharmacological Society. Electric field mediated delivery of genes *in vivo*. Gozd Martuljek, Slovenia, September 18-23, 1999.

5. Seminar at the Ljublijana Institute of Oncology. Electrochemotherapy for the treatment of solid tumors. Ljublijana, Slovenia, September 20, 1999.

6. University of South Florida Biomedical Engineering Society Student Chapter Seminar. Electric Fields and Other Energy Sources for Facilitation Mass Transport into Biological Cells. USF, Tampa, FL. November 18, 2002.

7. USF COE Professional Planning Day for Local High School Teachers. Electric

Fields and other Energy Sources for Transporting Molecules into Cells. February 16, 2004.

8. AIChE Central Florida Section Local Monthly Meeting. Electrochemotherapy and Electrogenetherapy for Delivering Therapeutic Molecules to Cancer Cells. Lakeland, FL. March 8, 2005.

9. AIChE Annual Regional Conference. New Methods for Delivery of Cancer Fighting Drugs. Clearwater, FL. June 4, 2005.

10. Hillsborough County Teacher Education Day on Cell Processing. Cell Processing Examples in Bioengineering. USF, Tampa, FL. June 6, 2005.

11. American Society of Mechanical Engineers Local Chapter Monthly Meeting. New Methods for Delivery of Cancer Fighting Drugs. Tampa, FL. November 16, 2005.

12. Electrically Mediated Delivery of DNA in Vivo. American University of Dubai, College of Engineering, Dubai, United Arab Emirates. December 21, 2007

13. Charge based systems for plasmid DNA and drug delivery. Old Dominion University, Frank Reidy Center for Bioelectrics, April 12, 2009.

14. Plasma Transfection. Bioelecrochemistry, Cellular and Organismal Responses to Endogenous and Exogenous Fields (Gordon Research Conference) July 6-11, 2014. University of New England, Biddeford, ME.

15. Development of Devices and Electrodes for In Vivo Drug and Gene Electrotransfer. Fundamental and Applied Bioelectrics Workshop, Frank Reidy Research Center for Bioelectrics, Old Dominion University. July 14-18, 2014.

## ***Conference/Symposium Session Chairs:***

Electric Pulses and Cell Manipulation-Electroporation Session. Fourteenth International Symposium on Bioelectrochemistry and Bioenergetics. Vingstedcentret, Denmark, May 23-29, 1998

Chair of Advances in Drug Delivery Session. 2007 AIChE annual Meeting. Salt Lake City UT, November 4-9, 2007.

Chair of Gene Delivery – I Session. 2009 AIChE annual Meeting. Nashville, TN, Novermber 8-13, 2009.

Chair of Gene Delivery – II Session. 2009 AIChE annual Meeting. Nashville, TN, Novermber 8-13, 2009.

Chair of Gene Delivery – III Session. 2009 AIChE annual Meeting. Nashville, TN, Novermber 8-13, 2009.

***Conference/Symposia Abstracts:***

1. Heller, R., **Jaroszeski, M. J.**, Freeman, K., and Gilbert, R. (1991) Determination of the number of cells fused to intact tissue after cell-tissue electrofusion. *In Vitro Cellular and Developmental Biology.* **27A**(3 pt. II):264, 102A.

2. **Jaroszeski, M. J.**, Gilbert, R., and Heller, R. (1991) Simplex optimization applied to electrofusion biotechnology. Proceedings of the IEEE EMBS Conference **13(2):**951.

3. Heller, R., **Jaroszeski, M. J.**, and Gilbert, R. (1992) Development of procedures for the optimization of electrofusion protocols. *In Vitro Cellular and Developmental Biology.* **28(3)**, V1089, 165A.

4. **Jaroszeski, M. J.**, Gilbert, R., and Heller, R. (1992) Development of a method for detecting and quantifying cell-cell electrofusion. Proceedings of the First World Congress for Electricity and Magnetism in Biology and Medicine, P90, 97.

5. Heller, R., **Jaroszeski, M.**, Boholst, B., Leo-Messina, J., Glass, F., Newton, C., Perrott, R., VanVoorhis, N., Reintgen, D., and Gilbert, R. (1994) The effectiveness of treating melanoma in C57Bl/6 mice with the combination of electroporation and chemotherapy. Proceedings of American Association for Cancer Research, **35**:1973,331.

6. Heller, R., **Jaroszeski, M.**, Messina, J., Glass, F., Perrott, R., VanVoorhis, N., Reintgen, D., and Gilbert, R. (1994) Electropermeabilization/chemotherapy parameter examination for effective anti-tumor treatment. Proceedings of XIIth International Symposium on Biolectrochemistry and Bioenergetics.

7. Gilbert, R., **Jaroszeski, M.**, Messina, J., Glass, F., Perrott, R., VanVoorhis, N., Reintgen, D., Cameron, D., Muffly, K., and Heller, R. (1994) Electropermeabilization as a tool for biomedical applications. XIIth International Symposium on Bioelectrochemistry and Bioenergetics.

8. **Jaroszeski, M.**, Gilbert, R., and Heller, R. (1994) A novel system for electrofusion of cells in a physiologic environment. XIIth International Symposium on Bioelectrochemistry and Bioenergetics.

9. **Jaroszeski, M.**, Heller, R., Messina, J., Glass, F., Perrott, R., Van Voorhis, N., Reintgen, D., and Gilbert, R. (1995) The effectiveness of treating melanoma in C57Bl/6 with electrochemotherapy after intratumor injection of bleomycin. Proceedings of the American Association of Cancer Research, **36**:308(1834).

10. Heller, R., **Jaroszeski, M.**, Puleo, C., Messina, J., Glass, F., Perrott, R.,

VanVoorhis, N., Gilbert, R., Mir, L. M., and Reintgen, D. (1995) Phase I-II treatment of melanoma and other subcutaneous malignancies by electrochemotherapy. Proceedings of the American Association of Cancer Research, **36**:247(1475).

11. Heller, R., **Jaroszeski, M.**, Perrott, R., Becker, J., Arrango, H., Sataswaroop, P., and Gilbert, R. (1995) Increased cytotoxicity of bleomycin when used in conjunction with electroporation. In Vitro Cellular and Developmental Biology. 30A, V-19, 10A.

12. Heller, R., **Jaroszeski, M.**, Puleo, C., Messina, J., Glass, F., DeConti, R., Rapaport, D., and Gilbert, R. (1996) Effective treatment of melanoma and other subcutaneous malignancies by electrically enhanced delivery of bleomycin. Proceedings of the American Association of Cancer Research, **37**:2046, 301.

13. **Jaroszeski, M. J.**, Gilbert, R., Yeatman, T., Nicolau, C., Atkin, A. and Heller, R. (1996) *In Vivo* electroporation for delivery of molecules to cells. Proceedings of the American Association of Cancer Research, **37**:2398, 351.

14. **Jaroszeski, M. J.**, Gilbert, R., Yeatman, T., Nicolau, C., Atkin, A. and Heller, R. (1996) *In Vivo* electroporation for delivery of molecules to cells. Proceedings of the European Bioelectromagnetic Association Annual Meeting.

15. Heller, R., **Jaroszeski, M.**, Glass, F., Puleo, C., Messina, J., DeConti, R., Rapaport, D., Gilbert, R, and Reintgen, D. (1996) Electrochemotherapy for the treatment of cutaneous malignancies. Proceedings of the European Bioelectromagnetic Association Annual Meeting.

16. Gilbert, R., **Jaroszeski, M.**, and Heller, R. (1996) Electrode configuration for delivery of molecules using electroporation. Proceedings of the European Bioelectromagnetic Association Annual Meeting.

17. Heller, R., **Jaroszeski, M. J.**, Glass, F., Gilbert, R., and Reintgen, D. (1996) Electrochemotherapy for the treatment of cutaneous malignancies. Proceedings of the Thirteenth International Symposium on Bioelectrochemistry and Bioenergetics.

18. Heller, R., **Jaroszeski, M.**, Dang, V., Hickey, J., Gilbert, R. (1996) Increased cytotoxicity of antitumor agents when used in conjunction with electroporation. In Vitro Cellular and Developmental Biology. **32(3)II**, 63A.

19. Heller, R., **Jaroszeski, M.**, Glass, F., Gilbert, R., and Reintgen, D. (1996) Electrochemotherapy for the treatment of solid tumors. Proceedings of the First World Congress on Magnetotherapy.

20. **Jaroszeski, M.**, Gilbert, R., Yeatman, T., Nicolau, C., Atkin, A., and Heller, R. (1997) *In vivo* electroporation for drug delivery to rat hepatomas. Proceedings of the

American Association for Cancer Research. **38**:18(1744).

21. Heller, R., **Jaroszeski, M.** Puleo, C., Messina, J., Glass, F., DeConti, R., Rapaport, D., Gilbert, R., and Reintgen, D. (1997) Enhanced delivery of bleomycin using electric fields for the effective treatment of skin malignancies. Proceedings of the American Association for Cancer Research. **38**:18(1742).

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