

Russell B. Auger, PhD

Doctor of Science and Engineering

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Education

PhD, Biomedical Engineering, Tulane University, New Orleans, LA., 2006.
MS, Biomedical Engineering, Tulane University, New Orleans, LA., 1999.
BSc, Chemistry, The University of Massachusetts, Amherst, MA., 1995.

Accomplishments

+ Energy systems, Manufacturing and Electronics

- Development of batch processes for bulk processing of electronics smart material powders.
- Development of methods for accelerated Hydrogen and Oxygen extraction and transport.

+ Instrumentation design development, modification and upgrade.

- Electronics modification for high energy elemental analyses.
- Upgrade of instrumentation for quantitative and qualitative chemistry.
- Medical device fabrication and testing.

+ Programming

- Computer algorithm design for preclinical evaluation of intracoronary based delivery of stem cells.
- HTML/CSS online web design specialization for non-dimensional mathematical programming.

- Molecular Biological ELISA and mathematical models for evaluating radial growth of cells. Computational modeling of the efficacy of molecular response.

+ Biomedical mechanics, mechanical engineering and medical device testing.

- Development of fluid resistance models as a means to evaluate tissue implant in a beating heart model. Practical and implemented in a preclinical non-human model.
- Development of molecular processors for use as implant autograft. Effects of tissue engineering as functional and sustained drug delivery for 30 days.
- Semi-Blind infusion of blocked bifurcating tissue beds in intravenous implant for cardiovascular delivery using real time biometric pressure measurements of beating heart.

Employment History

EMARENA CORPORATION (Chicago, IL) 07.2013 – Present

Title, President and Lead Scientist.

- General business, product silo, service silo and R&D
- Research, development, branding, marketing and sales of product silos.
- Smart material development prototype and green fabrication.
- Hydrogen and Oxygen systems for use in medical, aerospace,
- Physics of magnetic susceptibility. EM fluidization and compacting of materials in manufacturing.
- Evaluation of Qbit coil efficacy in mechanical quantum flux effects of particulate exposed to an oscillating 180 degree positive and negative magnetic field. Evaluating the limits of EM in mechanics.

ALLIANCE OF CARDIOVASCULAR RESEARCHERS LLC (New Orleans, LA) 09.2002-01.2005.

Title: Consultant to a cardiovascular research LLC housed within Tulane University.

- Medical implant development for real-time intracoronary delivery and electrical impedance during CHF.
- Proposal, design, development, setup and follow through pre-clinical evaluation of tissue implant technology.
- Completion and testing of Molecular systems for detection of engineered stem cells.
- Destructive evaluation by RT-PCR of tissue for medical probe implants.
- ISO equivalent procedures for use and development of medical implants.

COORDINATED INSTRUMENTATION FACILITY Tulane University (New Orleans, LA)
02.1998-06.2002.

Title: Senior instrumentation specialist for a shared university facility.

- Managerial and peripheral support for the electronics laboratory division of CIF.
- Accomplished in educating faculty and staff on the use of quantitative and qualitative scientific instrumentation.
- Major contributions included the support upgrade and re-design of hardware and software.
- Data validation, QC and prepublication verification of instrument capabilities.

CIF - Tulane University (New Orleans, LA) 03.1995-02.1998.

Title: Instrumentation specialist for a shared facility on Tulane University Campus.

- Support and validation of scientific instrumentation; assets in excess of 16 million dollars.
- Materials testing instrumentation, thermal analysis maintenance, ICP, mass spectroscopy etc.
- Support staff for inorganic, organic and electronics divisions of CIF.
- Modifications and upgrade of instrumentation for faculty and staff.

INTERSTATE NUCLEAR SERVICES (Springfield, MA) 03.1994-01.1995.

Title: Research Fellow in a nuclear decontamination facility of DOE/DOD textiles.

- Objective comparison of decontamination procedures and documentation for ISO 9000 certification.
- [In]Validation studies and for (cross) contamination of Cobalt -60 in an industrial textile model using Ozone.

Teaching Experience

Teaching assistantship in advanced microprocessors for medical instrumentation.
Spring Semester, 1998.

- Advanced microprocessor programming in assembly language.
- Embedded systems integration for communication and micro processing.

Teaching assistantship; Mathematical modeling. Fall Semester, 1997.

- Introductory and advanced topics in math modeling using Mathematica software.
- This teaching experience involved the academic training of students to model dynamic and chaotic systems for analysis of partial differentials.

Successful Trademark and Copyright

Emarena : service industry, Federal registration.

icBloom : in materials class, Federal registration.

IH2I : hydrogen gas, Federal registration.

Empsand : materials class, Illinois, State registration

Hydrogen Miner: Copyright 2D Art

Hydrogen Miner: Copyright Audio-Visual Effects and NFTs.

Patent Awards (Inventor)

E. Alt, K. Pinkernell, R. Auger, "Method for control of stem cell injection into the body", US Patent 9,242,069, Issued Jan 26, 2016.

Patent Application Publications

Russell Auger, Magnetically Susceptible Conductive Slurry; USPTO Application 13/294178 Filing Date 11.11.2013, Publication Date 05/16/2013

Eckhard U Alt, Kai Pinkernell, Russell Auger; Method and instrumentation for control of (stem) cell injection into the body. USPTO, 2005 11/068495, Filing 02.28.2015, Publication 10.13.2005.

Presentations and Publications

Russell Auger, Mesenchymal Stromal Cells as Angiogenic Cellular Vectors for Revascularizing the Heart; A Thesis under Eckhard U Alt of Tulane Medical School, Department of Cardiology, a Howard Tilton Memorial Library publication Tulane University, New Orleans LA 2006.

Cody Mayo III, Todd Luka, Russell Auger, Kai Pinkernell, Christian Valina, Richard Campeau, Parwis Fotuhi, and Eckhard Alt., Catheter based application of stem cells for myocardial repair. Biomedical Engineering Conference New Orleans., Biomedical Engineering Conference, 03.2005.

Russell Auger, Mesenchymal stromal cells as angiogenic cellular vectors., Biomedical

Engineering 03.2004. Christian Valina, Todd Luka, Kai Pinkernell, Russell Auger, Eckhard Alt. Subcutaneous bioelectrical impedance can detect respiration rate and tidal volume changes in an animal model. European Society of Cardiology 2004.

Current Certifications and Licensing

TX, CDL-A Drivers license; Combination, Doubles, Triples, Tankers, Hazmat

Awards and Honors

Chancellors List nominations for high academic achievement. 2005-2006. Alpha Eta Mu Beta, Biomedical Engineering Honor Society for a GPA higher than 3.5/4.0. 1998-2006.

American Heart Association fellowship and grant proposal, 2001; 20,000\$/yr discontinued 2002 at the Tulane University Stem Cell Research and Regenerative Medicine under Donald G. Phinney.

Professional Organizations

IEEE; 03.2013 – 2017

IEEE Magnetics; 03.2013 – 2017

American Chemical Society (ACS). 1995-2011

Community Involvement

Tutoring of advanced mathematics and science. 1998-2000.

Big Brothers, Big Sisters of New Orleans. 1997-2000.

Youth Group Advisor. 1997.