

## MICHAEL C. CHRISTIE

### **Degrees: Discipline, Institutions, Year:**

Ph.D. Materials Science & Engineering, Rutgers University, 1999.

M.S. Mechanics & Materials Science, Rutgers University, 1994.

B.S. Mechanical Engineering, Rutgers University, 1988.

### **Academic Experience:**

#### **Florida International University**

- Senior Lecturer, Department of Biomedical Eng'g, Spring 2017- present, full-time
- Senior Lecturer & Undergraduate Advisor, Department of Biomedical Eng'g, Spring 2016- present, full-time
- Lecturer & Undergraduate Advisor, Department of Biomedical Eng'g, 2008- spring 2016, full-time
- Visiting Professor, Department of Biomedical Engineering, 2007 – 2008, full-time
- Adjunct Instructor. Department of Biomedical Engineering. 2005 –2007, part-time

#### **Florida Memorial University**

- Adjunct Professor. Graduate and Continuing Education Department, 2000- 2008 part-time

#### **Rutgers University**

- Teaching Assistant. College of Engineering. 1992-96, part-time
- 1yr. Lecturer. College of Engineering, 1992-1993, part-time

### **Non-Academic Experience:**

- Millennium Scientific Inc , Principal Scientist, Medical Device Development, Manufacturing Consulting, 2004-2008
- Johnson & Johnson
  - Worldwide Unit Manager, Quality Assurance Laboratory, 2002-2004
  - Manager, Quality Assurance – Analytical Testing, 2000-2002
  - Staff Engineer, Quality Assurance – 1999-2000

### **Certifications or Professional Registrations.**

South Florida Inventor's Society

### **Professional Affiliations and Memberships:**

Biomedical Engineering Society

Materials Research Society

American Physical Society

American Chemical Society

American Society for Mechanical Engineers

### **Honors and Awards:**

Johnson & Johnson Technical Excellence Award – Cypher Stent 2004

Johnson & Johnson Standards of leadership Award 2003

Johnson & Johnson Standards of leadership Award 2002

Process Excellence- Six Sigma- Black Belt

2001

Sigma Xi – Scientific Research Society

Outstanding Graduate Student – Materials Science & Engineering, Rutgers University

Outstanding Graduate Student - Packaging Engineering, Rutgers University

Tau Beta Pi – National Engineering Honor Society

### **Courses Taught (FIU)**

First Year Experience

First year Honors Seminar: “Origin of Ideas and Ideas of Origin”

Biomedical Engineering Transport

Clinical Rotations

Biomaterials

Principles of Biomedical Engineering

Data Evaluation Principles

Biomedical Engineering Lab I

Biomedical Engineering Lab II

Applied Biomedical Engineering Principles (Graduate)

Advanced Biomaterials Science (Graduate)

Hemodynamics

Orthopaedic Biomechanics

Senior Design Project

### **Courses Taught (Other Institutions)**

- Materials Science and Engineering, Dept. of Mechanics and Materials Science - Rutgers University
- Physics I (Engineering Bridge Program) Rutgers University
- Calculus I (Engineering bridge Program) Rutgers University
- Earth Science – Florida Memorial University
- Physical Science – Florida Memorial University

### **Courses Supervised**

Introduction to Biomedical Engineering

Orthopaedic Biomechanics

Undergraduate Research

Undergraduate Seminar

Special Topics in BME

BME Co-Op

### **Courses Developed/ Redesigned**

Principles of Biomedical Engineering

Undergraduate Research

Senior Design Project

### **Senior Design Projects Supervised**

**Robot Erudite Stabilizing Tool:** Sponsor: Garrison Prosthetic Services, Miami, FL

Christian Abascal, Jose Gonzalez, Salvatore Costanzo, Ricardo Hauz. Fall 2016

**System of Sensors for Gait Analysis:** Sponsor: FIU College of Health Sciences, Department of Physical Therapy, Miami, FL. Jessyka Desrosieriers, Michel Alanso, Christopher Chow, Carlos Camargo, Kishmere Rolle, Fall 2015 - Spring 2016

***Novel Stent Design for Peripheral Vascular Stenosis,*** BME Medical Manufacturing Monterrey, Mexico. Jorge Torres, Teresa Milan, Alexander Williams, Amajai Fleishmann, Sebastian Londondo, Spring 2015 – Fall 2015

***Stereotaxic Instrument for the fixation of Spine of a Seltzer Rat Model:*** Sponsor: University of Miami, Miller School of Medicine, Department of Anesthesiology, Miami, FL. William Smit, John Perez, David Rodriguez, Carlos Chaves, Diana Alvarez. Fall 2013 - Spring 2014

***Novel Sub-Cerebral Catheter Design to Minimize Occlusions and Backflow,*** Engineering Resource Group, Pembroke Pines, FL. Carolina Alvarez, Joseph Chue-Sang, Rodrigo Gaibor, Douglas Wright. Fall 2012, - Spring 2013

***A Remote Introducer for Catheters Using the Medtronic Navigus Trajectory Guide,*** Engineering Resources Group INC. Pembroke Pines, FL. Fritzline Cesar Michael Lopez, Rudolph Piatyszek, Paola Sepulveda, Fall 2011 – Spring 2012

***Development of a Mechanical Fixture and Test Protocol for a Radial Head Plate System,*** Skeletal Dynamics, Miami, Fl. Patricia Santana, Kamau Pierre, Alexander Rodriguez Andreina Castro, Fall 2011 – Spring 2012

***Planar Cutting Systems for Bone Resurfacing,*** MAKO Surgical Inc, Fort Lauderdale, Lizeth Caldera, Luz Gomez, Charles, Fall 2008 – Spring 2009

***Bioresorbable Interference Screw,*** FIU Department of Mechanical and Materials Engineering, Miami, FL. Sergio Martinez, Manuel Salinas, Maggy Seiglie, Javier Gonzalez, Spring 2008 - Summer 2008

### **Mentoring and Undergraduate Research Activities**

Ailyn Rivero (Supported by NACME 2010-2012)

Herbert Wertheim School of Medicine. Spring 2016, Cohort.

Laura Fajardo (Supported by MBRS-RISE – 2008-2009) USPTO, Washington, DC

Michael Hall (Supported by SEAGEP Research Scholarship – 2008-2009)

Christofer Zapata (Supported by SEAGEP Research Scholarship and NACME –2008-09)  
Medical Doctor – Resident, St. Anthony’s Hospital, Chicago, IL

Manuel Salinas, Ph.D. (Supported by Norman Weldon Summer Research Fellow 2008)  
(Supported by SEAGEP Research Scholarship and NACME – 2008-2009)  
Ph.D. Biomedical Engineering. Post Doctoral Fellow, Brigham and Women’s Hospital, Harvard University. Assistant Professor Nova Southeastern University, College of Engineering.

Michelle Tillit (Supported by SEAGEP Summer Research Scholarship – Summer 2008)

Senior Engineer, Johnson and Johnson  
Sergio Martinez (Supported by SEAGEP Summer Research Scholarship – Summer 2008)  
Staff Engineer, Stryker-Howmedica Osteonics, Ft. Lauderdale, FL  
Kanwal Raja (Supported by SEAGEP Summer Research Scholarship – Summer 2008)

### **Service Activities:**

#### University

Academic Policies and Personnel Committee – **Chairperson** (2016 - 2017)  
Project Panther Life- Faculty Mentor, Fall 2015- present  
University Faculty Council (alternate) Fall 2015 (through spring 2016)  
Academic Policies and Personnel Committee Fall 2015 (through spring 2017)  
Undergraduate Council 2013-2015  
University Sabbatical Committee 2011-2013  
Ronald E. McNair Undergraduate Research Program, Board Member 2008-present  
Ronald E. McNair Undergraduate Research Program, Research Conference **Co-Chair**  
2015  
Pre-Health Profession Advising Dept. Evaluation/Recommendation Panel, 2008-present

#### College of Engineering and Computing

Faculty Council, 2010-2012 – **Vice chair** (2011-2012)  
Induction to the Profession Committee, 2008- 2012 - **Chairperson**, 2010-2012  
National Society of Black Engineers, **Co-Faculty Advisor**, Fall 2007 – present

#### Department of Biomedical Engineering

Biomedical Engineering, ABET Accreditation Preparedness Committee, 2007-present  
Biomedical Engineering Chairperson Search Committee – 2009-2010  
Biomedical Engineering Undergraduate Program Committee, 2007-present  
Committee on Academic Standing, **Founding Chairperson**, 2007 - present  
Industrial Advisory Board, Department of Biomedical Engineering 2003-2007  
Ph.D. Thesis Committee, Gallocher, Fall 2007  
MS, Thesis Committee, Dharam Persuad, Fall 2010  
Senior Design Project Competition, FIU, Biomedical Engineering, April 2005-present

### **Grants:**

- Writing Across the Curriculum: “**Enhancing Technical Writing Skills while Leveraging Development Potential of Biomedical Engineering Senior Design Projects**” Florida International University, Spring 2017, \$1250
- NSF I-Corp Development Grant, “**Mechanically Conditioned 3-Dimensional Cell Culture System**” (Industry Mentor) Awarded May 2016, NSF Award # 1644603, \$50,000
- NSF Mini I-Corp Development Grant, UCF-FIU April 2016, \$10,000
- NASA Faculty Senior Design Workshop. Summer 2012 Travel Grant - \$1000
- NASA Faculty Senior Design Workshop. Summer 2010 Travel Grant - \$1000
- Center for the Advancement of Teaching. “**Development of an Undergraduate Research Initiative in Biomedical Engineering**” FIU. Fall 2011. \$2000

- QEM Network Conference STEM Meeting and Workshop on Preparing Undergraduate students for the Ph.D. in STEM fields. Travel Grant. \$850 Fall 2010
- QEM Network Workshop Underrepresented Minority Master's and Doctoral Engineering and Materials Science Students and their Faculty/Staff Advisors (Fall 2011) STEM Workshop Travel Grant :\$850: Spring 2011
- QEM Network Workshop Effective Institutional STEM Instructional Strategies at HBCU-UP Grantee Institutions Travel Grant \$850 Fall 2012
- FASFEB-MARK U Star to BMES National Conference, Fall 2010, Pittsburg. Travel Grant: \$1850
- FASFEB-MARK U Star to BMES National Conference, Fall 2009, Pittsburg. Travel Grant: \$1850

### **Invited talk**

“Frontiers of Biomedical Engineering” Darton State College, Albany GA, Spring 2010

### **Principal Publications Since 2007**

Distribution and Size Effect of Mineral Inclusions on the Presence of Metallic Media, with Rigoberto Roche, *Ronald E Mcnair, Undergraduate Research Journal, 7<sup>th</sup> Cohort:* Fall 2010

A Biomedical Approach as Part of a Comprehensive Strategy for Reducing Violent Crimes in Society, with D.C. Barinas, *International Journal of Medical Implants and Devices*, April 2009

Hemodynamics of Sickle cell Anemia with Varying Parameters, with M. Tillit, S. Martinez, G. Ramnath, and M, Medoyaya *International Journal of Medical Implants and Devices*, Vol. 3, No. 1, 2008

Hemodynamics of Sickle Cell Anemia with Varying parameters, with M. Tillit, S. Martinez, G. Ramnath, and M, Medoyaya *Biomedical Engineering – Recent Developments*, Medical and Engineering Publishers, Sunshine, Maryland, 2008

### **Conference Presentations and Publications through 2006**

“Ferroelectric and Piezoelectric Properties of a Quenched Poly(vinylidene fluoride-trifluoroethylene) Copolymer”, with J. I. Scheinbeim and B. A. Newman, *J. Polymer Science, Part B: Polymer Physics*, June, 1997

“On Annealing and Ferroelectric Behavior in Poly(Vinylidene Fluoride-Trifluoroethylene) Random Copolymers”, with J.I. Scheinbeim, *Bulletin of the American Physical Society*, vol.47, No. 1, Part I, March 2002

“Toward Optimized Process Parameters for Ferroelectricity and Piezoelectricity in P(VF2-VF3) Copolymers”, with J.I. Scheinbeim, *Bulletin of the American Physical Society*, vol.47, No. 1, Part I, March 2002

“Ferroelectric and Piezoelectric Properties of Poly(vinylidene fluoride-trifluoroethylene) (73/27) Copolymer”, with J. I. Scheinbeim and B. A. Newman, Bulletin of the American Physical Society, vol. 40, No. 1, March, 1995

“Effects of Quenching on the Ferroelectric and Piezoelectric Response of Poly(vinylidene fluoride-trifluoroethylene) Copolymers”, with J. I. Scheinbeim and B. A. Newman, Bulletin of the American Physical Society, vol. 41, No. 1, March, 1996

“Ferroelectric and Piezoelectric behavior of quenched poly(vinylidene fluoride-trifluoroethylene) Copolymers”, with J. I. Scheinbeim and B. A. Newman, AIChE Annual meeting, Chicago, IL, November, 1996

“Process-Property Relationships in Ferroelectric Copolymers of Vinylidene Fluoride and Trifluoroethylene”, with J. I. Scheinbeim and B. A. Newman, Bulletin of the American Physical Society, vol. 42, No. 1, March 1997

“Ferroelectric Anomaly in Copolymers of Vinylidene Fluoride and Trifluoroethylene”, with J. I. Scheinbeim and B. A. Newman, Naval Conference on Piezoelectric Materials, College Park, PA, May 1997

“Aspects of Process Dependence on The Ferroelectric and Piezoelectric Behavior of Poly(vinylidene fluoride-trifluoroethylene) Random Copolymers”, with J. I. Scheinbeim and B. A. Newman, AIChE Annual Meeting, Los Angeles, CA, November 1997