

**MATTHEW O'DONNELL**

**Address**

Department of Bioengineering  
University of Washington  
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**Education**

<u>School</u>	<u>Dates Attended</u>	<u>Degree</u>	<u>Major Area</u>
University of Notre Dame	1968-1972	B.S.	Physics
University of Notre Dame	1972-1976	Ph.D.	Solid State Physics

**Work Experience**

Frank & Julie Jungers Dean Emeritus, College of Engineering, University of Washington, Seattle, WA 98195, 2013 - present

Professor, Bioengineering Department, University of Washington, Seattle, WA 98195, 2006 - present

Adjunct Professor, Mechanical Engineering Department, University of Washington, Seattle, WA 98195, 2006 - present

Frank & Julie Jungers Dean of Engineering, College of Engineering, University of Washington, Seattle, WA 98195, 2006 - 2012

Jerry W. and Carol L. Levin Professor of Engineering, University of Michigan, Ann Arbor, MI 48109-2125, 1998-2006

Chair, Biomedical Engineering Department, University of Michigan, Ann Arbor, MI 48109-2125, 1999-2006

Professor, Biomedical Engineering, University of Michigan, Ann Arbor, MI 48109-2125, 1997-2006.

Professor, Electrical Engineering & Computer Science, University of Michigan, Ann Arbor, MI 48109-2122, 1990-2006.

Physicist, Research and Development Center, General Electric Company, Schenectady, NY 12301, 1980-1990.

Research Fellow, Electrical Engineering, Yale University, New Haven, CT, 1984-1985.

Senior Research Associate in Physics and Research Instructor in Medicine, Washington University, St. Louis, MO 63130, 1978-1980.

Postdoctoral Fellow in Physics, Washington University, St. Louis, MO 63130, 1976- 1978.

Graduate Research and Teaching Fellow in Physics, University of Notre Dame, Notre Dame, IN 46556, 1972-1976

## **Honors**

William J. Morlock IEEE EMBS Award for Excellence in Biomedical Technology, 2015  
Distinguished Alumni Award, University of Notre Dame, 2009  
National Academy of Engineering, 2009  
Washington State Academy of Sciences, 2009  
Achievement Award, IEEE Ultrasonics, Ferroelectrics & Frequency Control Society, 2007  
Frank & Julie Jungers Dean of Engineering, University of Washington, 2006  
Jerry W. and Carol L. Levin Professor of Engineering, University of Michigan, 1998  
Research Award, BME Department, University of Michigan, 1998  
Fellow - AIMBE, 1996  
Teaching Award, College of Engineering, University of Michigan, 1996  
Teaching Award, EECS Department, University of Michigan, 1995  
Fellow - IEEE, 1993  
Whitney Award, General Electric Internal Research Award, May 1991  
Whitney Award, General Electric Internal Research Award, November 1990  
Best Paper - Medical Physics, 1985  
Best Paper - Medical Physics, 1984  
Senior Member - IEEE, 1984  
B.S. with Honors - University of Notre Dame, 1972

## **Graduate Student Mentoring**

Graduated 25 Ph.D. students, mentored 28 post-docs (see attached sheets)  
Currently mentor and support 5 post-docs (see attached sheets)

## **Extramural Funding**

\$ 1,210,212- 2016 (current year, PI, approximate - see attached sheets)

## **Publications and Patents**

229 Journal Articles (see attached sheets)  
196 Refereed Conference Proceedings Articles (see attached sheets)  
178 Presentations at International Meetings (see attached sheets)  
71 Patents (62 issued)

## **Professional Societies**

National Academy of Engineering – Member  
Washington State Academy of Sciences - Member  
IEEE – Fellow  
AIMBE - Fellow

## **Journal and Proposal Review**

Ultrasonic Imaging: Associate Editor  
Photoacoustics: Associate Editor  
IEEE: UFFC, Medical Imaging, BME, ASSP  
JASA, Circulation, Journal of Biomedical Optics  
NIH – Former Chair, Biomedical Imaging Technology (BMIT) Study Section  
NSF

## **Industrial Consulting**

General Electric, 1990-2000, 2006-2008  
Endosonics/Jomed, 1993-2003  
Acuson/Siemens, 1995-2002  
Microsound Systems, 1995-1997  
Q-Dot, 1995-2000  
Pangea Medical, 1998-1999  
Focus Surgery, 1998-2003  
Tetrad, 1999-2005  
Pixel Velocity, 2001-2009  
Vascular Imaging, 2003-present  
Sonetics, 2003-2006  
Allied Minds, 2008-2013  
Mirabilis Medica, 2008-2013  
Epsilon Imaging – 2009-present  
Histosonics – 2010-present  
Delphinus Medical – 2010-present  
uBeam – 2016-present  
LuxSonics- 2016-present

## **Matthew O'Donnell -- Trainee Mentoring**

### **Post-Doctoral Mentoring**

- 1.) Stanislav Emelianov  
1991-1995 – Elasticity Imaging
- 2.) Mustafa Karaman  
1994-1995 – Synthetic Aperture Imaging for Biomedical Ultrasound
- 3.) Steven Freeman  
1998-1999 – Delta-Sigma Beamformers for Biomedical Ultrasound
- 4.) Kyle Hollman  
1999-2001 – Phase Aberration Correction for 2-D Ultrasound Arrays
- 5.) Salavat Aglyamov  
2000-2002 – Reconstruction Algorithms for Elasticity Imaging
- 6.) Kang Kim  
2002-2004 – Elasticity Imaging to Detect Kidney Transplant Rejection
- 7.) Hua Xie  
2002-2005 – Elasticity Imaging to Age Deep Venous Thrombosis
- 8.) Russell Witte  
2002-2006 – Microwave/Optical-Induced Neural Imaging with Ultrasound
- 9.) Shai Ashkenazi  
2003-2006 – High Frequency Optoacoustic Imaging
- 10.) Takashi Buma  
2003-2005 – Optoacoustic Lamb-wave Transduction
- 11.) Xunchang Chen

- 2004-2005 – Cardiac Strain Rate Imaging
- 12.) Sheng-wen Huang  
2005-2009 – Thermal Strain and Photoacoustic Imaging
  - 13.) Lingyun Huang  
2007-2011– Cardiac Elasticity Imaging
  - 14.) Yael Petrank  
2007-2009– Viterbi Processing of Cardiac Elasticity Images
  - 15.) Chi Hyung Seo  
2009-2010 – Functional Imaging with Intracardiac Arrays
  - 16.) Jinjun Xia  
2009-2013 – Photoacoustic Imaging Systems
  - 17.) Chen-Wei Wei  
2010-2014 – Photoacoustic Contrast Agents
  - 18.) Emily Wong  
2011-2014 – Intracardiac Thermal Strain Imaging
  - 19.) Bastien Arnal  
2013-2014 – Magnetomotive Photoacoustics and Optical Coherence Elastography
  - 20.) Thu-Mai Nguyen  
2013-2014 – Optical Coherence Elastography and Magnetomotive Photoacoustics
  - 22.) Bao-Yu Hsieh  
2014-2016 – Integrated US/PA Imaging Systems
  - 21.) Maria Zontak  
2014-2016 – Cardiac Strain Imaging with 4-D Echocardiography
  - 23.) Soon Joon Yoon  
2014-present – Photoacoustic Contrast Agents
  - 24.) Lukasz Ambrozinski  
2015-2016 – Laser Ultrasound Systems
  - 25.) David Li (co-advisor with Lilo Pozzo)  
2015-present – Nanoemulsions for Photoacoustic Imaging
  - 26.) Liang Gao  
2016-present – Optical Coherence Elastography
  - 27.) Elena Petrova  
2016-present – Photoacoustics for Laboratory Medicine
  - 28.) Geng-Shi Jeng  
2017-present – Vascular Elastography

#### **Ph.D. Graduates**

- 1.) Yantian Zhang  
Dissertation: Magnetic Resonance  $T_1$  Imaging of the Breast Using Fat Suppressed Single Scan Technique  
Department: Bioengineering  
Date: 1994

- 2.) Pai-Chi Li  
Dissertation: Two-Dimensional Conformal Arrays for Ultrasound Imaging  
Department: Electrical Engineering & Computer Science  
Date: 1994
- 3.) Joseph R. Roebuck  
Dissertation: Segmentation of Proton MRS Signals Compromised by Partial Volume Contamination  
Department: Bioengineering  
Date: 1994
- 4.) Benjamin M. Shapo  
Dissertation: Displacement and Strain Imaging of Coronary Arteries with Intraluminal Ultrasound.  
Department: Electrical Engineering & Computer Science  
Date: 1996
- 5.) N. Abraham Cohn  
Dissertation: An Elasticity Microscope for High Resolution Imaging of Tissue Stiffness Using 50 MHz Ultrasound  
Department: Biomedical Engineering  
Date: 1997
- 6.) Sriram Krishnan  
Dissertation: Adaptive and Nonlinear Ultrasound Imaging  
Department: Electrical Engineering & Computer Science  
Date: 1997
- 7.) Mark A. Lubinski  
Dissertation: Speckle Tracking Techniques for Ultrasound Elasticity Imaging  
Department: Biomedical Engineering  
Date: 1998
- 8.) Steven Freeman  
Dissertation: An Oversampled Ultrasound Beamformer for Low-power, Portable Scanners  
Department: Electrical Engineering & Computer Science  
Date: 1998
- 9.) James D. Hamilton  
Dissertation: High Frequency Ultrasound Imaging Using Optics  
Department: Physics  
Date: 1998
- 10.) John R. Crowe  
Dissertation: Intraluminal Blood Flow Imaging  
Department: Electrical Engineering & Computer Science  
Date: 1999
- 11.) Takashi Buma  
Dissertation: Thermoelastic Generation of Ultrasound for High Frequency Phased Arrays  
Department: Applied Physics  
Date: 2002
- 12.) Yao Wang

- Dissertation: Forward-Viewing Ring Annular Array in Intravascular Ultrasound Imaging  
Department: Biomedical Engineering  
Date: 2003
- 13.) Charles D. Choi  
Dissertation: Integrated Balloon Ultrasound Catheter for Strain Imaging and Stent Deployment Guidance  
Department: Biomedical Engineering  
Date: 2003
- 14.) Ramon Erkamp  
Dissertation: Nonlinear Elasticity Imaging using Ultrasound  
Department: Biomedical Engineering  
Date: 2003
- 15.) Monica Spisar  
Dissertation: Resonant Optical Acoustic Detectors for High Frequency Medical Imaging  
Department: Biomedical Engineering  
Date: 2003
- 16.) Xunchang Chen  
Dissertation topic: Cardiac Strain Rate Imaging Using 2-D Speckle Tracking  
Department: Biomedical Engineering  
Date: 2004
- 17.) Javier DeAna  
Dissertation Topic: Quantitative Real-time Blood Flow Measurements Using Intravascular Ultrasound  
Department: Biomedical Engineering  
Date: 2004
- 18.) Yan Shi  
Dissertation Topic: Thermal Strain Imaging  
Department: Biomedical Engineering  
Date: 2005
- 19.) Todd Eperlding  
Dissertation Topic: Bubble-based Acoustic Radiation Force for Measuring Lens Elasticity  
Department: Biomedical Engineering  
Date: 2006
- 20.) Marwa Zohdy  
Dissertation Topic: Controllable Bioeffects of Laser-Generated Intracellular Microbubbles  
Department: Biomedical Engineering  
Date: 2006
- 21.) Christine Tse  
Dissertation Topic: Acoustic Characterization of Geometrically and Biochemically Targeted Optical Breakdown Effects for Biomedical Applications  
Department: Biomedical Engineering  
Date: 2007
- 22.) Rebecca Booi  
Dissertation Topic: 2D and 3D Breast Elastography with a Combined Ultrasound/Digital

Tomosynthesis System  
Department: Biomedical Engineering  
Date: 2007

- 23.) Yang Hou  
Dissertation Topic: Broadband All-Optical Ultrasound Transducers for High-Resolution Ultrasound Imaging  
Department: Electrical Engineering & Computer Science  
Date: 2008
- 24.) Ragnar Olafsson  
Dissertation Topic: Cardiac Activation Mapping Using Ultrasound Current Source Density Imaging  
Department: Biomedical Engineering  
Date: 2008
- 25.) Congxian Jia  
Dissertation Topic: Speckle Tracking for Cardiac Strain Imaging and Contrast Enhancement in Photoacoustic Imaging  
Department: Biomedical Engineering  
Date: 2010

### **B.S/M.S. Student Mentoring**

I have mentored numerous B.S. and M.S. students in the BME and EECS Departments at the University of Michigan.

### **Matthew O'Donnell -- External Research Funding**

#### **Current - PI:**

- 1.) P.I: Matthew O'Donnell  
Sponsor: NIH (EB-016034)  
Title: Non-invasive Trapping and Imaging of Circulating Tumor Cells in the Peripheral Vasculature  
Effort 15%
- |                                   |                   |             |
|-----------------------------------|-------------------|-------------|
| Dates and costs of entire project | 12/15/12-11/30/17 | \$1,770,099 |
| Dates and costs of current year   | 12/1/15-11/30/16  | \$424,926   |
- 2.) P.I: Matthew O'Donnell (Subcontract to Yale: P.I. James Duncan)  
Sponsor: NIH (HL-121226)  
Title: Integrated RF and B-mode Deformation Analysis for 4D Stress Echocardiography  
Effort 10%
- |                                   |                 |           |
|-----------------------------------|-----------------|-----------|
| Dates and costs of entire project | 2/18/14-1/31/18 | \$601,775 |
| Dates and costs of current year   | 2/18/16-1/31/17 | \$147,527 |
- 3.) Co-P.I.: Tom Matula, Matthew O'Donnell, and Norman Beauchamp  
Sponsor: Life Sciences Discovery Fund (LSDF 3292512)  
Title: Molecular Imaging and Therapy using Ultrasound

Effort 5%		
Dates and costs of entire project	9/1/10-8/31/17	\$4,999,999
Dates and costs of current year	9/1/16-8/31/17	\$304,761

5.) P.I.: Matthew O'Donnell

Sponsor: General Electric Company

Title: High Speed Tunable Laser and Optical Delivery System for an Integrated Photoacoustic /Ultrasonic (PAUS) Real-time Scanner

Effort 1%

Dates and costs of entire project	2/11/15-7/1/2017	\$290,000
Dates and costs of current year	2/11/15-7/1/2017	\$290,000

**Current – Co- PI:**

1.) P.I.: Xiaohu Gao (Matthew O'Donnell – co-PI)

Sponsor: NIH (CA-170734)

Title: Sensitive Cancer Detection with Magneto-motive Imaging

Effort 10%

Dates and costs of entire project	8/1/12-8/31/17	\$1,859,932
Dates and costs of current year	8/1/16-8/31/17	\$464,983

2.) P.I.: Lilo Pozzo (Matthew O'Donnell – co-PI)

Sponsor: NIH (HL-125339)

Title: Nano-agent for Photoacoustic Theranostics of Dialysis Graft/Fistula Occlusions

Effort 10%

Dates and costs of entire project	12/1/14-11/30/19	\$2,822,906
Dates and costs of current year	12/1/16-11/30/17	\$539,272

3.) P.I.: Tueng Shen (Matthew O'Donnell – co-PI)

Sponsor: NIH (EY-026532)

Title: Optical coherence elastography of corneal dynamics

Effort 10%

Dates and costs of entire project	4/1/16-3/31/21	\$2,857,830
Dates and costs of current year	4/1/16-3/31/17	\$588,306

**Immediate Past - PI:**

1.) P.I.: Matthew O'Donnell (Subcontract to Yale: P.I. James Duncan)

Sponsor: NIH (HL 082640)

Title: LV Strain Quantification for 4D Echocardiography

Effort 15%

Dates and costs of entire project	6/1/06-5/31/13	\$1,896,564
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2.) P.I.: Matthew O'Donnell (Subcontract to OHSU: P.I. David J. Sahn)

Sponsor: NIH (HL 067647)

Title: High Frequency Ultrasound Arrays for Cardiac Imaging

Effort 5%



Dates and costs of entire project 9/1/08-8/31/13 \$517,678

3.) P.I.: Matthew O'Donnell

Sponsor: Joint Center for Aerospace Technology Innovation (JCATI #61-1041)

Title: Multimode Laser Ultrasonics: Precise Measurement of Ultrasound Characteristics for Composite Structure Evaluation

Effort 0%

Dates and costs of entire project 1/1/13-6/30/13 \$77,725

4.) P.I.: Matthew O'Donnell

Sponsor: Boeing Company

Title: Multi-mode Laser Ultrasonics System for NDE of Complex Composite Parts

Effort 5%

Dates and costs of entire project 7/1/10-3/31/15 \$485,019

5.) P.I.: Matthew O'Donnell

Sponsor: BP Exploration & Production Inc.

Title: Advanced Downhole Waveform Interpretation

Effort 5%

Dates and costs of entire project 1/1/14-12/31/15 \$350,000

6.) P.I.: Matthew O'Donnell

Sponsor: General Electric Company

Title: Non-invasive Assessment of Carotid Artery Compliance using Ultrasound Elastography

Effort 5%

Dates and costs of entire project 9/1/14-5/31/16 \$147,759

Dates and costs of current year 9/1/14-5/31/16 \$147,759

#### **Past - PI:**

1.) P.I.: Matthew O'Donnell (Subcontract to OHSU: P.I. David Sahn)

Sponsor: NIH (HL 67647) – Transferred to UM on 9/1/06

Title: High Frequency Ultrasound Arrays: Intracardiac Imaging

Effort 15%

Dates and costs of entire project 2/15/02-2/14/07 \$1,115,000

2.) P.I.: Matthew O'Donnell

Sponsor: NIH (EB 003455) – Transferred to UM on 9/1/06

Title: Optoacoustic Transduction for High-Frequency Ultrasound

Effort: 15%

Dates and costs of entire project 7/1/05-6/30/09 \$ 1,328,848

3.) P.I.: Matthew O'Donnell

Sponsor: NIH (EB 003449) – Transferred to UM on 9/1/06

Title: Ultrasonic Imaging of LIOB in Dendrimer Nanocomposites

Effort 10%

Dates and costs of entire project 4/1/05-3/31/07 \$419,813

4.) P.I.: Matthew O'Donnell

Sponsor: NIH (EB 003451)  
Title: Microwave Induced Thermal Imaging – Transferred to UM on 9/1/06  
Effort 10%  
Dates and costs of entire project 8/1/05-7/31/07 \$407,745

5.) P.I.: Matthew O'Donnell  
Sponsor: NIH (HL 47401)  
Title: Can IVUS Help Manage Coronary Artery Disease  
Effort 25%  
Dates and costs of entire project 7/1/00-6/30/05 \$1,359,424

6.) P.I.: Matthew O'Donnell (Subcontract, P.I. Daryl Kipke)  
Sponsor: DARPA (N66001-02-8059)  
Title: Neural Imaging for Brain Machine Interfaces  
Effort: 5%  
Dates and costs of entire project 6/28/02-6/27/04 \$360,000

7.) P.I.: Matthew O'Donnell  
Sponsor: ONR (N00014-98-1-0012)  
Title: Resonant Optical Detector (ROUT) for Ultrasound Imaging  
Effort 15%  
Dates and costs of entire project 10/1/00-12/31/03 \$499,566

8.) P.I.: Matthew O'Donnell  
Sponsor: NIH (2R01DK47324)  
Title: Elasticity Imaging for Detection of Renal Pathology  
Effort 20%  
Dates and costs of entire project 6/1/98-5/31/03 \$1,227,003

9.) P.I.: Matthew O'Donnell  
Sponsor: Acuson (Siemens) Corp.  
Title: Ultrasound Imaging  
Effort 0%  
Dates and costs of entire project 5/1/92-4/30/02 \$60,000

10.) P.I.: Matthew O'Donnell  
Sponsor: Warner-Lambert Company  
Title: Elasticity Imaging in Rapid Evaluation of Atherosclerotic Plaque Vulnerability  
Effort 0%  
Dates and costs of entire project 5/15/99-10/14/00 \$87,672

11.) P.I.: Matthew O'Donnell  
Sponsor: ONR (N00014-98-1-0012)  
Title: Active Optical Detectors for Ultrasound Imaging  
Effort 15%  
Dates and costs of entire project 10/1/97-9/30/00 \$455,064

12.) P.I.: Matthew O'Donnell  
Sponsor: DARPA - Subcontract to Q-Dot, Inc. (DAPRA Program BAA 95-27)  
Title: Technology for Hand-Held Ultrasound Scanners

Effort 12%  
Dates and costs of entire project 9/13/96-9/12/00 \$391,330

13.) P.I.: Matthew O'Donnell  
Sponsor: NIH (1R01HL47401)  
Title: Catheter Arrays for Mechanical Imaging of Coronary Arteries  
Effort 25%  
Dates and costs of entire project 2/1/96-6/30/00 \$1,063,080

14.) P.I.: Matthew O'Donnell  
Sponsor: DARPA - Subcontract to GE-CRD (DARPA Program BAA 95-27)  
Title: Improved Ultrasound Image Quality Using Adaptive Acoustics  
Effort 25%  
Dates and costs of entire project 9/13/96-9/12/99 \$362,855

15.) P.I.: Matthew O'Donnell  
Sponsor: NIH (1R01DK47324)  
Title: Elasticity Imaging for Detection of Renal Pathology  
Effort 20%  
Dates and costs of entire project 1/1/95-12/31/97 \$604,757

16.) P.I.: Matthew O'Donnell  
Sponsor: DARPA-TRP - Subcontract to Q-Dot, Inc. (Contract DAMD 17-96-C-6037)  
Title: A Low Power, Low Cost, High-Performance Beamformer for Medical Ultrasound Scanners  
Effort 10%  
Dates and costs of entire project 4/1/96-9/30/96 \$21,112

17.) P.I.: Matthew O'Donnell  
Sponsor: General Electric  
Title: Phased Array Ultrasound Imaging  
Effort 0%  
Dates and costs of entire project 1/1/91-6/30/95 \$235,000

18.) P.I.: Matthew O'Donnell  
Sponsor: NIH(5R01 CA54896)  
Title: Conformal Arrays for Ultrasound Imaging  
Effort 20%  
Dates and costs of entire project 7/1/92-6/30/95 \$656,198

19.) P.I.: Matthew O'Donnell & Charles Cain  
Sponsor: Universitat Ulm  
Title: Focused Ultrasound Myocardial Ablation  
Effort 0%  
Dates and costs of entire project 1/1/94-6/30/94 \$22,000

**Past - Co PI:**

1.) P.I.: Jonathan M. Rubin  
Sponsor: NIH (HL 068658)

Title: Aging Venous Thrombi with Ultrasound Elasticity Imaging

Effort 0%

Dates and costs of entire project 7/1/02-6/30/07 \$1,346,418

Dates and costs of current year 7/1/06-6/30/07 \$327,507

2.) P.I.: Paul Krebsbach

Sponsor: NIH (T32 DE07057)

Title: Tissue Engineering and Regeneration

Effort 0 %

7/1/02-6/30/07

Dates and costs of entire project 7/1/02-6/30/07 \$2,990,354

Dates and costs of current year 7/1/06-6/30/07 \$400,852

3.) P.I.: Paul Carson

Sponsor: NIH (CA 091713)

Title: Combined Digital X-Ray and Ultrasound

Effort 0%

9/1/02-8/31/07

Dates and costs of entire project 9/1/02-8/31/07 \$3,330,718

Dates and costs of current year 9/1/06-8/31/07 \$670,000

4.) P.I.: Kyle W. Hollman

Sponsor: NIH (EY 015876)

Title: Bubble Based Acoustic Force Elasticity for Presbyopia

Effort 0%

Dates and costs of entire project 4/1/05-3/31/07 \$404,025

Dates and costs of current year 4/1/06-3/31/07 \$220,377

5.) P.I.: Lingjie J. Guo

Sponsor: NIH (EB 004933)

Title: Ultrasound Imaging Using Photonic Microring Resonators

Effort 0%

Dates and costs of entire project 4/1/05-3/31/07 \$420,750

Dates and costs of current year 4/1/06-3/31/07 \$229,500

### **Matthew O'Donnell -- Internal Research Funding**

#### **Past - PI:**

1.) P.I.: Matthew O'Donnell

Sponsor: Office of the Vice President for Research - University of Michigan

Title: Medical Image Processing and Design of VLSI Devices for Medical Imaging

Effort 0%

Dates and costs of entire project 11/21/90-3/31/91 \$38,100

2.) P.I.: Matthew O'Donnell

Sponsor: Office of the Vice President for Research - University of Michigan

Title: Elasticity Imaging for Quantitative Internal Palpation

Effort 0%  
Dates and costs of entire project 1/1/93-3/31/94 \$37,000

3.) P.I.: Matthew O'Donnell

Sponsor: Rackham Graduate School - University of Michigan

Title: Real-time Young's modulus imaging of coronary arteries

Effort 0%

Dates and costs of entire project 2/1/92-8/31/93 \$5,000

### **Matthew O'Donnell -- External Program Funding**

#### **Past - PI:**

1.) P.I.: Matthew O'Donnell, Charles Cain, Steven Goldstein, John Faulkner, and James Grothberg

Sponsor: Whitaker Foundation – Transferred to UM on 9/1/06

Title: Establishing Leadership in Biomedical Engineering at the University of Michigan

Effort 0%

Dates and costs of entire project 7/1/02-12/31/06 \$10,000,000

2.) P.I.: Matthew O'Donnell

Sponsor: Wallace H. Coulter Foundation – Transferred to UM on 9/1/06

Title: Wallace H. Coulter Translational Research Partnership

Effort 0%

Dates and costs of entire project 1/1/06-12/31/10 \$2,900,000

3.) P.I.: Matthew O'Donnell, Mary-Ann Mycek, and John Michael Mayer

Sponsor: Department of Education (GAANN) – Transferred to UM on 9/1/06

Title: GAANN Fellowship Program in Biomedical Engineering at the University of Michigan

Effort 0%

Dates and costs of entire project 8/14/06-8/13/09 \$507,000

4.) P.I.: Charles Cain, Matthew O'Donnell, Steven Goldstein, and John Faulkner

Sponsor: Whitaker Foundation

Title: Reorganization of Biomedical Engineering at the University of Michigan

Effort 0%

Dates and costs of entire project 7/1/96-6/30/99 \$3,000,000

5.) P.I.: Charles Cain & Matthew O'Donnell

Sponsor: Department of Education (GAANN)

Title: GAANN Fellowship Program in Bioengineering at the University of Michigan

Effort 0%

Dates and costs of entire project 9/1/94-8/31/97 \$960,000

### **Matthew O'Donnell -- Internal Program Funding**

#### **Past - PI:**

1.) P.I.: Matthew O'Donnell

Sponsor: Gilbert Whitaker Fund at the University of Michigan

Title: Pilot Grant on Integrative 2<sup>nd</sup> Year Biomedical Engineering Course

Effort 0%

Dates and costs of entire project 7/1/01-6/30/03 \$5,000

2.) P.I.: Matthew O'Donnell

Sponsor: Provost Office at the University of Michigan – Life Sciences Initiative

Title: Biotechnology and Human Values Freshman Course

Effort 0%

Dates and costs of entire project 7/1/02-6/30/04 \$316,050

## Matthew O'Donnell -- Journal Articles

1. M. T. Elliott, M. O'Donnell, and H. A. Blackstead, "Standing Magnetoelastic Waves in Rare-Earth Ferromagnetic Films", *Phys. Rev. Letters* 32, 734-737 (1974).
2. J. T. Wang, M. O'Donnell and H. A. Blackstead, "Excitation of Gigahertz Magnetoelastic Waves in Dysprosium Films: Frequency Dependence", *Phys. Rev. B* 13, 2044-2053 (1976).
3. M. O'Donnell, J. T. Wang, and H. A. Blackstead, "Magnetoelastic Excitations in Single Crystal Gadolinium", *Phys. Rev. Letters* 36, 606-609 (1976).
4. M. O'Donnell, S. C. Hart, J. G. Sylvester, and H. A. Blackstead, "Dynamic Magnetoelastic Coupling in Ni", *Solid State Communications* 18, 1141-1143 (1976).
5. M. O'Donnell, J. W. Mimbs, B. E. Sobel, and J. G. Miller, "Ultrasonic Attenuation on Myocardial Tissue: Dependence on Time After Excision and on Temperature", *J. Acoust. Soc. Am.* 62, 1054-1057 (1977).
6. M. O'Donnell, J. W. Mimbs, B. E. Sobel, and J. G. Miller, "Collagen as a Determinant of Ultrasonic Attenuation in Myocardial Infarcts", in *Ultrasound in Medicine*, Vol. 4, 503-513 (1978).
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EXPERIENCE: Following his graduate work, Dr. O'Donnell moved to Washington University in St. Louis, MO as a postdoctoral fellow in the Physics Department working on applications of ultrasonics to medicine and non-destructive testing. He subsequently held a joint appointment as a Senior Research Associate in the Physics Department and a Research Instructor of Medicine in the Department of Medicine at Washington University. In 1980 he moved to General Electric Corporate Research and Development Center in Schenectady, NY, where he continued to work on medical electronics, including MRI and ultrasound imaging systems. During the 1984-1985 academic year, he was a visiting fellow in the Department of Electrical Engineering at Yale University in New Haven, CT investigating automated image analysis systems. In 1990, Dr. O'Donnell became a Professor of Electrical Engineering & Computer Science at the University of Michigan in Ann Arbor, MI. Starting in 1997, he held a joint appointment as Professor of Biomedical Engineering. In 1998, he was named the Jerry W. and Carol L. Levin Professor of Engineering. From 1999-2006, he also served as Chair of the Biomedical Engineering Department. During 2006, he moved to the University of Washington in Seattle, WA where he was the Frank and Julie Jungers Dean of Engineering until the end of 2012. He is now a Professor of Bioengineering and Frank and Julie Jungers Dean Emeritus. His most recent research has explored new imaging modalities in biomedicine, including elasticity imaging, *in vivo* microscopy, optoacoustic arrays, photoacoustic contrast agents for molecular imaging and therapy, laser ultrasound systems, and catheter-based devices.

Dr. O'Donnell has over 420 archival publications and 61 issued patents. He has won numerous awards, including the Achievement Award and the Rayleigh Award from the IEEE Ultrasonics, Ferroelectrics & Frequency Control Society, the Distinguished Alumni Award from the University of Notre Dame, and the William J. Morlock IEEE EMBS Award for Excellence in Biomedical Technology. He is a fellow of the IEEE and AIMBE, and is a member of the Washington State Academy of Sciences and the National Academy of Engineering.