CURRICULUM VITAE
University of Idaho

NAME: Bryn A. Martin

DATE: April 3, 2018

RANK OR TITLE: Assistant Professor

DEPARTMENT: Biological Engineering

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DATE OF FIRST EMPLOYMENT AT UI: August 10, 2015

DATE OF TENURE: Untenured

DATE OF PRESENT RANK OR TITLE: August 10, 2015

EDUCATION BEYOND HIGH SCHOOL:

Degrees:

PhD	Mechanical Engineering, University of Illinois at Chicago	Chicago, Illinois, U.S.A.	2008
MS	Mechanical Engineering, University of Illinois at Chicago	Chicago, Illinois, U.S.A.	2005
BS	Mechanical Engineering, University of Illinois at Chicago	Chicago, Illinois, U.S.A.	2002

Certificates and Licenses:

Accelerated course and certification for management of tech. start-ups, EPFL, Switzerland	2009
Certified Electronics Technician training at Technology Center of DuPage, Addison, IL	1998

EXPERIENCE:

Teaching, Extension and Research Appointments:

Assistant Professor, Department of Biological Engineering, University of Idaho, ID	2015 –
Instructor (10%), University of Washington, WWAMI Regional Medical Education Program (Idaho)	2016 –
Research Assistant Professor, Department of Mechanical Engineering, University of Akron, OH	2013 – 2015
Director, Conquer Chiari Research Center, University of Akron, OH	2012 – 2015
Scientist, Swiss Federal Institute of Technology, EPFL, Lausanne, Switzerland	2011 – 2012
Postdoctoral Fellow, Swiss Federal Institute of Technology, EPFL, Lausanne, Switzerland	2009 – 2011

Joint Faculty Appointments:

Joint Faculty, National Skull Base Center, CA	2017 –
Joint Faculty, California Institute of Neuroscience, CA	2017 –
Joint Faculty, University of Washington, Neurosurgery, WA	2016 –
Joint Faculty, Center for Modeling Complex Interactions, University of Idaho, ID	2016 –
Joint Faculty, Mechanical Engineering, University of Idaho, ID	2015 –

Academic Administrative Appointments: None.

Consulting and industry consortium membership:

Behavior Imaging Corp., Telemedicine consultant for autism evaluation technology	2017 –
Neurapheresis.org, Consortium advisor for CSF filtration technologies	2017 –
Minnetronix Neuro Corp., Consultant for CSF filtration technologies	2017 –
Cerebral Therapeutics Corp., Boulder, CO: Consultant for intra-ventricular drug delivery	2017 –
Alcyone Lifesciences Corp., Concord, MA: Consultant for medical device	2016 –
Voyager Therapeutics Corp., Cambridge, MA: Consultant for MRI assessment of intrathecal drug delivery	2014 – 2015
Medtrad Biosystems, Palo Alto, CA: Design consultant for anthropomorphic bioreactor	2011
Neurosyntec, Los Gatos, CA: Neurohydrodynamics consultant for funded NSF SBIR grant	2010 – 2011

Non-Academic Employment:

Baxter Healthcare, Biosurgery, Round Lake, IL: Industrial Project Research Assistant	2007
Motorola, Biomonitoring Group, Schaumburg, IL: Industrial Project Research Assistant	2005 – 2006
Hospira, New Product Technologies Group, Lake Forest, IL: Internship	2007
Baxter, Global R&D, Round Lake, IL: Internship	2005
Motorola, Civil Government Industrial Sector, Schaumburg, IL: Internship	2004
Sencon Sensors and Controllers, Bedford Park, IL: Design Engineer Internship	2002
Sencon Sensors and Controllers, Bedford Park, IL: Electronics Technician	2001

TEACHING ACCOMPLISHMENTS:

Areas of Specialization:

Cerebrospinal fluid dynamics, Biofluid Mechanics, Biomechanics, Biomedical Imaging, Instrumentation and Measurements, Neural Engineering.

Courses Taught:

University Courses Taught (% contribution)

ENGR335	*Fluid Mechanics,* Enrollment 55, University of Idaho (50%)	2018 S
BE 441	*Instrumentation and Measurements*, Enrollment = 9, University of Idaho (50%)	2017 F
BE 404/504	*Medical Imaging Techniques and Applications*, Enrollment = 4, University of Idaho (100%)	2017 S
ISEM 301	*Tech Startup Entrepreneurship*, Enrollment = 26, University of Idaho (80%)	2017 S
BE 404/504	*Neural Engineering*, Enrollment = 4, University of Idaho (100%)	2016 F
BE 404/504	*Medical Imaging Techniques and Applications*, Enrollment = 7, University of Idaho (100%)	2016 S

University Undergraduate Research Courses Taught (100%)

BE 299	*Neuroengineering Research*, Enrollment = 1, University of Idaho, Moscow, ID	2018 S
BE 499	*Neuroengineering Research*, Enrollment = 2, University of Idaho, Moscow, ID	2018 S
BE 499	*Neuroengineering Research*, Enrollment = 2, University of Idaho, Moscow, ID	2017 F
BE 499	*Neuroengineering Research*, Enrollment = 2, University of Idaho, Moscow, ID	2017 S
BE 499	*Neuroengineering Research*, Enrollment = 2, University of Idaho, Moscow, ID	2016 F
BE 499	*Neuroengineering Research*, Enrollment = 1, University of Idaho, Moscow, ID	2016 S
BIOL 401	*Undergraduate Student Research*, Enrollment = 1, University of Idaho, Moscow, ID	2015 F

WWAMI Teaching (10% FTE all semesters)

WWAMI	*Basic imaging of the chest, radiographs and CT*, Univ. of Washington Medical School	2018 S
WWAMI	*Breast Cancer Imaging*, Univ. of Washington Medical School	2017 F
WWAMI	*Basic imaging of the chest, radiographs and CT*, Univ. of Washington Medical School	2017 F
WWAMI	*Basic imaging of the chest, radiographs and CT*, Univ. of Washington Medical School	2017 S
WWAMI	*Pulmonary chest radiograph interpretation*, Univ. of Washington Medical School	2017 S
WWAMI	*Human Form and Function Module - Imaging*, Univ. of Washington Medical School	2016 F
WWAMI	*Breast Cancer Imaging*, Univ. of Washington Medical School	2016 F
WWAMI	*Ultrasound Imaging Physics and Applications*, Univ. of Washington Medical School	2016 S
WWAMI	*Ultrasound Imaging Spring Break Training Module*, Univ. Washington Medical School	2016 S

Engineering Design Capstone Project Mentorship

BE 479	*Engineering Design,* Project Sponsor "NeuroForce", University of Idaho, Moscow, ID	2017 F
BE 479	*Engineering Design,* Project Sponsor "NeuroTouch", University of Idaho, Moscow, ID	2017 S
BE 479	*Engineering Design,* Project Sponsor "CSF system", University of Idaho, Moscow, ID	2016 SF

Virtual Technology & Design Capstone Project Mentorship

VTD 457	*Capstone Design Studio I,* Project Sponsor "Neuroculus", University of Idaho, Moscow, ID	2017 F

Course Interactive Learning Field Trips Organized

INBRE	*Onboarding tour*, IRIC Neurophysiological Imaging and Modeling Laboratory	2017 S
ISEM 101	*Lab tour*, IRIC Neurophysiological Imaging and Modeling Laboratory	2017 S
ENGR 335	*Wind tunnel tour*, University of Idaho	2018 S
ENGR 335	*Open channel flow lab tour*, University of Idaho	2018 S
BE 404/504	*Integrated Sports Medicine and Rehabilitative Therapy Clinic*, Moscow, ID	2017 S
BE 404/504	*MR imaging facility tour*, Gritman Medical Center, Moscow, ID	2017 S

BE 404/504	*MR imaging facility tour*, Gritman Medical Center, Moscow, ID	2016 S
BE 404/504	*Neurorehabilitation tour*, St. Luke's Rehabilitation Institute tour, Spokane, WA	2016 F

Continuing Medical Education (CME) accredited teaching lectures

Accredited by the Accreditation Council for Continuing Medical Education (ACCME)

1. "Steady streaming: Computational fluid dynamics predicts non-zero time-averaged intrathecal CSF flow" American Society for Neuroradiology (Vancouver, Canada, 6/7, 2018).
2. "Translational research on subarachnoid trabeculae biomechanics" National Skull Base Center (Thousand Oaks, CA, 3/3, 2018).
3. "Engineering-based Methods for Static and Dynamic Assessment of Chiari malformation" XXIX ASAP Conference on Chiari I Malformation, Syringomyelia, and Related Disorders (Uniondale, NY, 6/20-23, 2017).
4. "Cerebellar and Brain Stem Deformation Assessment of Chiari Malformation" American Society of Neuroradiology (Washington D.C., U.S.A., 5/27/2016).
5. "Neurophysiological Imaging and Modeling in Health and Disease" University of Washington, Department of Neurosurgery (Seattle, WA, 12/2/2015).
6. "Cerebrospinal fluid dynamics in the spinal subarachnoid space," Neuroscience Forum, European Continuing Medical Training (Lausanne, Switzerland, 02/7-8, 2014).
7. "Coupled neurohydrodynamic modeling of the cardiovascular and cerebrospinal fluid system: insights gained and challenges that remain," European continuing medical training Neuroscience Forum, (Domaine de Divonne, Divonne-les-Bains, France, 12/16-17, 2011).

Students Advised:

Undergraduate Students

2018	advised to completion of degree = 0
2017	advised to completion of degree = 0
2016	advised to completion of degree = 0
2015	advised to completion of degree = 0

Student Advisees

#	Year	Type
12	2018	Undergraduate
3	2018	PhD
1	2018	MS
12	2017	Undergraduate
2	2017	PhD
1	2017	MS
8	2016	Undergraduate
2	2016	PhD
1	2016	MS
8	2015	Undergraduate
1	2015	PhD
1	2015	MS

Current Doctoral Candidates

Ph.D.	M. Khani	University of Idaho, Biological Engineering	Spring 2016 – Present	Major Professor
Ph.D.	L. Sass	University of Idaho, Biological Engineering	Fall 2016 – Present	Major Professor

Current Master's Candidates

M.S.	J. Rohr	University of Idaho, Biological Engineering	Fall 2016 – Present	Major Professor

Current Undergraduate Trainees

B.S.	Anson Lunstrum	University of Idaho, Biological Engineering	Spring 2018 – Present	Research Supervisor
B.S.	Elliott Marsden	University of Idaho, Biological Engineering	Spring 2018 – Present	Research Supervisor
B.S.	Elena Tipton	University of Idaho, Biological Engineering	Spring 2018 – Present	Research Supervisor
B.S.	Shavaine Byass	University of Idaho, Biological Engineering	Spring 2018 – Present	Research Supervisor
B.S.	Alexis Brooks	University of Idaho, Biological Engineering	Spring 2018 – Present	Research Supervisor

B.S.	K. McCain	University of Idaho, Computer Science	Summer 2017 – Present	Research Supervisor
B.S.	A. Sass	University of Idaho, Computer Science	Fall 2015 – Present	Research Supervisor
B.S.	S. Sater	University of Idaho, Biological Enginering	Spring 2017 – Present	Research Supervisor

Engineering Grand Challenge Scholar Trainees

B.S.	T. Freeman	University of Idaho, Computer Science	Fall 2015 – Present	Grand Scholar Mentor
B.S.	G. Conley	University of Idaho, Biological Engineering	Fall 2015 – Present	Grand Scholar Mentor

Current Medical School Trainees

N/A	B. Lawrence	University of Washington, Medical Program	Fall 2016 – Present	MSRTP Mentor

Completed Doctoral Students

Ph.D. S. Pahlavian — University of Akron, Mech. Engineering — Fall 2013 – Present — Committee Member
- Dissertation: Non-invasive assessment of cerebrospinal fluid and brain tissue biomechanics using MRI and CFD
- Current Position: Laboratory of Functional MRI Technology at University of Southern California

Ph.D. C. Majors — University of Idaho, Biological Engineering — Spring 2018 — Major Professor
- Dissertation: None (took job in industry)
- Current Position: Engineering Technician, XCraft, Coeur d'Alene, Idaho.

Ph.D. S. Thyagaraj — University of Akron — Spring 2016 — Co-Supervisor / Committee
- Dissertation: "In Vitro Investigation of CSF Dynamics in Chiari Malformation by 4D MRI"
- Current Position: Post-doctoral fellow, Case Western Reserve

Ph.D. S. Ashaat — Auckland U. of Tech. — Fall 2012 – 2015 — Committee Member
- Dissertation: "Understanding upper airway dynamic characteristics in OSA patients under treatment"
- Current Position: Lecturer in Refrigeration and Air Conditioning at Manukau Institute of Technology

Ph.D. N. Shaffer — The University of Akron — Fall 2015 — Co-Supervisor / Committee
- Dissertation: "MRI-Based Computational Modeling of CSF Dynamics in Chiari Malformation"
- Current Position: Quality Control Engineer, Cleveland, Ohio.

Ph.D. T. Yiallourou — EPFL, Switzerland — Fall 2012 – 2014 — Co-Director / Committee
- Dissertation: "Subject-Specific CFD modeling and measurement of CSF motion in the cervical spine"
- Current Position: Omeros Corporation, Senior Scientist, Seattle, Washington.

Ph.D. K. Shahim — EPFL, Switzerland — Fall 2009 – 2011 — Co-Supervisor / Committee
- Dissertation: "Bio Simulation of Brain Ventricle Dilation in Normal Pressure Hydrocephalus"
- Current Position: Postdoctoral Fellow, Inst. for Surgical Technology and Biomechanics, U. of Bern

Completed Master's Students

M.S. S. Mei — University of Idaho — 6/2016 – 12/2016 — Major Professor / Research Supervisor
- Thesis: N/A, transferred to another advisor.

M.S. S. Pahlavian — University of Tehran — Spring 2012 – 2013 — Research Co-Supervisor
- Thesis: "Numerical simulation of spinal cord nerve roots impacts on cervical CSF
- Current Position: Ph.D. student at the University of Akron

M.S. B. Anthikat — KTH Royal Inst. of Tech. — Fall 2011 — Thesis Co-Supervisor
- Thesis: "Continuous Positive Airway Pressure Impacts Cerebral Blood Flow and CSF Motion"

M.S. E. Coppens — EPFL — Fall 2010 — Thesis Co-Supervisor
- Thesis: "Assessment of the Impact of Placing An Aortic Graft Upon the Hemodynamics"
- Current Position: Ph.D. student at Katholieke Universiteit Leuven, KLIP

M.S. A. Picquot — Institut Supérieur de Mécanique — Fall 2010 — Thesis Co-Supervisor
- Thesis: "An in vivo MRI and CFD simulation of CSF hydrodynamics in the third ventricle"
- Current Position: Production and Maintenance Managers Assistant at Holcim

M.S. E. Farine — EPFL, Switzerland — Spring 2012 — 4-month Project Supervisor
- Thesis Project Report: "Measurement of Brain Volume Change Due to Acute Modification of ICP"
- Current Position: Ph.D. student at Swiss Federal Institute of Technology

M.S. A. Chiki — EPFL, Switzerland — Spring 2012 — 4-month Project Supervisor
- Thesis Project Report: "Lumbar spine cerebrospinal fluid velocity measurements in tethered cord"

M.S. A. Hirsch — EPFL, Switzerland — Fall 2011 — 4-month Project Supervisor
- Thesis Project Report: "Construction of a 3D Model of the Spinal Subarachnoid Space"
- Current Position: Ph.D. student at Swiss Federal Institute of Technology

M.S. L. Asboth — EPFL, Switzerland — Spring 2011 — 4-month Project Supervisor
- Thesis Project Report: "Comparison of 4D MRI flow measurements and 3D CFD simulation of CSF"
- Current Position: Ph.D. student at Swiss Federal Institute of Technology

M.S. C. Meuli — EPFL, Switzerland — Spring 2011 — 4-month Project Supervisor

- Thesis Project Report: "Pulse Wave Velocity in the Spinal Subarachnoid Space"
- Current Position: Ph.D. student at Swiss Federal Institute of Technology

Completed Undergraduate Research Students

B.S.	C. Majors	University of Idaho, Mechanical Enginering	Spring 2017 – Fall 2017	Research Supervisor
B.S.	B. Aldrimk	University of Idaho, Mechanical Enginering	Spring 2017 – Fall 2017	Research Supervisor
B.S.	L. Hold	University of Idaho, Biological Enginering	Spring 2017	Research Supervisor
B.A.	J. Oles	University of Idaho, Virtual Tech. & Design	Spring 2017 – Fall 2017	Research Co-supervisor
B.S.	J. Pluid	University of Idaho	Fall 2015 – Summer 2016	Research Supervisor
B.S.	C. Gibbs	University of Idaho	Fall 2015 – Summer 2016	Research Supervisor
B.S.	M. Vinicius	University of Idaho	Fall 2015 – Spring 2016	Research Supervisor
B.S.	A. Elliott	University of Idaho	Fall 2015 – Summer 2016	Research Supervisor
B.S.	V. Gomm	University of Idaho	Summer 2016	Research Supervisor
B.S.	M. V da Silva	University of Idaho	Fall 2015 – Spring 2016	Research Supervisor
B.S.	J. Havrilak	The University of Akron	Fall 2014 – Spring 2015	Senior Design Supervisor
B.S.	V. Traviso	The University of Akron	Summer 2014	Research Supervisor
B.S.	M. Dailey	The University of Akron	Fall 2014 – Spring 2015	Senior Design Supervisor
B.S.	D. Lemmer	The University of Akron	Summer 2014	Senior Design Supervisor
B.S.	L. Kostan	The University of Akron	Summer 2014	Research Supervisor
B.S.	J. Schlafer	Brown University	Summer 2014	Research Supervisor
B.S.	V. Traviso	The University of Akron	Summer 2014	Research Supervisor
B.S.	G. Margida	Grinnell College	Summer 2014	Research Supervisor
B.S.	R. Kenyon	The University of Akron	Spring 2013	Research Supervisor
B.S.	M. Wransky	The University of Akron	Fall 2013 – Spring 2014	Research Co-Supervisor
B.S.	D. McQuaide	Iowa State University	Fall 2013 – Summer 2014	Research Supervisor
B.S.	I. Pitteloud	EPFL	Spring 2013	Research Supervisor
B.S.	M. Majcher	The University of Akron	Fall 2012 – Spring 2013	Research Supervisor
B.S.	R. Kenyon	The University of Akron	Spring 2013	Research Supervisor
B.S.	J. Chishko	The University of Akron	Fall 2012	Research Supervisor
B.S.	J. Lazzara	The University of Akron	Fall 2012	Research Supervisor
B.S.	S. Metrailler	EPFL	Spring 2011	Research Supervisor
B.S.	A. DeMuralt	EPFL	Spring 2010	Research Supervisor
B.S.	G. Muller	EPFL	Spring 2010	Research Supervisor

Completed Medical Student Trainees

B.S.	P. Marty NE	Ohio Medical Univ.	Summer 2014	Research Supervisor

Completed High School Student Trainees

H.S.	K. McCain	University of Idaho	Summer 2017	Summer Research Supervisor
H.S.	N. Allen	The University of Akron	Summer 2014	Summer Research Supervisor
H.S.	D. McQuaide	The University of Akron	Summer 2013	Summer Research Supervisor
H.S.	M.Lowenkamp	The University of Akron	Summer 2013	Summer Research Supervisor
H.S.	J. Loth	The University of Akron	Summer 2013	Summer Research Supervisor

Materials Developed: (non-scholarship activity)

BBLearn Online Lecture Notes and Videos (21 lectures) for Instrumentation and Measurements	2017F
BBLearn Online Lecture Notes and Videos (21 lectures) for Neural Engineering	2016S
BBLearn Online Lecture Notes and Videos (21 lectures) for Medical Imaging Techniques and Applications	2015F

Courses Developed:

ISEM 301	*Tech Startup Entrepreneurship*, University of Idaho, Moscow, ID	2017 S
BE 404/504	*Neural Engineering*, University of Idaho, Moscow, ID	2016 F
BE 404/504	*Medical Imaging Techniques and Applications*, University of Idaho, Moscow, ID	2016 S

Non-credit Classes, Workshops, Seminars, Invited Lectures, etc.:

BE 142	*Course lecture*, Engineering for Living Systems, University of Idaho, Moscow, ID	2016 F
BE 142	*Course lecture*, Engineering for Living Systems, University of Idaho, Moscow, ID	2015 F
ISEM 101	*Course lecture*, Engineering Grand Challenges, University of Idaho, Moscow, ID	2017 S

Honors and Awards:

UW Medicine, WWAMI Pro Recognition, Award for professionalism in learning, Seattle, WA	2017
Appointed Joint Faculty, California Institute of Neuroscience, CA	2017 –
Appointed Joint Faculty, National Skull Base Center, CA	2017 –
Appointed Joint Faculty, Neurosurgery, University of Washington, WA	2016 –

SCHOLARSHIP ACCOMPLISHMENTS:

Publication summary

- 41 peer-reviewed full-length journal publications [1-41] and recently accepted publications.
- 5 peer-reviewed publications presently under review (full text available upon request)
- Corresponding author for 18 peer-reviewed full-length journal publications.
- Three review papers in cerebrospinal fluid dynamics
- Scopus: 361 citations by 185 documents with h-index = 13, as of 1/11/2017, ID: 8683613700
- 58 peer-reviewed documents indexed in Scopus: http://www.scopus.com/authid/detail.url?authorId=8683613700
- 74 peer-reviewed documents indexed in Web of Science: http://www.researcherid.com/rid/N-6640-2016

Peer reviewed full-length journal publications

Recently accepted publications *(full text provided upon request)*

- None at present

Publications under review *(full text provided upon request)*

1. Khani M, Sass LR, Xing T, Sharp MK, Baledent O, Martin BA*, "Anthropomorphic Model of Intrathecal Cerebrospinal Fluid Dynamics Within the Spinal Subarachnoid Space: Spinal Cord Nerve Roots Increase Steady-Streaming," (Under Review).
2. Lawrence BJ, Urbizu A, Allen PA, Loth F, Tubbs RS, Bunck A, Kroeger JR, Madura C, Chen JA, Luciano MG, Ellenbogen RG, Oshinski JN, Martin BA*, "*Cerebellar tonsil ectopia measurement in type I Chiari malformation patients show poor inter-operator reliability*," (Under Review).
3. Lawrence BJ, Luciano MG, Tew J, Ellenbogen RG, Oshinski JN, Loth F, Culley AP, Martin BA*, "*Cardiac-related spinal cord tissue motion at the foramen magnum is elevated in Type I Chiari malformation patients and decreases post-decompression surgery*." (Under Review).
4. Luciano MG, Batzdorf U, Kula RW, Rocque BG, Maher CO, Heiss J, Martin BA, Bolognese P, Ashley-Koch A, Limbrick D, Poppe DJ, Esposito KM, Odenkirchen J, Conwit R, McNeil E, Nuckolls G, Rubinstein Y, Ury TK, Ala'i S, Feldman R, "*Development of common data elements for use in Chiari Malformation Type I clinical research: a National Institute for Neurological Disorders and Stroke project*." (Under Review).
5. Sharp MK, Carare R, Martin BA, "*Dispersion in porous media in oscillatory flow between flat plates: Applications to intrathecal and perivascular solute transport in the central nervous system*." (Under Review).

Published *(full text provided upon request)*

1. Houston JR, Hughes ML, Lien MC, Martin BA, Loth F, Luciano MG, Vorster S, Allen PA (2018), "*An Electrophysiological Study of Cognitive and Emotion Processing in Type I Chiari Malformation*." Cerebellum. https://www.ncbi.nlm.nih.gov/pubmed/29383659
2. Al-Jumaily AM, Ashaat S, Martin B, Pohle-Krauza R, Krauza M, Dan A, Zografakis J (2018), "*A pilot study on the biomechanical assessment of obstructive sleep apnea pre and post bariatric surgery*." Respir Physiol Neurobiol, 250: 1-6. https://www.ncbi.nlm.nih.gov/pubmed/29339193
3. Eppelheimer MS, Houston JR, Bapuraj JR, Labuda R, Loth DM, Braun AM, Allen NJ, Pahlavian SH, Biswas D, Urbizu A, Martin BA, Maher CO, Allen PA, Loth F (2018), "*A Retrospective 2D Morphometric Analysis of Adult Female Chiari Type I Patients with Commonly Reported and Related Conditions*." Frontiers in Neuroanatomy, 12. https://doi.org/10.3389/fnana.2018.00002
4. Mortazavi MM, Quadri SA, Khan MA, Gustin A, Suriya SS, Hassanzadeh T, Fahimdanesh KM, Adl FH, Fard SA, Taqi MA, Armstrong I, Martin BA, Tubbs RS (2017), "*Subarachnoid Trabeculae: A comprehensive review of their embryology, histology, morphology and surgical significance*." World Neurosurg. https://www.ncbi.nlm.nih.gov/pubmed/29269062
5. Sass LR, Khani M, Natividad GC, Tubbs RS, Baledent O, Martin BA (2017), "*A 3D subject-specific model of the spinal subarachnoid space with anatomically realistic ventral and dorsal spinal cord nerve rootlets*." Fluids Barriers CNS, 14: 36. https://www.ncbi.nlm.nih.gov/pubmed/29258534
6. Yildiz S, Thyagaraj S, Jin N, Zhong X, Heidari Pahlavian S, Martin BA, Loth F, Oshinski J, Sabra KG (2017), "*Quantifying the influence of respiration and cardiac pulsations on cerebrospinal fluid dynamics using real-time phase-contrast MRI*." J Magn Reson Imaging, 46: 431-439. https://www.ncbi.nlm.nih.gov/pubmed/28152239

7. Haga PT, Pizzichelli G, Mortensen M, Kuchta M, Pahlavian SH, Sinibaldi E, Martin BA, Mardal KA (2017), "*A numerical investigation of intrathecal isobaric drug dispersion within the cervical subarachnoid space*." PLoS One, 12: e0173680. https://www.ncbi.nlm.nih.gov/pubmed/28296953
8. Khani M, Xing T, Gibbs C, Oshinski JN, Stewart GR, Zeller JR, Martin BA (2017), "*Nonuniform Moving Boundary Method for Computational Fluid Dynamics Simulation of Intrathecal Cerebrospinal Flow Distribution in a Cynomolgus Monkey*." J Biomech Eng, 139. https://www.ncbi.nlm.nih.gov/pubmed/28462417
9. Urbizu A, Martin BA, Moncho D, Rovira A, Poca MA, Sahuquillo J, Macaya A, Espanol MI (2017), "*Machine learning applied to neuroimaging for diagnosis of adult classic Chiari malformation: role of the basion as a key morphometric indicator*." J Neurosurg: 1-13. https://www.ncbi.nlm.nih.gov/pubmed/29053075
10. Urbizu A, Ferre A, Poca MA, Rovira A, Sahuquillo J, Martin BA, Macaya A (2017), "*Cephalometric oropharynx and oral cavity analysis in Chiari malformation Type I: a retrospective case-control study*." J Neurosurg, 126: 626-633. https://www.ncbi.nlm.nih.gov/pubmed/27153161
11. Thyagaraj S, Pahlavian SH, Sass LR, Loth F, Vatani M, Choi JW, Tubbs RS, Giese D, Kroger JR, Bunck AC, Martin BA (2017), "*An MRI-Compatible Hydrodynamic Simulator of Cerebrospinal Fluid Motion in the Cervical Spine*." IEEE Trans Biomed Eng. https://www.ncbi.nlm.nih.gov/pubmed/28961100
12. Khalsa SSS, Geh N, Martin BA, Allen PA, Strahle J, Loth F, Habtzghi D, Urbizu Serrano A, McQuaide D, Garton HJL, Muraszko KM, Maher CO (2017), "*Morphometric and volumetric comparison of 102 children with symptomatic and asymptomatic Chiari malformation Type I*." J Neurosurg Pediatr: 1-7. https://www.ncbi.nlm.nih.gov/pubmed/29125445
13. Houston JR, Eppelheimer MS, Pahlavian SH, Biswas D, Urbizu A, Martin BA, Bapuraj JR, Luciano M, Allen PA, Loth F (2017), "*A morphometric assessment of type I Chiari malformation above the McRae line: A retrospective case-control study in 302 adult female subjects*." J Neuroradiol. https://www.ncbi.nlm.nih.gov/pubmed/28826656
14. Pizzichelli G, Kehlet B, Evju O, Martin BA, Rognes ME, Mardal KA, Sinibaldi E (2017), "*Numerical study of intrathecal drug delivery to a permeable spinal cord: effect of catheter position and angle*." Comput Methods Biomech Biomed Engin: 1-10. https://www.ncbi.nlm.nih.gov/pubmed/29119834
15. Urbizu A, Ferre A, Poca MA, Rovira A, Sahuquillo J, Martin BA, Macaya A (2016), "*Cephalometric oropharynx and oral cavity analysis in Chiari malformation Type I: a retrospective case-control study*." J Neurosurg: 1-8. http://www.ncbi.nlm.nih.gov/pubmed/27153161
16. Heidari Pahlavian S, Bunck AC, Thyagaraj S, Giese D, Loth F, Hedderich DM, Kroger JR, Martin BA (2016), "*Accuracy of 4D Flow Measurement of Cerebrospinal Fluid Dynamics in the Cervical Spine: An In Vitro Verification Against Numerical Simulation*." Ann Biomed Eng, 44: 3202-3214. https://www.ncbi.nlm.nih.gov/pubmed/27043214
17. Bapuraj JR, Londy FJ, Delavari N, Maher CO, Garton HJ, Martin BA, Muraszko KM, Ibrahim el SH, Quint DJ (2016), "*Cerebrospinal fluid velocity amplitudes within the cerebral aqueduct in healthy children and patients with Chiari I malformation*." J Magn Reson Imaging, 44: 463-470. https://www.ncbi.nlm.nih.gov/pubmed/26788935
18. Alves T, Ibrahim E, Martin BA, Malyarenko D, Maher C, Muraszko K, Garton HJ, Srinivasan A, Bapuraj RJ (2016), "*Principles, Techniques, and Clinical Applications of Phase Contrast Magnetic Resonance Cerebrospinal Fluid Imaging*." Neurographics, Accepted. http://dx.doi.org/10.3174/ng.3170204
19. Martin BA, Yiallourou TI, Pahlavian SH, Thyagaraj S, Bunck AC, Loth F, Sheffer DB, Kroger JR, Stergiopulos N (2016), "*Inter-operator Reliability of Magnetic Resonance Image-Based Computational Fluid Dynamics Prediction of Cerebrospinal Fluid Motion in the Cervical Spine*." Ann Biomed Eng, 44: 1524-1537. https://www.ncbi.nlm.nih.gov/pubmed/26446009
20. Heidari Pahlavian S, Bunck AC, Loth F, Shane Tubbs R, Yiallourou T, Kroeger JR, Heindel W, Martin BA (2015), "*Characterization of the discrepancies between four-dimensional phase-contrast magnetic resonance imaging and in-silico simulations of cerebrospinal fluid dynamics*." J Biomech Eng, 137: 051002. https://www.ncbi.nlm.nih.gov/pubmed/25647090
21. Yiallourou TI, Daners MS, Kurtcuoglu V, Haba-Rubio J, Heinzer R, Fornari E, Santini F, Sheffer DB, Stergiopulos N, Martin BA (2015), "*Continuous positive airway pressure alters cranial blood flow and cerebrospinal fluid dynamics at the craniovertebral junction*." Interdisciplinary Neurosurgery-Advanced Techniques and Case Management, 2: 152-159. http://www.sciencedirect.com/science/article/pii/S2214751915300050
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Peer-reviewed extended conference proceedings (greater than 2 pages)

1. Loth F, Pahlavian SH, Amini R, Shaffer N, Martin BA, Zhong X, Oshinski J, "Computational Tools to Assess Impedance, Pressure and Strain for Subjects With Chiari Malformation," 5th International Conference on Computational and Mathematical Biomedical Engineering – CMBE2017 (Pittsburgh, PA, USA, 4/10-12, 2017)
2. Martin BA*, Yiallourou TI, Stergiopulos N, "Quantitative comparison of 4D MRI flow measurements to 3D CFD simulation of cerebrospinal fluid movement in the spinal subarachnoid space," International Conference on Computational Fluid Dynamics in Medicine and Biology (Dead Sea, Israel, 03/25-30, 2012).
3. Yiallourou TI, Asboth L, Kroeger JR, Maintz D, Bunck AC, Martin BA, Stergiopulos N, "Quantitative comparison of 4D MRI flow measurements to 3D CFD simulation of cerebrospinal fluid movement in the spinal subarachnoid space," 10th International Workshop on Biomedical Engineering (Kos, Greece, 10/5-7, 2011).

4. Yazicioglu Y, Martin BA, Navarro K, Royston TJ, "Transverse vibration of pre-stressed beams: An experimental technique for the determination of dynamic viscoelastic material properties of tissue mimicking materials," 152nd Meeting of the Acoustical Society of America (Paris, France, 5/29-6/4, 2008).

Keynote and grand rounds lectures

1. "Neurophysiological Imaging and Modeling in Health and Disease" University of Washington, Department of Neurosurgery, Grand Rounds (Seattle, WA, 12/2/2015).
2. "Characterization and modeling of Chiari malformation," National Institutes of Health (NIH), National Institutes of Neurological Disorders and Stroke, Grand Rounds (Bethesda, MD, 11/13, 2014).
3. "Progress in Chiari malformation research at the University of Akron," Akron General Hospital Post-grad Research Symposium (Akron, OH, 06/06, 2013).
4. "Syringomyelia biomechanics," NIH – National Institute of Neurological Disorders and Stroke, Grand Rounds (Bethesda, Maryland, 2/5, 2008).

Invited lectures (*published as conference abstracts)

1. "Translational research on subarachnoid trabecuale biomechanics" National Skull Base Center (Thousand Oaks, CA, 3/3, 2018).
2. "Quantitative MRI-based Diagnostics for Chiari Malformation" Chiari and Syringomyelia Foundation, Think Tank (Boston, MA, 10/7, 2017).
3. "Convection Enhanced Rational Intrathecal Delivery Based on CSF Dynamics" Biogen (Boston, MA, 8/14, 2017).
4. "Numerical modeling of intrathecal cerebrospinal fluid dynamics" Idaho NIH IDeA INBRE Conference (Moscow, ID, 8/2, 2017).
5. "Biophysics of Chiari malformation" 13th Symposium of the International Hydrocephalus Imaging Working Group (Kobe, Japan, 9/25-26, 2017).
6. "Engineering-based Methods for Static and Dynamic Assessment of Chiari malformation" American Syringomyelia and Chiari Alliance Project Annual Conference (Long Island, NY, 7/20-23, 2017)*.
7. "MRI-based quantification of CSF dynamics in ALS patients: a prospective case-control study" Inland Northwest Movement Disorder Society, 3rd Annual Meeting (Spokane, WA, 9/7-8, 2017).
8. "Are monkeys like humans? Comparison of intrathecal CSF dynamics across mammalian species" International Cerebrospinal Fluid Dynamics Society (Atlanta, Georgia, 6/19-20/2017)*.
9. "MRI-based biomarkers for characterization of amyotrophic lateral sclerosis" Clinical Translational Research Infrastructure Network, University of Nevada Las Vegas (Las Vegas, NV, 5/16, 2017)*.
10. "MRI Assessment of CSF Dynamics and Geometry in Non-human Primates" International Society for Hydrocephalus and Cerebrospinal Fluid Disorders (ISHCSF) (Cartagena, Colombia, 10/10/2016)*.
11. "Cerebellar and Brain Stem Deformation Assessment of Chiari Malformation" American Society of Neuroradiology (Washington D.C., U.S.A., 5/27/2016)*.
12. "Measurement and Modeling of Intracranial Fluid Dynamics and Morphology" Washington State University (Spokane, WA, 01/11/2016).
13. "Reliability of 4D Phase Contrast MRI for detection of CSF flow velocities" IHIWG / ISHCSFD Conference (Banff, Canada, 9/18, 2015).
14. "How reliable is phase-contrast MRI detection of CSF flow in Chiari malformation?" American Syringomyelia and Chiari Alliance Project Annual Conference (Ann Arbor, MI, 7/22-25, 2015).
15. "Assessment of cephalometric measurement reliability in type 1 Chiari malformation," American Society of Neuroradiology, CSF flow study group (Chicago, IL, 5/1, 2015).
16. "Characterization and modeling of cerebrospinal fluid dynamics in health and disease," Medtronic Neuro Forum Internal Lecture (Minneapolis, MN, 3/6, 2015).
17. "Reliability of CSF flow detection in Chiari malformation: an in vitro assessment of 4D phase-contrast MRI," American Syringomyelia and Chiari Alliance Project (ASAP) Annual Meeting, University of Michigan (Ann Arbor, MI, 7/22-25, 2015).
18. "Biomechanical characterization of Chiari malformation: morphometrics, CSF dynamics, and neuromechanics," Conquer Chiari Research Conference (Akron, OH, 11/8-9, 2014).
19. "In vitro comparison of 4D and 2D PC MRI assessment of CSF dynamics," International Hydrocephalus Imaging Working Group (IHIWG) (Bristol, UK, 9/5-6, 2014).
20. "Measurement and modeling of cerebrospinal fluid dynamics in health and disease," Voyager Therapeutics (Cambridge, MA, 7/9, 2014).
21. "Characterization and modeling of cerebrospinal fluid dynamics in Chiari Malformation," World Congress on Biomechanics, American Society of Mechanical Engineers Summer Bioengineering Conference (Boston, MA, 7/5-11, 2014)*.
22. "Cerebrospinal fluid dynamics in the spinal subarachnoid space," Neuroscience Forum, European Continuing Medical Training (Lausanne, Switzerland, 02/7-8, 2014).

23. "Characterization and modeling of cerebrospinal fluid dynamics: a field rich in complexity with many questions to answer," 7th World Congress on Biomechanics (Boston, Ma, U.S.A., 07/6-11, 2014)*.
24. "Spinal cord nerve roots and denticulate ligaments alter CSF dynamics in the upper cervical spine," 2nd International CSF dynamics symposium (Manhasset, New York, U.S.A., 06/24-25, 2013)*.
25. "Engineering insights into CSF flow dynamics at the craniovertebral junction," 51st Annual Meeting and The Foundation of the American Society of Neuroradiology Symposium, Hydrocephalus and CSF flow group meeting (San Diego, CA, 05/18-23, 2013).
26. "The importance of cerebrospinal fluid dynamics in craniospinal disorders," University of Illinois at Chicago, Department of Biomedical Engineering Lecture Series (Chicago, IL, 05/03, 2013).
27. "Chiari what? Using engineering principles to help understand biomechanics of a rare brain disorder called Chiari malformation," University of Akron, Research for Lunch Lecture Series (Akron, Ohio, 03/13, 2013).
28. "4D MRI applied to the investigation of Chiari & syringomyelia," Conquer Chiari Research Conference (Chicago, IL, 11/8-9, 2012).
29. "Neurohydrodynamics in the cervical spine," American Syringomyelia and Chiari Alliance Project Research Conference, Children's National Medical Center (Washington D.C., 07/18-21, 2012).
30. "4D MRI quantification of CSF velocities with comparison to computational fluid dynamics simulations," American Society of Neuroradiology 50th Annual Meeting, CSF and Hydrocephalus Study Group (New York, 04/26-27, 2012).
31. "Research trends in neurohydrodynamics," Nagoya Institute of Technology symposium on bioengineering, (Nagoya, Japan, 03/08, 2012).
32. "Coupled neurohydrodynamic modeling of the cardiovascular and cerebrospinal fluid system: insights gained and challenges that remain," European continuing medical training Neuroscience Forum, (Domaine de Divonne, Divonne-les-Bains, France, 12/16-17, 2011).
33. "Neurohydrodynamics: an engineering perspective," Department of Neuroradiology at the University Hospital of Münster, (Münster, Germany, 8/25, 2011).
34. "Simulation of CSF in the spinal subarachnoid space and spinal cord blood flow," 1st International Cerebrospinal Fluid Engineering Conference, (Zurich, Switzerland, 7/22-25, 2011)*.
35. "In vitro modeling of syrinx progression," Conquer Chiari Research Conference: New Developments and Controversies (Chicago, IL, 11/12, 2010).
36. "Cerebrospinal fluid biomechanics: an engineering perspective," Service de Neurologie Maladies Cérébro-Vasculaires, Centre Hospitalier Universitaire Vaudois (Lausanne, Switzerland 09/31, 2010).
37. "In vitro modeling of the spinal subarachnoid space," 6th World Congress on Biomechanics (Singapore, 09/1-6, 2010)*.
38. "An engineering analysis of syringomyelia," University of Illinois at Chicago, Department of Radiology, MRI Research Laboratory (Chicago, Illinois, 10/24, 2008).
39. "In vitro syringomyelia hydrodynamics," Ecole Polytechnique Fédérale de Lausanne (Lausanne, Switzerland, 9/16, 2008).

Conference presentations with published abstracts

1. Lad SP, Sass LR, Khani M, Byass S, McCabe A, Verbick LZ, Baledent O, Martin BA, "An Experimental and Computational Platform for Neurapheresis: Cerebrospinal Fluid Filtration Device and Protocol Optimization" Congress of Neurological Surgeons Annual Meeting (Houston, TX, 10/6-10, 2018).
2. Freund J, Singh D, Arzumand A, Sass LR, Byass S, Martin BA, Anand PJ, "Intrathecal Drug Delivery Platform for Gene Therapy: An In Vitro & In Vivo Delivery Study," American society of Gene and Cell Therapy Annual Meeting (Chicago, IL, 5/16-19, 2018).
3. Conley Natividad GC, Sass LR, Baledent O, Lad N, Mortazavi M, Tubbs RS, Martin BA, "3D anatomic model and quantitative assessment of 38 intracranial cerebrospinal fluid cisterns and cortical subarachnoid space," World Congress of Biomechanics (Dublin, Ireland, 7/9-12, 2018).
4. Freeman TS, Sass LR, Khani M, McCain K, Carter GT, Weeks DL, Petersen, Martin BA, "Quantification of Intrathecal Cerebrospinal Fluid Dynamics in Patients with Amyotrophic Lateral Sclerosis and Comparison to Controls," World Congress of Biomechanics (Dublin, Ireland, 7/9-12, 2018).
5. Sass LR, Byass S, Singh D, Arzumand A, Freund J, Anand PJ, Martin BA, "3D Printed In Vitro Platform for Investigation of Cerebrospinal Fluid Solute Transport Within the Intrathecal Spinal Subarachnoid Space," World Congress of Biomechanics (Dublin, Ireland, 7/9-12, 2018).
6. Sharp MK, Martin BA, Carare RO, "Shear-augmented dispersion in porous media in the periarterial and spinal subarachnoid spaces," World Congress of Biomechanics (Dublin, Ireland, 7/9-12, 2018).
7. Lawrence BJ, Ellenbogen RG, Luciano MG, Martin BA, "Elevated spinal cord tissue motion at the foramen magnum is an indicator of symptomatic chiari malformation," Western Medical Research Conference (Carmel, CA, 1/25-27/2018).
8. Ethier CR, Myers JG, Nelson E, Martin BA , Oshinski JN, Samuels B, Feola AJ, "Effects of CSF pressure on the eye: a computational-experimental comparison," NASA Human Research Investigator's Workshop (Galveston, TX, 1/22-25/2018).

9. Rohr JJ, Sass AM, Sater S, Macias B, Oshinski JN, Ethier CR, Stenger M, Martin BA, "MRI-based quantification of optic nerve tortuosity and subarachnoid space 3d geometry: reliability assessment," NASA Human Research Investigator's Workshop (Galveston, TX, 1/22-25/2018).
10. Sass LR, Khani M, Gibbs C, Freeman T, Pluid J, Elliott A, Oshinski JN, Zeller J, Stewart GR, Powell D, Petersen B, Weeks D, Carter G, Martin BA, "Quantitative assessment of intrathecal cerebrospinal fluid dynamics and geometry across large mammalian species," Hydrocephalus 2017 (Kobe, Japan, 10/23-25/2017).
11. Rohr JJ, Sass AM, Sater S, Aldrimk B, Stenger M, Macias B, Ethier CR, Sargsyan A, Martin BA, "Inter-operator Reliability Assessment of Optic Nerve Tortuosity in Long-duration Flight Astronauts," 33rd Annual Meeting of the American Society for Gravitational and Space Research (Seattle, WA, 10/25-28/2017).
12. Sass LR, Conley G, Cleveley B, Khani M, Xing T, Baledent O, Martin BA, "Neurochi: A virtual reality and in vitro model of the CSF system for teaching and research," Hydrocephalus 2017 (Kobe, Japan, 10/23-25/2017).
13. Sharp MK, Martin BA, Carrare R, "Analytic Darcy-Brinkman model for prediction of Shear-augmented dispersion in the BAsement Membranes and spinal subarachnoid space," International Cerebrospinal Fluid Dynamics Society (Atlanta, Georgia, 6/19-20/2017).
14. LR Sass, M Khani, O Baledent, BA Martin, "An in vitro model of intrathecal cerebrospinal fluid dynamics with dorsal and ventral spinal cord nerve rootlets," Summer Bioengineering, Biomechanics and Biotransport (Tucson, AZ, 6/21-24, 2017).
15. Sharp MK, Carrare R, Martin BA, "Shear-Augmented Dispersion Affects Cerebrospinal Fluid Solute Transport in the Subarachnoid Space but not within the Basement Membranes in the Brain," Summer Bioengineering, Biomechanics and Biotransport (Tucson, AZ, 6/21-24, 2017).
16. Khani M, Xing T, Gibbs C, Oshinski J, Stewart GR, Zeller JR, Martin BA, "CFD model and MRI measurement of intrathecal cerebrospinal fluid dynamics in a cynomolgus monkey," PhD Student Paper Finalist, Biomechanics – Fluids, Summer Bioengineering, Biomechanics and Biotransport (Tucson, AZ, 6/21-24, 2017).
17. Nelson ES, Myers JG, Lewandowski B, Feola AJ, Werner C, Raykin J, Martin BA, Samuels B, Ethier CR, "Ocular modeling for VIIP syndrome: how experimental and numerical studies can collaborate," NASA Human Research Program Investigators Workshop (Galveston, TX, 1/24, 2017).
18. Martin BA, Loth F, Luciano MG, "CSF fluid dynamics in Chiari malformation: a MRI study of longitudinal impedance," International Society for Hydrocephalus and CSF Disorders (Cartagena, Colombia, 10/8-11, 2016).
19. Bapuraj JR, Londy FJ, Martin BA, Ibrahim EH, Maher CO, Garton HJ, Muraszko KM, "New Parameters for Assessing CSF flow at the Cerebral Aqueduct and Craniovertebral Junction in Normal Subjects and Pediatric Chiari I malformations," American Society of Neuroradiology (Washington D.C., U.S.A., 4/26-27, 2016).
20. Loth F, Shaffer N, Pahlavian SH, Luciano MG, Oshinski JN, "Quantitative Assessment of the Differences in the Resistance to Spinal CSF Motion in Chiari Malformation," 3rd bi-annual meeting of the International CSF dynamics society (Amiens, France, 7/9-10, 2015).
21. Martin BA, Shaffer N, Oshinski JN, Luciano MG, Loth F, "Neural tissue deformation and cerebrospinal fluid flow impedance are positively correlated at the craniocervical junction," Summer Bioengineering Biotransport and Biomechanics Meeting (Snowbird, UT, USA, 6/17-20, 2015).
22. Majcher MJ, Dailey MR, Lemmer DP, Havrilak JT, Leipzig N, Martin BA, "Design of a 3D bioreactor for simulation of cerebrospinal fluid flow in the third ventricle and aqueduct of sylvius," Summer Bioengineering Biotransport and Biomechanics Meeting (Snowbird, UT, USA, 6/17-20, 2015).
23. Pahlavian SH, Loth F, Luciano MG, Martin BA, "A patient specific computational model to characterize the impact of neural tissue motion on cerebrospinal fluid dynamics at the cervical-medullary junction," Summer Bioengineering Biotransport and Biomechanics Meeting (Snowbird, UT, USA, 6/17-20, 2015).
24. Thyagaraj S, Giese D, Santini F, Fornari E, Bunck AC, Loth F, Martin BA, "Multicenter comparision of 4D phase contrast MRI measurement of cerebrospinal fluid dynamics in the cervical spine," Summer Bioengineering Biotransport and Biomechanics Meeting (Snowbird, UT, USA, 6/17-20, 2015).
25. Al-Jumaily A, Ashaat S, Martin BA, Pohle-Krauza R, Krauza ML, "Bariatric surgery improvements for obstructive sleep apnea patients," Summer Bioengineering Biotransport and Biomechanics Meeting (Snowbird, UT, USA, 6/17-20, 2015).
26. Loth F, Martin BA, Pahlavian S, Shaffer N, Oshinski JN, Luciano MG, "CFD simulation of cerebrospinal fluid motion to assess Chiari malformation severity," International conference on CFD in medicine and biology (Albufeira, Portugal, 9/30-10/4, 2015).
27. Marty P, Urbizu A, Macaya A, Sahuquillo J, Poca MA, Martin BA, "Gender-specific differences in adult type I Chiari malformation morphometrics," 67th Meeting of the American Academy of Neurology (Washington, DC, 4/18-25, 2015).
28. Luciano M, Martin BA, Loth F, "Is Chiari malformation a structure or a movement? Cleveland Clinic-Conquer Chiari Collaboration," Chiari and Syringomyelia Foundation Research Colloquium (Boston, MA, 10/18, 2014).
29. Bapuraj R, Martin BA, "2D PC MRI assessment of Chiari malformation" International Hydrocephalus Imaging Working Group (IHIWG) (Bristol, UK, 9/5-6, 2014).
30. Kroger JR, Thyagaraj S, Giese D, Hedderich D, Morsdorf-Shulte RL, Maintz DC, Yiallourou TI, Bunck AC, Martin BA, "4D-phase-contrast evaluation of cerebrospinal fluid dynamics in a rigid-wall 3D printed in-vitro model of Chiari I

Malformation with idealized spinal cord nerve roots," 100th Meeting of the Radiological Society of North America (Chicago, IL, 11/30-12/5, 2014).

31. Pahlavian SH, Bunck AC, Tubbs RS, Yiallourou TI, Loth F, Martin BA, "4D phase-contrast magnetic resonance imaging of cerebrospinal fluid velocities in the cervical spine and quantitative comparison to computational fluid dynamics," Midwest American Society of Biomechanics Regional Meeting (Akron, OH, 3/4-5, 2014).
32. Thyagaraj S, Pahlavian SH, Vatani M, Choi J, Goodin M, Bunck AC, Yiallourou TI, Loth F, Martin BA, "3D printed model for simulation of cerebrospinal fluid motion in the cervical spinal subarachnoid space," Midwest American Society of Biomechanics Regional Meeting (Akron, OH, 3/4-5, 2014).
33. Shaffer N, Martin BA, Dombrowski S, Luciano MG, Tew JM, Loth F, "Investigation of post-surgical changes to cerebrospinal fluid flow impedance in type I Chiari malformation patients," Midwest American Society of Biomechanics Regional Meeting (Akron, OH, 3/4-5, 2014).
34. Alves T, Bapuraj JR, Malyarenko D, Martin BA, Srinivasan A, "Principles, Techniques and Clinical Applications of Phase Contrast MRI Cerebrospinal Fluid Imaging," 52nd Annual Meeting and The Foundation of the ASNR Symposium (Montreal, Canada, 5/17-22).
35. Mortensen M, Mardal KA, Pahlavian SH, Martin BA, "Preliminary study of the impact of spinal cord nerve roots and denticulate ligaments on drug movement in the cervical spinal subarachnoid space," 11th World Congress on Computational Mechanics (WCCM XI), 5th European Conference on Computational Mechanics (ECCM V), 6th European Conference on Computational Fluid Dynamics (ECFD VI) (Barcelona, Spain, 6/20-25, 2014)
36. Yiallourou TI, Luciano M, Loth F, Bunck AC, Stergiopulos N, Martin BA, "Inter-operator dependence of subject specific CFD modeling of cerebrospinal fluid dynamics at the craniocervical junction," International Society for Magnetic Resonance in Medicine (Milan, Italy, 5/10-16, 2014).
37. Martin BA, Shaffer N, Lowenkamp M, Loth F, Tew JM, Luciano MG, "Clinical importance of neural tissue deformation in type I Chiari malformation," American Society of Pediatric Neurosurgeons (Costa Rica, 1/26-31, 2014).
38. Shaffer N, Martin BA, Dombrowski S, Luciano MG, Tew JM, Oshinski JN, Loth F, "Quantitative Assessment of the Differences in Spinal CSF Dynamics in Chiari Malformation," 2nd International CSF dynamics symposium (Manhasset, New York, U.S.A., 6/24-25, 2013).
39. Shaffer N, Martin BA, Rocque B, Madura C, Iskandar B, Wieben O, Dombrowski S, Luciano MG, Oshinski JN, Loth F, "The relation of cerebrospinal fluid flow impedance and cerebellar herniation in type I Chiari malformation," ASME Summer Bioengineering Conference (Sun River, Oregon, U.S.A., 6/26-29, 2013).
40. Al-Jumaily AM, Ashaat S, Martin BA, Heinzer R, Haba-Rubio J, Stergiopulos N, "Uvula dynamic characteristics," ASME Summer Bioengineering Conference (Sun River, Oregon, U.S.A., 6/26-29, 2013).
41. Bertram CD, Elliott NSJ, Martin BA, Brodbelt AR, "The contribution of engineering modelling to the understanding of syringomyelia pathogenesis: a review," Syringomyelia 2013 (Sydney, Australia, 2/27-3/1, 2013).
42. Bapuraj JR, Londy F, Maher CO, Martin BA, Quint DJ, Sundgren PA, Chenevert TC, Muraszco KA, "Dynamic MRI and quantitative MRI CSF flow studies in Chiari I malformations," Conquer Chiari Research Conference (Chicago, IL, 11/8-9, 2012).
43. Bapuraj JR, Londy F, Maher CO, Martin BA, Quint DJ, Sundgren PA, Chenevert TC, Muraszco KA, "The influence of neck position on CSF velocities at the cranio-cervical junction and the aqueduct of Sylvius in healthy subjects and pre- and post-operative patients with Chiari I malformation," American Society of Neuroradiology 50th Annual Meeting (New York, NY, 4/21-26, 2012).
44. Martin BA, Yiallourou TI, Stergiopulos N, "Quantitative comparison of 4D MRI flow measurements to 3D computational fluid dynamics simulation of cerebrospinal fluid movement in the spinal subarachnoid space," International Conference on Computational Fluid Dynamics in Medicine and Biology (Dead Sea, Israel, 3/25-30, 2012).
45. Yiallourou TI, Odier C, Martin BA, Haba-Rubio J, Heinzer R, Hirt L, Stergiopulos N, "The effect of continuous positive airway pressure on total cerebral blood flow in 23 healthy away volunteers," 10th International Workshop on Biomedical Engineering (Kos, Greece, 10/5-7, 2011).
46. Yiallourou TI, Asboth L, Kroeger JR, Maintz D, Bunck AC, Martin BA, Stergiopulos N, "Quantitative comparison of 4D MRI flow measurements to 3D computational fluid dynamics simulation of cerebrospinal fluid movement in the spinal subarachnoid space," 10th International Workshop on Biomedical Engineering (Kos, Greece, 10/5-7, 2011).
47. Martin BA, Novy J, Balédent O, Reymond P, Stergiopulos N, "Prediction of spinal cord perivascular flow based on a coupled computational simulation of the cardiovascular and cerebrospinal fluid system," International Society for Hydrocephalus and Cerebrospinal Fluid Disorders (Copenhagen, Denmark, 9/3-7, 2011).
48. Shahim K, Drezet JM, Martin BA, Molinari JF, Momjian SH, "Analytical model of normal pressure hydrocephalus," Swiss Federal Institute of Technology – EPFL, Material Science and Engineering EDMX Research Symposium (Lausanne, Switzerland, 3/17, 2011).
49. Martin BA, Reymond P, Balédent O, Novy J, Stergiopulos N, "A coupled simulation of spinal cord blood flow and cerebrospinal fluid motion in the spinal subarachnoid space based on in vivo measurements," ASME Summer Bioengineering Conference (Farmington, Pa, 6/22-25, 2011).
50. Vardoulis O, Coppens E, Martin BA, Reymond P, Stergiopulos N, "Assessment of aortic graft impact on hemodynamics," ASME Summer Bioengineering Conference (Farmington, Pa, 6/22-25, 2011).

51. Picquot A, Santini F, Block J, Fonari E, Martin BA, Stergiopulos N, "A comparison of 4D MRI flow measurements and 3D computational fluid dynamics simulation of cerebrospinal fluid movement in the brain ventricles," International Society for Magnetic Resonance in Medicine Annual Meeting (Montréal, Canada, 5/7-13, 2011).
52. Martin BA, F. Loth, "In vitro hydrodynamic modeling of syringomyelia," International Symposium on Syringomyelia (Berlin, Germany 12/09-11, 2010).
53. Martin BA, P. Reymond, F. Loth, N. Stergiopulos, "A 1-D coupled model of the cardiovascular tree and cerebrospinal fluid system," 6th World Congress on Biomechanics (Singapore, 9/1-6, 2010).
54. Y. Liu, Martin BA, T. J. Royston, "A series of in silico fluid structure interaction simulations of the cerebrospinal fluid pressure wave propagation in the spinal subarachnoid space," ASME 2010 International Mechanical Engineering Congress & Exposition (Vancouver, Canada, 11/12-18, 2010).
55. Martin BA, "Device and method for non-invasive measurement of vascular properties," TechConnect medtech IP submission (Anaheim, CA, June 21-25, 2010).
56. Y. Liu, Martin BA, T. J. Royston, F. Loth, "A fluid structure interaction simulation of the cerebrospinal fluid, spinal cord, and spinal stenosis present in syringomyelia," ASME Summer Bioengineering Conference (Naples, FL, 6/16-19, 2010).
57. Martin BA, S. El-Khoury, F. Loth, "The Influence of cerebrospinal fluid flow frequency and magnitude on subarachnoid space pressure fluctuations in an in vitro syringomyelia model with spinal canal stenosis," Biomedical Engineering Society Annual Meeting (Pittsburgh, Pa, 10/7-10, 2009).
58. Martin BA, F. Loth, T. J. Royston, "The interrelation of cerebrospinal fluid pulse wave velocity and biomechanical properties of the spinal canal," 10th US National Congress on Computational Mechanics, Mechanics of biological Tissues Mini-Symposium (Columbus, Ohio, 7/16-19, 2009).
59. Martin BA, F. Loth, "The influence of coughing on cerebrospinal fluid pressure in an in vitro syringomyelia model with spinal canal stenosis," ASME Summer Bioengineering Conference (Lake Tahoe, CA, 6/17-21, 2009).
60. F. Loth, Martin BA, "Engineering & imaging techniques," American Syringomyelia Alliance Project Annual Conference (Washington D.C., July, 2008).
61. F. Loth, Martin BA, "Engineering & imaging techniques," Chiari Research Conference 2008, State of the Research and New Directions (Chicago, IL, 11/6-7, 2008).
62. Martin BA, Wojciech Kalata, Francis Loth, John N. Oshinski, Michael Jerosch-Herold, "MR measurement of pulse wave velocity in the spinal canal," ASME Summer Bioengineering Conference (Marco Island, FL, 6/25-29, 2008).
63. Martin BA, "Syringomyelia apparatus demonstration," UIC/Conquer Chiari Research Symposium (Chicago, Illinois, 6/2, 2007).
64. W. Kalata, Martin BA, F. Loth, T. J. Royston, J. N. Oshinski, Jerosch-Herold, "Measurements of pulse wave velocity in the spinal canal," Biomedical Engineering Society Annual Meeting (Chicago, Illinois, 10/11-14, 2006).
65. Martin BA, W. Kalata, F. Loth, T.J. Royston, J. N. Oshinski, "An engineering approach to understanding the hydrodynamics of syringomyelia," ASAP Annual National Conference (Cedar Rapids, Iowa, 7/20-23, 2005).
66. T. Spohnholtz, T. J. Royston, Y. Yaziciolgu, Martin BA, F. Loth, H. Bassiouny, "A multimode sonic & ultrasonic diagnostic imaging system with application to peripheral vascular characterization," 149th Meeting of the Acoustical Society of America (Vancouver, Canada, 5/16-20, 2005).
67. W. Kalata, Martin BA, F. Loth, J. N. Oshinski, "Differences in cerebrospinal fluid motion in Chiari malformation patients and healthy volunteers," 3rd Annual Neural Hydrodynamics Symposium (Cleveland, OH, 5/12-14, 2005).
68. Martin BA, W. Kalata, F. Loth, J. N. Oshinski, T. J. Royston, "Experimental syringomyelia hydrodynamics: the importance of pressure phase relation on syrinx pathogenesis," 3rd Annual Neural Hydrodynamics Symposium (Cleveland, OH, 5/12-14, 2005).
69. Martin BA, W. Kalata, F. Loth, T. J. Royston, J. N. Oshinski, "An experimental investigation of the hydrodynamic and biomechanical environment present in syringomyelia," ASME Summer Bioengineering Conference (Vail, CO, 5/22-26, 2005).
70. Martin BA, W. Kalata, J. N. Oshinski, F. Loth, "An engineering perspective on syringomyelia," ASAP Annual National Conference (Key Biscayne, FL, 6/21-24, 2004).
71. Martin BA, W. Kalata, T.J. Royston, J. N. Oshinski, F. Loth, "Experimental study on pressure and hydrodynamic flow within the subarachnoid space," 2nd Symposium of Neural Hydrodynamics (Menlo Park, CA, 5/1, 2004).
72. Martin BA, F. Loth, J. N. Oshinski, "Physical characterization of pressure wave transmission in a fluid filled syrinx," Proceedings of the Neurohydrodynamic Symposium (6/1, 2004).
73. Martin BA, W. Kalata, J. N. Oshinski, F. Loth, "Importance of mechanical forces in the development of syringomyelia for patients with Chiari malformation," ASAP Annual Conference (New York City, NY, 7/1, 2003).
74. Martin BA, W. Kalata, J. N. Oshinski, F. Loth, "Engineering perspective on diseases related to CSF motion," University of Chicago in the Department of Neurosurgery Grand Rounds (Chicago, IL, 6/6, 2003).

Conference posters

1. Byass S, Sass LR, Martin BA, "In vitro quantification of intrathecal solute transport: impact of bolus and flush volume," University of Idaho Undergraduate Research Symposium (Moscow, ID, 4/30/2018).

2. Chen X, Theodossiou S, Majors C, Tipton E, Schiele NR, Murdoch G, Tanner B, Mortazavi M, Potirniche G, Martin BA, "Ex vivo quantification of ovine pia arachnoid complex biomechanical properties and morphology," University of Idaho Undergraduate Research Symposium (Moscow, ID, 4/30/2018).
3. Natividad GC, Cleveley B, Oles J, Manwaring D, Magbunduku L, Sass LR , Martin BA, "Neurochi: Virtual Reality Software of the Cerebrospinal Fluid System" University of Idaho Undergraduate Research Symposium (Moscow, ID, 4/30, 2018).
4. Sass AM, Sater S, Rohr JJ, Macias B, Oshinski JN, Ethier CR, Stenger M, Martin BA, "Methods For Quantifying Tortuosity and 3d Geometry Changes Occuring to the Optic Nerve During Long-Duration Spaceflight," University of Idaho Undergraduate Research Symposium (Moscow, ID, 4/30, 2018).
5. Marsden E, Aldrimk B, Lunstrum A, Conley G, Sass LR, Martin BA, "Oscillatory Flow Pump for Simulation of Cerebrospinal Fluid Flow," University of Idaho Undergraduate Research Symposium (Moscow, ID, 4/30, 2018).
6. Sass AM, Rohr JJ, Stenger M, Macias B, Ethier CR, Sargsyan AE, Martin BA, "Automated Method to Quantify 3D Geometric Alterations of the Optic Nerve and Sheath in Astronauts," NASA Human Research Program Investigators' Workshop, The Gateway to Mars (Galveston, TX, 1/22-25, 2018).
7. Rohr JJ, Sass AM, Sater S, Aldrimk B, Stenger M, Macias B, Ethier CR, Sargsyan A, Martin BA, "Inter-operator Reliability Assessment of Optic Nerve Tortuosity in Long-duration Flight Astronauts," 33rd Annual Meeting of the American Society for Gravitational and Space Research (Seattle, WA, 10/25-28/2017).
8. McCain K, Sass L, Khani M, Carter G, Weeks D, Wiest M, Petersen B, Wingett D, Freeman T, Martin BA, "MRI based biomarkers for characterization of ALS," University of Idaho, Idaho INBRE conference (Moscow, ID, 8/2, 2017).
9. Conley G, Cleveley B, Oles J, Sass L, Xing T, Baledent O, Kurtcuoglu V, Martin BA, "Neurochi virtual reality simulator of the cerebrospinal fluid system," University of Idaho, Idaho INBRE conference (Moscow, ID, 8/2, 2017).
10. Sater S, Sass A, Aldrimk B, Rohr J, Stenger M, Macias B, Martin BA, "Reliability assessment of Optic Nerve Trajectory in Long-duration Space Flight Astronauts," University of Idaho, Undergraduate Student Research Symposium (Moscow, ID, 4/24, 2017).
11. Conley G, Cleveley B, Sass L, Xing T, Baledent O, Kurtcuoglu V, Martin BA, "A 3D Anatomic Model of the Intracranial Cerebrospinal Fluid System Based on MRI Measurements and Neurosurgical Literature Review," University of Idaho, Undergraduate Student Research Symposium (Moscow, ID, 4/24, 2017).
12. Majors C, Aldrimk B, Sass L, Martin BA, "Prototype 3D-printed Oscillatory Flow Pump for Simulation of Cerebrospinal Fluid Flow," University of Idaho, Undergraduate Student Research Symposium (Moscow, ID, 4/24, 2017).
13. G. Conley Natividad, B. Cleveley, LR Sass, T Xing, O Baledent, V Kurtcuoglu, BA Martin, "Neuroculus virtual reality simulator of the cerebrospinal fluid system," Undergraduate Student Paper Competition Finalist, Summer Bioengineering, Biomechanics and Biotransport (Tucson, AZ, 6/21-24, 2017).
14. MV DaSilva Ferreira, BA Martin, "MRI-based assessment of cerebrospinal fluid pulse wave velocity in the upper cervical spine," University of Idaho Undergraduate Research Symposium (Moscow, ID, 2016).
15. M. Wransky, D. McQuaide, J. Strahle, C. O. Maher, M. Espanol, F. Loth, BA Martin, "Machine learning and morphometric analysis of asymptomatic and symptomatic Type 1 Chiari malformation patients," World Congress on Biomechanics, American Society of Mechanical Engineers Summer Bioengineering Conference (Boston, MA, 7/5-11, 2014).
16. S. H. Pahlavian, A. C. Bunck, R. S. Tubbs, T. Yiallourou, F. Loth, BA Martin, "Quantitative Comparison of 4D Phase-Contrast Magnetic Resonance Imaging and Subject-Specific Computational Fluid Dynamics Simulation of Cerebrospinal Fluid Velocities in Cervical Spine," World Congress on Biomechanics, American Society of Mechanical Engineers Summer Bioengineering Conference (Boston, MA, 7/5-11, 2014).
17. S. Thyagaraj, S.H. Pahlavian, M. Vatani, J. Choi, M. Goodin, A. Bunck, T. Yiallourou, F. Loth, BA Martin, "3D printed model of the cervical spine for simulation of cerebrospinal fluid motion: comparison of in vitro and computational fluid dynamics simulation results," World Congress on Biomechanics, American Society of Mechanical Engineers Summer Bioengineering Conference (Boston, MA, 7/5-11, 2014).
18. N. Shaffer, BA Martin, S. Dombrowski, M. Luciano, J. Tew, F. Loth, "Investigation of post-surgical changes to cerebrospinal fluid hydrodynamics in type I Chiari malformation patients," World Congress on Biomechanics, American Society of Mechanical Engineers Summer Bioengineering Conference (Boston, MA, 7/5-11, 2014).
19. M. Majcher, N. Shaffer, F. Loth, M. Luciano, J. Oshinski, B. Martin, "Quantification of neural tissue deformation in type 1 Chiari malformation patients pre- and post-spinal decompression surgery and comparison to controls," World Congress on Biomechanics, American Society of Mechanical Engineers Summer Bioengineering Conference (Boston, MA, 7/5-11, 2014).
20. D. Casey, BA Martin, G. Bateman, S. H. Pahlavian, N. Shaffer, K. Smith Jr., F. Loth, "Numerical Simulation of Superior Sagittal Sinus Hemodynamics," World Congress on Biomechanics, American Society of Mechanical Engineers Summer Bioengineering Conference (Boston, MA, 7/5-11, 2014).
21. M. Wransky, M. Espanol, A. Urbizu, F. Loth, BA Martin, "Machine learning for the detection of type 1 Chiari malformation without using tonsillar herniation measurement," Midwest American Society of Biomechanics Regional Meeting (Akron, OH, 3/4-5, 2014).

22. R. Kenyon, S. Thyagaraj, N. Leipzig, F. Loth, BA Martin, " An in vitro hydrodynamic model of the spinal subarachnoid space with arachnoid trabeculae," Midwest American Society of Biomechanics Regional Meeting (Akron, OH, 3/4-5, 2014).
23. M. Majcher, N. Shaffer, F. Loth, M. Luciano, J. Tew, M. Lowenkamp, BA Martin, "Quantification of axial spinal cord displacement in type 1 Chiari malformation," Midwest American Society of Biomechanics Regional Meeting (Akron, OH, 3/4-5, 2014).
24. M. Majcher, N. Shaffer, F. Loth, M. Luciano, J. Oshinski, BA Martin, "Measurement of brain and spinal cord tissue motion in type 1 Chiari malformation by phase contrast magnetic resonance imaging," University of Akron Student Innovation Symposium (Akron, OH, 4/10, 2014).
25. Chen T, Lowenkamp M, Shaffer N, and B Martin. "Syrinx Formation over 1 week in Chiari I Malformation: CSF velocity quantification before and after surgery," AANS/CNS Section on Pediatric Neurological Surgery (Toronto, Canada, 12/2013).
26. M. Wransky, M. Espanol, B. Martin, "MRI-based Classifiers in Chiari Malformation," Midstates Conference for Undergraduate Research in Computer Science and Mathemathics (Delaware, OH, U.S.A., 11/16, 2013).
27. S.H. Pahlavian, T.I. Yiallourou, R. S. Tubbs, A. Bunck, M. Goodin, F. Loth, M. Raisee, Martin BA, "Cerebrospinal fluid dynamics in the cervical spine: importance of fine anatomical structures," ASME Summer Bioengineering Conference (Sun River, Oregon, U.S.A., 6/26-29, 2013).
28. Martin BA, N. Stergiopulos, "Prediction of the impact of craniospinal compliance on the relative timing of arterial and cerebrospinal fluid pulsations and perivascular fluid flow into the spinal cord," ASME Summer Bioengineering Conference (Fajardo, Puerto Rico, 6/20-23, 2011).
29. T. Yiallourou, A. Bunck, J. Kroeger, N. Stergiopulos, Martin BA, "4D MRI flow quantification of cerebrospinal fluid motion in the cervical spine in healthy subjects and Chiari malformation patients: how do the results compare with 3D computational fluid dynamics?," ASME Summer Bioengineering Conference (Fajardo, Puerto Rico, 6/20-23, 2011).
30. B. D. Anthikat-Alpert, T. Yiallourou, J. Haba-Rubio, R. Heinzer, E. Fonari, N. Chevrey, F. Santini, N. Stergiopulos, Martin BA, "Continuous positive airway pressure impacts cerebral blood flow and cerebrospinal fluid motion: a phase contrast MRI study," ASME Summer Bioengineering Conference (Fajardo, Puerto Rico, 6/20-23, 2011).
31. T. I. Yiallourou, C. Odier, Martin BA, J. Haba-Rubio, R. Heinzer, L. Hirt, N. Stergiopulos, "The effect of continuous positive airway pressure on total cerebral blood flow in 23 healthy away volunteers," ASME Summer Bioengineering Conference (Farmington, Pa, 6/22-25, 2011).
32. Martin BA, T. J. Royston, J. N. Oshinski, F. Loth, "Towards non-invasive assessment of the elastic properties of the spinal aqueduct," ASME Summer Bioengineering Conference (Lake Tahoe, CA, 6/17-21, 2009).
33. Martin BA, R. Labuda, T. J. Royston, J. N. Oshinski, B. Iskandar, F. Loth, "Pathological biomechanics of cerebrospinal fluid pressure in syringomyelia: fluid structure interaction of an in vitro coaxial elastic tube system," ASME Summer Bioengineering Conference (Lake Tahoe, CA, 6/17-21, 2009).
34. Martin BA, J. Seil, F. Loth, S. McCormack, T. J. Royston, "Epithelial cell growth on compliant biomaterial (Nusil CF11)," Biomedical Engineering Society Annual Meeting (Chicago, Illinois, 10/11-14, 2006).
35. E. Mason, Martin BA, Y. Yazicioglu, F. Loth, T. J. Royston, I. Nicolaescu, "In vitro and in vivo piezoelectric sensor for measurement of pulse wave velocity," Biomedical Engineering Society Annual Meeting (Chicago, Illinois, 10/11-14, 2006).
36. Martin BA, W. Kalata, F. Loth, J. N. Oshinski, T. J. Royston, "Characterization of pressure wave transmission in a fluid filled syrinx," Biomedical Engineering Society Annual Meeting (Chicago, Illinois, 10/11-14, 2006).
37. T. Spohnholtz, T. J. Royston, Y. Yaziciolgu, Martin BA, F. Loth, H. Bassiouny, "Helping doctors interpret the sound of blood using a multimode sonic and ultrasonic imaging system," 149th Meeting of the Acoustical Society of America, lay language paper (Vancouver, Canada, 5/16-20, 2005).
38. Y. Yazicioglu, T. J. Royston, T. Spohnholtz, Martin BA, F. Loth, H. Bassiouny, "Coupled vibration and sound radiation from a fluid-filled and submerged or embedded vascular tube with internal turbulent flow due to a constriction," 149th Meeting of the Acoustical Society of America (Vancouver, Canada, 5/16-20, 2005).
39. W. Kalata, Martin BA, et. al, "Hydrodynamics of cerebrospinal fluid in spinal canal with Chiari malformation and syringomyelia," Bioengineering Session, American Society of Mechanical Engineers National Conference (Anaheim, CA, 11/13-19, 2004).
40. Martin BA, W. Kalata, J. N. Oshinski, F. Loth, T. J. Royston, "Construction and validation of a complaint model of the cerebrospinal fluid system with fluid filled syrinx," 2004 ASME International Mechanical Engineering Congress & Exposition (Anaheim, CA ,11/13-19, 2004).
41. W. Kalata, Martin BA, F. Loth, T. J. Royston, J. N. Oshinski, "Hydrodynamics of cerebrospinal fluid in spinal canal with Chiari malformation and syringomyelia," Bioengineering Poster Session, American Society of Mechanical Engineers National Conference (Anaheim, CA, 11/13-19, 2004).
42. Y. Yazicioglu, T. J. Royston, T. Spohnholtz, Martin BA, F. Loth, "Coupled vibration of a fluid-filled and submerged vascular tube with internal transitional / turbulent flow due to a constriction," in Proceedings of the 148th Meeting of the Acoustical Society of America, (San Diego, CA, 11/1, 2004).

Patents:

Patent applications under review

1. PCT/EP2010/051320, Martin BA, "Device and method for non-invasive measurement of cerebrovascular properties," (provisional filed 2/3, 2012, Ecolé Polytechnique Fédérale de Lausanne, Switzerland).
2. US 2006/0089557 A1, Liliana Grajales, Martin BA, Ion V. Nicolaescu, Iwona turlik. "Method and apparatus to facilitate heart rate detection," (published 10/27, 2004, Motorola, Inc., Schaumburg, IL).

Invention disclosures

1. Martin BA, Cleveley CB, Sass LR, Conley G, Oles J, Aldrimk B, "Neurochi: Virtual Simulation of the Cerebrospinal Fluid System," (submitted 8/2017, University of Idaho, ID).
2. Martin BA, Maughan M, Gibbs C, Deans B, Souvenir B, Harlow M, Aljawi M, "Biomechanical Indenter Pen," enabling disclosure, (submitted 4/2017, University of Idaho, ID).
3. Martin BA, Sass L, "Anthropomorphic cerebrospinal fluid system model," invention disclosure, (filed 7/7, 2016, University of Idaho, ID).
4. Pahlavian SH, Labuda R, Eppelheimer M, Loth F, Martin BA, Urbizu AS, "Software for Automated Morphometrics of Skull Based Diseases," invention disclosure, (filed 12/10, 2015, University of Akron, OH) USPTO 62/265,666.
5. Martin BA, "Subject-specific prediction and optimization of intrathecal (IT) drug and gene therapy (GT) based on 4D phase contrast magnetic resonance imaging and computational modeling," invention disclosure, (filed 5/9, 2014, University of Akron, OH).
6. Martin BA, "Device and method for noninvasive alteration of intracranial pressure oscillations via a cardiac triggered continuous positive airway pressure device," invention disclosure, (filed 10/12, 2012, University of Akron, OH).
7. Martin BA, "Device and method for non-invasive measurement of cerebrovascular properties," invention disclosure (filed 12/11, 2009, Ecolé Polytechnique Fédérale de Lausanne, Switzerland).
8. Martin BA, "Automated laser aspiration system," invention disclosure (filed 7/15, 2009, Ecolé Polytechnique Fédérale de Lausanne, Switzerland).
9. Martin BA, F. Loth, "Cerebrospinal fluid system model," invention disclosure (filed 3/4, 2009, University of Akron, OH).
10. Martin BA, F. Loth, "System and method for research of patient entered medical information," (filed 3/24, 2009, University of Akron, OH).
11. F. Loth, Martin BA, R. Labuda, J. Oro, J. N. Oshinski, "Device and method for measurement of tension and elastic properties of the spinal cord and filum terminale," invention disclosure (filed 3/2, 2009, University of Akron, OH).
12. T. J. Royston, Spohnholtz, F. Loth, Y. Yazicioglu, Martin BA, "A multimode sonic & ultrasonic diagnostic imaging method," invention disclosure (filed 3/1, 2004, University of Illinois at Chicago, IL).
13. T. J. Royston, Spohnholtz, F. Loth, Martin BA, "New acoustic skin-contact hydrophone sensor array pad for medical diagnosis and monitoring," invention disclosure (filed 3/1, 2004, U. of Illinois at Chicago, IL).

Grants and Contracts Awarded (Active):

1. **Simulations of CSF, Hemodynamics and Ocular Risk (VIIP SCHOLAR)**
   Source: NASA, NNX16AT06G
   Funding: $750,000 total, $97,000 to Martin BA (Co-I), 10/01/2016 – 09/30/2019
   Investigators: Ethier R (PI), Martin BA (Co-I)

2. **Highly Accelerated Simultaneous Multi-Slice Phase Contrast MRI**
   Source: NIH, NIMH, 1R44MH112210-01A1
   Funding: $1,287,772 total, $47,529 to Martin BA, 08/01/2016 – 07/31/2018
   Investigators: Feinberg (PI), Martin BA (Co-I)

3. **Intrathecal catheter optimization by parametric numerical simulations**
   Source: Industry (Alcyone Lifesciences)
   Funding: $11,395, 4/25/2018 – 6/5/2018
   Investigators: Martin BA (PI)

4. **Ocular Biomechanics Assessment in Astronauts**
   Source: KBR Wyle / NASA Prime Grant No. NNJ15HK11B
   Funding: $91,172, 03/01/2018 – 9/30/2018
   Investigators: Martin BA (PI)

5. **An in vitro platform for pharmacokinetic quantification of intrathecal infusion devices**
   Source: Industry (Alcyone Lifesciences)
   Funding: $58,000, 07/23/2017 – 12/31/2018
   Investigators: Martin BA (PI)

6. **An Experimental and Computational Platform for Neuropheresis Device Assessment**
   Source: Industry (Minnetronix)
   Funding: $136,411, 10/1/2017 – 9/30/2018
   Investigators: Martin BA (PI)

7. **Investigating the Impact of Arachnoid Trabeculae on Brain Tissue Stresses in Sports-Related Traumatic Brain Injury (TBI)**
   Source: NIH Grant No.P20 GM103408 (National Institute of General Medical Sciences) / Idaho INBRE
   Funding: $134,692, 05/01/2017 – 04/30/2019
   Investigators: Martin BA (PI), Schiele (Co-I), Potirniche (Co-I), Mortazavi (Co-I), Tanner (Co-I)

8. **Advanced Ocular and Brain MRI of Astronauts Following Long Duration Space Flight**
   Source: NASA, Idaho Space Grant Consortium
   Funding: $25,000, 8/1/2016-6/30/2018
   Investigators: Martin BA (PI)

9. **Engineering Grand Challenges Scholars**
   Source: University of Idaho (internal)
   Funding: $5,950, 3/1/2017-2/28/2018
   Investigators: Martin BA (Mentor for G. Conley and T. Freeman)

10. **Idaho Space Grant Consortium Graduate Student Fellowship**
    Source: Idaho Space Grant Consortium
    Funding: $25,000, 6/2017-5/2018
    Investigators: Martin BA (Mentor for MS Student, J Rohr)

11. **Idaho Space Grant Consortium Undergraduate Student Fellowship**
    Source: Idaho Space Grant Consortium
    Funding: $2,500, 6/2017-5/2018
    Investigators: Martin BA (Mentor for BE student Austin Sass)

Completed grants

1. **Hydrodynamic Simulator for Brain Therapeutic Development**
   Source: Vandal Ideas Project (Internal Competitive Grant, University of Idaho)
   Funding: $75,000, 07/01/2016 – 08/31/2017
   Investigators: Martin BA (PI), Xing (co-I), Cleveley B (co-I)

2. **Summer Undergraduate Research Fellowship, University of Idaho (B. Aldrimk)**
   Source: University of Idaho (internal)
   Funding: $6,000, 6/2017-8/2017
   Investigators: Martin BA (Mentor for ME student Brian Aldrimk)

3. **Visualizing Science**
   Source: Vandal Ideas Project (Internal Competitive Grant, University of Idaho)
   Funding: $60,000 7/2016 – 9/2017
   Investigators: Machlis S (co-PI), Rowley R (co-PI), Martin BA (Co-I)

4. **University of Washington Medical Student Research Training Programs (MSRTP) Fellowship**
   Source: Idaho Space Grant Consortium
   Funding: $6,000, 6/2017-8/2018
   Investigators: Martin BA (Mentor for WWAMI student, B. Lawrence)

5. **Idaho INBRE Summer Undergraduate Research Fellowship (G. Conley)**
   Source: University of Idaho (internal)
   Funding: $6,000, 5/10/2017-7/31/2017
   Investigators: Martin BA (Mentor for G. Conley)

6. **Idaho INBRE Summer Undergraduate Research Fellowship (K. McCain)**
   Source: University of Idaho (internal)
   Funding: $6,000, 5/10/2017-7/31/2017
   Investigators: Martin BA (Mentor for K. McCain)

7. **MRI-based Biomarkers for Amyotrophic Lateral Sclerosis**
   Source: 4U54GM104944-04 NIH General Medical Sciences (CTR – Infrastructure Network)
   Funding: $68,500, 8/1/2016-6/30/2017
   Investigators: Martin BA (PI)

8. **Biomechanical Characterization and Modeling of Arachnoid Trabeculae in Traumatic Brain Injury**
   Source: NIH Grant No.P20 GM103408 (National Institute of General Medical Sciences) / Idaho INBRE
   Funding: $13,357, 1/1/2017-4/30/2017
   Investigators: Martin BA (PI)

9. **A subject-specific computational simulator of intrathecal drug dispersion in non-human primates**
   Source: Industry (Voyager Therapeutics)
   Funding: $166,953, 09/2015-9/2016
   Investigators: Martin BA (PI)

10. **Multicenter in vitro assessment of 4D PC MRI for quantification of CSF motion**
    Source: American Syringomyelia and Chiari Alliance Project
    Funding: $53,568 to Martin BA, 08/2013 – 05/2016
    Investigators: Martin BA (PI)

11. **Identification of MRI parameters and genetic factors for diagnosis of Chiari malformation**
    Source: Chiari and Syringomyelia Patient Education Foundation
    Funding: $22,296, 03/2015 – 03/2016
    Investigators: Martin BA (PI)

12. **MRI morphometric traits of Type 1 Chiari malformation across age and gender**
    Source: Chiari and Syringomyelia Patient Education Foundation
    Funding: $37,840, 03/2015 – 03/2016
    Investigators: Martin BA (PI)

13. **A Chiari Malformation MR image database**
    Source: Chiari and Syringomyelia Patient Education Foundation
    Funding: $61,064, 04/2014-03/2016
    Investigators: Loth F (PI), Martin BA (Co-I)

14. **MRI-directed identification of genetic risk factors in Chiari Malformation in men and women**
    Source: Fundacion Ramon Areces Post-doctoral Fellowship Award
    Funding: 36,000 EUR, 10/2014-10/2016
    Investigators: Martin BA (mentor), Urbizu A (post-doc fellow)

15. **MRI quantification of brain and nerve damage in Chiari I malformation**
    Source: Chiari and Syringomyelia Patient Education Foundation
    Funding: $142,177, 02/2013 – 12/2015
    Investigators: Martin BA (co-PI)

16. **Transcriptional profiling and µCT assessment of a syringomyelia rat model**
    Source: Chiari and Syringomyelia Patient Education Foundation
    Funding: $97,651, 10/2012 – 10/2015
    Investigators: Leipzig N (PI), Martin BA (Co-I)

17. **MRI Based Classification of Chiari Malformation**
    Source: Chiari and Syringomyelia Patient Education Foundation
    Funding: $33,309, 01/2014-06/2015
    Investigators: Espanol M (PI), Martin BA (Co-I)

18. **Metabolic and Inflammatory Alterations in Patients with Chiari Malformation**
    Source: Chiari and Syringomyelia Patient Education Foundation
    Funding: $59,053, 01/2014-06/2015
    Investigators: Shriver L (PI), Martin BA (Co-I)

19. **An in vitro assessment of 4D PC MRI quantification of cerebrospinal fluid dynamics**
    Source: Swiss Nat. Science Foundation (Grant No. IZK0Z2_152766), Int. Short Visit
    Funding: $12,228, 04/2014 – 06/2014
    Investigators: Fornari E (PI), Martin BA (Co-I)

20. **Pressure oscillations: a new lung therapy approach**
    Source: Marie Curie Actions (Grant No. FP7-PEOPLE-2011-IIF) Int. Incoming Fellowships
    Funding: $166,252, 10/2012-10/2013
    Investigators: Martin BA (Co-I), Al-Jumaily A (Co-I), Stergiopulos N (administrator)

21. **Development of a coupled hydrodynamic model of the cardiovascular and cerebrospinal fluid system**
    Source: Swiss National Science Foundation (Grant No. 205321_132695 / 1)
    Funding: 351,976 CHF direct, 01/2010-09/2013)
    Investigators: Stergiopulos N (PI), Martin BA (Co-I)

22. **A model system for teaching neurohydrodynamics**
    Source: NSF, SBIR Phase I (Grant No. 1214752)
    Funding: $149,763, 2012
    Investigators: Radojicic M (PI), Martin BA (consultant)

Honors and Awards:

Medical Advisory Panel Member for the Chiari Project Foundation	2017 –
Elected Executive Board Member of the International Society for Hydrocephalus and CSF Disorders	2017 – 2019
Elected Executive Board Member of the International Society for Hydrocephalus and CSF Disorders	2015 – 2017
Distinguished Alumni Award, College of DuPage, Glen Ellyn, IL	2015
Outstanding researcher award from Conquer Chiari Patient Education Foundation	2013
Keynote Speaker at Akron General Hospital Post-grad Symposium (06/06, 2013), Akron, OH.	2013
NPR radio on my research, WKSU 89.7, "Engineering a Chiari breakthrough," (03/04, 2013)	2013
Co-leader of the International Hydrocephalus Imaging Working Group, New York, NY, U.S.A.	2011 –
Board of Director member of the International Cerebrospinal Fluid Dynamics Society	2011 –
Selected as entrepreneurial speaker at the medTech IP conference (06/21, 2010), Anaheim, CA	2010

SERVICE:

Major Committee Assignments:

National review panels and committees:

University of Wisconsin-Milwaukee's Research Growth Initiative, Review Panel	2018 January
NASA, Human Research Program (HRP), Visual Impairment Intracranial Pressure Syndrome	2017 March
NIH, Common Data Elements, Chiari I Malformation, Imaging Diagnostics Panel Member	2017
NIH, Bioengineering, Technology and Surgical Sciences Study Section, Review Panel	2016 June
American Heart Association, Bioengineering Clinical Committee, Review Panel	2016 October
American Heart Association, Bioengineering Clinical Committee, Review Panel	2016 April
NIH NINDS Common Data Elements Committee for Chiari Malformation	2016
American Heart Association, Bioengineering Clinical Committee, Review Panel	2015 March
NASA, Non-Advocate Review Panel Member, Review Panel	2014
Auckland University of Technology (AUT), Strategic Research Investment Fund, Review Panel	2014

University:

3rd Year Review Committee for Biological Engineering, Chair evaluation	2017
P&T Review Committee for Biological Engineering, Full Professor (1)	2016
P&T Review Committee for Mathematics, Assistant Professor (1)	2016
Attendance at University Faculty Meetings	2015 – present
Graduate Student Fellowship Support Program, Member	2017 – present

College:

College Marshall for 2016 Fall Commencement	2016
Attendance at COE Faculty Meetings	2015 – present

Departmental:

Biological Engineering Department By Law Committee	2016
Biological Engineering Facebook page manager (published 30+ articles)	2016
Meetings with potential BE students (20+ students for 30 minute meetings)	2015 – present
Led Biological Engineering new student enrollment outreach event at Moscow High School	2016
Calling campaign, called 10+ potential BE students	2016F
Calling campaign, called 10+ potential BE students	2017S

Other:

Volunteer Judge for "Idaho Pitch" Entrepreneurship event	2017F
Volunteer Judge for "Idaho Pitch" Entrepreneurship event	2017S
Idaho INBRE student poster judge	2017S
Idaho INBRE member and student mentor	2017 – present
Office of Undergraduate Research SURF student mentor	2017 – present
University of Washington / WWAMI MSRTP medical student mentor	2017 – present

Professional and Scholarly Organizations

Society leadership:

Biomechanics of the Central Nervous System, Chair and Organizer, World Congress on Biomech.	2017 – 2018
Biofluids Theme Abstract Chair, SB^3C, Summer Bioengineering, Biomechanics, Biotransport –	2017

Executive Board Member, International Society for Hydrocephalus and CSF Disorders	2015 – 2017
Co-leader and Board Member, International Hydrocephalus Imaging Working Group, IHIWG.org	2011 – present
Executive Board Member, International CSF Dynamics Society	2012 – present
Biofluids Theme Chair, Summer Biomechanics, Bioengineering, Biotransport Conference (SB^3C)	2016 – present
Board Member, The Chiari Project Foundation	2017 – present

Professional society membership:

ASME, American Society of Mechanical Engineers, Biomedical Engineering Division	2004 – Present
BMES, Biomedical Engineering Society	2015 – Present
ASNR, American Society of Neuroradiology	2012 – Present
ISMRM, International Society of Magnetic Resonance Imaging	2014 – Present
ISHCFD, International Society for Hydrocephalus and Cerebrospinal Fluid Disorders	2011 – Present
APS, American Physiological Society	2011 – 2015
ISCBFM, International Society for Cerebral Blood Flow and Metabolism	2009 – 2015
International Spinal Cord Society	2011
American Syringomyelia Alliance Project	2006 – 2007
ASA, Acoustical Society of America	2005
BMES, Biomedical Engineering Society	2006
EWB, Engineers Without Borders U.S.A.	2003 – 2007

Journal reviewer for:

2 papers reviewed in 2018
7 papers reviewed in 2017
9 papers reviewed in 2016
4 papers reviewed in 2015

American Journal of Physiology: Heart and Circulatory Physiology
ASME Journal of Biomechanical Engineering
Acta Neurologica Scandanavica
Developmental Neurorehabilitation
Fluids and Barriers of the CNS
IEEE Transactions on Biomedical Engineering
Medical Engineering and Physics
Nature Communications
Neuroradiology
Neurosurgery
Journal of Biomechanics
Journal of Neurology, Neurosurgery, and Psychiatry
Journal of Neuroscience
PLOS one
Royal Society – Interface Focus
World Neurosurgery

Abstract reviewer for:

World Congress on Biomechanics, Biomechanics of the Central Nervous System	2018
Summer Biomechanics, Bioengineering and Biotransport Meeting (SB3C.com)	2016
Summer Biomechanics, Bioengineering and Biotransport Meeting (SB3C.com)	2015
World Congress on Biomechanics	2014
American Society of Mechanical Engineers, Summer Bioengineering Conference	2012 – 2013

Presentation judge for:

Hydrocephalus Society, Young Investigator Award, Oral Presentations	2017
Hydrocephalus Society, Young Investigator Award, Poster Presentations	2017
American Society of Mechanical Engineers, Summer Bioengineering Conference	2010 – 2015

Conferences organized

1. Hydrocephalus 2018, Hydrocephalus Society Conference (Bologna, Italy 10/17-23, 2018), *International organizing & scientific committee.*
2. Hydrocephalus 2017, Hydrocephalus Society Conference (Kobe, Japan, 10/23-25, 2017), *International organizing & scientific committee.*

3. International Society of Hydrocephalus and CSF Dynamics Disorders (ISHCSFD) Conference (Cartagena, Colombia, 10/8-11, 2016), *International organizing & scientific committee.*
4. "Summer Biomechanics, Biotransport and Bioengineering Conference (SB^3C)," (Snowbird, UT, U.S.A., 6/17-20, 2015), *Member at Large, Conference Organizing Committee*.
5. "2nd CSF International CSF Dynamics Symposium," Feinstein Institute for Medical Research (Long Island, NY, 06/24-25, 2013), *Co-organizer and Conference Chair*.
6. "1st Conquer Chiari Research Center Open House," Engineering Research Center, University of Akron (Akron, OH, 04/27, 2013), *Conference Organizer*.

Symposiums and workshops organized

1. "Biomechanics of the Central Nervous System," Track: Biofluids and Biotransport, World Congress on Biomechanics (Dublin, Ireland, 07/8-12, 2018), *Session Organizer*.
2. 55th Meeting of the American Society of Neuroradiology, "CSF Flow Study Group (IHIWG)" (Vancouver, Canada, 06/6-7, 2018), *Co-Organizer.*
3. "International Hydrocephalus Imaging Working Group Symposium (IHIWG)," International Society of Hydrocephalus and CSF Dynamics Disorders (ISHCSFD) Conference (Kobe, Japan, 10/23-25, 2017), *Co-organizer*.
4. 54th Meeting of the American Society of Neuroradiology, "CSF Flow Study Group (IHIWG)" (Long Beach, CA, U.S.A., 04/27-28, 2017), *Co-Organizer*.
5. "International Hydrocephalus Imaging Working Group Symposium (IHIWG)," International Society of Hydrocephalus and CSF Dynamics Disorders (ISHCSFD) Conference (Cartagena, Colombia, 10/8-11, 2016), *Co-organizer*.
6. 53rd Meeting of the American Society of Neuroradiology, "CSF Flow Study Group (IHIWG)" (Washington, D.C., U.S.A., 05/26-27, 2016), *Co-Organizer*.
7. "International Hydrocephalus Imaging Working Group Symposium (IHIWG)," International Society of Hydrocephalus and CSF Dynamics Disorders (ISHCSFD) Conference (Banff, Canada, 09/17, 2015), *Chair and Co-organizer*.
8. "International Hydrocephalus Imaging Working Group Symposium (IHIWG)," International Society of Hydrocephalus and CSF Dynamics Disorders (ISHCSFD) Conference (Bristol, UK, 09/5-6, 2014), *Organizer and Co-chair*.
9. "CSF Dynamics Mini-Symposia," World Congress on Biomechanics (Boston, MA, 06/11, 2014), *Organizer and Co-chair*.
10. "Hydrocephalus and CSF Flow Working Group," 52nd Meeting of the American Society of Neuroradiology, ASNR (Montreal, Canada, 05/22-23, 2014), *Co-organizer*.
11. "Controversies in Hydrocephalus and CSF Flow (IHIWG) Workshop," 51st Meeting of the American Society of Neuroradiology (San Diego, CA, 05/23-24, 2013), *Co-organizer*.

Conference sessions chaired/co-chaired

1. "CNS solute transport part 2" ASNR CSF Flow Study Group, (Vancouver, Canada, 6/7, 2018), *Session Chair*.
2. "Research in iNPH," Hydrocephalus 2017, International Society for Hydrocephalus and Cerebrospinal Fluid Disorders (Kobe, Japan, 09/23, 2017), *Session Chair*.
3. "Biomechanics of the Central Nervous System," Track: Biofluids and Biotransport, World Congress on Biomechanics (Dublin, Ireland, 07/8-12, 2018), *Session Chair*.
4. "MR Elastography," IHIWG / ISHCSFD Conference (Banff, Canada, 09/18, 2015), *Session Chair*.
5. "Pathophysiology of type 1 Chiari malformation," American Society of Neuroradiology, CSF flow study group (Chicago, IL, 5/1, 2015), *Session Chair*.
6. "Cerebrospinal fluid MRI diagnostics," International Society of Hydrocephalus and CSF disorders (Bristol, UK, 09/5-8, 2014), *Session Chair*.
7. "Cerebrospinal Fluid Dynamics Symposium," 7th World Congress of Biomechanics (Boston, MA, U.S.A., 06/06-11, 2014), *Session Chair*.
8. "Session D," 1st International CSF Dynamics Symposium, Swiss Federal Institute of Technology (Zurich, Switzerland, 07/08/2011), *Session Chair*.
9. "Session G: Spinal Cord," 2nd International CSF Dynamics Symposium, Feinstein Institute for Medical Research (Manhasset, NY, 06/25/2013), *Session Chair*.

Outreach Service:

Publicity and media coverage of research

1. "Quantitative MRI-based Diagnostics for Chiari Malformation" 12/05/2017, (CSF: Chiari & Syringomyelia Foundation, Online Video Publication, 2017 https://www.youtube.com/watch?v=Mot2fi4WwAI).
2. "From Breaking Stereotypes to Learning Biomarkers of Lou Gherig's Disease, Computer Engineering Student Forges Her Own Path" 12/05/2017, (University of Idaho, College of Engineering, 2017 https://www.uidaho.edu/engr/news/features/tavara-freeman).
3. "Inspiring the Art of Science" 12/05/2017, (University of Idaho, Visualizing Science – Publication, http://www.uidaho.edu/research/news/research-reports/2017/art-of-science).
4. "The Beauty of Science" 12/05/2017, (University of Idaho, http://www.uidaho.edu/news/feature-stories/visualizing-science).
5. "Always an Explorer." 12/04/2017, (University of Idaho, College of Engineering, 2017, http://www.uidaho.edu/engr/news/features/claire-majors).
6. "Reverse Engineering the Brain." 10/26/2017, (University of Idaho, College of Engineering, 2017, http://www.uidaho.edu/engr/news/features/tavara-freeman).
7. "Research shows astronauts' vision can get worse in space." 7/6/2017, (KREM channel 2 news, Spokane, WA, http://www.krem.com/news/local/latah-county/research-shows-astronauts-vision-can-get-worse-in-space/454790398).
8. "Blind Spot, Humans have long dreamed of traveling through the far reaches of space – populating other planets and creating societies there. NASA has announced it hopes to send humans to Mars in the 2030. But how do you "boldly go where no one have gone before" if you can't see where you are going?" (University of Idaho, Here We Are Idaho, Alumni Magazine, Spring 2017, https://issuu.com/uidaho/docs/hwhi-2017_spring_56pgs_issuu).
9. "Fit to serve, Fit to Serve: Biological Engineering Student Feeds the Homeless, Fights Wildfires and Prepares for Medical School," (University of Idaho, College of Engineering, 2017, https://www.uidaho.edu/engr/news/features/christina-gibbs).
10. "Are Monkeys Like Humans? Comparison of Intrathecal CSF Dynamics Across Mammalian Species," (Chiari & Syringomyelia Foundation, CSF Dynamics Symposium, Atlanta, GA, 2017 http://csfinfo.org/research/csf-funded-research/csf-hydrodynamics-symposium/2017-hydrodynamics/hydrodynamics-participants/intrathecal-csf-dynamics-mammals/).
11. "Engineering student uses mapping and imaging to reveal unknown," (University of Idaho, Vandals in Focus 2017, student research magazine, https://goo.gl/z1bHlF).
12. Pritchard Art Gallery, "Visualizing Science - Nebulus," Installation by Casey Doyle and Bryn Martin," (Moscow, ID, 2/10/2017 – 4/15/2017, https://www.uidaho.edu/caa/galleries-centers-and-labs/prichard/exhibits/vscience).
13. University of Idaho Video Publicity Feature, "Visualizing Science, Casey Doyle & Bryn Martin," (Moscow, ID, 4/19/2017, https://www.youtube.com/watch?v=pfS707Pw19w).
14. Inland 360.com, "Art: visualizing science channels fact through imagination," (Jennifer K Bauer, Spokane, WA, 3/8/2017, https://goo.gl/2h61dU).
15. Moscow-Pullman Daily News, "UI senior works to cure cancer," (Josh Babcock, Moscow, ID, 5/14, 2016, http://goo.gl/rCdWiC).
16. "In Vivo and In Vitro CSF Flow Studies in Chiari Malformation: An ASAP funded research study," (American Syringomyelia and Chiari Alliance Project, Annual Meeting, Princeton, NJ, 2014 http://asap.org/index.php/disorders/2014-conference-presentations/in-vivo-and-in-vitro-csf-flow-studies-in-cmi/).
17. National Public Radio, WKSU, Exploradio, "Engineering a Chiari breakthrough," (Jeff St. Clair, Kent, OH, 3/4, 2013, http://bit.ly/16JdIut), re-aired several times in 2014.
18. Spinal Cord Nerve Roots and Denticulate Ligaments Alter CSF Dynamics in the Upper Cervical Spine, " (2013 CSF Hydrodynamics Symposium: Dr. Bryn Martin, https://vimeo.com/72195933).
19. Akron Beacon Journal, "UA tackles brain disorder," (Cheryl Powell, Akron, OH, 6/25, 2012, http://bit.ly/ZTdjiv).
20. University of Akron Online Newsroom, "When does a headache need an engineer to fix it?," (6/24, 2012, http://bit.ly/ZKeJxl).
21. Scicasts, "University receives funding for research center to treat patients with Chiari malformation," (6/27, 2012, http://bit.ly/OvrlpE).
22. Chiari and Syringomyelia Foundation, New Researchers Feature, "The influence of coughing on cerebrospinal fluid pressure in an in vitro syringomyelia model with spinal subarachnoid space stenosis," (6/1, 2009, http://bit.ly/13buPpY).
23. Conquer Chiari Foundation, In the Spotlight, "Dr. Bryn Martin, CCRC Director," (7/1, 2012, http://bit.ly/XYZdQ5).

Community Service: (non-academic unrelated to employment)
Sponsor and donor, Family Promise of the Palouse, Interfaith Hospitality Network for Homeless Families

Honors and Awards:
None.

PROFESSIONAL DEVELOPMENT:

Teaching:
None.

Scholarship:
See above for conferences/symposiums/workshops attended.

Outreach:

Presentation	"Reverse Engineering the Brain" Idaho INBRE Summer Undergraduate Fellows	05/22/17
Lab tour	"Neurophysiological Imaging and Modeling Laboratory" Eng. Grand Challenges	2017
Outreach	Led Biological Engineering new student enrollment outreach event at Moscow High School	2016

Administration/Management:
None.