

UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES
GRADUATE FACULTY APPLICATION

1. Name: Analiz Rodriguez
2. UAMS Graduate Program Sponsor: GPIBS Major field: Pathobiology
3. Present UAMS academic title or administrative position: Assistant Professor
- Date appointed this rank/position: July 2017 Employed by: COM Neurosurgery

4. Comments of Department Chair/Head or Program Director including: evidence of scholarly development, effectiveness as a teacher, quality of publications and reallocation of duties if this application is approved.

Analiz is a new faculty member in the COM Department of Neurosurgery who obtained her MD/PhD at Case Western, did her neurosurgery residency at Wake Forest. She already has over 20 manuscripts, holds a patent on glioblastoma detection, and has made numerous presentations at national/international meetings. She was recently awarded a COM Clinician Scientist award where she will be developing her research program in glioblastoma. For someone so early in her career, she has been recognized with many honors and awards.

JD Day/Bobby McGehee

October 31, 2017

Steve Post

Department Chair/Head or Program Director

Date

Graduate Council Representative

I have read the comments of my Department Chair/Head or Program Director and I do, do not (circle one) wish to supply additional information in support of my application.

Analiz Rodriguez October 30, 2017
Applicant's Signature Date

Approvals

G Boyer
Chair, Graduate Faculty Committee

11/15/17
Date

Eric Post
Chair, Graduate Council

11/15/17
Date

Korow...
Dean of the Graduate School

10/30/17
Date

5. **List your planned involvement in graduate education (courses, theses, dissertations):**

Analiz will initially begin teachign afew lectures in neuroscience and cancer biology for the pathobiology track of GPIBS and will serve as a rotation lab for GPIBS graduate students. Initially she will serve on a advisory committees with a more long term goal to become a major advisor.

6. **Briefly summarize your experience in graduate-level classroom teaching:**

She does not have much grad level teaching at this point but has mentored both medica students and residents. She was also involved in curriculum development at Case Western.

7. **Briefly summarize your experience in research and student research mentoring:**

Mostly mentoring medical students and residents.

8. **Attach Curriculum Vita** showing educational background (including institutions attended, degrees awarded and dates), honors or awards received, scholarly or professional organization affiliations, teaching experience (give school, dates and advanced and graduate subjects taught), including student theses and/or dissertations supervised. Cite publications and research in progress.

Analiz Rodriguez, M.D., Ph.D.

4301 W Markham St
Little Rock Arkansas, 72205
(239) 826-9782
arodriguez@uams.edu

Education

Neurosurgery Residency, Wake Forest University Baptist Medical Center, Winston Salem, NC 2010-2016

General Surgery Internship, University of Pittsburgh Medical Center, Pittsburgh, PA 2009-2010

M.D./Ph.D, NIH Medical Scientist Training Program, Case Western Reserve University, Cleveland, OH 2003-2009

B.A. in Chemistry, New College of Florida: The Honors College of Florida, Sarasota, FL 2000-2003

Current Position

Instructor, Neurosurgical Oncology,
City of Hope National Medical Center
Duarte, CA 2016-2017

Academic Appointments

Assistant Professor
Department of Neurosurgery, University of Arkansas Medical Center
Little Rock, AR July 2017-

Other Positions and Employment

Math and Science Tutor, Educational Resource Center, Cleveland, Ohio	2006-2007
Organ Preservation Specialist, Kidney/Liver/Pancreas Transplant Program, Cleveland Clinic Foundation, Cleveland Ohio	2006
Intramural Volleyball, Team Captain, Department of Pathology, Case Western Reserve University, Cleveland, Ohio	2005-2006
Reading and Math Tutor for English as Second Language (ESL) Students, Platform Learning Program, Cleveland Municipal School District, Cleveland, OH	2005-2006
Teaching Assistant for Organic Chemistry and Calculus, New College of Florida, Sarasota, FL	2002-2003

Certification and Licensure

California State Medical License (active)	2016-
American Board of Neurological Surgery written examination	March 2014

Professional Memberships and Activities

American Society for Laser Medicine and Surgery	2016
Alpha Omega Alpha	2015
Council of State Neurosurgical Societies	2014-
American Association of Neurological Surgeons	2010-
Congress of Neurological Surgeons	2010-
Women in Neurosurgery	2010-
Association of Women Surgeons	2010-

Honors and Awards

Clinician Scientist Program, University of Arkansas Medical Sciences	2017-2020
Congress of Neurological Surgeons Leadership Fellow	2015-2016
Alpha Omega Alpha	2015
Southeast Quadrant Socioeconomic Fellow, Council of State Neurosurgical Societies	2014-2015
American Association of Neurological Surgeons/ Neurosurgery Research Education Fund Research Fellowship	2013-2014
Case Western Reserve University's Medical Scientist Training Program Representative to Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)	2005-2007
Project Innovation Fund Award, Case Western Reserve University	2004
National Institute of Health Medical Scientist Training Program	2003
National Science Foundation Summer Research Fellowship, Dartmouth College	2002

National Science Foundation Summer Research Fellowship, University of Idaho	2001
Florida Bright Futures Scholarship	2000
University of South Florida Hispanic Scholar	2000

Committee Assignments and Administrative Services

Committee Member, Self Assessment in Neurological Surgery, Congress of Neurological Surgeons	2017-
Secretary, Communication and Education Committee, Council of State Neurological Societies (CSNS)	2017-
Committee Member, Young Neurosurgeons Section, CSNS	2016-
Women in Neurosurgery Liaison, AANS/CNS Tumor Section Executive Committee	2016-
Women in Neurosurgery, Executive Committee Member	2014-
Neurosurgery Representative, Resident Quality Improvement Committee, Wake Forest Medical Center	2011-2015
Resident Committee Member, Association of Women Surgeons	2010-2016
President (2007-2008) and Member, Minority Graduate Student Organization, Case Western Reserve University	2005-2008

Educational Activities

Neurosurgery 101 Course, Panel Discussion, course to encourage students interested in Neurosurgery, University of California Los Angeles	2016
Wake Wings Instructor, First and only resident to be selected to teach Teamwork skills workshop for Medical Center Employees, Wake Forest Medical Center	2013-2016
Organizer of Interdisciplinary Neurological Conference between the departments of Neurosurgery, Neurology and Emergency Medicine, Wake Forest Medical Center	2012
Bridging Pathways to Health Careers, Mentor to underserved high school students interested in Health Careers, Case Western Reserve University	2006-2007
Student Representative for Block V Curriculum Development, Office of Curricular Affairs, Case Western School of Medicine	2005-2006
Scholars Collaboration in Teaching and Learning, selected through competitive process as a medical student to develop curriculum for the school of medicine, Project: "Integrating evidence based medicine in clinical practice"	2004

Mentorship of Students

directed clinical research activities, Wake Forest University Aravind Somasundaram (Current Medical Student Brody SOM) Oleg Lobanov (current Pediatric Neurology Resident, Washington University) Ann Liu (current Neurosurgery Resident, Johns Hopkins) Elizabeth Kuhn (current Neurosurgery Resident, UAB) Martin Piazza (current Neurosurgery Resident, UNC-CH) Michael McCormick (current General Surgery Resident EVMS) Harry Bartels (current Otolaryngology Resident (UV)	2011-2016
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Courses Attended

4th NeuroBlate Residents/Fellows Course Orlando Florida, January 2017
Transitioning to Spine Practice. Medtronic Course. Denver CO. May 2016
DepuySynthes Spine Future Leaders Workshop: Spine Tumors. September 2015
10th Annual CNS 3-D Surgical Anatomy Course for Senior Residents.

August 2015
AANS Billing and Coding Course. February 2015
EANS (European Association of Neurosurgical Societies) Tumor Course.
September 2014.
Complex Cervical Spine Surgery and Complication Management. AO North
America. June 2014
Depuy Synthes Spine Future Leaders Workshop: Decision Making in Adult
Degenerative Scoliosis. April 2014
Chicago Neurosurgery Review course. January 2014
Research Update in Neuroscience for Neurosurgeons. October 2013

Grants and Contract Awards

AANS/ NREF (American Association of Neurological Surgeons National Research Education Fund), Role: Principle Investigator, Mentor: Waldemar Debinski, Title: The Role of Tumor associated Macrophages in Directing Glioma Invasion	07/2013-07/2014
National Institutes of Health (NIH) Research Supplement to Promote Diversity in Health Related Research, PA-05-015, Role: Graduate Researcher	06/2005-10/2007
NIH-RO1 #EB-00282, Lymphocyte/Macrophage Interactions on Biomaterials, Role: Graduate Researcher.	06/2005-10/2007
National Science Foundation funded Research Experience for Undergraduate, Dartmouth Molecular Materials Group: Evaluation of Critical Solution Temperatures in Thermosensitive Amphiphilic Triblock Polymers, Role: Undergraduate Researcher	06/2002-08/2002
National Science Foundation funded Research Experience for Undergraduate: Viral Host/Vector Interactions in Potato Leaf Roll Viral Infected Plants, Role: Undergraduate Researcher	06/2001-08/2001

Publications

1. Caculitan N, Scudder P, **Rodriguez A**, Casson JL, Wang HL, Robinson JM, and Johal MS. "In Situ Kinetics of LBL Assembled NLO-Active Amphiphiles from Dynamic Surface Force Measurements." *Langmuir* 2004; 20: 8735-8739.
2. Voskerician G, **Rodriguez A**, Gingras PH. "Macroporous Condensed Poly(Tetra Fluor-Ethylene): II. In vivo effect on Adhesion Formation and Tissue Integration". *Journal of Biomedical Materials Research: Part A*. 2007. 82(2): 426-35.
3. Ngumbi E, Eigenbrode SD, Bosque-Perez NA, Ding H, **Rodriguez A**. Myzus Persicae is arrested more by blends than by individual compounds elevated in headspace of PLRV-infected potato. *Journal of Chemical Ecology*. 2007. 33(9): 1733-1747.
4. **Rodriguez A**, Voskerician G, Meyerson HM, MacEwan SR, Anderson JM. T cell subset distributions following primary and secondary implantation at subcutaneous biomaterial implant sites. *Journal of Biomedical Materials Research: Part A*. 2008. 85(2): 556-565
5. Anderson JM*, **Rodriguez A***, Chang DT*. Foreign Body Reaction to Biomaterials. *Seminars in Immunology*. 2008. 20(2): 86-100. *primary first co-authors
6. **Rodriguez A**, Meyerson H, and Anderson JM . Quantitative in vivo cytokine analysis at synthetic biomaterial implant sites. *Journal of Biomedical Materials Research A*. 2009. 89 (1): 152-9.
7. **Rodriguez A**, MacEwan SR, Meyerson H, Kirk JT, Anderson JM. The foreign

- body reaction in T cell deficient mice. *Journal of Biomedical Materials Research A*. 2009. 90(1): 106-13.
8. **Rodriguez A** and Anderson JM. Evaluation of Biomaterial Surface Effects on T cell Activation. *Journal of Biomedical Materials Research A*. 2010. 92(1): 214-220.
 9. **Rodriguez A**, Strowd R, Reynolds P, Lefebvre C. Integrating Resident-to-Resident Teaching in Interdisciplinary Stroke Education. *Medical Education*. 2014. 48(5): 534.
 10. **Rodriguez A**, Neal MT, Liu A, Somasundaram A, Hsu W, Branch CL. Placement of cortical bone trajectory screws in previously instrumented pedicles for adjacent segment lumbar degenerative disease using intraoperative CT stereotactic spinal navigation. *Neurosurgical Focus*. 2014. 36(3): E9.
 11. Mohammadi A, Hawasli A, **Rodriguez A**, Schroeder JL, Laxton A, Elson P, Tatter SB, Barnett GH, Leuthardt EC. The Role of Laser Interstitial Thermal Therapy in Enhancing Progression Free Survival of Difficult to Access High Grade Gliomas: a Multi-Center Study. *Cancer Medicine*. 2014. 3(4):971-9.
 12. **Rodriguez A**. "Women in Surgical Leadership Positions: Further Assessment and Future Planning Needed". *The American Journal of Surgery*. Jun 2015. 209(6):1112
 13. **Rodriguez A**, Tatter SB. Neurosurgical Management of Brain Metastases. *Current Problems in Cancer*. 2015. 39(2):89-98.
 14. **Rodriguez A**, Kuhn EN, Somasundaram A, Couture DE. Management of Pediatric Syringomyelia. *Journal of Neurosurgery: Pediatrics*. 2015 Jul 24:1-6
 15. **Rodriguez A**, Tatter SB, Debinski W. Neurosurgical Techniques for Disruption of the Blood-Brain-Barrier for Glioblastoma Treatment. *Pharmaceutics*. 2015. 7(3):175-187.
 16. Renfrow JJ, **Rodriguez A**, Liu A, Pilitsis J, Samadani U, Ganju A, Germano I, Benzil D, Wolfe SQ. Positive Trends in Neurosurgery Enrollment and Attrition: Analysis of the 2000-2009 Female Neurosurgery Resident Cohort. *Journal of Neurosurgery*. 2016. 124(3):834-9.
 17. McCormick M, Bartels H, **Rodriguez A**, Johnson JE, Janjua RM. Anatomical variations of the transverse-sigmoid sinus junction: Implications for endovascular treatment of idiopathic intracranial hypertension. *The Anatomical Record*. 2016. 299 (8):1037-42.
 18. **Rodriguez A**, Tatter SB. Laser Ablation of Recurrent Malignant Glioma: Current Status and Future Prospective. *Neurosurgery*. 2016 Dec; Suppl 1: S35-S39.
 19. Renfrow JJ, **Rodriguez A**, Wilson TA et al. Tracking Career Paths of Women in Neurosurgery. *Neurosurgery*. 2017. May 16 epub ahead of print
 20. **Rodriguez A**, Brown CE, Badie B. Chimeric Antigen Receptor T cell Therapy for Glioblastoma. 2017. Translational Research. In press
 21. Badie B, Brown CE, **Rodriguez A**, Tang W, Wong S, Forman S, Jensen M. Bioactivity and Safety of Off-the-Shelf, steroid resistant IL-13Ra2 CAR T cells in Glioblastoma Patients. 2017. In preparation for Science Translational Medicine.
 22. Mirzaei H, **Rodriguez A**, Brown CE, Badie B. CAR T Cell Therapy in solid tumors: Challenges and Clinical applications. 2017. In preparation for *Frontiers in Immunology*.

Theses and Dissertations

1. Undergraduate Honors Thesis: Synthesis of Non-Linear Optical Amphiphiles and Incorporation into Polyelectrolyte Multilayers. 2003. Department of Chemistry, New College of Florida
2. Doctor of Philosophy Dissertation: T cell interactions in the Foreign Body Response to Biomaterials. 2008. Department of Pathology, Case Western Reserve University.

Abstracts and Presentations

Oral Presentations

National/International Meetings

1. "MRI-guided Laser Thermal Therapy for Recurrent Cerebral Metastases." **Rodriguez A**, Tatter SB. NeuroBlate Network. February 2013.
2. "Clinical Outcome of Patients with Lumbar Fusion Using the Cortical Bone Trajectory." Neal MT, **Rodriguez A**, Liu A, Somasundaram A, Hsu W, Branch CL. AANS/CNS Section on Disorders of the Spine and Peripheral Nerves. March 2014
3. "The Role of Tumor associated Macrophages in directing Glioma Invasion." **Rodriguez A**, Debinski W. Neurosurgery Research Education Foundation Research Symposium. 2014 AANS Annual Meeting. April 2014
4. "Lesion Volumetric analysis following MRI guided laser ablation for radiation necrosis." **Rodriguez A**, Lobanov O, Tatter SB. Section on Tumors Neurosurgical Forum at the 2014 CNS national meeting. October 2014
5. "Induction of M2 type Macrophages by GBM cells." **Rodriguez A**, Gibo D, Debinski W. Annual Scientific Meeting of the Society for Neuro-Oncology. November 2014
6. "Stereotactic MRI-guided Laser Interstitial Thermal Therapy of the Corpus Callosum for Refractory Childhood onset Epilepsy." **Rodriguez A**, Popli G, Couture D. 2014 Pediatric Section Annual Meeting. December 2014
7. "The Original Cushing Society: A historical Review of the Senior Society's First 6 Meetings." **Rodriguez A**, Somasundaram A, Liu A, Quest D, Tatter SB. American Association of Neurological Surgeons Annual Meeting. May 2015.
8. "Positive Trends in Neurosurgery Enrollment and Attrition: Analysis of the 2000-2009 Female Neurosurgery Resident Cohort. Renfrow JR, **Rodriguez A**, Liu A, Pilitsis J, Samadani U, Ganju A, Germano I, Benzil D, Wolfe S. American Association of Neurological Surgeons Annual Meeting. May 2015.
9. "Alternative Payment Models: What do neurosurgeons need to know?" Aronson J, Kahn E, **Rodriguez A**, Singer J. Council of State Neurosurgical Societies National Meeting. September 2015
10. "New Frontiers of Laser Ablation in Neurosurgery" **Rodriguez A**. 5th Annual Dandy Neurosurgical Society Meeting. November 2016
11. "Laser Ablation for the Neurosurgical Oncologist". **Rodriguez A**. Society for Brain Mapping and Therapeutics Annual Meeting. April 2017.
12. "CAR T cell Therapy for malignant glioma". **Rodriguez A**. Society for Brain Mapping and Therapeutics Annual Meeting. April 2017.

Local/Regional Meetings

1. "Laser Interstitial Thermal Therapy for Glioblastoma and Cerebral Metastasis". **Rodriguez A**, Tatter SB. Southern Neurosurgical Society Annual Meeting March 2012
2. "Interdisciplinary Neurologic Conference: Spontaneous Intracranial Hemorrhage." **Rodriguez A**, Strowd R, Thompson G, Witcher M. Emergency medicine Grand Rounds. December 2012. Wake Forest Medical Center
3. "Laser Interstitial Thermal Therapy for recurrent Cerebral Metastases." **Rodriguez A**, Tatter SB. Southern Neurosurgical Society. February 2013
4. "Stereotactic Radiosurgery versus Surgical Resection for Treatment of Metastatic Brain Tumors with Greater than 2cm Diameter." **Rodriguez A**, Liu A, Piazza M, Lucas J, Chan M, Tatter S. Southern Neurosurgical Society. February 2014
5. "Paradigm Shift in the Treatment of Idiopathic Intracranial Hypertension - Angioplasty as a Litmus Test." **Rodriguez A**, Bartels H, McCormick M, Janjua RM. Southern Neurosurgical Society. February 2014
6. "Clinical Outcome of Patients with Lumbar Fusion using the Cortical Bone Trajectory." **Rodriguez A**, Neal M, Liu A, Somasundaram A, Hsu W, Branch C. Southern Neurosurgical Society. February 2014

7. "Immunotherapy and the Tumor Microenvironment in GBM." **Rodriguez A**, University of Arkansas Neurobiology and Developmental Sciences Seminar. January 2017
8. "Immunotherapy and the Tumor Microenvironment in GBM." **Rodriguez A**, University of Wisconsin Neurosurgery Grand Rounds. January 2017.

Posters

National/International Meetings

1. "Myzus Persicae Response to Volatiles from PLRV Infected Plants", **Rodriguez A**, National Conference on Undergraduate Research. April, 2002.
2. "Induction of Volatile Organic Compounds from Potato Leafroll Virus-Infected Potato Plants that attract the Virus Vector Myzus Persicae" Eigenbrode SD, Berger PH, Ding H, Lorenzen, and **Rodriguez A**, ESA (Ecological Society of America) Annual Meeting and Exhibition. November, 2002
3. "Incorporating NLO Surfactants into Polyelectrolyte Multilayers and Langmuir-Blodgett Assemblies", Caculitan N, Scudder P, Casson JL, Robinson JM, **Rodriguez A**, Tang Z, Wang HL, and Johal MS, The 229th ACS National Meeting. March, 2005
4. "Isolation and Identification of Volatile Organic Compounds that arrest the green aphid Myzus Persicae to Potato Leaf Virus-Infected Plants", Ngumbi E, Ding H, **Rodriguez A**, Eigenbrode SD, Entomological Society of America Annual Meeting. December, 2006
5. "Quantification of T Lymphocyte Subpopulations to Biomaterial Implants by flow cytometry". **Rodriguez A**, Voskerician G, Meyerson HM, MacEwan SR, Anderson JM. Society for Biomaterials 2007 Annual Meeting. April 2007
6. "MRI-thermometry Guided Laser Interstitial Thermal Therapy for recurrent Cerebral Metastases". **Rodriguez A**, Tatter SB. Congress of Neurological Surgeons Annual Meeting. October 2012.
7. "Epidural Hematoma Calcification in Children: A rare but significant entity." Claiborne, JR, Wood BC, **Rodriguez A**, Couture DE, David LR. 12th International congress on cleft lip/palate and related craniofacial anomalies. May 2013
8. "The Role of Laser Interstitial Thermal Therapy in Enhancing Progression Free Survival of Difficult to Access High Grade Gliomas: a Multi-Center Study." Mohammadi AM, Hawasli AH, **Rodriguez A**, Schroeder JL, Laxton AW, Elson Paul, Tatter SB, Barnett GH, Leuthardt EC. 2013 Society for Neuro-Oncology Meeting. November 2013
9. "Natural History of Syringomyelia." **Rodriguez A**, Somasundaram A, Kuhn E, Couture D. 2013 AANS/CNS Section on Pediatric Neurological Surgery. December 2013. Top E-poster Presentation.
10. "The Utilization of Cortical Bone Trajectory in the Treatment of Adjacent Segment Lumbar Degenerative Disease." Neal MT, **Rodriguez A**, Liu A, Somasundaram A, Hsu W, Branch CL. AANS/CNS Section on Disorders of the Spine and Peripheral Nerves. March 2014.
11. "The Effect of Vancomycin Powder usage on early Post-operative Infection Rates in Adult Lumbar Fusion." Liu A, Sun D, **Rodriguez A**, Birkedal J, Syed I, and Hsu W. AANS Annual Meeting. April 2014.
12. "Stereotactic Radiosurgery versus Surgical Resection for Treatment of Metastatic Brain Tumors with Greater than 2cm Diameter." **Rodriguez A**, Liu A, Piazza M, Lucas J, Chan M, Tatter S. AANS Annual Meeting. April 2014
13. "Paradigm Shift in the Treatment of Idiopathic Intracranial Hypertension - Angioplasty as a Litmus Test." **Rodriguez A**, Bartels H, McCormick M, Janjua RM. AANS Annual Meeting. April 2014.
14. "Spine Surgery in Octogenarians". Liu A, Sun D, **Rodriguez A**, Branch CL, Hsu W. AANS Annual Meeting. April 2015
15. "Management of Mild Traumatic brain injury: A single institution experience to determine predictors of hospital Admission." **Rodriguez A**, Wilson TA, Liu A, Piazza MG, McAbee J, Spong T, Reynolds P, and Wolfe SQ. CNS

Annual Meeting. October 2015.

Local/Regional Meetings

1. "Cyclic-RGD Functionalized Thermosensitive Liposomes for Targeted Drug Delivery to Tumor Endothelial Cells", Miksic V, Saul J, Nasongkla N, **Rodriguez A**, Renne R, Gao J, Case Research Showcase 2004. April, 2004
2. "We Supply the Evidence, You make the Decisions: Evidenced Based Medicine in Clinical Practice", Zipp T, **Rodriguez A**, Jessup C, Case School of Medicine Educational Retreat. February, 2005
3. "Response of Myzus Persicae to Potato Volatiles: Deciphering the effects of Potato Leaf Roll Virus Infection", Eigenbrode SD, Ngumbi E, Ding H, Mowry TM, **Rodriguez A**, Werner B, Pacific Branch Entomological Society 19th Annual Meeting. March, 2006.

Other Creative Products

1. **Rodriguez, A**. Wellness: Personal Life. Association of Women Surgeons. Online resource for medical students and residents. https://www.womensurgeons.org/aws_library/FINAL%20Wellness%20-%20Personal%20Life.pdf
2. **Rodriguez, A**. Reflections on Glioblastoma and the new Death with Dignity. AANS Neurosurgeon: Resident's Forum. Volume 23, Number 4, 2014
3. **Rodriguez, A**. The Future of GME Funding: Implications for Neurosurgery. AANS Neurosurgeon: CSNS Report. Volume 23, Number 4, 2014
4. Contributor to The Neurosurgical Atlas. Online Operative Manual developed by Dr. Aaron Cohen-Gadol. <http://www.neurosurgicalatlas.com/volumes/preface>
5. Neal MT, **Rodriguez A**, Branch CL. Cortical Bone Trajectory Pedicle Screw Fixation Mast Technique. Video Atlas of Spine Surgical Techniques.p. 327-334.
6. Hammer C, **Rodriguez A**, Schirmer C. Achieving Greatness: #Concussion Facts. Neurosurgery Blog. <http://www.neurosurgeryblog.org/2016/10/12/achieving-greatness-concussionfacts/>. October 2016

Patents and Technology Transfer

Detection of Malignancy in Brain Cancer, WO2015070197 A1, Debinski W, **Rodriguez A**, Gibo D, Wake Forest University Health Sciences