

ALISON RIGBY

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EDUCATION

University of California, San Diego (San Diego, CA)

Ph.D. Student in Neurosciences

Aug 2022 – Present

Drexel University (Philadelphia, PA)

M.A. in Music Therapy and Counseling, Graduated *Summa cum laude* / GPA: 3.90

June 2015

Rutgers University (Camden, NJ)

M.S. in Biology, Graduated *Magna cum laude* / GPA: 3.89

May 2005

Rutgers University (Camden, NJ)

B.A. in Biology, Graduated *Magna Cum Laude* / GPA: 3.79, Honors College

May 2003

Highest Honors Achievement Award in Biology; Athenaeum Honors Society; Outstanding Scholars Award – Full Tuition Scholarship

Professional Training & Additional Coursework

Harvard University Extension School / Graduate-level Courses (online)

June – Dec 2021

Intermediate Statistics: Methods and Modeling (Fall 2021); Programming in R (Summer 2021)

University of California at Berkeley Summer School / Graduate-level Courses (online)

May – Aug 2021

Computational Models of Cognition (Summer 2021); Introduction to Cognitive Science (Summer 2021)

Stanford Summer School: Introduction to Statistical Methods / Graduate-level course (online)

June – Aug 2021

University College London: Statistical Parametric Mapping for EEG/MEG/fMRI (online)

May 2021

IBM Data Science Professional Certificate (online), Coursera

Jan 2021

Data Science Methodology; Python for Data Science; AI & Development; Python Project for Data Science; Databases and SQL for Data Science with Python

Neurocourses UK – Royal Society of Biology: Human Brain Anatomy (online)

Nov 2020

Coursera: Introduction to Programming with MATLAB (online)

April 2020

AWARDS & HONORS

Award for Establishing a New Technology

Nov 2006

Merck Research Laboratories (West Point, PA)

- Developed & optimized global Merck protocol for laser-capture microdissection & RNA extraction applied to neuroscience drug discovery

RESEARCH EXPERIENCE

Italian Institute of Technology at Sapienza University – Neuroscience of Perception and Action Lab (Rome, Italy)

Volunteer Research Intern

Jan 2022 – June 2022

- Assisted in human participant studies using EEG hyper-scanning, motion-capture, and eye-tracking to measure interpersonal synchronization during ecological music tasks
- Collaborated on literature review for a forthcoming paper synthesizing existing literature in joint music-making from behavioral, neural, and computational modeling perspectives

Champlain College – Champlain Neuroscience Lab (Rome, Italy / Remote)

Volunteer Researcher

June 2020 – June 2022

- Contributed to qualitative research study examining experiences of Parkinson's patients in Movement for Parkinson's dance program in Burlington, Vermont
- Collaborated on study protocol, data analysis, and published paper with researchers at Champlain College in Burlington, Vermont and Università Cattolica del Sacro Cuore in Milan, Italy
- Attended and participated in Movement for Parkinson's Zoom classes to observe, better understand participant challenges and needs, and build rapport with attendees
- Recruited volunteer research participants and obtained informed consent
- Conducted Zoom interviews: 60-minute qualitative interviews with participants; transcription and coding of interview recordings for further content analysis

Merck Research Laboratories – Neuroscience Department (West Point, PA)

Research Associate Biologist

Aug 2005 – April 2011

- Contributed to the discovery of FDA-approved “Belsomra” and optimized the global Merck protocol for laser-capture microdissection and RNA extraction
- Investigated the effects of a dual orexin receptor antagonist on gene expression of amphetamine-sensitized animals
- Examined gene expression changes in cholinergic neurons from basal forebrain during sleep and extended wakefulness; Studied gene expression changes in sleep circuits during wake and sleep using a novel and more precise approach
- Collaborated with researchers at University of Pennsylvania, Northwestern University, and Rosetta Inpharmatics LLC
- Presented research at internal/external conferences, including Society for Neuroscience annual meeting
- Selected to present research using laser-capture microdissection and gene expression analysis for drug discovery to the company CEO
- Trained colleagues and incoming personnel on current technologies and assays in our lab
- Lab skills: animal handling, animal dissection, tissue preparation, slide preparation, cryosectioning, laser-capture microscopy, fluorescence microscopy, RNA extraction, PCR

Rutgers University (Stratford, NJ)

Thesis Researcher, Lab of Dr. Robert Nagele

Sept 2003 – May 2005

- Thesis title: The Response of Neurons to Alzheimer’s Disease Pathology
- Investigated the molecular mechanisms underlying development of Alzheimer’s Disease pathology using immunohistochemical assays
- Presented research at graduate student research symposia, 2004-2005
- Lab Skills: immunohistochemistry, light microscopy, fluorescence microscopy, tissue preparation

CLINICAL EXPERIENCE

The Children’s Hospital of Philadelphia (Philadelphia, PA)

Music Therapist (Per Diem)

Oct 2015 – May 2019

Music Therapy Intern

Sept 2014 – June 2015

- Delivered patient and family care through individual and group music therapy sessions on the Oncology, Neurology, Pediatric Intensive Care, Neonatal Intensive Care, and Rehabilitation units
- Observed/Assessed patients’ clinical needs and supported clinical goals: normalization, increased social interaction and stimulation, pain management, anxiety and stress reduction, developmental milestones attainment, improved feeding behavior, increased family bonding, recovery and rehabilitation of motor and cognitive function, increased coping skills, emotional expression, grief processing
- Led “Music Together Within Therapy” groups for patients and their families to support normalization, caregiver-child bonding, and clinical needs specific to individual patients
- Assessed clinical needs of group members, flexibly responded to individual and group needs, and modeled supportive musical behavior for caregivers
- Formulated lesson plans for hospital groups; Developed take-home support sheets to educate and guide caregivers in creating musical experiences at home with their children
- Supervised music therapy undergraduate student participants in “Music Together Within Therapy” groups
- Co-Led and developed a caregiver relaxation group with a dance-movement therapist on the PICU to support stress reduction and promote social interaction
- Collaborated with colleagues across treatment teams to optimize care and support to patients and families
- Participated in bi-annual memorial service for families of deceased patients to provide bereavement support

Cancer Treatment Centers of America (Philadelphia, PA)

Music Therapist

Sept 2016 – Sept 2018

- Provided music therapy and counseling sessions for patients, families, and hospital groups
- Assessed patient clinical needs and supported patient clinical goals: pain management, anxiety and stress reduction, normalization, sleep improvement, memory enhancement, emotional expression, grief processing, quality of life improvement
- Collaborated with colleagues across cross-disciplinary treatment teams, including ICU, Stem Cell, Integrative, and Palliative/End of Life Care teams during daily rounds
- Presented research to the Executive Leadership team communicating and advocating for the benefits of music therapy for oncology populations and, as a result, initiated a music therapy program in the hospital

Birdhouse Center for the Arts (Lambertville, NJ)

Music Therapist

Nov 2015 – Feb 2016

- Provided in-home music therapy sessions for children and adolescents with Autism Spectrum Disorder

The Young Children's Center for the Arts (Philadelphia, PA)

Leader/Facilitator, Music Therapy Practicum

March 2014 – June 2014

- Guided group music therapy sessions for children ages 1-4 years old
- Supported children with developmental disabilities in 1:1 music therapy sessions

Germantown Recovery Community (Philadelphia, PA)

Leader/Facilitator, Music Therapy Practicum

Sept 2013 – March 2014

- Facilitated group music therapy sessions for clients with schizophrenia and community choir
- Counseled client with an intellectual disability through therapeutic music lessons

TEACHING EXPERIENCE

Drexel University (Philadelphia, PA)

Adjunct Faculty

Sept 2015 – June 2018

Continuing Music Therapy Education Course Lecturer

Jan 2017

- Designed curriculum and taught the following graduate-level courses;
 - *Neuroscience: Concepts and Applications for Creative Arts Therapy* (part of core curriculum for graduate students in MA Creative Arts Therapies program)
 - *Music and Neuroscience: Basic Principles for Music Therapists* (continuing education course approved by the Certification Board for Music Therapists)
 - *Neuroscience Intensive course* (5-hour course for graduate students)
- Organized course materials for key topics: nervous system organization and function, neural transmission, neural systems, neurodevelopment, neuroplasticity, cognitive processing, neurologic disorders, social and affective neuroscience and applications, therapeutic practice; Researched current literature in clinical neuroscience, psychotherapy, and creative arts therapies to develop course content
- Collaborated with students during experiential learning activities to encourage applications of knowledge in practice
- Designed approachable course content for students from non-science backgrounds

PUBLICATIONS

- Colombo, B., **Rigby, A.**, Gnerre, M., Biassoni, F. (2022). The effects of a dance and music-based intervention on Parkinson's patients' wellbeing. An interview study. *Int. J. Environ. Res. Public Health*, 19(12). <https://doi.org/10.3390/ijerph19127519>
- Nikonova E. V., Gilliland, J. D., Tanis, K. Q., Podtelezchnikov, A. A., **Rigby, A. M.**, Galante, R. J., Finney, E. M., Stone, D. J., Renger, J. J., Pack, A. I., & Winrow, C. J. (2017). Transcriptional profiling of cholinergic neurons from basal forebrain identifies changes in expression of genes between sleep and wake. *Sleep*, 40(6). <https://doi.org/10.1093/sleep/zsx059>
- Winrow, C. J., Tanis, K. Q., Reiss, D. R., **Rigby, A. M.**, Uslaner, J. M., Uebele, V. N., Doran, S. M., Fox, S. V., Garson, S. L., Gotter, A. L., Levine, D. M., Roecker, A. J., Coleman, P. J., Koblan, K. S., & Renger, J. J. (2010). Orexin receptor antagonism prevents transcriptional and behavioral plasticity resulting from stimulant exposure. *Neuropharmacology*, 58(1), 185-94. <https://doi.org/10.1016/j.neuropharm.2009.07.008>
- Winrow, C. J., Tanis, K. Q., **Rigby, A. M.**, Taylor, R. R., Serikawa, K., McWhorter, M., Tokiwa, G. Y., Marton, M. J., Stone, D. J., Koblan, K. S., & Renger, J. J. (2009). Refined anatomical isolation of functional sleep circuits exhibits distinctive regional and circadian gene transcriptional profile. *Brain research*, 1271, 1-17. <https://doi.org/10.1016/j.brainres.2009.02.083>

PRESENTATIONS & POSTERS (* after name denotes presenter)

- Smith, S.*, **Rigby, A.M.**, Doelling, K., & Voytek, B. (2023, March). Investigating the mechanisms of precise predictive timing: behavior and intracranial EEG. [Poster Presentation]. Cognitive Neuroscience Society Conference, San Francisco, CA, USA.
- Abalde, S. F.*, **Rigby, A. M.**, Keller, P. E., & Novembre, G. (2022, July). A framework for joint music-making: behavioral findings, neural process, and computational models. [Poster presentation]. Musical Togetherness Symposium, Vienna, Austria.
- **Rigby, A. M.*** (2017, July). Can music therapy support the vulnerable brain? : Explorations of possible music therapy approaches for supporting neurocognitive development and strengths in children undergoing cancer treatment [Poster presentation]. World Congress of Music Therapy Conference, Tsukuba, Japan.
- **Rigby, A. M.*** & Liu, F. Y.* (2017, July). Neuroscience-informed music therapy as a neuroprotective intervention for pre-dementia populations [Presentation]. World Congress of Music Therapy Conference, Tsukuba, Japan.
- **Rigby, A. M.*** (2016, June). Can music therapy support the vulnerable brain? : Explorations of possible music therapy approaches for supporting neurocognitive development and strengths in children undergoing cancer treatment [Presentation]. The International Association for Music & Medicine Conference, Beijing, China.
- **Rigby, A. M.*** & Liu, F. Y.* (2016, June). Neuroscience-informed music therapy as a neuroprotective intervention for pre-dementia populations [Presentation]. The International Association for Music & Medicine Conference, Beijing, China.
- **Rigby, A. M.*** & Troyano, A.* (2016, March). Becoming a music therapist: recommendations for the use of mindfulness to support supervisee development [Presentation]. The Mid-Atlantic Region of the American Music Therapy Association Conference, Harrisburg, PA, USA.

- Hutchings, K.*, **Rigby, A.M.***, Page, M.*, & Liu, F. Y.* (2016, March). Over 30 and starting over: becoming a music therapist later in life [Presentation]. The Mid-Atlantic Region of the American Music Therapy Association Conference, Harrisburg, PA, USA.
- **Rigby, A. M.*** (2016, January). Music therapy in integrative cancer treatment [Presentation]. Cancer Treatment Centers of America, Philadelphia, PA, USA.
- **Rigby, A. M.*** (2015, June). Becoming a music therapist: recommendations for the use of mindfulness to support supervisee development [Presentation]. Thesis Colloquium, Drexel University, Philadelphia, PA.
- **Rigby, A. M.***, Taylor, R. R., Tanis, K. Q., Groover, K. M., Reiss, D. R., Renger, J. J., & Winrow, C. J. (2010, May). Laser capture microdissection for neuroscience target discovery [Presentation]. Merck Research Laboratories Symposium, West Point, PA, USA.
- Nikonova, E. V.*, Tanis, K. Q., Mackiewicz, M., Winrow, C. J., Podtelezchnikov, A. A., **Rigby, A. M.**, Romer, M. A., Finney, E. M., Stone, D. J., Pack, A. I., & Renger, J. J. (2009, October). Identification of novel sleep-wake regulated pathways in basal forebrain cholinergic neurons using mRNA profiling [Poster Presentation]. Society for Neuroscience Conference, Chicago, IL, USA.
- Taylor, R. R.*, **Rigby, A. M.**, Tanis, K. Q., Groover, K. M., Reiss, D. R., Renger, J. J., & Winrow, C. J. (2008, November). Laser capture microdissection for neuroscience target discovery [Poster Presentation]. Society for Neuroscience Conference, Washington, D.C., USA.
- **Rigby, A. M.***, Taylor, R. R., Serikawa, K., Stone, D. J., McWhorter, M., Rhydderch, J., Tanis, K. Q., Mackiewicz, M., Romer, M., Renger, J. J., & Winrow, C. J. (2008, November). Dissecting gene expression in heterogeneous tissue: LCM profiling sleep nuclei and neuronal sub-populations [Poster Presentation]. Society for Neuroscience Conference, Washington, D.C., USA.
- **Rigby, A. M.***, Taylor, R. R., Serikawa, K., Stone, D. J., McWhorter, M., Miller, R. A., Barbacci, D. C., Hendrickson, R., Renger, J. J., & Winrow, C. J. (2007, November). Uncovering the next generation of sleep targets - applications of laser capture microdissection and molecular profiling analysis [Poster Presentation]. Society for Neuroscience Conference, San Diego, CA, USA.
- **Rigby, A. M.**, Serikawa, K., Stone, D. J., McWhorter, K. S., Renger, J. J., & Winrow, C. J.* (2007, June). Uncovering the next generation of sleep targets-Application of laser capture microdissection and gene expression analysis [Poster Presentation]. SLEEP 2007, Minneapolis, MN, USA.
- **Rigby, A. M.***, Renger, J. J., Winrow, C. J. (2006, October). Uncovering the next generation of sleep targets – applications of laser capture microdissection and gene expression analysis [Poster Presentation]. Society for Neuroscience Conference, Atlanta, GA, USA.
- Presented posters at the yearly Merck Technology Symposium 2006-2008.
- **Rigby, A. M.*** (2005, May). The response of neurons to Alzheimer’s Disease pathology [Presentation]. Thesis Defense, Rutgers University, Camden, NJ, USA.
- Siu, G.*, **Rigby, A. M.***, Kosciuck, M. C., Venkataraman, V., Wang, H., Nagele, R. G. (2005, March). Antineuronal antibodies in human serum target specific neuronal subtypes: a possible trigger that initiates the pathogenesis of Alzheimer’s Disease [Poster Presentation]. UMDNJ-SOM GSBS Research Day, Stratford, NJ, USA.
- DuBay, J.*, Vatsky, S., Siu, G., **Rigby, A. M.**, Kosciuck, M. C., & Nagele, R. G. (2005, March). Abeta42, the so-called “toxic” peptide implicated in Alzheimer’s disease, is not all bad [Poster Presentation]. UMDNJ-SOM GSBS Research Day, Stratford, NJ, USA.
- Vatsky, S.*, DuBay, J., Siu, G., **Rigby, A. M.**, Kosciuck, M. C., & Nagele, R. G. (2005, March). Cytoskeletal protein expression during neuron degeneration in brain tissue with Alzheimer’s disease pathology [Poster Presentation]. UMDNJ-SOM Research Day, Stratford, NJ, USA.
- Siu, G.*, **Rigby, A. M.***, Kosciuck, M. C., Venkataraman, V., Wang, H., Nagele, R. G. (2004, October). Antineuronal antibodies in human serum target specific neuronal subtypes: a possible trigger that initiates the pathogenesis of Alzheimer’s Disease [Poster Presentation]. UMDNJ-SOM GSBS Fall Research Retreat, Egg Harbor City, NJ, USA.

INVITED TALKS

Italian Institute of Technology at Sapienza University – Neuroscience of Perception and Action Lab (Rome, Italy)

Music Therapy: General Overview and Clinical Examples

Feb 2022

Champlain College – Music and Wellbeing Course (Online)

What is Music Therapy?

March 2021; March 2022

Immaculata University – Health Psychology Course (Online)

Eating Disorders

April 2020; Oct 2020; March 2021

PROFESSIONAL MEMBERSHIPS & LEADERSHIP ROLES

Professional Memberships:

Society for Neuroscience

2005 – 2011; 2016 – Present

American Music Therapy Association

2013 – Present

International Association for Music and Medicine

2015 – Present

Planetary Society

2017 – Present

Leadership Experience:

International Association for Music and Medicine (Rome, Italy)

Member, Board of Directors

June 2016 – Present

Editorial Experience:

Frontiers in Health Psychology (Rome, Italy)

Review Editor

Nov 2020 – March 2022

Psychology of Aesthetics, Creativity, and the Arts (Rome, Italy)

Reviewer

June 2020 – Present

Professional Development / Conferences:

Neuroscience Conferences:

Society for Neuroscience Conference (San Diego, CA)

Nov 2023

17th Annual NeuroMusic Conference (online)

Nov 2021

NeuroMusic VII Conference (online)

June 2021

NeurIPS Conference (online)

Dec 2020

Neuro November Convention 2020 (online)

Nov 2020

Neuromatch Conference 3.0 (online)

Oct 2020

Neuromatch Academy (online) / Observer Track

July 2020

Society for Neuroscience Conference (Washington, D.C.)

Nov 2008

Society for Neuroscience Conference (San Diego, CA)

Nov 2007

Society for Neuroscience Conference (Atlanta, GA)

Oct 2006

Music Therapy Conferences:

International Association for Music & Medicine Conference (online)

May 2022

American Music Therapy Association Conference (online)

Oct 2021

MAR-AMTA Conference (online)

April 2021

World Congress of Music Therapy (online)

July 2020

International Association for Music & Medicine Conference (online)

May 2020

International Association for Music & Medicine Conference (Barcelona, Spain)

May 2018

Trauma Theory & Treatment: Somatosensorial Implications of Resilience (New York, NY)

May 2018

World Congress of Music Therapy (Tsukuba, Japan)

July 2017

PAIN: Cellular to Social Implications for Music Therapy & Medicine (New York, NY)

April 2017

International Association for Music & Medicine Conference (Beijing, China)

June 2016

Turned On-Tuned-In: Integrating Technology in Music Therapy & Medicine (New York, NY)

May 2016

MAR-AMTA Conference (Harrisburg, PA)

March 2016

CLINICAL CERTIFICATIONS

Music Therapist, Board-Certified (Philadelphia, PA)

Aug 2015 — Present

Certification Board for Music Therapists

First Sounds: Rhythm, Breath and Lullaby Training (New York, NY)

Jan 2017

Mount Sinai Beth Israel Hospital, Louis Armstrong Center for Music and Medicine

Neurologic Music Therapy Training (Wuxi, China)

June 2016

International Neurologic Music Therapy Training Program

Music Together Certification (Hopewell, NJ)

Nov 2014

SCIENCE COMMUNICATION EXPERIENCE

YouTube Channel / <https://www.youtube.com/channel/UCrtaiTG4AMITmFVy-Fenzag>

Science Educator

March 2020 – Present

- Researched topics at intersection of neuroscience and music to share with a broader audience
- Scripted content to communicate science topics, such as ear function and sound transduction, fear processing in the brain, and otoacoustic emissions, in approachable, accessible ways
- Constructed props and used Video Scribe software to animate and explain biological structures/physical properties
- Videography skills: camera operation, lighting, sound, and editing

COMMUNITY ENGAGEMENT

Colors of the Brain

Graduate Student Mentor

Sept 2022 — Present

- Served as a graduate student mentor for an undergraduate neuroscience research fellow throughout their 10-week summer research experience
- Provided guidance and support in choosing a lab, developing a research project, and presenting a poster at the culminating research symposium
- Offered general academic career mentorship with particular sensitivity to the frequent barriers and challenges encountered as an underrepresented/first-generation student

Neuromatch Conference

Online Volunteer

Oct 2020

- Hosted 25 talks as a showrunner, managed the Zoom platform on the backend, helped presenters with set-up, monitored the chat for any abuse, and relayed questions and comments to presenters
- Helped book presenters for a Neuroscience and Art panel discussion
- Organized social events, including a movie watch party
- Taught a virtual Zoom yoga session for conference participants

Neuromatch Academy

Online Volunteer

July 2020

- Taught virtual Zoom yoga classes to students; Organized social events

GEMS - STEM Summer Program for Girls (Camden, NJ)

Volunteer Educator / Biology Instructor

June 2003 — July 2003

- Designed and taught biology classes/lab to local high school girls in the Camden community

OTHER WORK EXPERIENCE

Yoga Instructor

Optimal Sport Health Club (Philadelphia, PA)

Aug 2015 — Jan 2018

Is Yoga Studio (Philadelphia, PA)

Jan 2013 — Aug 2015

Shanti Yoga Shala (Philadelphia, PA)

Sept 2012 — Dec 2012

Musician / Violinist

Woods' Edge Trio (Philadelphia, PA)

June 1999 — Dec 2018

Various Bands (Philadelphia, PA)

Oct 2006 – Present

- Violinist in Philadelphia-area bands (Void Vision, Stereo League, Edison, Bulletproof Tigers, Women Who Tan Well, HbDbW, Steve Goldberg and the Arch Enemies, Gemini Wolf)
- Album recordings (Lotus, Void Vision, Worldtown Soundsystem, Stereo League, Ayumi Perry, Ben Arsenal, Edison, Diggable Planets, Bulletproof Tigers, Gemini Wolf, Mr. Twit, Advanced Mechanisms)

RELEVANT SKILLS

Programming Languages: Python, R, JavaScript, SQL

Languages: Italian B2 (upper-intermediate level in speaking/reading/writing), English (native speaker)