

PATRICIA ANN BRODERICK, PH.D.



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<https://www.eazysensenanotechnology.com>
<https://www.eazysensationalbrainimaging.com>

CUNY Grad. Ctr: Psychology: Cognitive and
Behavioral Neuroscience

CUNY Neuroscience Collaborative Graduate
Program: Biology

160 Convent Ave. New York, NY, 10031

NYU Langone Med. Ctr. & Comprehensive Epilepsy
Center, First Ave.& 34th St.

NY, NY, 10016

COURSE DIRECTOR

Neurobiological Actions of Drugs of Abuse at the
City University of New York School of Medicine,
The City College of New York

EDITORIAL APPOINTMENTS

Brain Sciences, Member of the Board

Basel, Switzerland & Beijing, China

The Journal of Neural Transmission, Member of the Board and Field Editor

Vienna, Austria. Heidelberg, Germany.

The Sensors Journal, Member of the Board

Academic Editor, Review Specialist

Sensors, Biochemical Sensors, Chemical Sensors, Physical Sensors

Basel, Switzerland & Beijing, China

The Journal of Biochips and Tissue Chips, Member of the Board and Editor-in-Chief

Henderson, Nevada, USA

EC Cronicon, Psychology and Psychiatry, Member of the Board, Advisory Board,

London, UK

EC Cronicon, Neurology, Member of the Board,

London, UK.

EC Cronicon, Pharmacology, Member of the Board,

London, UK

The International Neuropsychiatric Journal, Member of the Board and Academic Editor

India, UK, USA

The Journal of Caffeine Research, Former-Member of the Board and Editor in Chief, New

Rochelle, NY, USA.

MOJ Clinical & Medical Case Reports: Anatomy and Physiology, Member of the Board and Review editor

INDUSTRIAL EXPERIENCE

SENIOR SCIENTIST

1979-1981

USV Pharmaceutical Corporation, Dept. Cardiovascular Pharmacology, Tuckahoe, NY: Managerial responsibilities in cardiovascular and diuretic pharmaceuticals; managerial responsibilities in CNS area as well, screening CNS effects of cardiovascular and diuretic compounds; instituted the Geller-Seifter Anxiolytic Paradigm.

POSTDOCTORAL AND RESEARCH ASSOCIATE EXPERIENCE

THE ALBERT EINSTEIN COLLEGE OF MEDICINE/ MONTEFIORE MEDICAL CENTER

1981-1985

Department of Psychiatry and Neuroscience, Bronx, NY

CORNELL UNIVERSITY MEDICAL SCHOOL/ THE BURKE REHABILITATION CENTER

1985-1986

White Plains, NY

PROFESSIONAL EXPERIENCE

MOST RECENT FIRST

<u>Institution</u>	<u>Dates</u>	<u>Rank</u>	<u>Department</u>
The City University of New York: (CUNY) Graduate center	2013- Present	Faculty	Subprogram in Neuroscience
The City University of New York: (CUNY) Medical school, Sophie Davis School of Biomedical Education	2013-2015	Course Director	Pharmacology, Physician Assistant Program
The City University of New York: (CUNY) Medical school, Sophie Davis School of Biomedical Education	1995- Present	Medical Professor	Pharmacology, Physiology and Neuroscience
The City University of New York: (CUNY) Medical school, Sophie Davis School of Biomedical Education	1986- 1985	Assc. Medical Professor	Pharmacology and Physiology
<i>Tenure Earned and Granted in 1990 at the CUNY Medical/ Sophie Davis School of Biomedical Education</i>			
New York University School med. : Langone Medical Center	2000- Present	Adjunct Professor/Assc.	Neurology
The City University of New York: (CUNY) Graduate School	1987- Present	Doctoral Faculty	Biology and Psychology

Cornell Univ. Sch. Medicine @ Burke Rehabilitation Ctr.	1985- 1986	Research Associate	Neurology
Albert Einstein College of Medicine Montefiore	1984-1985	Research Associate	Psychiatry
Albert Einstein College of Medicine Montefiore	1981-1984	Postdoctoral Fellow	Psychiatry
USV Pharmaceutical Corp.	1979-1981	Senior Pharmacologist	Psychiatry
Bronx community College The City University of NY	1974-1986	Adjunct, Assoc., and Asst. Professor	Biology and Medical Tech.
St, John's University	1976-1979	Doctorate Teaching/Research	Ph.D Pharmacology
Nathan S. Kline Psychiatric Institute and NY Medical School	1981-1984	Pre-doctoral Research Fellowship	Clinical Chem. Pharmacology
The College of New Rochelle	1975	Adjunct Asst. Professor	Education
St. Thomas Aquinas College	1974	Adjunct Asst. Professor	Div. Nat. Sci.
Scanlan High School	1972-1975	Senior Faculty: Tenure	Science
Cathedral High School	1966-1972	Faculty: Tenure	Science
St. Rose/ St. Joseph's Elem School	1963-1966	Faculty	Science and Math

ACADEMIC AND INDUSTRIAL HONORS

- | In 2018-2019, Broderick named Top Educator soon to be released cover story
- | In 2018-2019, Broderick named Top Industry Professor-soon to be released cover story
- | In 2018, Neuromolecular Imaging and BRODERICK PROBE® nanobiosensors reveal a temporal synchrony in brain rhythms in neural transmission online with movement designs during natural physiology: Temporal asynchrony is imaged online in the same subject during pathology
- | In 2018, Market Overview Today, Dr. Broderick manufactures original sensors that are smaller than ... <http://www.youtube.com/watch?v=LeliGwi-aKg>.
- | In 2018, Bronx Times Reporter, Most influential women in the Bronx
- | **In 2018, Keynote Speaker, Stockholm, Sweden** Speech on second day of 30th Congress on Nanotechnology and nanomaterials Sensing Brain
- | In 2017-2018, Inner Circle Executives, cover story, Continental Who's Who [Empowering Professionals, CUTV News, 2018.]
- | In 2018, Trademark was renewed in Sweden and Canada
- | In 2017, Trademark was renewed in Italy
- | In 2017, radio shows via CUTV News, Jim Masters, host, Topic-Eazysense Nanotechnologies Inc. [CUTV News Welcomes Dr. Patricia Broderick of Eazysense ...](https://www.benzinga.com/.../cutv-news-welcomes-dr-patricia-broderick-of-eazysense...) <https://www.benzinga.com/.../cutv-news-welcomes-dr-patricia-broderick-of-eazysense...>
- | In 2017, - Dr. Patricia Broderick serves as a Medical Professor in Physiology, ... recently finishing her book, Neuroimaging, Sensing Biochemistry in the ...
- | In 2016-2017, Awarded the Business Woman Elite Award, Corp. America, Acquisitions International (AI) Global
- | In 2016-2017, Brain Teaser, a Publication of Corp. America and Acquisitions International Global
- | In 2016-2017, TOP Biosensor, Corp. America, AI Global
- | In 2016, Business Woman Elite Award, Corp. America, nominee, NY, NY, USA; in process, September, 2016.
- | In 2016, Market Watch, March 24, 2016 for BRODERICK PROBE® nanobiosensors and excellence in Professorship.
- | In 2016, DE-Gruyters Open. Berlin, with offices in Basel, Beijing, Boston and Munich. Press Release, facebook, twitter.
- | In 2016, Top Professional and Scientist of the Year, The International Association of Top Professionals, NY, NY, USA.
- | In 2016, Professional of the Year, The International Association of Who's Who. Google_StreetInsider.com
- | In 2016, Trademark granted, BRODERICK PROBE®. France, Germany, Spain, United Kingdom
- | In 2016, Appointed to The Editorial Board, *Journal of Caffeine Research*, Reykjavik, Iceland & Galway, Ireland
- | In 2015, USPTO Patent, A noninvasive Photonic Sensor with Polymer Memory Transduction
- | **Eazysense Nanotechnologies Inc.-Business Plan and Articles of Association -2015 to present.**
- | In 2015, Founder, President, Eazysense Nanotechnologies, Inc. Registered in NY, USA
- | In 2015, New matter patent, authorized by Tech Comm Off, CUNY
- | In 2015, Editorial Board, Neurology@ EC Chronicon
- | In 2015, Editorial & Advisory Board, Chemical Sensors, de Gruyters Open
- | In 2015, Editorial Board, Clinical Cases, MedCrave
- | In 2015, Faculty Row, Inducted, Super Professor
- | In 2015, Board Meeting, Sensors, Basel, Switzerland, with Beijing, China, Travel Award
- | In 2015, Laboratory Taping for media publication by TV Channel, "Ask the Expert"
- | In 2015, International Symposium on Sensors Science, Basel, Switzerland/Beijing, China, *Keynote Speaker/Chair Neurosensors*
- | In 2015, Featured on City College Website

- In 2015, Guest Editor, Technology Fast Forwards Advances in Medicine, J. Neural Transmission
- In 2015, BRODERICK PROBE® featured in CCNY in the News, the Publications and Media Office of CCNY/CUNY
- In 2014, Top Clinical Professor in the Industry Expert. Lifetime Achievement Award from Continental. Who's Who
- In 2014, Internet Radio Consultant on Doctor Radio; live streamed from NYU Langone on Internet Radio, Sirius XM, C
- In 2014, CCNY in the News – Three Articles
- In 2014, Board meeting for the J. Neural Transmission, Berlin, Travel Award
- In 2014, VIP Woman of the Year Award for Outstanding Excellence and Dedication to her profession and achievement of women
- In 2014, Professor/Educator by the National Association of Professional Women 2014
- In 2014, Top Industry Expert Award, published on the Internet Magazine, titlestand.com
- In 2014, Appointed Course Director, Pharmacology, Physician Assistants Program, The City University of New York School of Medicine at the City College of New York in affiliation with the Harlem Hospital Center
- In 2013, Workshop/Symposium, *Proprietary BRODERICK PROBE® biosensor and its related Biotechnologies; Carbon Nanoparticles Comprised of Lipids and Stem Cells*, Raleigh, North Carolina, August 26-28, 2013 with research students, Lauren Malave, Diego Buenaventura, Idaliene Hernandez. Aruna Seegolam and Dr. Jack Jacoby, Rutgers
- In 2013, Invited Speaker, A Mind/Body Minimar, *Board and Member of the American Turner Assn.*, New York
- In 2013, Travel Award for Field Editor, *Journal of Neural Transmission*, Heidelberg, Germany, (April, 2013). Editorial Board Meeting at the Springer Heidelberg Office in Germany
- In 2012, Educator Award, *The Irish Voice*, Presented at the Home of the Irish Consulate General, Noel Kilkenny
- In 2012, Appointed to the Editorial Board, and appointment as Editor-in-Chief, *Journal of Biochips and Tissue Chips*
- In 2012, Invited speaker, International Congress and Exhibition on Biosensors & Bioelectronics: Analyzing Novel Approaches to Biosensors and Bioelectronics, Las Vegas, Nevada
- In 2011, Trademark, BRODERICK PROBE®, granted, South Korea
- In 2011, Appointed to the position of Field Editor, *Journal of Neural Transmission*, Vienna, Austria
- In 2011, Invited speaker, International Congress on Molecular and Cell Biology, Innovative Technologies, Biosensors, Beijing, China, Chaoyang district
- In 2011, BRODERICK PROBE® Biotechnology, Clinical, Epilepsy Patients, Published Newsletter, American Turners Assc, Inc., (Summer, 2011). BRODERICK PROBE® Biotechnology, Clinical, Epilepsy Patients, Published Newsletter, CCNY, Vice Chancellor, CUNY
- In 2011, BRODERICK PROBE® Biotechnology, Human and Animal research, Published Article, in the journal of the CUNY Graduate Center Public Relations
- In 2010, BRODERICK PROBE® Biotechnology, Clinical, Epilepsy Patients, PRESS RELEASE, NYU MEDICAL CENTER
- In 2010, Appointed to The Editorial Board, *Brain Sciences*, Beijing, China, & Basel, Switzerland
- In 2008, Appointed to The Editorial Board, *The Sensors Journal*, Biochemical Sensors Section and Chemical Sensors Section, Basel, Switzerland
- In 2006, Appointed to the Editorial Board, *Journal of Neural Transmission*, Vienna, Austria

PUBLICATIONS

- ❖ -**Broderick PA.**, Sensing the epilepsy brain: a unique nanosurgical biomedical device to treat the epilepsy patient. *Med Case Rep MOJ Clin.* 2018;8(2):60– 65. DOI: 10.15406/mojcr.2018.08.00241

- ❖ -**Broderick PA.**, “*NEUROIMAGING: Nanosensing Biochemistry in the Brain*”, An Imaging Textbook- *The evolution of In Vivo Electrochemistry into Neuromolecular Imaging into Non Invasive Voltaic Photonics: LIVE IMAGING*, Pan Stanford Publishing Pte Ltd., Singapore in press (2018).

- ❖ **Chowdury, R., Broderick, P.A., et al.**, *Intravascular blood flow displays temporal synchrony when basal ganglia neurotransmitter release is videotracked online in the normal state, while vasculature and cerebral release reflect temporal asynchrony during online videotracking of stroke: Sensing with Dual Laser Doppler Flowmetry and BRODERICK PROBE® Society for Neuroscience Presentation San Diego, CA. (2018)*

- ❖ -**Broderick, PA, Wenning, L.**, Neuromolecular imaging and BRODERICK PROBE® nanobiosensors reveal temporal synchrony patterns between neurotransmitter concentration and movement in the physiologic state and temporal asynchrony between neurotransmitter concentration and movement in the pathologic state: **Medical Research, Archives**, vol.6, number 8, 1765. (2018). Published Aug 16, (2018) DOI :<https://doi.org/10.18103/mra.v6i8.1765>

- ❖ -**Broderick, PA**, (ed.) Dr. Victor Preedy): *Compendium on Parkinson’s disease*, The Neuroscience of Parkinson’s. Disease, London, UK, in press (2018).

- ❖ -Wenning L, **Broderick PA**, Philip R. Nicotine Incites a Transformation to Estrus from any Estrous Cycle Stage. *EC Psychology and Psychiatry* (2017); 3.6: 200-214.

- ❖ -**Broderick PA**, Wenning L, Li Y-S. Neuromolecular imaging, a nanobiotechnology for Parkinson's disease: advancing pharmacotherapy for personalized medicine. [*J Neural Transm \(Vienna\)*](#) 10.1007/s00702-016-1633-3. **Epub (2016)** Oct 28.

- ❖ -**Broderick, P.A.**, Jacoby, J.H. (2017) Guest Editors, Special Issue: Nanomedicine in Brain and Spinal Repair: Alzheimer’s, Parkinson’s and the Proteome. *J. Neural Transmission*. Springer Pub. DE

- ❖ -**Broderick PA**, Wenning L, Li Y-S. Textbook Chapter 6, entitled “Life in the Penumbra with the BRODERICK PROBE® ” in eBook Volume “New Concepts in Stroke Diagnosis and Therapy” of eBook series “Current Development in Stroke, Volume 1” edited by Radaelli, A., Bentham Science Publishing 2017: 131-175.

- ❖ -Wenning L, **Broderick PA**. Neuromolecular imaging and BRODERICK PROBE® nanobiosensors reveal temporal synchrony patterns between neurotransmitter concentration and movement in the physiologic state and temporal asynchrony between neurotransmitter concentration and movement in the pathologic state. Poster and abstract (2017): *Society for Neuroscience Annual Meeting* in Washington, D.C.

- ❖ -Wenning L, Phillip R, **Broderick PA**. Nicotine induces change in estrus cycle phase. Poster and abstract presented at *Neuroscience (2016): Society for Neuroscience Annual Meeting* in San Diego, CA

- ❖ -**Broderick, PA**. “Caffeine Is A Stimulant But It May Not Be A Psychostimulant”. *EC Psychology and Psychiatry*

(2016) 1.1: 4-13

- ❖ -Wenning, L., Phillip, R. **Broderick, P.A.** (2016) Nicotine induces change in Estrus Cycle Stage, **Soc Neuroscience, San Diego, CA. USA, Presentation, November 5th, 2016.**
- ❖ ~~(I3S2015)~~ Peter Seitz, Debbie G. Senesky, Michael J. Schöning, Peter C. Hauser, Roland Moser, Hans Peter Herzig, Assefa M. Melesse, **Patricia A. Broderick**, Patrick Thomas Eugster, **Sensors (09/2015); 15(9).** DOI:10.3390/s150924458, **4th International Symposium on Sensor Science:** Basel, Switzerland and Beijing, China
- ❖ -**Broderick, P.A.** Cocaine and Neuromolecular Imaging of neurotransmitters in brain: BRODERICK PROBE® laurate nanobiosensors in mesocorticolimbic neurons, the nucleus accumbens. In: (Ed. Victor R. Preedy) *The Neuropathology of Drug Addiction and Substance Misuse, 2015* Elsevier Press, San Diego, CA, New York, NY, 201
- ❖ -**Broderick P.A.** Caffeine is Hot-People Want to Know About It. **Alumnus**, The City College of New York, June Issue, 2015
- ❖ -**Broderick, P.A.** and Malave, M.B. Caffeine, Adenosine, Sex and the Estrous Cycle **Soc. for Neuroscience**, Chicago, Il., Abstract and Presentation, 2015.
- ❖ -**Broderick, P.A.** Caffeine Counters Cocaine's Effects on Women's Estrus Cycles **Journal of Caffeine Research** (press release) 2014
- ❖ -Lauture, J., and **Broderick, P.A.** Coffee is to a Square as Caffeine is to a Rectangle: Part 3 **Journal of Caffeine Research**, 4(4), 105-106, (2014)
- ❖ -**Broderick, P.A.**, and Malave, L. B., Cocaine Shifts the Estrus Cycle Out of Phase and Caffeine Restores It. **Journal of Caffeine Research**, 4(4), 109-113, (2014)
- ❖ -Lauture, J., and **Broderick, P.A.** Coffee is to a Square as Caffeine is to a Rectangle: Part 2 **Journal of Caffeine Research**, 4 (3), 67-68, (2014)
- ❖ -Lauture, J., and **Broderick, P. A.** Coffee is to a Square as Caffeine is to a Rectangle: Part 1 **Journal of Caffeine Research**, 4 (2), 33-34, (2014)
- ❖ -Malave, L. B., and **Broderick, P.A.** Caffeine's Attenuation of Cocaine-Induced Dopamine Release by Inhibition of Adenosine. **Journal of Caffeine Research**, 4 (2), 35-40, (2014)
- ❖ -**Broderick, P.A.** Neuromolecular Imaging shows Temporal Synchrony Patterns between serotonin and movement within neuronal motor circuits in brain. **Brain Sciences**, 3, 992-1012 (2013)
- ❖ -Saleem W., **Broderick, P.A.** Biomarkers for Brain Disorders Electrochemically Detected By BRODERICK PROBE® Microelectrodes/Biosensors. **J. Biosensors & Bioelectronics**, . S12: 003. (2013).
- ❖ -**Broderick, P.A.**, Signal processing with BRODERICK PROBE® biosensors: studies in neurodegeneration. **J.**

Biosensors & Bioelectronics. Biomedical Engineering, IEEE, Conference @ CCNY (Spring 2013).

- ❖ -**Broderick, P.A.**, Rosenbaum, T. Sex specific brain deficits in auditory processing in an animal model of cocaine- related schizophrenic disorders. **Brain Sciences**. 3(2), 504-520 (2013).
- ❖ -**Broderick, P.A.** Biosensors and Biochips Sense Central and Peripheral Disease. **Editorial, J. Biochips & Tissue Chips**, 3:e122 (2013)
- ❖ -**Broderick, P.A.**, BRODERICK PROBE® microelectrodes/biosensors: Clinical and preclinical use for neurodegenerative diseases. **International Conference on Biosensors and Bioelectronics, 4.5 Biosensors and Nanosensors**, Las Vegas, USA, (May, 2012).
- ❖ -**Broderick, P.A.**, Introducing BRODERICK PROBE® Biosensors Clinically in Epilepsy Patients, **First International Congress in Molecular and Cell Biology, 4.1, Innovative Imaging Technologies**, Beijing, China (August, 2011).
- ❖ -Haile, M.M., **Broderick, P.A.**, Li, Y-S, Quartermain, D., Blanck, T.J.J, Bekker, A.Y. Nimodipine reverses the elevation of synaptic striatal dopamine and serotonin during *in vivo* hypoxia, **Neuroscience** 5:1-7(2011).
- ❖ -**Broderick, P.A.**, Kolodny, E.H., Biosensors in Brain Trauma and Dual Laser Doppler Flowmetry: Enoxaparin simultaneously reduces stroke-induced dopamine and blood flow while enhancing serotonin and blood flow in motor neurons of brain, *In Vivo*. **Sensors, Published on line, Dec. 24, (2010) (vol. 1:136-161(2011).**
- ❖ -**Broderick, P.A.**, Kolodny, E.H., Real-time Imaging of Biomarkers in the Parkinson's Brain: Pharmaceutical Therapy with Bromocriptine. **Pharmaceuticals**, 2(3): 236-249(2009).
- ❖ -**Broderick, P.A.** Doyle, W.K., Pacia S.V., Kuzniecky, R.I., Devinsky, O., Kolodny, E.H., A clinical trial of an advanced diagnostic biomedical device for epilepsy patients, **J. Long-Term Effects of Medical Implants**. Vol.18, June 1 (2009).
- ❖ -**Broderick, P.A.**, Doyle, W. K.; Pacia, S.V, Kuzniecky, R. I., Devinsky, O., Kolodny, E.H., Conference Paper, Intra operative Neuromolecular Imaging (NMI) in Neocortex of Epilepsy Patients: Comparisons with Resected Epileptogenic Tissue, Society for Neuroscience, Nov. (2009).
- ❖ -**Broderick, P.A.** Doyle, W.K., Pacia S.V., Kuzniecky, R.I., Devinsky, O., Kolodny, E.H., A clinical trial of an advanced diagnostic biomedical device for epilepsy patients, **J. Long-Term Effects of Medical Implants**. Vol.18, June 1 (2009).
- ❖ -**Broderick, P.A.**, Doyle, W. K.; Pacia, S.V, Kuzniecky, R. I., Devinsky, O., Kolodny, E.H., Conference Paper, Intra operative Neuromolecular Imaging (NMI) in Neocortex of Epilepsy Patients: Comparisons with Resected Epileptogenic Tissue. Society for Neuroscience, Nov. (2009).
- ❖ -**Broderick, P.A.**, Ho, H., Wat, K., Murthy, V., Laurate biosensors image brain neurotransmitters *in vivo*: Can an antihypertensive medication alter psychostimulant behavior? **Sensors** 8: 4033-4061 (2008).
- ❖ -**Broderick, P.A.**, Studies of oxidative stress mechanisms using a morphine/ascorbate animal model and novel N- stearoyl cerebroside and laurate sensors. **J. Neural Transm.** 115: 7-17 (2008).

- ❖ -Nunes, J.V., **Broderick, P.A.**, Novel research translates to clinical cases of schizophrenic and cocaine psychosis. *Neuropsychiatric Disease and Treatment* 3(4): 475-485 (2007).
- ❖ -**Broderick, P.A.** and Hope, O., Monoamines and motor responses are co-deficient in the Fawn-Hooded depressed animal model. *Prog. Neuro-Psychopharmacol. & Biol. Psychiat.* 30: 887-898 (2006).
- ❖ -Simmons, D.A. and **Broderick, P.A.**. Cytokines, stressors and clinical depression: augmented adaptation responses underlie depression pathogenesis. *Prog. Neuro-Psychopharmacol. & Biol. Psychiat.* 29: 793-807 (2005).
- ❖ -**Broderick, P.A.**, Olabisi, O.A., Rahni, D.N. and Zhou, Y., Cocaine acts on accumbens monoamines and locomotor behavior via a 5-HT_{2A/2C} receptor mechanism as shown by ketanserin: 24 hr follow-up studies. *Prog. Neuro- Psychopharmacol. & Biol. Psychiat.* 28: 547-557 (2004)
- ❖ -**Broderick, P.A.**, Hope, O., Okonji, C., Rahni, D.N. and Zhou, Y., Clozapine and cocaine effects on dopamine and serotonin release in nucleus accumbens during psychostimulant behavior and withdrawal. *Prog. Neuro-Psychopharmacol. & Biol. Psychiat.* 28: 157-171 (2004)
- ❖ -**Broderick, P.A.**, Rahni, D.N. and Zhou, Y., Acute and subacute effects of risperidone and cocaine on accumbens dopamine and serotonin release using in vivo microvoltammetry *on line* with open-field behavior. *Prog. Neuro- Psychopharmacol. & Biol. Psychiat.* 27: 1037-1054 (2003).
- ❖ -**Broderick, P.A.** Interleukin 1 β alters hippocampal serotonin (5-HT) and norepinephrine (NE) release during open- field behavior in Sprague Dawley animals: Differences from the Fawn-Hooded animal model of depression. *Prog. Neuro-Psychopharmacol. & Biol. Psychiat.* 26: 1355-1372 (2002).
- ❖ **Broderick, PA**, Sensing the Human Brain for Live Imaging: Nanosurgical Biomedical Polymeric Voltaic Optics for Brain Disorders. **30th Conference on Nanotechnology and Nanomaterials, Stockholm Sweden, Abstract, April 30, 2018.**
- ❖ **Broderick, PA**, Sensing the Epilepsy Brain: A Unique Nanosurgical Biomedical Device to treat the Epilepsy Patient. *MOJ CR, Medcrave online, Clinical and Medical Cases, March (2018).*
- ❖ **Choudhury, R., Alabed T., Wenning, L., Broderick, PA**, Intravascular blood flow displays a temporal synchrony online with videotracking neurotransmitter release within brain's basal ganglia in normality while also online, vasculature and cerebral release do not reflect synchrony during septicemia: Sensing with Laser Doppler Flowmetry and BRODERICK PROBE[®]. Society for Neuroscience, San Diego CA, **(2018)**
- ❖ **Broderick PA. "NEUROIMAGING: Nanosensing Biochemistry in the Brain"**, A Textbook- *The evolution of In Vivo Electrochemistry into Neuromolecular Imaging into Non Invasive Voltaic Photonics: LIVE IMAGING*, Pan Stanford Publishing Pte Ltd., Singapore, Introduction and twelve chapters submitted and accepted **(2018).**
- ❖ Wenning, L., **Broderick, PA**, Neuromolecular imaging and BRODERICK PROBE[®] nanobiosensors reveal temporal synchrony patterns between neurotransmitter concentration and movement in the physiologic state and temporal asynchrony between neurotransmitter concentration and movement in the pathologic state: *Medical Archives Research*, accepted, March **(2018).**

- ❖ **Broderick, PA**, Wenning, L. Neuromolecular Imaging in Parkinson's disease. Dr. Victor Preedy's *Compendium on Parkinson's disease*, Elsevier, London, UK, (2018).

- ❖ Wenning L, **Broderick PA**, Philip R. Nicotine Incites a Transformation to Estrus from any Estrous Cycle Stage. *EC Psychology and Psychiatry* (2017); 3.6: 200-214.

- ❖ **Broderick PA**, Wenning L, Li Y-S. Neuromolecular imaging, a nanobiotechnology for Parkinson's disease: advancing pharmacotherapy for personalized medicine. *J Neural Transm (Vienna)*. 10.1007/s00702-016-1633-3. Epub (2016) Oct 28.

- ❖ **Broderick, P.A.**, Jacoby, J.H. (2017) Guest Editors, Special Issue: Nanomedicine in Brain and Spinal Repair: Alzheimer's, Parkinson's and the Proteome. *J. Neural Transmission*. Springer Pub. DE

- ❖ **Broderick PA**, Wenning L, Li Y-S. Textbook Chapter 6, entitled "Life in the Penumbra with the BRODERICK PROBE® " in eBook Volume "New Concepts in Stroke Diagnosis and Therapy" of eBook series "Current Development in Stroke, Volume 1" edited by Radaelli, A., Bentham Science Publishing 2017: 131-175.

- ❖ Wenning L, **Broderick PA**. Neuromolecular imaging and BRODERICK PROBE® nanobiosensors reveal temporal synchrony patterns between neurotransmitter concentration and movement in the physiologic state and temporal asynchrony between neurotransmitter concentration and movement in the pathologic state. Poster and abstract (2017): *Society for Neuroscience Annual Meeting* in Washington, D.C.

UNITED STATES AND INTERNATIONAL PATENTS

<u>Dates</u>	<u>Individuals Involved</u>	<u>Description</u>
2003	Broderick, P.A.	The effects of clozapine and cocaine on dopamine and serotonin release in nucleus accumbens during psychostimulant behavior and withdrawal. Provisional U.S. Patent (Filed, Dec. 4th, 2003).PCT-2004/040756, Issued Nov.22,2007
2002	Broderick, P.A, Pacia SV	Identification, diagnosis, and treatment of neuropathologies, Neurotoxicities, tumors, and brain and spinal cord injuries using microelectrodes with microvoltammetry. PCT Application (Filed, April 8th, 2002
2002	Broderick, P.A, Pacia SV	Identification, diagnosis, and treatment of neuropathologies, Neurotoxicities, tumors, and brain and spinal cord injuries using microelectrodes with microvoltammetry. U.S. Application Serial # 10/118,571 (Filed, April 8th, 2002). U.S. #7,112,319 (Issued, Sept. 26, 2006). U.S. C.I.P. Filed, July, 2006)-Application # 11/490,695-Office Action-received from IP CUNY office Mar. 2010-Received by CUNY IP from Hoffman and Baron, Jan. 2010. Under Review for Office Action. April, 2013
2001	Broderick, P.A.	Identification, diagnosis, and treatment of neuropathologies, Neurotoxicities, tumors, and brain and spinal cord injuries using BRODERICK PROBE [®] microelectrodes. Provisional U.S. Patent (Filed, Oct. 1st, 2001).
2001	Broderick, P.A.	Identification of biogenic amines in the human neocortex in patients with neocortical and mesial temporal lobe epilepsy using in SITU microvoltammetry. Provisional U.S. Patent (Filed, June. 4th, 2001).
2001	Broderick, P.A.	Identification of biogenic amines in the human neocortex in patients with neocortical and mesial temporal lobe epilepsy using in SITU microvoltammetry. Provisional U.S. Patent (Filed, April. 6th, 2001).
2000	Broderick, P.A.	microelectrodes and their use in a cathodic electrochemical current arrangement with telemetric application. Canadian patent and pct # 2,063,607 (issued, nov. 24th, 2000).
1999	Broderick, P.A.	microelectrodes and their use in a cathodic electrochemical current arrangement with telemetric application. U.S. patent # 5,938,903 (issued aug. 17th, 1999). Hong kong, the people's republic of china #hk1007350 (issued april 9th, 1999).
1997	Broderick, P.A.	microelectrodes and their use in a cathodic electrochemical current arrangement with telemetric application. Ep0 patent #0487647 (germany, spain, france, united kingdom, italy, sweden); # 1007350 (hong kong) (granted, feb. 26th, 1997).

1995 electrochemical	Broderick, P.A.	microelectrodes and their use in a cathodic current arrangement with telemetric application. U.S. patent # 5,433,710 (issued, aug. 22nd, 1995).
1991 electrochemical	Broderick, P.A.	microelectrodes and their use in a cathodic current arrangement with telemetric application. International publication number wo 91/02485 (issued march 7th, 1991).

The patents are assigned to The City University of New York. Dual assignment occurs when New York University is involved and the trademark is owned by Dr. Broderick. Note that *(asterisks) mark the patents that hold dual assignment.

<u>Patent #</u>	<u>Date</u>	<u>Title or Subject Matter</u>	<u>Inventors(s)</u>
4,883,057	Nov 28, 1989	Cathodic electrochemical current arrangement with telemetric application	Patricia A. Broderick
5,443,710	Aug 22, 1995	Microelectrodes and their use in a cathodic electrochemical current arrangement with telemetric application	Patricia A. Broderick
5,938,903	Aug 17, 1999	Microelectrodes and their use in an electrochemical arrangement with telemetric application	Patricia A. Broderick
US 7,112,319 B2	Sept. 26, 2006	Identification, diagnosis, and treatment of neuropathologies, neurotoxicities, tumors, and brain and spinal cord injuries using microelectrodes with microvoltammetry.	Patricia A. Broderick

New patents in 2015, 2016 and 2017* (USPTO- July 2017)

USPTO Patents 2006 & 2015 are registered in the Indian patent Office.

Critical concepts and designs for the BRODERICK PROBE® are reported in the **Broderick 2016 non-provisional (PCT application)** for the non-invasive design.

The provisional application was filed on December 31, 2015. It was issued Serial No. 62/273,693. The non- provisional (PCT application), detailing this cutting edge nanobrain nanosensor device, was filed on December 28, 2016 and was assigned International Application No PCT/US16/68879.

The non-provisional (PCT application) is entitled,

NONINVASIVE ELECTROACTIVE PHOTONIC PROTEIN SENSOR WITH POLYMER PHOTOVOLTAIC OPTICS FOR MEMORY TRANSDUCTION USING ORGANIC AND INORGANIC ELEMENTS AS PLATFORMS

This application claims the benefit of U.S. Provisional Application No. 62/273,693, filed December 31, 2015, the disclosure of which is incorporated by reference herein in its entirety and is patented in the public domain, February of this year, 2017.

The renewals have been granted for the trademark registrations of the mark BRODERICK PROBE in Canada (Reg. No. 546314) and Sweden (Reg. No. 312196). For the Canadian registration, the renewal is for a term of fifteen years, and the next renewal will be due by June 7, 2031. For the Swedish registration, the renewal is for a term of ten years, and the next renewal will be due by April 26, 2026. We have docketed the renewal date

TRADEMARK: BRODERICK PROBE®

Issue dates:

United States RN 2251571 – Next renewal due June 8, 2019
South Korea RN 40-0893489 – Next renewal due December 8, 2021
France RN 95576067 – Next renewal due June 5, 2025
Germany RN 39523553 – Next renewal due June 5, 2025
Italy Renewal RN 362015000018125– Next renewal due June 5, 2025
Spain RN 1969425 – Next renewal due June 5, 2025
United Kingdom RN 2023874– renewed due June 5, 2025
Sweden RN 312196 – Next renewal due April 26, 2026
Canada RN 546314 – Next renewal due June 7, 2031

Sweden # 312196 (Issued, April 26th, 1996)
Spain #1,969, 425 (Issued, Oct. 7th, 1996)
France # 95576067 (Issued, June 6th, 1995)
Italy # 727516 (Issued, June 6th, 1995)
Germany # 39523553.7 (Issued, June 6th, 1995)
Great Britain # 2023874 (Issued, June 5th, 1995)

GRANTS AND CONTRACTS

Broderick, P.A. Indian Angel Network, 2018-Investment for Eazysense Nanotechnologies Inc. 3 percent equity for twelve years- 2018. Onward.

Negotiations and Registration of US Patents in India and Business Plans- Discussions from 2016 onward.

- ❖ **Broderick, P.A.** Research Grant, Center for Advanced Technology, CCNY, CUNY, NY State Project, **(\$7500) (2013)**. **Broderick, P.A.** Travel Award, HEKA Electronics Inc., Nova Scotia, Canada, **(\$3000) (2012)**
- ❖ **Broderick, P.A.** Research Grants and Licensing Fee, HEKA Electronics, Inc., NY, Germany, Canada, **(\$117,000) (2013)**.
- ❖ **Broderick, P.A.** Grants from the Anesthesiology Dept., NYU Langone to support part-time technician and support collaboration on Neuromolecular Imaging, hypoxic hypoxia and cognitive decline post-operatively about **\$100,000-in** personnel and supplies **(2007-2010)**.
- ❖ **Broderick, P.A., NYU Langone:** Translational work *in vivo* during epilepsy surgery. IRB **(2008)** obtained by Dr. Ruben Kuzniecky, Epileptologist, Director of Research, Comprehensive Epilepsy Center, NYU Langone, Dept. of Neurology. This approved project allows use of BRODERICK PROBE® biosensors (manufactured on site, CCNY, NY and Autolab Potentiostat (Metrohm, aka Brinkmann, LI, NY). Amount, immeasurable **(2008-present)**
- ❖ **Broderick, P.A. NYU, FACES, Foundation for Children with Epileptic Seizures.** *Neuromolecular imaging in epilepsy and tumor patients intraoperatively using The BRODERICK PROBE® biosensors.* **(\$35, 000)**.
- ❖ **Broderick, P. A. FM Kirby Foundation:** Anti-Platelet Therapy in Ischemic Stroke: Imaging Real Time Neurochemical
- ❖ Changes in Brain. **(\$125,000.00, 2008-2011)**.
- ❖ Kolodny, E.H., **Broderick, P.A. Leon Lowenstein Foundation:** *Gene Therapy in Parkinson's Disease.* **(\$57,255), Sept. 2007 – Dec., 2009)**.

Previous Additional Sources of Support (2003-2004):

Broderick, P.A., P.I., Student Scholarship Fund: H.S. Student Training: CNS studies.

Broderick, P.A., P.I., Stevens, Davis, Miller and Mosher, LLC: Patent Consult: CNS studies.

Broderick, P.A., P.I., Pharmacia Upjohn Award: CNS research; psychosis, depression, drug abuse.

Broderick, P.A., P.I., Grant and Consultation Support (2002-2004): Codman & Shurtleff, J&J, Broderick Biotechnology.

Broderick, P.A., P.I., Professional Staff Congress, CUNY (2002-2003): Nitrous and Nitric Oxide studies.

Source: National Institutes of Health, NIGMS: SCORE AWARD.

Title: *Normal vs. Psychotic Behavior: Neural Basis for Clozapine.* PI: Patricia A. Broderick, Ph.D.

Dates: 02/01/00 - 01/31/03

Award: \$475,000.00

Source: Parents against Childhood Epilepsy: P.A.C.E. AWARD.

Title: *In Vivo Voltammetry with Microelectrodes for the Detection and Quantification of Neurotransmitters in Epileptogenic Cortex during Epilepsy Surgery.*

Co-PI: Patricia A. Broderick, Ph.D.

Co-PI: Steven V. Pacia, M.D.

Dates: 12/15/99 - 8/30/01

Award: \$52,568. 00

Source: The Pharmacia and Upjohn Company, (*Clinical Division: Educational Award*).

Title: Brain Neurotransmitter Signals for Diagnosis and Treatment of Central Nervous System Disorders: Psychotic, Affective, Cognitive and Epileptogenic.

PI: Patricia A. Broderick, Ph.D.

Dates: 9/1/1997-unrestricted time period.

Award: \$10,000. 00

Grants: Research Support (1985-1999) (Award amounts are written in direct costs; indirect costs are not shown):

Source: The Aaron Diamond Foundation

Title: *The Study of a Neuroimmune Link Between AIDS-Related, Interleukin-1 (IL-1) and the Excitotoxin, Quinolinic Acid: Signal Intercommunication in the Hippocampal Serotonergic Neurotransmitter Circuitry.*

PI: Patricia A. Broderick, Ph.D.

Co-Inv.: Richard Coico, Ph.D.

Dates: 10/15/92 - 1/7/95

Award: \$143,500. 00

Source: Foundation for Children with Epileptic Seizures: FACES AWARD.

Title: *Neurotransmitter Release at the Human Epileptogenic Focus: In Situ Studies.*

PI: Patricia A. Broderick, Ph.D.

Dates: 11/15/96 - 6/30/99

Award: \$50,000. 00

Source: The Pharmacia & Upjohn Company, *Pre-Clinical Division*

Title: *Understanding the Neurochemistry of the D4 Receptor: Relationship to Schizophrenia and Parkinson's Disease.*

PI: Patricia A. Broderick, Ph.D.

Dates: 9/1/93 - 8/31/95

Award: \$35,200. 00

Source: The Pharmacia & Upjohn Company, *Clinical Division*

Title: *Neurochemical Mechanisms for Alprazolam, Diazepam and Desipramine.*

PI: Patricia A. Broderick, Ph.D. Dates: 2/4/92 - 2/4/95

Award: \$19,800. 00

Source: The Pharmacia & Upjohn Company, *Clinical Division: Educational Award*

Title: *Presentations on Affective Disorders*

PI: Patricia A. Broderick, Ph.D.

Dates: 11/1/92 - 12/31/96

Award: \$6,000.00

Source: PSC/CUNY (Professional Staff Congress/The City University of New York)

Title: *Study of Atypical Neuroleptic Clozapine on Cocaine-Induced Dysfunctional Neurotransmitter Release and Behavior.*

PI: Patricia A. Broderick, Ph.D.

Dates: 7/1/1997 - 12/31/1999

Award: \$9,280.00

Source: PSC/CUNY (Professional Staff Congress/The City University of New York)

Title: *Real Time Dopamine and Serotonin Release in Nucleus Accumbens During Cocaine Withdrawal.*

PI: Patricia A. Broderick, Ph.D.

Dates: 7/1/95 - 12/31/97

Award: \$8,500.00

Source: PSC/CUNY (Professional Staff Congress/The City University of New York)

Title: *The Effects of Ibogaine and Alpha-cis-Flupenthixol on Cocaine-Induced Biogenic Amine Dysfunction: Preclinical Treatment Strategies.*

PI: Patricia A. Broderick, Ph.D.

Dates: 7/1/92 - 12/31/94

Award: \$6,300.00

Source: NIH, National Institutes of Health, National Institute on Drug Abuse (NIDA)

Title: *Electrochemical Study of CNS Reward Circuits for Cocaine.*

PI: Patricia A. Broderick, Ph.D.

Dates: 8/1/89 - 7/31/92

Award: \$151,554.00

Source: The Pharmacia & Upjohn Company, *Preclinical Division*

Title: *Neurochemical Profiles of Antipsychotic and Anxiolytic Drugs for Clinical Evaluation.*

PI: Patricia A. Broderick, Ph.D.

Dates: 12/15/90 - 12/31/92

Award: \$25,000.00

Source: Biomedical Research Support (NIH Supplement)

Title: *Electrochemical Study of CNS Reward Circuits for Cocaine.*

PI: Patricia A. Broderick, Ph.D.

Dates: 4/1/91 - 3/31/92

Award: \$4,000.00

Source: PSC/CUNY (Professional Staff Congress/The City University of New York)

Title: *An In Vivo Electrochemical Study of Brain Reward Circuits for Cocaine in the Freely Moving Rat.*

PI: Patricia A. Broderick, Ph.D.

Dates: 7/1/89 - 12/31/91

Award: \$18,904.00

Source: The Pharmacia & Upjohn Company, *Preclinical Division*

Title: *Effects of 5-HT_{1A} Agonists on Serotonin and Norepinephrine Release Measured In Vivo.*

PI: Patricia A. Broderick, Ph.D.

Dates: 1/1/89 - 1/1/91

Award: \$22,000.00

Source: The Pharmacia & Upjohn Company, *Clinical Division*

Title: *Dopaminergic Activity of Adinazolam.*

PI: Patricia A. Broderick, Ph.D.

Dates: 7/1/89 - 6/30/90

Award: \$3,000.00

Source: Biomedical Research Support (NIH Supplement)

Title: *Electrochemical Study of the CNS Reward Circuits for Cocaine.*

PI: Patricia A. Broderick, Ph.D.

Dates: 4/1/89 - 3/31/90

Award: \$2,000.00

Source: Biomedical Research Support (NIH Supplement)

Title: *In Vivo Electrochemical Study of Dopamine in CNS Neuroanat. Sites Associated with Brain Reward.*

PI: Patricia A. Broderick, Ph.D.

Dates: 4/1/87 - 3/31/89

Award: \$6,000.00

Source: PSC/CUNY (Professional Staff Congress/The City University of New York).

Title: *An In Vivo Electrochemical Study of the Reward Circuits for Cocaine in Brain.*

PI: Patricia A. Broderick, Ph.D.

Dates: 7/1/87 - 12/31/88

Award: \$4,200.00

Source: The Pharmacia & Upjohn Company, *Preclinical Division*

Title: *In Vivo Electrochemistry: Novel Dopaminergic Autoreceptor Agonists.*

PI: Patricia A. Broderick, Ph.D. Dates: 7/1/84 - 6/30/87

Award: \$30,000.00

P.A. Broderick, Co-Principal Investigator* and Co-Investigator **:

Source: NIH, National Institute on Health *

Title: *Feasibility Study: Diabetes Research and Training Center*

Subtitle: *Diabetes and Brain Monoamine Metabolism.* (P.I.'s: Drs. Fleisher and Jacoby)

Dates: 12/1/83 - 11/30/85

Award: \$30,000.00

Source: NIDA, National Institute on Drug Abuse**

Title: *Marijuana & Dopamine/Enkephalin Brain Reward Systems.* (P.I.: Dr. Gardner)

Dates: 7/1/84 - 6/30/85

Award: \$74,859.00

STUDY GRANTS

<u>Date</u>	<u>Grant</u>
1974	New York State Study Grant (Chemistry of Alcohol Abuse), New York University.
1972	National Science Foundation Study Grant (Introductory Microbiology), Indiana U
1972	National Science Foundation Study Grant (Marine Biology), University of Maine
1972	National Science Foundation Study Grant (Psychopharmacology of Drug Use and Abuse), Vanderbilt
1971	National Science Foundation Study Grant (Ecology), Radford College, Virginia
1967	National Science Foundation Study Grant (Chemistry), Pace University, NY

SEMINARS

- ❖ In 2018, Colloquia, Fall, 2018, invited and accepted.
 - ❖ In 2017, Rotation, Assessment-Doctoral Candidate: Naomi Gaggi: Psychology Training Director, Prof Harris p. Ziegler
 - ❖ In 2016-2018, CUNY Graduate Ctr., Interviews-Psychology and Biology
 - ❖ In 2014-present, Director positions for CUNY School of Medicine. CCNY
 - ❖ In 2013, Demonstrations for BRODERICK PROBE® in human and animal market, HEKA Electronics Inc., Canada, Germany, USA, March 11, 2013.
 - ❖ In 2013, American Turner, 2013
 - ❖ In 2013, Workshop, proprietary BRODERICK PROBE® biosensor and its related biotechnologies; carbon nanoparticles comprised of lipids and stem cells, OMICS GROUP Tissue Regeneration Conference, N.C.
 - ❖ In 2012, HEKA Electronics Inc., Laboratory in Nova Scotia, Chester Facility, Laboratory Design and Technology Transfer-Sept. 3rd to Sept. 7th, 2012. Dr. Broderick (CUNY and NYU Langone) and Dr. Wang (HEKA Electronics)
-

JOURNAL EDITORIAL CONTRIBUTIONS

- ❖ Brain Research
- ❖ Brain Research Bulletin
- ❖ Diabetes
- ❖ Neuroscience and Biobehavioral Reviews
- ❖ New York Academy of Sciences:
- ❖ The Ontario Mental Health Foundation Pharmacology, Biochemistry and Behavior Trends in Neurosciences Psychopharmacology
- ❖ Physiology and Behavior
- ❖ Life Sciences
- ❖ The Behavioral and Brain Sciences
- ❖ Biological Psychiatry
- ❖ J. Neuroimmunology
- ❖ J. Pharmacy and Pharmacology
- ❖ Analytical Chemistry Oman Medical Journal Nanotechnology Journals J. Neural Transmission
- ❖ Sensors, Physical, Biologic and Chemical
- ❖ J. Chemistry of Materials

- ❖ science of advanced materials

PROFESSIONAL SOCIETIES

- ❖ American Society for Pharmacology and Experimental Therapeutics. The Society for Neuroscience
- ❖ The Association for Women in Science
- ❖ The Electrochemical Society
- ❖ The American Epilepsy Society
- ❖ The Biomedical Engineering Society

TRAVEL AWARDS: RESEARCH AND STIPENDS

- ❖ Certificate of Scholarship from Chancellor Goldstein for Dr. Broderick's research (2008-2009). Broderick Brain Scholarships and Rudin Scholarships 2008-2009)
- ❖ AD-TECH Medical Instrumentation Corporation (1997)
- ❖ The City University of New York Graduate School Ascend Fellowship (1997). Syosset High School Mentoring Fund for Westinghouse Applicants (1995). Data Sciences International (1993-1995).
- ❖ National Institute on Drug Abuse, International Narcotics Research Conference (1983 through 1989). Wyeth Laboratories (1983).
- ❖ The Pharmacia and Upjohn Company (1984, 1986 through 1991). San Diego Instruments (1987).

RESEARCH FEATURED

- ❖ In 2017-2018, radio shows via CUTV News, Jim Masters, host, Topic-Eazysense Nanotechnologies Inc. [CUTV News Welcomes Dr. Patricia Broderick of Eazysense ...](https://www.benzinga.com/.../cutv-news-welcomes-dr-patricia-broderick-of-eazysense...) <https://www.benzinga.com/.../cutv-news-welcomes-dr-patricia-broderick-of-eazysense...>
- ❖ In 2018-2019, Broderick named Top Industry Professor-soon to be released cover story
- ❖ In 2018, Neuromolecular Imaging and BRODERICK PROBE® nanobiosensors reveal a temporal synchrony in brain rhythms in neural transmission online with movement designs during natural physiology: Temporal asynchrony is imaged online in the same subject during pathology
- ❖ In 2018, Market Overview Today, Dr. Broderick manufactures original sensors that are smaller than ... <http://www.youtube.com/watch?v=LeliGwi-aKg>.
- ❖ In 2016, Doctor Patricia Broderick is named professor of the year by the International Associates of Who's who [Dr. Patricia Broderick Is Named Professional of the Year by the ...](https://finance.yahoo.com/.../dr-patricia-broderick-named-professional-80000075.ht...) <https://finance.yahoo.com/.../dr-patricia-broderick-named-professional-80000075.ht...>
- ❖ In 2011, American Turners Assc, Inc
- ❖ In 2011, Vice Chancellors Newsletter, CCNY
- ❖ In 2011, Folio. Journal of the Graduate School of the City University of New York
- ❖ In 2005, NYU Press Release NYU, 2010, Alumnus
- ❖ In 2000, featured on Time Capsule
- ❖ In 1998, featured on Alumnus
- ❖ In 1997, featured on Staten Island Reporter

- ❖ In 1993, WWOR Channel 9, 10:00 NEWS, (Aug. 12 and 24, 1994). Journal NIH Res.
- ❖ In 1992, Thesis, The Magazine of the Graduate School and University Center
- ❖ In 1992, featured on New York Newsday
- ❖ In 1992, featured on The Boston Globe
- ❖ In 1992, Philadelphia Inquirer
- ❖ In 1991, NYS Legislative Bill for Preclinical Cocaine Treatment Research
- ❖ In 1990, featured on The Albany Times
- ❖ In 1990, The Scientists

COURSES

<u>Dates</u>	<u>Course</u>	<u>Institution</u>
2007-2011	Neuropsychiatry	CUNY Medical school: Med students
2000-2003	Neuroscience	CUNY Medical school: Med students
1992-1997	trends in Neuroscience	CUNY Graduate school: Grad students
1994-2003	Biochemistry	CUNY Graduate school: Med students
1989-Present	Pharmacology	CUNY Medical school: Physician Assistants
1986-Present	Pharmacology	CUNY Medical school: Med students
1986-Present	Independent Study	CUNY Medical school: Med students
Director, Physician Assistant Pharmacology and Director, Drug Abuse and Addiction 2014 to present.		
1983-1985	Medical Technology	Bronx Community College, CUNY.
1976-1979	Public Health Lectures	St. John's University.
1976-1979	Pharmacology Lab and Lecture	St. John's University.
1975-1976	Pharmacology Lab and Lectures	New York Medical College.
1975-1976	Anatomy and Physiology	Bronx Community College, CUNY.
1974-1975	Pharmacology of Drug Abuse	St. Thomas Aquinas College.
1974-1975	Pharmacology of Drug Abuse	College of New Rochelle.

MENTORING IN THE BRODERICK LAB

Graduate Student:

Naomi Gaggi, Rotation: Excellent, Theoretical and Empirical Aspects of the Science of Advanced Sensors: Animal Surgery Using Sensor Techniques: Writing Styles, Literature Review: Childhood Diseases ADHD and Autism, the Similarities and the Differences. Interviewed Graduate Candidates in the Psychology and Biology Programs.

Undergraduate Students:

Honors Chemistry: Alif al Amin, Grove Sch Engineering, Ina Fanjaniaina,
CCNY: Rahat Choudhury, Kylie Lang, Melissa Cabrera, and Tagreed Alabed

2009 idaliene hernandez, city university of ny & hunter coll. & mount st. Vincent
 2012 lauren malave.bs, grad student, masters ccny, cuny. To ph.d.
 2013 diego buenaventura, ba, ms, ph.d student, cuny grad to dr. Mark emerson's lab
 2013 aruna seegolam, bs, lab manager to private buisness
 2012 srilu garikapati, high school, intel student, stuyvesant h.s. ny. Entering college
 2012 samantha lee, high school, intel student, bronx h.s. of sci. Ny. Entering college
 2012 rebecca philip, high school, intel student, bronx h.s. of sci. Ny.
 2014 camille chan, high school, townsend harris h.s. n.y.
 2014 shamilah faria, high school, townsend harris h.s. n.y.
 2014 swathi mettela, high school, townsend harris h.s. n.y.
 2014 zainab koli, high school, townsend harris h.s. n.y.

Additional Mentees:

Michael Haile, MD

Alex Bekker, MD

Yong-Sheng Li, MD.

Samuel Galoyan: Phd, NYU Langone Faculty, Training In The Broderick Biotechnology and The BRODERICK PROBE® From 2006 To The Present; Application To Hypoxia And Hypotension Studies.

Taylor Rosenbaum: Millburn High School Student, Millburn, New Jersey, Training In Broderick Probe® Biosensors And Biotechnology From April 2009 To June 2011 In Preparation For Intel Competition Scholarship For Taylor.

COMMUNITY SERVICE

CUNY MED SCHOOL AND CCNY

2012-present:

- ❖ Kevin Daly, Second Place, Intel_ Science and Engineering< Syosset, Taylor Rosenbaum and others=High School Students and Sophie Davis Students and Undergraduate students were successfully mentored by Dr. Broderick in her lab (Rebecca Phillip, Zainab Zoli, Swathi Mettela, Wendy Chou, Idaleine Hernandez, Zafire Choudhury)

2013 -2018 American Turner Association of New York, Seminars on treatments of brain disease

2007-2008: Search Committee, Faculty Appointee, CUNY Medical School.

2002-2006 Faculty Senate, CCNY and CUNY.

1999 Member: **Search Committee: Asst./Assoc. Professor in Physiol. & Pharmacol.**, CUNY Medical School.

1998 Member: **Committee for Outstanding Teacher Award for 1998**, CCNY.

1997 Member: **Committee for Outstanding Teacher Award for 1997**, CCNY.

1996 Research Laboratory chosen for **OPPR/NIH site visit**, CCNY&CUNY Medical School.

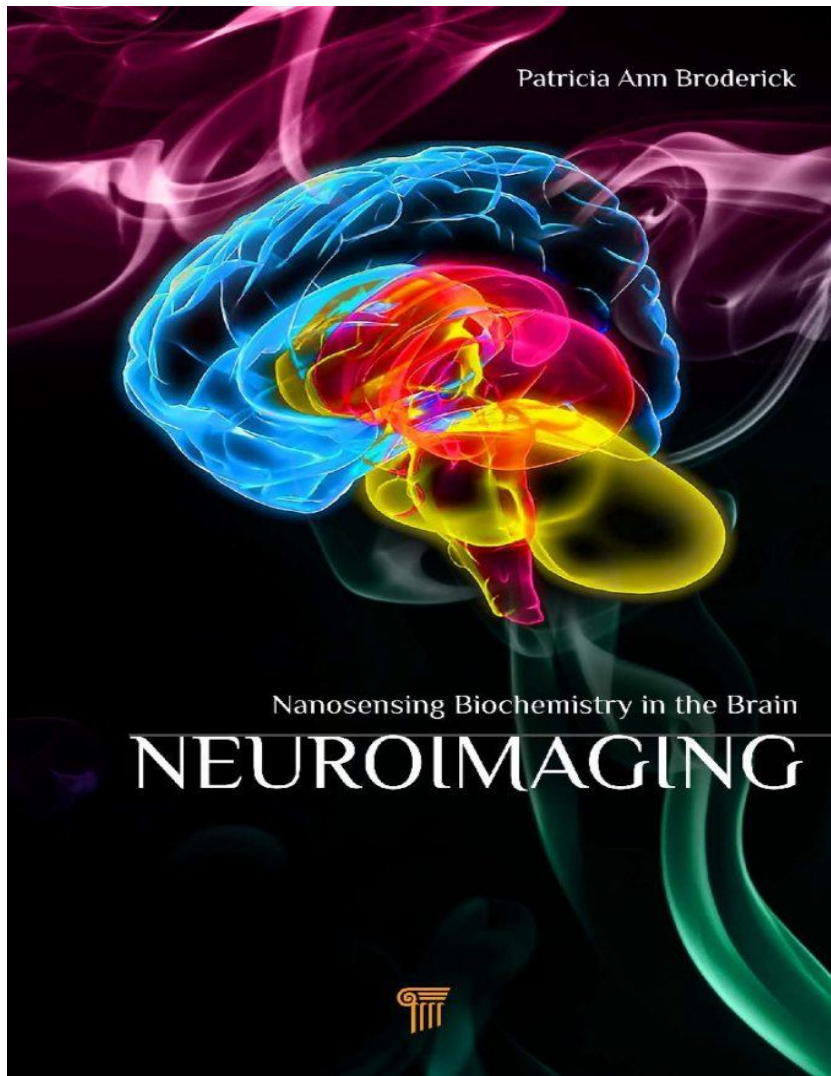
1995-2010 Member: **Promotion and Tenure Committee**, CUNY Medical School



Evidence for the BRODERICK PROBE® to Enter the Business/Franchise Market

From spectral analysis to Neuromolecular Imaging to Voltaic Photonics, we have cautiously made our way, step by step to the BRODERICK PROBE® market to enter into the business Franchise market. Prior to these steps, the Broderick Brain Foundation was founded; this is the “non-profit” arm of the “for profit” Company, Eazysense Nanotechnologies Incorporated. Presented above are the logos for Eazysense Nanotechnologies Inc. Each of the logos represents describes the work of Eazysense Nanotechnologies Inc. The figure to the right represents how Eazysense Nanotechnologies has entered Voltaic Photonics, converting photonic energy to electrical and then electrochemical energy without entering the brain invasively.

Upcoming textbook with Singapore- Textbook Cover



Edited: Tagreed Alabed