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EDUCATION:

- Ph.D. **Washington University in St. Louis**, St. Louis, MO (2008)
Ph.D. candidate in *Biochemistry*
Dissertation: Re-evaluation of transmembrane water exchange in rat brain
Advisors: Dr. Joseph J.H. Ackerman and Dr. Jeffrey J. Neil
Focus: MRI of small animals
- M.S. **University of Pennsylvania**, Philadelphia, PA (1999)
Ph.D. candidate in *Chemistry* (1997-2001) - transferred to Washington
University in St. Louis
Thesis: NMR Studies of Proteins in Bicelles
Advisor: Dr. Stanley J. Opella
Focus: Solid-state NMR of membrane proteins
- B.S. **University of Wisconsin**, Madison, WI (1997)
Major: *Biochemistry*
Undergraduate research: Dr. John L. Markley
Focus: High-resolution solution NMR of rubredoxin

RESEARCH EXPERIENCE:

- research associate
Dr. George L. Gerton, Ph.D. (2013 - present)
Center for Research on Reproduction and Women's Health, University of
Pennsylvania
- postdoctoral research
Dr. George L. Gerton, Ph.D. (2013)
Center for Research on Reproduction and Women's Health, University of
Pennsylvania
- postdoctoral research
Dr. Nathalie Scholler, M.D. Ph.D. (2008 - 2013)
Ovarian Cancer Research Center, University of Pennsylvania

TECHNICAL SKILLS:

Research: Nuclear magnetic resonance using solution and solid-state methods for structural biology, MRI, flow cytometry, mouse cancer models (subcutaneous, intraperitoneal, orthotopic), mouse tissue and organ harvest, mammalian cell culture and transient transfection, optical imaging (epifluorescence, confocal, bioluminescence) bacterial and yeast recombinant protein expression and purification, general molecular biology, immunology, and biochemistry techniques (HPLC, FPLC, ELISA, gel electrophoresis, PCR, qPCR, western blot), dynamic light scattering, rat and mouse handling, rat neurosurgery, solid-phase peptide synthesis, immunohistochemistry, immunofluorescence, understand materials science characterization methods (TEM, TGA, SEM, FT-IR, ICP-MS)

Computer: Programming experience in Matlab and Unix, pulse sequence programming (Varian Inova), Adobe Illustrator, Microsoft Office, FlowJo

TEACHING EXPERIENCE:

University of Pennsylvania:

Student co-mentoring

Calvin V. Nguyen (2012 summer - 2013 summer)

Undergraduate research: *Clickbodies for site-specific attachment of antibody fragments to nanoparticles using click chemistry*

Norma A. Brown (2011 summer)

NSF/AMP Research Program Participant

Matthew Cha, Kevin Chu, Andrew Lee, and Xiao Ling (2011 spring semester)

Bioengineering Senior Design Project: *Immunotargeted magnetic nanoparticles for MRI detection and magnetic fluid hyperthermia of cancer cells*

Kolin Hribar and Gregory Wiedman (2010 spring semester)

Bioengineering Senior Design Project: *Synthesis and modification of gold nanorods for targeted photothermal ablation of cancer cells*

Teaching Assistant, Chemistry 251: Principles of Biological Chemistry, 1999

- presented one lecture to ~40 undergraduates

Washington University in St. Louis:

Teaching Assistant, Biology 2960: Principles of Biology I, 2003

Lecturer, Bio/Chem 5147: Contrast Agents for Biological Imaging, 2008

- prepared and presented a lecture to ~10 graduate students

HONORS AND AWARDS:

Session chair: University of Pennsylvania Optical Imaging Research Symposium (2012)

Gene Therapy Training Grant: CF and Genetic Diseases (2008 – 2011)

Gordon Research Conference: In vivo Magnetic Resonance Travel Award (2006)

25th International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering Travel Award (2005)

MEMBERSHIPS:

American Chemical Society (2012 – present)
Society for Thermal Medicine (2011 – 2013)
American Society of Gene and Cell Therapy (2011)
Institute for Translational Medicine and Therapy, University of Pennsylvania (2008 – present)
International Society of Magnetic Resonance in Medicine (2008)

MANUSCRIPT REVIEWER:

ACS Nano
International Journal of Nanomedicine
Journal of Biomarkers
Journal of Magnetic Resonance
Metals

PUBLICATIONS, PEER REVIEWED (* INDICATES CORRESPONDING AUTHOR):

Prantner AM[#], Turini M[#], Kerfelec B, Joshi S, Baty D, Chames P, and Scholler N, Anti-mesothelin nanobodies for both conventional and nanoparticle-based biomedical applications, *J. Biomed. Nanotechnol.* **11**:1201-1212 (2015)

Prantner AM, Nguyen CV, and Scholler N, Facile immunotargeting of nanoparticles against tumor antigens using site-specific biotinylated antibody fragments, *J. Biomed. Nanotechnol.* **9**:1686-1697 (2013)

Paik T, Gordon TR, **Prantner AM**, Yun H, Murray CB, Designing Tripodal and Triangular Gadolinium Oxide Nanoplates and Self-Assembled Nanofibrils as Potential Multimodal Bioimaging Probes, *ACS Nano*, **7**:2850-2859 (2013)

Prantner AM*, Chen J, Murray CB, and Scholler N, Coating evaluation and purification of monodisperse, water-soluble, magnetic nanoparticles using sucrose density gradient ultracentrifugation, *Chem. Mater.*, **24**:4008-4010 (2012)

Prantner AM, Bretthorst GL, Neil JJ, Garbow JR, and Ackerman JJH, Magnetization transfer induced biexponential longitudinal relaxation, *Magn. Reson. Med.*, **60**:555-563 (2008)

Bullok K, Gammon ST, Violini S, **Prantner AM**, Villalobos VM, Sharma V, and Piwnica-Worms D, Permeation peptide conjugates for In vivo molecular imaging applications, *Mol. Imaging*, **5**:1-15 (2006)

Prantner AM, Sharma V, Garbow JR, and Piwnica-Worms D. Synthesis and characterization of a Gd-DOTA-D-permeation peptide for magnetic resonance relaxation enhancement of intracellular targets, *Mol. Imaging*, **2**:333-341 (2003)

DeSilva TM, Veglia G, Porcelli F, **Prantner AM**, and Opella SJ, Selectivity in heavy metal-binding to peptides and proteins, *Biopolymers*, **64**:189-197 (2002)

Dvorak CMT, Hall DJ, Hill M, Riddle M, **Prantner A**, Dillman J, Deibel M, and Palmenberg AC, Leader protein of encephalomyocarditis virus binds zinc, is phosphorylated during viral infection, and affects the efficiency of genome translation, *Virology*, **290**:261-271 (2001)

Veglia G, Porcelli F, DeSilva T, **Prantner A**, and Opella SJ, The structure of the metal-binding motif GMTCAAC is similar in an 18-residue linear peptide and the mercury binding protein MerP, *J. Am. Chem. Soc.*, **122**: 2389-2390 (2000)

Prantner AM, Volkman BF, Wilkens SJ, Xia B, and Markley JL, Assignment of ¹H, ¹³C, and ¹⁵N signals of reduced *Clostridium pasteurianum* rubredoxin: oxidation state-dependent changes in chemical shifts and relaxation rates, *J. Biomol. NMR*, **10**:411-412 (1997)

Volkman BF, **Prantner AM**, Wilkens SJ, Xia B, and Markley JL, Assignment of ¹H, ¹³C, and ¹⁵N signals of oxidized *Clostridium pasteurianum* rubredoxin, *J. Biomol. NMR*, **10**:409-410 (1997)

PUBLICATIONS, NON-PEER REVIEWED (* INDICATES CORRESPONDING AUTHOR):

Prantner AM* and Scholler N, Biological barriers and current strategies for modifying nanoparticle bioavailability, *J. Nanosci. Nanotechnol.*, **14**:115-125 (2014)

CONFERENCE ABSTRACTS AND PRESENTATIONS:

ORAL PRESENTATIONS:

Prantner AM, Yun HS, Chen J, Murray CB, Scholler N, and Gerton GL, Nanotechnology as an approach to contraception, 2014 Annual University of Pennsylvania Center for Research on Reproduction and Women's Health and Obstetrics and Gynecology Research Retreat, Philadelphia, PA, 2014

Prantner AM, Chen J, Muray CB, Scholler N, Targeting of superparamagnetic iron oxide nanoparticles for cancer therapy based on localized hyperthermia, 6th Annual Thomas Jefferson University Center for Translational Medicine Symposium, Philadelphia, PA, 2010

Prantner AM, Glickson JD, Coukos G, Scholler N, Developing a universal method to prepare scFv-modified nanoparticles for ovarian cancer diagnosis and therapy, 2009 Annual University of Pennsylvania Center for Research on Reproduction and Women's Health and Obstetrics and Gynecology Research Retreat, Philadelphia, PA, 2009

Prantner AM, Bretthorst GL, Ackerman JJH, Compartment-specific water apparent-diffusion coefficients in mammalian brain, 25th International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering, San Jose, CA, 2005

POSTER PRESENTATIONS:

Prantner AM, Chen J, Muray CB, Scholler N, Developing magnetic nanoparticles for targeted nucleic acid delivery and detection, 14th Annual American Society of Gene & Cell Therapy Meeting, Seattle, WA, 2011

Prantner AM, Chen J, Muray CB, Scholler N, Developing targeted superparamagnetic iron oxides for combination chemotherapy and hyperthermia, Immunochemotherapy: Correcting Immune Escape in Cancer, Philadelphia, PA, 2011

Hribar KC, Wiedman GR, **Prantner A**, Divgi C, Scholler N, Gold nanorods conjugated to tumor-specific antibody for the targeting of ovarian cancer, Philadelphia, PA, 2010

Prantner AM, Ohana P, Hochberg A, Glickson JD, Coukos G, Scholler N, Dual specificity suicide gene therapy using targeted nanoparticles directed against ovarian cancer, 8th Annual Biomedical Postdoc Research Symposium, Philadelphia, PA, 2009

Prantner AM, Glickson JD, Coukos G, Scholler N, Development of a universal method for preparing targeted nanoparticles with functionally intact scFv, 12th Annual Meeting of the Translational Research Cancer Centers Consortium: Biologic Therapies for Cancer, Philadelphia, PA, 2009

Prantner AM, Bretthorst GL, Neil JJ, Garbow JR, Ackerman JJH, Tissue (brain) water longitudinal relaxation is biexponential, 16th International Society for Magnetic Resonance in Medicine Scientific Meeting and Exhibition, Toronto, Ontario, 2008

Prantner AM, Neil JJ, Bretthorst GL, Ackerman JJH, Kroenke CD, Garbow JR, Reevaluation of transcytolemmal water exchange in rat brain, Gordon Research Conference: *In vivo* Magnetic Resonance, South Hadley, MA, 2006

Prantner AM, Veglia G, Mesleh MF, Opella SJ, Solid-state NMR studies of membrane proteins in bicelles, 38th Annual Eastern Analytical Symposium and Exposition, Somerset, NJ, 1999

Prantner AM, Volkman BF, Hall DJ, King D, Markley JL, Characterization of a self-cleaving peptide involved in picornaviral processing, Keystone Symposia on Molecular and Cellular Biology: Frontiers of NMR in Molecular Biology V, Taos, NM, 1997

REFERENCES:

Dr. George L. Gerton, Ph.D. (current advisor), Research Professor of Reproductive Biology, Department of Obstetrics and Gynecology, University of Pennsylvania
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Dr. Vladimir R. Muzykantov, M.D. Ph.D. (colleague), Professor of Pharmacology and Medicine, Vice-Chair Department of Pharmacology, Director, Center for Targeted Therapeutics and Translational Nanomedicine, University of Pennsylvania
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