

11/15/2016

CURRICULUM VITAE
Ryan Spitler, Ph.D.

I. Educational Background

Education:

| | | |
|-----------|-------|---|
| 9/10-6/14 | Ph.D. | Developmental and Cell Biology University of California Irvine Irvine, CA |
| 9/05-6/07 | B.S. | Molecular Cell and Developmental Biology University of California Santa Cruz Santa Cruz, CA |
| 9/02-6/05 | A.A. | Chemistry Cabrillo College Aptos, CA |

Postgraduate Training:

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| 8/14-Present | | Stanford Cancer Imaging Fellowship Stanford University School of Medicine Stanford, CA |
| 1/16-3/16 | | Stanford Ignite Program Stanford Graduate School of Business Stanford University Stanford, CA |

II. Professional Appointments

Academic Appointments:

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|--------------|---|
| 1/08 – 8/10 | Life Science Research Assistant II Department of Pediatrics, Stanford School of Medicine Stanford, CA |
| 3/05 – 12/06 | Lab Assistant University of California Santa Cruz Santa Cruz, CA |

Industry Appointments:

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|----------------|--|
| 4/16 – 7/16 | Applications Manager Magnetic Insight, Inc. Alameda, CA |
| 10/15 –Present | Advisory Board Member Biophotas, Inc. Tustin, CA |
| 3/16 – 10/16 | Consultant Bell Biosystems, Inc. South San Francisco, CA |
| 7/14 –10/15 | Consultant Biophotas, Inc. Tustin, CA |
| 8/15 –10/15 | Consultant 5AM Ventures-BCBA Menlo Park, CA |

3/08 –12/09 Research Assistant
TransDerm, Inc.
Santa Cruz, CA
11/08 –3/08 Analyst I Microbiology
TestAmerica, Inc.
Morgan Hill, CA
3/03 –11/08 Research Assistant
Santa Cruz Biotechnology, Inc.
Santa Cruz, CA

III. Honors and Awards

8/14 – 7/16 Stanford Cancer Imaging Fellowship
Stanford University, Stanford, CA
5/15 – 3/16 Innovation Challenge Grant: Magnetogenetics: A Powerful New Tool
for Cancer Therapy (Co-PI)
12/10 – 6/14 Military Photomedicine Program Research Grant (Co-investigator)
University of California Irvine, Irvine, CA
6/13-6/14 Biophotas Research Fellowship
University of California Irvine, Irvine, CA
2010 Center for Biomedical Imaging, Achievement Award
Stanford University, Stanford, CA

IV. Scholarly Publications:

A. Peer reviewed journal articles

S.S. Gambhir, T.J. GE, O. Vermesh, **R. Spitler**. Towards Achieving Precision Health: A Vision for the Future. (in preparation for Nature Medicine, 2016)

Saeid Zanganeh, Jim Q, Tahereh Jafari, Nasser Khakpash, Mohsen Erfanzadeh and **Ryan Spitler**. The Evoution of Iron Oxide Nanoparticles for use in Biomedical MRI Applications. (accepted, SM Journal Clincal and Medical Imaging 2016).

Ryan Spitler, Kimberly D. Brewer, Andrea Chan, Papia Chakraborty, Joyce Barozzo, Abdul Wakeel, Steven Machtaler, James Rioux, Juergen Willmann, Chris Contag, Brad Rice, Caleb Bell and Brian K. Rutt. Characterization of Magnetotactic Bacteria as MRI Cell Labeling and Tracking Agents. (in preparation for Magnetic Resonance in Medicine, 2016)

Saeid Zanganeh, Gregor Hutter, **Ryan Spitler**, Olga Lenkov, Aubie Shaw, Jukka Sakari Pajarinen, Morteza Mahmoudi, Hossein Nejadnik, Stuart Goodman, Michael Moseley, Lisa M. Coussens, Heike E. Daldrup-Link. Iron Oxide Nanoparticles Inhibit Tumor Growth. Nat Nanotechnol. 2016 Nov;11(11):986-994.

Saeid Zanganeh, **Ryan Spitler**, Mohsen Erfanzadeh. Protein Corona: Opportunities and Challenges. Cell Biol. 2016 Jun;75:143-7.

Ryan Spitler, Frederique Norpetlian, Xiangdue Kong, Kyoko Yokomori, Gerry R. Boss and Michael W. Berns. Combination of Low light level Therapy (LLLT) and Nitrosyl-cobinamide (NO-Cbi) accelerates wound healing. J Biomed Opt. 2015 May;20(5):051022.

Ryan Spitler and Michael W. Berns. Comparison of laser and diode sources for low light level acceleration of wound healing. J Biomed Opt. 2014 Mar 1;19(3):3800.

Ryan Spitler, Raphaela Schwappacher, Tao Wu, Xiangduo Kong, Kyoko Yokomori, Renate B. Pilz, Gerry R. Boss, and Michael W. Berns. Nitrosyl-cobinamide (NO-Cbi), a new nitric oxide donor, improves wound healing through cGMP/cGMP-dependent protein kinase. *Cell Signal*. 2013 Dec;25(12):2374-82.

Anne Dallas*, Heini Ilves*, Joshua Shorestein, Adam Judge, **Ryan Spitler**, Christopher Contag, Suet Ping Wong, Richard P. Harbottle, Ian MacLachlan, and Brian H. Johnston. Minimal-length synthetic shRNAs (sshRNAs) formulated with lipid nanoparticles are potent inhibitors of hepatitis C virus IRES-linked gene expression in mice. *Mol Ther Nucleic Acids*. 2013 Sep 17;2:e123.

(Raphaela Schwappacher*, Hema Rangaswami*), Jacqueline Su-Yuo, Aaron Hassad, **Ryan Spitler** and Darren E. Casteel. cGMP-dependent Protein Kinase I β Regulates Breast Cancer Cell Migration and Invasion via a Novel Interaction with the Actin/Myosin-associated Protein Caldesmon. *J Cell Sci*. 2013 Apr 1;126(Pt 7):1626-36.

Emilio González-González, Yeu Chun Kim, Tycho J Speaker, Robyn P. Hickerson, **Ryan Spitler**, James C. Birchall, Maria Fernanda Lara, Rong-hua Hu, Yanhua Liang, Nancy Kirkiles-Smith, Mark R. Prausnitz, Leonard Milstone, Christopher H. Contag, & Roger L. Kaspar. Visualization of plasmid delivery to keratinocytes in mouse and human epidermis. *Sci Rep*. 2011;1:158.

Sudipta Majumdar, Agnes Hajduczki, Rosemarie Vithayathil, Tivoli J. Olsen, **Ryan M. Spitler**, Aaron S. Mendez, Travis D. Thompson, Gregory A. Weiss. In vitro Evolution of Ligands to the Membrane Protein Caveolin. *J Am Chem Soc*. 133 (25), pp 9855-9862. 2011 May 26.

(Mark Mackanos*, Christopher Sramek*), **Ryan Spitler**, Loh-Shan Leung, Hiroyuki Nomoto, Christopher H. Contag, Daniel Palanker. Non-damaging retinal phototherapy: dynamic range of the heat shock protein expression. (*authors contributed equally) *Invest Ophthalmol Vis Sci*. 2011 Mar 28;52(3):1780-7.

Emilio González-González, Hyejun Ra, **Ryan Spitler**, Robyn P. Hickerson, Christopher H. Contag, and Roger L. Kaspar. Increased interstitial pressure improves nucleic acid delivery to skin enabling a comparative analysis of constitutive promoters. *Gene Therapy* 2010 Oct (10):1270-8.

Gunilla B Jacobson, Emilio Gonzalez-Gonzalez, **Ryan Spitler**, Rajesh Shinde, Devin Leake, Roger L Kaspar, Christopher H Contag, Richard N Zare. Biodegradable Nanoparticles with Sustained Release of Functional siRNA in Skin. *J Pharm Sci*. 2010 Oct (10):4261-6.

Emilio Gonzalez-Gonzalez, Tycho J. Speaker, Robyn P. Hickerson, **Ryan Spitler**, Manny Flores, Devin Leake, Christopher H. Contag, and Roger L. Kaspar. Silencing of reporter gene expression in skin using siRNAs delivered by a hollow soluble protrusion array device (PAD). *Mol Ther*. 2010 Sept 1667-1674. (work featured on the cover of the Sept edition)

B. Non peer reviewed papers

Ryan Spitler. Low-Level Light Therapy Is Still Looking for and Finding Clinical Inroads (In press, Biophotonics, 2016)

Patrick Goodwill, Bo Zheng, **Ryan Spitler.** Breaking New Ground in Molecular Imaging, Magnetic Particle Imaging Facilitates Research and Clinical Cell Therapy Success. (in press, GEN. 2016 Sept 15 vol. 36, No. 16).

C. Book Chapters

None

D. Books

None

E. Special Materials

None

F. Digital publications

None

G. Abstracts not published in other forms

R. Spitler. “Pre-Clinical Applications of Magnetic Particle Imaging (MPI)” Molecular Imaging Program at Stanford Retreat 2016, Los Gatos, CA

R. Spitler, K. D. Brewer, K. R. Lee, A. C. Chan, J. C. Barozzo, A. Wakeel, C. S. Foote, S. Machtaler, J. Rioux, J. Willmann, P. Chakraborty, B. W. Rice, C. H. Contag, C. B. Bell III, B. K. Rutt. Magnetotactic Bacteria a Living MRI Tracking Agent” World Molecular Imaging Congress 2016, New York, NY

R. Spitler, B. Rutt, C. H. Contag; “Magnetotactic Bacteria a Living Tracking Agent” Advances in Cancer Imaging presented by Stanford Cancer Imaging program 2016, Stanford, CA

R. Spitler, G. Jacobson, C.H. Contag; “Iron oxide Nanoparticles for Heating and In vivo Imaging” Magnetic Particle Symposium 2015, Stanford, CA

R. Spitler, B. Rutt, C. H. Contag; “Magnetogenetic Cancer Therapy” Advances in Cancer Imaging presented by Stanford Cancer Imaging program, Stanford 2015, CA

R. Spitler, F. Norpetlian, X. Kong, K. Yokomori, G. R. Boss, M. W. Berns; “LLLT and Pharmacological Approaches for Wound-Healing in Cell Models” UC Systemwide Bioengineering Symposium 2014, Irvine, CA

R. Spitler, F. Norpetlian, X. Kong, K. Yokomori, G. R. Boss, M. W. Berns; “LLLT and Pharmacological Approaches for Wound-Healing in Cell Models” The international Society for Optics and Photonics (SPIE) conference 2014, San Francisco, CA

R. Spitler, R. Schwappacher, T. Wu, X. Kong, K. Yokomori R. B. Pilz, G. R. Boss, M. W. Berns; “Nitrosyl-cobinamide promotes wound healing through enhanced cell migration” American Society for Cell Biology meeting 2012, San Francisco, CA

R. Spitler, R. Schwappacher, T. Wu, G. R. Boss, M. W. Berns; “Wound Healing and Toxicity Mitigation of Airway Injury” World Molecular Imaging Congress 2011, San Diego, CA

R. Spitler, A. Dallas, H. Ilves C. H. Contag, S. P. Wong, B. H. Johnston; “Development of RNAi Therapeutics for the Treatment of Liver Diseases” Gordon Conference, Drug Carriers in Medicine & Biology 2010, Waterville Valley, NH

R. Spitler, E. Gonzalez-Gonzalez, T. J. Speaker, R. P. Hickerson, M. Flores, D. Leake, C. H. Contag, R. L. Kaspar; “The Development of RNAi Delivery Tools for Skin Diseases” Caliper Owners Meeting Group 2010, San Francisco, CA

R. Spitler, A. Dallas, H. Ilves C. H. Contag, S. P. Wong, B. H. Johnston; “Development of RNAi Therapeutics for the Treatment of Liver Disease” Center for Biomedical Imaging at Stanford Symposium 2010, Stanford, CA

R. Spitler, A. Dallas, H. Ilves C. H. Contag, S. P. Wong, B. H. Johnston; “Development of RNAi Therapeutics for the Treatment of Liver Disease” Pediatric Research Retreat Lucile Packard Children’s Hospital 2010, Stanford, CA

R. Spitler, A. Dallas, H. Ilves C. H. Contag, S. P. Wong, B. H. Johnston; “Methods of RNAi Delivery for the Treatment of Liver Diseases” BioX Interdisciplinary Symposium 2009, Stanford, CA

V. Editorial Services

The European Journal of Pharmacology 2015 (Reviewer)

PLOS ONE 2015 (Reviewer)

Journal of Biomedical Optics 2015 (Reviewer)

Lasers in Surgery & Medicine 2015 (Reviewer)

VI. Grants (Include role (eg PI), granting agency, type (eg K-08, R-01), and term but NOT dollar amount)

A. Current Funding

Stanford Cancer Imaging Fellowship 2014-Present

B. Pending Funding

DoD CDMRP (Key personnel) 2016

C. Prior Funding

Biophotas Research Fellowship 2013-2014

Military Photomedicine Program Research Grant (Co-investigator) 2010-2014

D. Patents

Methods and Systems of Treating Wounds UC Case No. 2013-772-2 (Pending)

E. Service as grant reviewer

None

VII. University Administrative Service

- A. Committee Service
None

- B. Leadership roles
None

VIII. Service to Professional Organizations

- A. Membership
 - 2010 – Present American Association for the Advancement of Science
 - 2015 – Present World Molecular Imaging Society (WMIS)
 - 2010 – 2014 Beckman Laser Institute & Medical Clinic
 - 2012 – 2013 American Society for Cell Biology
 - 2008 – 2010 Pachyonychia Congenita Foundation

- B. Committee service
None

- C. Leadership roles
Lead Clinical Advisor for Biophotas, Inc.

IX. Presentations

- A. National and Regional Meetings
 - R. Spitler**, B. Rutt, C. H. Contag; “Magnetotactic Bacteria a Living Tracking Agent” Oral presentation at Advances in Cancer Imaging presented by Stanford Cancer Imaging program 2016, Stanford, CA

 - R. Spitler**, G. Jacobson, C.H. Contag; “Iron oxide Nanoparticles for Heating and In vivo Imaging” Oral presentation at Magnetic Particle Symposium 2015, Stanford, CA

 - R. Spitler**, B. Rutt, C. H. Contag; “Magnetogenetic Cancer Therapy” Oral presentation at Advances in Cancer Imaging presented by Stanford Cancer Imaging program, Stanford 2015, CA

 - R. Spitler**, F. Norpetlian, X. Kong, K. Yokomori, G. R. Boss, M. W. Berns; “LLLT and Pharmacological Approaches for Wound-Healing in Cell Models” Poster presentation at UC Systemwide Bioengineering Symposium 2014, Irvine, CA

 - R. Spitler**, E. Gonzalez-Gonzalez, T. J. Speaker, R. P. Hickerson, M. Flores, D. Leake, C. H. Contag, R. L. Kaspar; “The Development of RNAi Delivery Tools for Skin Diseases” Oral presentation at Caliper Owners Meeting Group 2010, San Francisco, CA

 - R. Spitler**, A. Dallas, H. Ilves C. H. Contag, S. P. Wong, B. H. Johnston; “Development of RNAi Therapeutics for the Treatment of Liver Disease” Oral presentation at Center for

Biomedical Imaging at Stanford Symposium 2010, Stanford, CA

R. Spitler, A. Dallas, H. Ilves C. H. Contag, S. P. Wong, B. H. Johnston; “Development of RNAi Therapeutics for the Treatment of Liver Disease” Poster presentation at Pediatric Resaerch Retreat Lucile Packard Children’s Hospital 2010, Stanford, CA

R. Spitler, A. Dallas, H. Ilves C. H. Contag, S. P. Wong, B. H. Johnston; “Methods of RNAi Delivery for the Treatment of Liver Diseases” Poster presentation at BioX Interdisciplinary Symposium 2009, Stanford, CA

B. International Meetings

R. Spitler, F. Norpetlian, X. Kong, K. Yokomori, G. R. Boss, M. W. Berns; “LLLT and Pharmacological Approaches for Wound-Healing in Cell Models” Poster presentation at The international Society for Optics and Photonics (SPIE) conference 2014, San Francisco, CA

R. Spitler, R. Schwappacher, T. Wu, X. Kong, K. Yokomori R. B. Pilz, G. R. Boss, M. W. Berns; “Nitrosyl-cobinamide promotes wound healing through enhanced cell migration” Post presentation at American Society for Cell Biology meeting 2012, San Francisco, CA

R. Spitler, R. Schwappacher, T. Wu, G. R. Boss, M. W. Berns; “Wound Healing and Toxicity Mitigation of Airway Injury” Poster presentation at World Molecular Imaging Congress 2011, San Diego, CA

R. Spitler, A. Dallas, H. Ilves C. H. Contag, S. P. Wong, B. H. Johnston; “Development of RNAi Therapeutics for the Treatment of Liver Diseases” Poster presentation at Gordon Conference, Drug Carriers in Medicine & Biology 2010, Waterville Valley, NH

C. Visiting Professorships

None

X. Community Service

None