

CURRICULUM VITAE

**Shawn David Hingtgen**

Home Address: **327 N. Serenity Hill Circle  
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Professional Address:  
**Division of Molecular Pharmaceutics  
UNC Eshelman School of Pharmacy  
Biomedical Research and Imaging Center  
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120 Mason Farm Rd  
Chapel Hill, NC 27599**

Date and Place of Birth: **December 27, 1975; Marshalltown, Iowa**

Education

**B.S., Biology, 1998: The University of Iowa**  
**Ph. D., Anatomy and Cell Biology, 2004: The Roy J. and Lucille A. Carver College of Medicine,  
University of Iowa**

Current Position

**Assistant Professor**, April 2012-Present: Division of Molecular Pharmaceutics, Eshelman School of Pharmacy, Biomedical Research Imaging Center, The University of North Carolina at Chapel Hill

Previous Training

**Instructor**, June 2010-March 2012: Department of Radiology, Massachusetts General Hospital, Harvard University

**Post-doctoral Research Fellow**, June 2008-June 2010: Department of Radiology, Massachusetts General Hospital, Harvard University, Khalid Shah, Ph.D., advisor.

**T-32 Post-doctoral Research Fellow**, February 2005-June 2008: Center for Molecular Imaging Research, Department of Radiology, Massachusetts General Hospital, Harvard University, Ralph Weissleder, M.D., Ph.D. and Khalid Shah, Ph.D., Co-advisors.

**Graduate Student**, August 1999-December 2004: Department of Anatomy and Cell Biology, The Roy J. and Lucille A. Carver College of Medicine, University of Iowa, Robin. L. Davisson, Ph.D., advisor

**Undergraduate Research Assistant**, August 1994-December 1998: Department of Biology, University of Iowa, Richard J. Sjolund, Ph.D., advisor

### Academic Honors

- Keystone Symposia Underrepresented Minority Scholarship, Keystone Symposia on Stem Cell Differentiation & Dedifferentiation, 2010
- American Brain Tumor Association, Post-doctoral Research Fellowship, 2008
- National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) Minority Travel Award, American Physiological Society, 2005
- Caroline tum Suden/Frances A. Hellebrandt Professional Opportunity Award, American Physiological Society, 2005
- College of Medicine Public Health Research Week Award, The University of Iowa Roy J. and Lucille A. Carver College of Medicine, 2004
- National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) Minority Travel Award, American Physiological Society, 2004
- Caroline tum Suden/Frances A. Hellebrandt Professional Opportunity Award, American Physiological Society, 2004
- New Investigator Award, Society for Free Radical Biology and Medicine, 2003
- National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) Minority Travel Award, American Physiological Society, 2003
- Caroline tum Suden/Frances A. Hellebrandt Professional Opportunity Award, American Physiological Society, 2003
- College of Medicine Public Health Research Week Award, The University of Iowa Roy J. and Lucille A. Carver College of Medicine, 2002
- Merck New Investigator Award, American Heart Association Council for High Blood Pressure Research, 2001
- Honorable Mention-James F. Jackobsen Forum, University of Iowa, 2001
- Undergraduate Scholar Assistant, University of Iowa, 1994-1998
- Opportunity at Iowa Underrepresented Minority Scholarship, University of Iowa 1994-98

### Teaching Experience

- **Graduate teaching assistant**, "Human Gross Anatomy", Department of Anatomy and Cell Biology, Roy J. and Lucille A. Carver College of Medicine, University of Iowa, 2002 and 2003

## Funding

- The North Carolina Translational and Clinical Sciences, **UNC Clinical Translation Science Award KL2 Scholars Program: “Combining nanoparticle chemotherapeutics and stem cell-based drug delivery to overcome drug resistance in Glioblastoma.”**, July, 2012-July 2014. Project total: \$75,000.
- American Brain Tumor Association, **Post-doctoral Research Fellowship: “Engineering and real-time imaging of targeted anti-tumor therapies using ES-derived neural stem cells”**, July 1, 2008-July 1, 2010. Project total \$100,000.
- T-32 Research Fellowship, **Post-doctoral Fellowship: “Training in Molecular Imaging Research”**, February 1, 2005- July 1, 2008. Project total \$105,000.

## Publications

1. **Hingtgen, S.D.**, Sarkar, D., Yacoub, A., Fisher, P.B., Shah, K. SM7L: A Novel First-Generation MDA-7 Variant with Diagnostic Properties and Enhanced Anti-tumor Effects. *PLoS One (In Press)*
2. **Hingtgen, S.D.**, Figueiredo, J.F., Ferrar, C., Shah, K. A multi-modality image-guided mouse model of Glioblastoma resection and recurrence. *J. Neuro Onc. (Under review)*
3. **Hingtgen, S.D.**, Rich, B.E., Caruso, M., Mohapatra, G., Shah, K. Novel Resistant Stem Cells Secreting Targeted Immunotoxins Attenuate Glioma Progression and Synergize with TRAIL. *Cancer Res. (Submitted)*
4. Kauer, T.M., Figueiredo, J.F., **Hingtgen, S.D.**, Shah, K. Novel approach to deliver stem-cell based therapy in a mouse model of glioma resection. *Nat Neurosci.* 2011 Dec 25;15(2):197-204.
5. **Hingtgen, S.D.**, Kasmieh, R., van de Water J.A., Figueiredo, J.L., Weissleder, R., Shah, K. A novel molecule integrating therapeutic and diagnostic activities reveals multiple aspects of stem cell-based therapy. *Stem Cells.* 2010 Apr;28(4):832-41.
6. **Hingtgen, S.D.**, Li, Z., Kutschke, W., Tian, X., Sharma, R.V., Davisson, R.L. Superoxide Scavenging and AKT Inhibition in the Myocardium Ameliorate Pressure Overload-induced NFκB Activation and Cardiac Hypertrophy. *Physiol Genomics.* 2010 Apr;41:127-136.
7. Sasportas, L.S., Kasmieh, R., Wakimoto, H., **Hingtgen S.D.**, van de Water J.A., Mohapatra, G., Figueiredo, J.L., Martuza, R.L., Weissleder, R., Shah, K. Assessment of therapeutic efficacy and fate of engineered human mesenchymal stem cells for cancer therapy. *Proc Natl Acad Sci U S A.* 2009 Mar 24;106(12):4822-7.
8. **Hingtgen, S.D.**, Ren, X., Terwilliger, E.F., Classon, M., Weissleder, R., Shah, K. Targeting Multiple Pathways in Gliomas with Stem Cell and Viral Delivered S-TRAIL and Temozolomide. *Mol Cancer Ther.* 2008 Nov;7(11):3575-85

9. Shah, K., **Hingtgen, S.D.**, Kasmieh, R., Figueiredo, J.L., Martinez-Serrano, A., Breakefield, X.O., Weissleder, R. Bimodal viral vectors and in vivo imaging reveal the fate of human neural stem cells in experimental glioma model. *J Neurosci* 2008 April 28(17):4406-4413
10. Arwert, E., **Hingtgen, S.D.**, Figueiredo, J.L., Bergquist, H., Mahmood, U., Weissleder, R., Shah, K. Visualizing the dynamics of EGFR activity and anti-glioma therapies in vivo. *Cancer Res.* 2007 Aug 1;67(15):7335-42
11. **Hingtgen, S.D.**, Tian, X., Sharma, R.V., Davisson, R.L. A gp91<sup>phox</sup>-Containing NADPH Oxidase is a Key Signaling Molecule in Angiotensin II-Induced Cardiomyocyte. *Physiol Genomics* 2006 Aug; 26 (3):180-91
12. Xiuying Ma, Curt D. Sigmund, **Shawn D. Hingtgen**, Xin Tian, Robin L. Davisson, Francois M. Abboud, and Mark W. Chapleau. Ganglionic Action of Angiotensin Contributes to Sympathetic Activity in Renin-angiotensinogen Transgenic Mice. *Hypertension.* 2004 Feb;43(2):312-6
13. **Hingtgen, S.D.**, Davisson, R.L. Gene therapeutic approaches to oxidative stress-induced cardiac disease: principles, progress and prospects. *Antioxid. Redox Signal.* 2001 Jun; 3(3):433-49

### Abstracts

1. **Hingtgen, S.D.**, Kasmieh, R., van de Water J.A., Figueiredo, J.L., Shah, K. Determining Multiple Aspects of Stem Cell-based Therapies using Novel Diagnostic and Therapeutic Multifunctional Molecules. (2010) *Keystone Symposia on Stem Cell Differentiation & Dedifferentiation*
2. **Hingtgen, S.D.**, Kasmieh, R., Figueiredo, J., Weissleder, R., and Shah, K. Fate and therapeutic efficacy of neural Stem Cells in mouse model of glioma. (2008) *Society for Neuro-Oncology.*
3. **Hingtgen, S.D.**, Kasmieh, R., Terwilliger, E.F., Weissleder, R., and Shah, K. (2007). Adeno-associated viral vector encoding secretable TRAIL inhibits glioma progression assessed by bioluminescent imaging. *Mol. Imaging.*
4. **Hingtgen, S.D.**, Kasmieh, R., Figueiredo, J., Chung, S., Kim, K., Weissleder, R., and Shah, K. (2007). *In vivo* imaging of embryonic stem cell-derived neural precursor cells and gliomas transduced with bi-modal lentiviral vectors. *Mol. Imaging.*
5. Arwert, E., **Hingtgen, S.D.**, Figueiredo, J., van de Water, J., Bergquist, J., Mahmood, U., Weissleder, R., and Shah, K. (2007). Visualizing the dynamics of EGFR activity and anti-glioma therapies *in vivo.* *Mol. Imaging.*
6. **Hingtgen, S.D.**, Kasmieh, R., Weissleder, R., Shah, K. (2006). Using bi-modal viral vectors for imaging delivery of S-TRAIL and fate of gliomas in vivo. *Mol. Imaging.* 5:434
7. Shah, K, **Hingtgen, S.D.**, Kasmieh, R., Figueiredo, J.L., Weissleder, R. (2006). In Vivo Imaging of Human NSC Fate in Mouse Glioma Models. *Mol. Imaging.* 5:434

8. Sharma, R.V., **Hingtgen, S.D.**, Yang, J, Li, Z, Tian, X, Kutschke, W, Engelhardt, J.F., Davisson, R.L. (2005). Activation of Akt by Superoxide ( $O_2^{\cdot-}$ ) is Required for NF $\kappa$ B Activation and Cardiac Hypertrophy. *FASEB J.* 19:A136.
9. **Hingtgen, S.D.**, Tian, X, Li, Z, Kutschke, W, Sharma, R.V., Davisson, R.L. (2005). gp91<sup>phox</sup> is the Predominant Nox Homologue Expressed in Cardiomyocytes and siRNA-Mediated Silencing of its Expression Abolishes Ang II-Induced Superoxide Generation and Cardiomyocyte Hypertrophy. *FASEB J.* 19:A388
10. **Hingtgen, S.D.**, Kutschke, W., , Li, Z., Sharma. R.V., Davisson, R.L. (2004). Bioluminescent Imaging of Pressure Overload-Induced Myocardial NF $\kappa$ B Activation In Vivo: Role of Superoxide ( $O_2^{\cdot-}$ ). *Hypertension.* 44:538
11. **Hingtgen, S.D.**, Tian, X., Sharma, R.V., Davisson, R.L. (2004). The Role of gp91phox in Angiotensin II (AngII)-induced Cardiomyocyte Hypertrophy. *FASEB J.* 18:A279
12. **Hingtgen, S.D.**, Yang, J., Sharma, R.V., Engelhardt, J.E., Davisson, R.L. (2003). Angiotensin (AngII)-Induced Cardiomyocyte Hypertrophy: Role of Reactive Oxygen Species, NF $\kappa$ B, and Akt/Protein Kinase B. *Free Radical Biol. Med.* 35:S66
13. Ma, X., Sigmund, C.D., **Hingtgen, S.D.**, Tian, X., Davisson, R.L., Abboud, F.M., Chapleau, M. W. (2003). Significant Contribution of a Ganglionic Action of Endogenous Angiotensin to Sympathetic Nerve Activity in Renin-angiotensin Double Transgenic Mice. *Hypertension.* 42:408
14. **Hingtgen, S.D.**, Yang, J., Sharma, R.V., Engelhardt, J.E., Davisson, R.L. (2003). Angiotensin II (AngII)-Induced Cardiomyocyte Hypertrophy: Role of Reactive Oxygen Species and Akt/Protein Kinase B. *FASEB J.* 17:A883
15. **Hingtgen, S.D.**, Yang, J., Wise, M.E., Engelhardt, J.E., Davisson, R.L. (2001). Angiotensin II-Induced Cardiomyocyte Hypertrophy: Role of Rac1-Activated NAD(P)H Oxidase and Reactive Oxygen Species. *Hypertension.* 38:510-511
16. **Hingtgen, S.D.**, Yang, J., Wise, M.E., Hill, J.A., Engelhardt, J.E., Davisson, R.L. (2000). Role of reactive oxygen species in angiotensin II-induced cardiomyocyte hypertrophy. College of Medicine Research Week, The University of Iowa Carver College of Medicine.
17. Yang, J., **Hingtgen, S.D.**, Hill, J.A., Wise, M.E., Engelhardt, J.F., Davisson, R.L. (2000). Reactive oxygen species mediate angiotensin II-induced cardiomyocyte hypertrophy. *Circulation.* 102:S642.
18. Yang, J., Hjelmstad M., **Hingtgen, S.D.**, Ritchie, T.L., Hill, J.A., Davisson, R.L., Engelhardt, J.F. (2000). Redox Modulating Gene Therapy for Myocardial Ischemia/Reperfusion Injury. *Mol. Ther.* 1:S257.