CURRICULUM VITAE

Mark A. Lubkowitz
Saint Michael's College
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Education:

The University of California: Berkeley, CA 1998-2001
Post-Doctoral fellow in plant developmental genetics
Advisor: Dr. Mike Freeling

The University of Tennessee: Knoxville, Tennessee, 1992-1997
Ph.D. in Microbiology
Advisor: Dr. Jeffrey Becker
Dissertation title: "Oligopeptide transport: cloning and characterization of a new gene family"

Washington and Lee University: Lexington, Virginia, 1991
B.S. in Biology, *cum laude*

Professional Activities:

Associate Professor of Biology, Saint Michael's College, 2007-present
Assistant Professor of Biology, Saint Michael's College, 2001-2007.
Graduate Research Assistant, University of Tennessee, 1993 - 1997.
Research Assistant, Washington and Lee University, 1990- 1991.

Awards and Honors:

Sigma Xi Science Society member, 2002-present
Sigma Xi Graduate Student Science Fair, Second Place, University of Tennessee, 1997
Chancellor's Award for Extraordinary Professional Promise, University of Tennessee, 1997
President of Microbiology Dept. Graduate Students, University of Tennessee 1996-1997
Speaker Recruiting Committee, University of Tennessee 1995-1996
Graduate Student Association Representative, University of Tennessee, 1993
Washington and Lee Biology Research Award, 1991
Honors Graduate, *cum laude,* Washington and Lee University, 1991
Dean's List, Washington and Lee University

Teaching Experience

Saint Michael's College 2001-present.

Botany, lecture and laboratory
General Biology, lecture and laboratory
Cell and Molecular Biology, lecture and laboratory
Bioinformatics, lecture and laboratory

University of California at Berkeley, fall, 2000.

Plant Biology, team-taught seminar for graduate students

Mills College, fall 1999.

Microbiology, lecture and laboratory

University of Tennessee,
Microbiology, lecture, 1997.
Cell Biology, discussion section, 1994.

Undergraduate Research Mentored
Stephanie ('08), 2007-08
Project title: substrate analysis of OPTs

Nolan Sutherland ('08), Summer 2006.
Project title: Are oligopeptide transporters expressed in the pitchers of Asian pitcher plants?

Andrew Reid ('08), Summer 2006.
Project title: The effects of nitrogen and volume change on Asian pitcher plant acidity

Amie Kortis ('06), 2005-2006.
Project title: Does feeding affect senescence and pH in Asian pitcher plants?

Abbie Breckheimer ('06), 2006.
Project title: Oligopeptide transporter involvement in the feeding mechanism of the carnivorous pitcher plant *Nepenthes ventricosa.*

Kristyn Dumont ('05), 2003-2005.
Project title: Characterization of *OsPTR1* gene expression patterns during rice development

Pat Bafuma ('04), May 2003-May 2004.
Project title: Cloning and characterization of the oligopeptide transport gene *OsOPT1* from rice

David Moody ('04), Jan. 2002-May 2004.
Project title: Cloning and characterization of the oligopeptide transport gene *ZmOPT3* from *Zea mays*

Kerry Donahue ('03), June 2002-May 2003.
Project title: Do hormones affect gene expression levels of *OsPTR1* in rice?

Lee Brooks ('03), Jan. 2002-May 2003.
Project title: Is the gene regulatory sequence CNSlg3-i2 conserved in grass relatives?

Helen Smith ('00), Research student from Mills College. 1999-2000.
Project title: Does the maize mutant *dau1* ectopically express knox genes?

Alex Tolmasoff ('00), University of California 1999-2000.
Project title: A reverse one hybrid screen to identify downstream targets of the knox gene *roughsheath1*

Mary Jane Santos (High school senior), Project Seed, University of California, summer, 1999.

Aaron Burchfield ('97), University of Tennessee, 1996-97.
Project title: Cloning of an oligopeptide transporter from *Saccharomyces cerevisiae*

Publications (* indicates undergraduate co-author)

Vasconcelos, M., Li, G., Lubkowitz, M., and Grusak, M. (2007) Oligopeptide transporters and their role in Fe(II) and Fe(III)-Nicotianamine Transport in rice. Submitted to *Plant Genome*.

Lubkowitz, M.A**.** (2006). The OPT family functions in long distance peptide and metal transport in plants. In Genetic Engineering: principles and methods, volume 27, 35-55. ed J. Setlow (Springer).

Bauer, P., Lubkowitz, M., Tyers, R., Nemoto, K., Meeley R., Goff, S., Freeling, M. (2004). Regulation and a conserved intron sequence of *liguleless3/4 knox* class I homeobox genes in grasses. *Planta* 219(2):359-68.

Lubkowitz, M. A. (2002). Genomics 2002: getting primed. *Biosciences* 53(3):290-291.

Lubkowitz, M. A., Barnes, R., Breslav, M., Burchfield, A*., Naider, F., & Becker, J. M. (1998). *Schizosaccharomyces pombe isp4* encodes an oligopeptide transporter and is a member of a novel family of oligopeptide transporters. *Molecular Microbiology* 28:729-741.

Lubkowitz, M. A., Hauser, L., Breslav, M., Naider, F., & Becker, J. M. (1997). An oligopeptide transport gene from *Candida albicans*. *Microbiology UK* 143: 387-396.

Becker, J. M., & Lubkowitz, M. A. (1995). Co-reviewer of "Molecular biology of pathogenic fungi, edited by B Maresca & G. S. Kobayashi. New York, NY: Telos Press, 1994, 577p." *Mycopathologia* 131:127.

Basrai, M. A., Lubkowitz, M. A., Perry, J. R., Miller, D., Naider, F., & Becker, J. M. (1995). Cloning of a *Candida albicans* peptide transport gene. *Microbiology UK* 141: 1147-1156.

Grants

NSF Proposal No 0639387, 2006.
Title: Collaborative Research: RUI: The role of oligopeptide transporters in seed development
Amount: $170,701

Vermont Genetics Network Summer Fellowship, 2006.
Title: The role of peptide transporters in seed germination.
Amount: $64,000

NSF Proposal No 0543160, 2005 (Not funded).
Title: Collaborative Research: RUI: The role of oligopeptide transporters in seed development

Vermont Genetics Network Summer Fellowship, 2005.
Title: The role of oligopeptide transporters in seed development.
Amount: $54,000

EPSCoR Summer Research proposal, 2005.
Title: The role of oligopeptide transporters in seed germination
Amount: $10,000

NSF Proposal No 0444526, 2004 (Not funded).

Title: Collaborative Research: RUI: The role of oligopeptide transporters in seed development.

New England Reading Associations (NERA) grant: Co-PI with Valerie Bang-Jensen (Education Dept), 2004 (not funded).
Title: Books in bloom: the development of a literature garden

Vermont Genetics Network Summer Fellowship, 2004.
Title: Characterization of *OsOPT1,* a putative peptide transporter from rice
Amount: $10,000

NSF Proposal No 0343687, 2003 (Not funded).
Title: Collaborative Research: RUI: Characterization of an oligopeptide transport family in rice

EPSCoR Equipment acquisition proposal, 2003.
Title: Characterization of an oligopeptide transport family in rice
Amount: $2978

Vermont Genetics Network equipment acquisition proposal, 2003.
Title: Characterization of an oligopeptide transport family in rice
Amount: $7040

Vermont Genetics Network travel grant, Summer 2003.
Amount: $1000

Vermont Genetics Network Summer Fellowship, 2003.
Title: Characterization of the OPT gene family in rice
Amount: $10,000

Council for Undergraduate Research Summer Fellowship, 2002.
Title: Determining the extent of a genetic network for leaf development in monocotyledonous plants
Amount: $3,500

Vermont Genetics Network Summer Fellowship, 2002.
Title: The role of conserved non-coding DNA sequences in leaf development
Amount: $10,000

Vermont Genetics Network Equipment grant, 2002.
Title: The role of conserved non-coding DNA sequences in leaf development
Amount: $9236

Vermont Genetics Network Travel grant, 2002.
Amount: $926

National Institutes of Health Post-Doctoral Fellowship, 1999-2001.
Title: Analysis of temporal development in the maize leaf
Amount: salary and benefits for 3 years Approx. $96,000

Science Alliance Research Achievement Award, University of Tennessee, 1997.
Amount: $3,200

Alexander Hollaender Fellowship Recipient, 1993.
Amount: $12,000

Invited Presentations:

University of Vermont Biology Department Seminar series. February, 2008
Seminar title: "Resource allocation in germinating rice seeds: an unusual link between peptides and metals?"

Florida State, Biology Dept Seminar Series. .February 2006.
Seminar title: "Peptide transport: the unknown player in seed germination?"

Norwich University Science Lecture Series. February 2006.
Seminar title: "Peptide transport: the unknown player in seed germination?"

Midldebury College Biology Department seminar series. October, 2004.
Seminar title: "Long distance transport in plants: an unusual link between peptides and metals."

Third Annual Vermont Genetics Network retreat, University of Vermont, August 2004.
Seminar title: "The Microarray Outreach Program."

Ecology and Evolution Dept seminar, University of Vermont, November 2001.
Seminar title: "Assembling a genetic network for regional leaf identity using orthologous grass sequences."

The 42nd Annual Maize Meeting, Cortdelain, ID, February, 2000.
Seminar title: "Assembling a genetic network for regional identity along the proximal-distal axis of the leaf."

Washington and Lee University, Biology Department, Lexington, VA, November, 1997.
Seminar title: "The OPT family of transport proteins: a lesson in in silica science."

University of Tennessee, Dept. of Biochemistry, Cellular, and Molecular Biology, November, 1997. Seminar title: "The OPT family of transport proteins."

Southeastern Regional Yeast Meeting, Long Beach, MS, April, 1997.
Seminar title: "*Schizosaccharomyces pombe* isp4 and *Candida albicans* OPT1 encode oligopeptide transporters and are members of a novel family of transport proteins."

Southeastern Regional Yeast Meeting, Hattiesburg, MS, June, 1996.
Seminar title: "Cloning and characterization of an oligopeptide transport gene from *Candida albicans*."

Poster presentations (* indicates undergraduate co-author)

Vermont Genetics Network retreat. Burlington, VT, April, 2007.
Poster presented: Andrew Reid and Mark Lubkowitz. "The effects of nitrogen and volume change on Asian pitcher plant acidity."

Iron Nutrition and Interactions in Plants. Montpelier, France, July, 2006.

Poster Presented: Vasconelos, M., Lubkowitz, M., and M. Grusak. "Oligopeptide transporters and their role in Fe(II)- and Fe(III)-nicotianamine transport in rice (Oryza sativa L)."

The 48th Annual Maize Meeting. Asilomar, CA, March, 2006.
Poster presented: M. Lubkowitz, K. Dumont*, and P. Bafuma*. "Oligoeoptide transporters are expressed during germination in rice"

Vermont EPSCoR Summer Retreat. Burlington, VT, August, 2005.
Poster presented: M. Lubkowitz, K. Dumont*, and P. Bafuma*. "The role of peptide transporters
in rice seed germination."

American Society of Plant Biologists. Seattle, WA, August, 2005.
Poster presented: Lubkowitz, M., K. Dumont*, and P. Bafuma*. " Oligopeptide transporters are expressed during germination in rice."

The 47th Annual Maize Meeting. Lake Geneva, WI, March, 2005.
Poster presented: Dumont*, K. and M. Lubkowitz. "Oligopeptide transporters show differential gene expression during germination."

"Posters on the Hill" sponsored by The Council for Undergraduate Research. April, 2005.
Poster presented: Dumont*, K. and M. Lubkowitz. "OsOPTs show differential expression during germination."

Third Annual Vermont Genetics Network Retreat. University of Vermont, August, 2004.
Poster presented: Dumont*, K. and M. Lubkowitz. "OsOPTs show differential gene expression during germination."

The 46th Annual Maize Meeting. Mexico City, Mexico, March, 2004.
Poster presented: Moody*, D**.** and M. Lubkowitz. "Characterization of the oligopeptide transporter *ZmOPT3*."

The 46th Annual Maize Meeting. Mexico City, Mexico, March, 2004.
Poster presented: Dumont*, K. and M. Lubkowitz. "Substrate specificity of the rice peptide transporter *OsPTR1*."

The 46th Annual Maize Meeting. Mexico City, Mexico, March, 2004.
Poster presented: Bafuma*, P. and M. Lubkowitz. "Characterization of an oligopeptide transport gene family in *Oryza sativa*."

Second Annual Vermont Genetics Network Retreat. University of Vermont, August, 2003.
Poster presented: M. Lubkowitz. "Assembling a genetic network for regional leaf identity using
orthologous grass sequences "

The 45th Annual Maize Meeting. Lake Geneva, WI, March, 2003.
Poster presented: Donahue*, K. and M. Lubkowitz. "Characterization of a Peptide Transport Gene from *Oryza sativa*."

The 45th Annual Maize Meeting. Lake Geneva, WI, March, 2003.
Poster presented: Brooks*, L. and M. Lubkowitz. "An analysis of CNS-lg3-i2 in non-ligule

forming plants and plants with altered ligules."

The 45th Annual Maize Meeting. Lake Geneva, WI, March, 2003.
Poster presented: Moody*, D. and M. Lubkowitz. "Characterization of an oligopeptide transporter."

Vermont Genetics Network Retreat. University of Vermont, August, 2002.
Poster presented: Donahue*, K., Moody*, D., and M. Lubkowitz. "Characterization of a peptide transport gene from *Oryza sativa*."

Vermont Genetics Network Retreat. University of Vermont, August, 2002.
Poster presented: Brooks*, L., and M. Lubkowitz. "The role of non-coding sequence CNSLg3-i2 in ligule formation in *Zea mays, Juncus, Typha, Carex,* and *Sparganium*."

The 43rd Annual Maize Meeting. Lake Geneva, WI, February, 2001.
Poster presented: Lubkowitz, M. J. Ito, H. Smith*, M. Freeling, and S. Goff. "A combinatorial approach to assembling the liguleless3 genetic network."

The 42nd Annual Maize Meeting. Lake Geneva, WI, February, 2000.
Poster presented: Lubkowitz, M. and Freeling, M. "Discerning the function of liguleless3: a search for downstream targets."

The 41st Annual Maize Meeting. Lake Geneva, WI, February, 1999.
Poster presented: Lubkowitz, M. and Freeling, M. "A modified yeast screen to identify downstream targets of roughsheath1 and liguleless3."

FASEB Conference on transport of amino acids, peptides, and biogenic amines. Copper Mtn., CO, July, 1997. Poster presented: Becker, J. M., M. Lubkowitz, and F. Naider, "Oligopeptide transport systems in eukaryotes."

Fifteenth American Peptide Symposium. Nashville, TN, June, 1997.
Abstract presented: Becker, J. M., M. Lubkowitz, and F. Naider, "Oligopeptide transport systems in eukaryotes."

International meeting on Candida albicans. San Diego, CA, February, 1996.
Poster presented: Lubkowitz, M. A., Hauser, L., Naider, F., and J. Becker, "Cloning of a second peptide transport gene from *Candida albicans*."

Keystone Symposia: Host-Fungus Pathogenic Interactions. Taos, NM, February, 1995.
Poster presented: Lubkowitz, M., M. Basrai, F. Naider, , and J. Becker, "Cloning of a *Candida albicans* peptide transport gene: a molecular approach to drug delivery."

Conferences and workshops attended

Vermont EPSCoR Grant Writing Workshop. Burlington, VT, June 2006.

Vermont Genetics Network Career Day. Burlington, VT, April, 2006.

Vermont Gardeners Association: Building Community Gardens. Burlington, VT, January, 2006.

Vermont EPSCoR Grant Writing Workshop. Middlebury, VT, June, 2004.

BEDROCK: Bioinformatics in Biology Education. University of Vermont, April 2003.

Incorporating genomics research into the undergraduate curricula. Wheaton College, May 2002.

April Dialogue: The Teaching-Research Connection sponsored by Council for Undergraduate Research. Washington, D.C., April, 1997.

Medical Mycology Conference. University of Minnesota at Minneapolis, June, 1993.

Internal grants

Faculty development grant, Co-PI with Valerie Bang-Jensen (Education Dept), 2006.
Title: Expanding The Teaching Gardens of Saint Michael's College
Amount: $2000

Faculty development grant, Co-PI with Valerie Bang-Jensen (Education Dept), 2005.
Title: Year two of The arboretum
Amount: $2000

Faculty development grant: Co-PI with Valerie Bang-Jensen (Education Dept), 2004.
Title: The Teaching Gardens of Saint Michaels College.
Amount: $3500

Faculty summer stipend grant, summer 2004.
Title: Characterization of an oligopeptide transport family in rice
Amount: $3000

Internal Vermont Genetic Network proposal, 2003.
Title: Peptide transport systems in grasses
Amount: $8460

Service

Service to the Department

Hartnett grant reviewer 2005.
Chemical Safety Office, 2001-present.
Co-organizer of the Biology Department Centennial Celebration.

Service to the College

Committee for Undergraduate Research, chair, 2007-08
Baseball Team Faculty Academic Mentor, Spring 2007, 2008
Liaison for The Council for Undergraduate Research, 2006-present.
Co-founder of "The teaching gardens of Saint Michael's College." 2004.
Technology steering committee, 2004-06.
Educational Technology committee, 2003-04.
Visiting dorm faculty advisor for Tala Williford, 2003-04.
Theme House sponsor: "Make a Wish." 2003-2004.
Pre-orientation weekend (POW) participant and speaker. July, 2003.

Facilitator for World Lake Basin Management Initiative Conference, June, 2003.
Classroom host for minority high school students from Charleston High School, June, 2003.
LEAP participant and speaker, January, 2003.
Co-organizer of colloquium titled "And justice for all? The intersection of the juvenile justice and education systems." (March 8th, 2003) Other organizers: Valerie Bang-Jensen, Mary Beth Doyle, and Father Mike Cronogue.
Educational Technology committee, 2002-03.
Visiting dorm faculty advisor for Malika Barker, 2002-03.

Professional service
Vermont Genetics Network Grant Reviewer, March 2007
Vermont Genetics Network Profession Development Seminar. Invited speaker. February. 2007.
Vermont EPSCoR Focus group invited participant. June, 2006.
Vermont EPSCoR Grant Writing Workshop panelist. June 2005.
Vermont Genetics Network career day panelist. April, 2004.
American Association for the Advancement of Science focus group participant for VGN. spring 2004.
Vermont Genetics Network Focus group participant. Spring, 2003.
American Association for the Advancement of Science invited focus group participant for VGN. spring 2003.
Reviewed three chapters in *Genomics, proteomics, and bioinformatics* by Campbell and Heyer. 2002. Benjamin and Cummings.

Professional Memberships:
American society of Plant Biologists 2005-present.
American Association for the Advancement of Science, 1995-present.
Council of Undergraduate Research, 1995-present.