Koeun Choi

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Human Development and Family Science Virginia Polytechnic Institute and State University 305 Wallace Hall 295 West Campus Drive Blacksburg, VA 24060

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Research Interests

My research interests are at the intersection between cognitive development and media technology. I am interested in understanding how children learn in a complex and dynamic digital media environment. My work has focused on four aspects of learning from media, including examining (1) the impact of media on learning, (2) characterizing individual and contextual differences that moderate or mediate media effects, (3) identifying cognitive mechanisms underlying media-based learning, and (4) connecting computational modeling and data analytics to describe and predict this learning. I employ multiple methods such as experimental designs, individual difference measures, eye-tracking methodologies, and statistical and computational approaches to tackle these questions. My goal is to connect cognitive development and media technology to explain and support children's learning.

Education

2016	Ph.D. in Human Development and Family Studies (Minor: Educational Psychology)
	University of Wisconsin, Madison, WI
	Dissertation: Toddlers' learning from touch screens: The role of working memory
	Advisor: Dr. Heather Kirkorian
	Minor Advisor: Dr. Haley Vlach
2011	M.A. in Child Development and Family Studies
	Seoul National University, Seoul, South Korea
	Thesis: Two-, three-, and four-year-olds' use of accuracy cues in word learning
	Advisor: Dr. Soon Hyung Yi
2008	B.A. in Family and Child Studies / Psychology
	Seoul National University, Seoul, South Korea (cum laude)

Academic Employment

8.2018-	Assistant Professor in Human Development and Family Science
Present	Virginia Polytechnic Institute and State University
9.2017-	Postdoctoral Fellow in Psychology
7.2018	Rutgers University-Newark
	Advisor: Dr. Elizabeth Bonawitz
7.2016-	Postdoctoral Scholar in Psychology
6.2017	University of California, Riverside
	Advisor: Dr. Rebekah Richert

Research / Work Experience

2012–2016 Project Assistant, University of Wisconsin-Madison
Learning from Touchscreens in Early Childhood Project
Funded by National Science Foundation (NSF), PI: Dr. Heather Kirkorian

2009-2010	Research Assistant, Seoul National University
	Korean Language Intervention for Children from Multicultural Families Project
	Funded by the National Institute of Korean Language, PI: Dr. Soon Hyung Yi
2008-2009	Lead Teacher, Hynix Child Care Center, Icheon, South Korea

Awards and Honors

2018	Top Paper Award from the Children, Adolescents, and Media Division of
	International Communication Association (Kirkorian, Choi, Yoo, & Etta)
2017	Top Paper Award from the Children, Adolescents, and Media Division of
	International Communication Association (Kirkorian, Choi, & Anderson)
2017	Society for Research in Child Development Early Career Travel Award (\$500)
2016	Human Development & Family Studies Outstanding Research Award (\$400)
2015	Sackler Colloquia National Academy of Sciences Travel Award (\$1,000)
2015	Schurch-Thomson Graduate Research Award (\$2,000)
2014–2015	Human Development & Family Studies Summer Research Award (\$1,500/yr)
2013–2016	Human Development & Family Studies Travel Award (\$500/yr)
2014–2016	Meyers Fund of the School of Human Ecology Travel Award (\$500/yr)
2013	McPherson ERI David G. Walsh Research Travel Award (\$1,000)
2013	Viola Baker Endowment School of Human Ecology Travel Award (\$500)
2013	Human Development & Family Studies Outstanding Research Scholarship Award
2013	Society for Research in Child Development Travel Award (\$300)
2012	Korean Honor Scholarship sponsored by the Embassy of the Republic of Korea (\$1,000)
2010	Graduate Student Academic Award, Korea Institute of Child Care & Education (\$500)
2003	Seoul National University Entrance Scholarship, Seoul National University

Publications

Peer-Reviewed Journal Articles

Choi, K., Kirkorian, H. L., & Pempek, T. A. (2018). Understanding the transfer deficit: Contextual mismatch, proactive interference, and working memory affect toddlers' video-based transfer. *Child Development*, 89, 1378-1393. doi:10.1111/cdev.12810

Travers, B. G., Kirkorian, H. L., Jiang, M. J., **Choi, K.**, Rosengren, K. S., Pavalko, P., & Jobin, P. (2017). Knowing how to fold 'em: Paper folding across early childhood. *Journal of Motor Learning and Development. Journal of Motor Learning and Development*, 6, 147-166. doi:10.1123/jmld.2016-0044

Kirkorian, H. L., & Choi, K. (2017). Associations between toddlers' naturalistic media experience and observed learning from screens. *Infancy*, 22, 271-277. doi:10.1111/infa.12171

Choi, K., & Kirkorian, H. L. (2016). Touch or watch to learn? Toddlers' object retrieval using contingent and noncontingent video. *Psychological Science*, *27*, 726-736. doi:10.1177/0956797616636110

Kirkorian, H. L., **Choi, K.**, & Pempek, T. A. (2016). Toddlers' word learning from contingent and noncontingent video on touch screens. *Child Development*, 87, 405-413. doi:10.1111/cdev.12508

Manuscripts in Revision / Under Review

Choi, K., Kirkorian, H. L., & Pempek, T. A. (under review). Does cognitive control moderate toddlers' transfer from contingent video?: An exploratory study.

Peer-Reviewed Papers in Conference Proceedings

Choi, K., Lapidow, E., Austin, J., Shafto, P., & Bonawitz, E. (2018). Preschoolers are more likely to direct learning content questions to adults than to other children (or selves) during spontaneous conversational acts. *Proceedings of the 40th Annual Conference of the Cognitive Science Society*. Madison, WI: Cognitive Science Society.

Manuscripts in Preparation

- **Choi, K.**, Lapidow, E., Austin, J., Shafto, P., & Bonawitz, E. (in preparation). Preschoolers are more likely to direct learning content questions to adults than to other children (or selves) during spontaneous conversational acts.
- **Choi, K.**, Schlesinger, M. A., Franchak, J. M, & Richert, R. A. (in preparation). Preschoolers use others' effort as a cue to selective attention and imitation: An eye-movement study.
- **Choi, K.**, & Richert, R. A. (in preparation). The impact of repetition and fantasy on transfer of learning from media: An eye-tracking study.
- Kirkorian, H. L., **Choi, K.**, & Anderson, D. R. (in preparation). Parents' active involvement mediates the impact of background television on young children's toy play.
- Kirkorian, H. L., **Choi, K.**, Etta, R., & Yoo, S. H. (in preparation). Does media interactivity support toddlers' learning by guiding selective attention? An eye-movement study.
- Kirkorian, H. L., Travers, B., Rosengren, K., Choi, K., & Jiang, M. (in preparation). Associations between children's naturalistic media use and achievement of developmental milestones.
- Kirkorian, H. L., Travers, B., Rosengren, K. S., **Choi, K.**, & Jiang, M. (in preparation). The quality of drawings produced with traditional versus digital media: A developmental study.
- Etta, R. A., Kirkorian, H. L., & Choi, K. (in preparation). Preschoolers' learning from children's books: Effects of platform and interactivity.

Book Chapters

Kirkorian, H. L., Pempek, T. A., & **Choi, K.** (2016). The role of online processing in young children's ability to learn from interactive and non-interactive media. In R. Barr & D. Linebarger (Eds.) *Media exposure during infancy and early childhood: The effect of content and context on learning and development* (pp. 65-89). Springer: New York, NY. doi:10.1007/978-3-319-45102-2_5

Other Publications in Korean

Yi, S., Kim, M., Gun, K., Jung, J., Song, M., & Choi, K. (2011). Early childhood education program of intergenerational integration: Integrating early childhood program series. Seoul: Hakjisa.

Presentations

Invited Talks

- 2018 "Understanding cognitive development in digital media environments (January 2018), Virginia Tech, Department of Human Development & Family Science
- 2017 "Interactions with touch screens improve toddlers' transfer independent of individual differences in working memory" (October 2017), Cognitive Development Society Pre-Conference Workshop on Digital Media & Cognitive Development, Portland, OR
- 2016 "Touch or watch to learn? Children's learning from interactive & non-interactive symbolic media" (March 2016), Developmental Brown Bag, UW-Madison, Department of Psychology.

- "Touch or watch to learn? Children's learning from interactive media" (December 2015), Georgetown University, Children's Digital Media Center.
- 2014 "Eye movements as a window into children's learning from visual media" (December 2014), McPherson Eye Research Institution Seminar, UW-Madison.

Contributed Conference Presentations (Peer-Reviewed)

2018

- **Choi, K.**, Lapidow, E., Austin, J., Shafto, P., & Bonawitz, E. (2018, July). *Preschoolers are more likely to direct learning content questions to adults than to other children (or selves) during spontaneous conversational acts*. Talk presented at the 40th annual Cognitive Science Society meeting, Madison, WI.
- **Choi, K.**, & Bonawitz, E. (2018, July). *Adults can exploit children's exploration for their own learning: Child-led play supports adult causal conjunctive inferences*. Poster presented at the Pre-Conference Workshop on understanding exploration-exploration trade offs at the 40th annual Cognitive Science Society meeting, Madison, WI.

2017

- **Choi, K.**, Schlesinger, M. A., Grant, C., Puttre, H. J., Franchak, J. M., & Richert, R. A. (2017, October). *Preschoolers use others' effort as a cue to attention and selective imitation*. Poster presented at the biennial meeting of the Cognitive Development Society, Portland, OR.
- Lapidow, E., Bonawitz, E., Shafto, P., Austin, J., **Choi, K.**, Tariq, S., & Bell, C. (2017, October). *Preschoolers are more likely to direct questions to adults than to other children (or selves) during spontaneous conversational acts.* Poster presented at the Cognitive Development Society Pre-Conference Workshop on Question Asking on Childhood, Portland, OR.
- Jiang, M., **Choi, K.**, Raimer, C., Kirkorian, H. L., Tolkin, E., Sartin-Tarm, A., & Rosengren, K. S. (2017, October). *Children's action errors: A diary study in their natural environment*. Poster presented at the biennial meeting of the Cognitive Development Society, Portland, OR.
- Kirkorian, H., **Choi, K.**, Yoo, S. & Etta, R. A. (2017, October). *Selective attention and learning from interactive and noninteractive video: An eye movement study*. Poster presented at the biennial meeting of the Cognitive Development Society, Portland, OR.
- **Choi, K.**, Schlesinger, M. A., Franchak, J. M., & Richert, R. A. (2017, May). *Character perceptions guide children's looking to and learning from on-screen characters*. Talk presented at the annual meeting of the International Communication Association, San Diego, CA.
- Kirkorian, H. L., **Choi, K.**, & Anderson, D. R. (2017, May). *Parents' active engagement mediates the impact of background TV on toddlers' play*. Talk presented at the annual meeting of the International Communication Association, San Diego, CA.
- **Choi, K.**, Kirkorian, H. L., & Etta, R. A. (2017, April). *The effect of contextual variability on the generalization of category labels between symbolic mediums*. Poster presented at the biennial meeting of the Society for Research in Child Development, Austin, TX.
- Etta, R. A, Kirkorian, H. L., & **Choi, K.**. (2017, April). *Preschoolers' learning from children's books: Effects of platform and interactivity*. Poster presented at the biennial meeting of the Society for Research in Child Development, Austin, TX.
- Jiang, M., Choi, K., Kirkorian, H. L., Travers, B. G., Rosengren, K. S., Millerhagen, J., Lee, C., & Haugstad, N. (2017, April). *Drawing across mediums: The impact of technology on the quality and production of drawings*. Poster presented at the biennial meeting of the Society for Research in Child Development, Austin, TX.

2016

- **Choi, K.**, Kirkorian, H. L., Pempek, T. A., & Etta, R. A. (2016, October). *On-screen or off-screen? The role of retrieval contexts and working memory in toddlers' object retrieval using touch screens*. Flask talk presented at the special topics meeting of the Society for Research in Child Development, Irvine, CA.
- **Choi, K.**, Kirkorian, H. L., Pempek, T. A., & Etta, R. A. (2016, May). *Toddlers' object retrieval using touchscreens: The role of working memory skills*. Paper presented at the biennial meeting of the International Congress of Infant Studies, New Orleans, LA.
- Jiang, M. J., **Choi, K.**, Kirkorian, H. L., Travers, B. G., Rosengren, K. S., Jobin, P., Pavalko, P., Matoba, M. & Tolkin, E. (2016, May). *Drawing across media: The impact of technology on the quality of drawings*. Poster presented at the annual meeting of the Association for Psychological Science, Chicago, IL.

2015

- **Choi, K.**, Kirkorian, H. L., Pempek, T. A., Schroeder, E. L, & Etta, R. A. (2015, October). *The impact of contextual differences on toddlers' object retrieval using touchscreens*. Poster presented at the Digital Media & Developing Minds Conference, National Academies of Sciences Sackler Colloquia, Irvine, CA.
- **Choi, K.**, Kirkorian, H. L., Pempek, T. A., Schroeder, E. L, & Etta, R. A. (2015, October). *The impact of contextual differences on toddlers' object retrieval using touchscreens*. Poster presented at the biennial meeting of the Cognitive Development Society, Columbus, OH.
- Kirkorian, H. L., **Choi, K.**, Pempek, T. A., Schroeder, E. L., & Etta, R. A. (2015, May). *Toddlers' learning from interactive vs. non-interactive mediated experiences using touchscreens*. Paper presented at the annual meeting of the International Communication Association, San Juan, PR.
- Kirkorian, H. L., **Choi, K.**, Schroeder, E., Pempek, T. A., & Etta, R. A. (2015, May). *Toddlers' learning from video: The role of cognitive-control skills*. Paper presented at the annual meeting of the International Communication Association, San Juan, PR.
- **Choi, K.**, Kirkorian, H. L., Pempek, T. A., & Schroeder, E. L. (2015, March). *Toddlers' object retrieval using touchscreens: The role of working memory skills*. Paper presented at the biennial meeting of the Society for Research in Child Development in Philadelphia, PA.
- Kirkorian, H. L., **Choi, K.**, Schroeder, E. L., & Etta, R. A. (2015, March). *Object retrieval using interactive video: The role of visual selection in learning from screens*. Paper presented at the biennial meeting of the Society for Research in Child Development in Philadelphia, PA.

2014

- Kirkorian, H. L., **Choi, K.**, Pempek, T. A., & Schroeder, E. L. (2014, June). *Toddlers' learning from interactive and non-interactive video on touchscreens*. Poster presented at the biennial meeting of the International Society on Infant Studies in Berlin, Germany.
- **Choi, K.**, Schroeder, E. L., & Kirkorian, H. L. (2014, May). *Toddlers' learning from touchscreens: Object retrieval using interactive vs. non-interactive video*. Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago, IL.

2013

- **Choi, K.**, & Kirkorian, H. L. (2013, November). *Attention, comprehension, and learning from video: Evidence from eye movement studies*. Poster presented at Learning to attend, attending to learn: Neurological, behavioral, and computational perspectives, San Diego, CA.
- Kirkorian, H. L., & Choi, K. (2013, October). *Age differences in top-down control of visual attention during video viewing*. Paper presented at the biennial meeting of the Cognitive Development Society, Memphis, TN.
- Vigna, A., Choi, K., Clarkson, A., Hickey, E., Burgess-Hull, A., Burnson, C., Runion, H., Sheche,

- J., & Pinela, C. (2013, October). *The development, assessment, and impact of a low-cost mindfulness meditation outreach program for a university campus community*. Poster presented at the Conference for Contemplative Practices to Promote Child and Family Well-Being, Madison, WI.
- **Choi, K.**, & Kirkorian, H. L. (2013, April). *Object retrieval using contingent vs. non-contingent video on touchscreens*. Poster presented at the biennial meeting of the Society of Research in Child Development, Seattle, WA.
- **Choi, K.**, Kirkorian, H. L., Hanson, K. G., & Anderson, D. R. (2013, April). *The impact of background television and parent-child interaction on young children's toy play*. Poster presented at the biennial meeting of the Society of Research in Child Development, Seattle, WA.
- Kirkorian, H. L., **Choi, K.**, & Pempek, T. A. (2013, April). *Toddlers' word-learning from contingent vs. non-contingent video on touchscreens*. Paper presented at the biennial meeting of the Society of Research in Child Development, Seattle, WA.

2012

Kirkorian, H., & **Choi, K.** (2012, June). Eye-tracking techniques for studying age differences in online processing of video. Poster presented at the Eye Tracking Methodology in Child and Infant Research, Minneapolis, MN.

Burgess-Hull, A., Burnson, C., **Choi, K.**, Hickey, E., Pinela, C., Runion, H., Samuelson, A., Sheche, J., & Vigna, A. (2012, April). *The development, assessment, and impact of a mindfulness meditation outreach program.* Poster presented at the International Symposia of Contemplative Studies, Denver, CO.

2009

Choi, K., & Yi, S. (2009, June). *Academic stress and mental health of Korean 4th grade students: Parent attachment as a mediator*. Poster presented at the 3rd WHO International Conference on Children's Health and Environment, Busan, Korea.

Intramural Presentations

- "Young children's transfer of learning from interactive and noninteractive media" (2016, October), Talk presented at Cognitive Brain and Behavior Brownbag, Department of Psychology, Rutgers University Newark.
- "The influence of media on children's development" (2013, May), Talk presented at Scholarly SoHE, School of Human Ecology, UW-Madison
- "Object retrieval using contingent vs. non-contingent video on touchscreens" (2013, May), Poster presented at the Wisconsin Alumni Research Foundation Discovery Challenge, UW-Madison
- "The role of individual differences in cognitive skills in children's learning through educational media" (2013, April), Poster presented at the School of Human Ecology Student Poster & Project Exhibition, UW-Madison
- "The impact of background television and parent-child interaction on young children's toy play" (2013, February), Talk presented at Professional Development Seminar in Human Development & Family Studies, UW-Madison
- "Children's Learning from Touchscreens: Object retrieval using interactive vs. non-interactive Video" (2012, May), Poster presented at the Wisconsin Alumni Research Foundation Discovery Challenge, UW-Madison
- "Touchscreens and early childhood mathematics" (2012, April), Poster presented at the School of Human Ecology Student Poster & Project Exhibition, UW-Madison
- "NSF research grant proposal Children's learning from touchscreens: Object retrieval using interactive vs. non-interactive video" (2012, April), Talk presented at Professional Development Seminar in Human

Development & Family Studies, UW-Madison.

Teaching	Research Supervisor
Fall 2017– Present	21:830:491 - Section 19: Research in Psychology Rutgers University - Newark (Instructor: Dr. Elizabeth Bonawitz) Supervising 2-4 undergraduate research assistants per semester
Fall 2016– Spring 2017	PSYC 182E - 001: Laboratory in Psychology (Developmental Psychology) University of California, Riverside (Instructor: Dr. Rebekah Richert) Supervising 3-9 undergraduate research assistants per quarter
Fall 2011– Summer 2016	HDFS 592: Research Experience in Human Development & Family Studies University of Wisconsin-Madison (Instructor: Dr. Heather Kirkorian) Supervising 3-8 undergraduate students per semester
	Teaching Assistant
Fall 2011– Spring 2011	HDFS 362: Development of the Young Child University of Wisconsin-Madison (Instructor: Dr. Heather Kirkorian) Teaching assistant, 160 undergraduate students in fall/spring, online-course
Spring 2009	Exploration of Identity through Life Course Seoul National University (Instructor: Dr. Soon Hyung Yi) Teaching assistant, 70 undergraduate students
	Guest Lecturer
Fall 2015	HDFS 425: Research Methods in Human Development and Family Studies University of Wisconsin-Madison (Instructor: Dr. Janean Dilworth-Bart) Guest Lecture: Experimental designs in research
Fall 2015	HDFS 469: Family and Community Influences on the Young Child University of Wisconsin-Madison (Instructor: Lauren Lewis) Guest Lecture: The influence of background TV on children's play: Parent-child interaction as a mediator
Fall 2015	HDFS 474: Racial Ethnic Families in U.S University of Wisconsin-Madison (Instructor: Dr. Lynet Uttal) Guest Lecture: The influence of media on children's racial attitude and behaviors
Fall 2015	HDFS 616: Mass Media and Youth University of Wisconsin-Madison (Instructor: Dr. Heather Kirkorian) Guest Lecture: Transfer of learning and Interactive Media
Summer 2015	HDFS 474: Racial Ethnic Families in U.S. (002) University of Wisconsin-Madison (Instructor: Lauren Lewis) Guest Lecture: Children, Race, Ethnicity, and Media

Service and Outreach

To the Profession

Ad-Hoc Journal Reviewer

2018	European Journal of Psychology of Education [1]
2017	Child Development [3]; British Journal of Developmental Psychology [1]
2016	Child Development [1]
2015	Journal of Experimental Child Psychology [1]
2014	Journal of Children and Media [1]

Conference Submission Reviewer

2017	Reviewer for the 2018 Technology, Mind and Society Conference of the American Psychological Association
2016	Reviewer for Doctoral Consortium at the 2016 Special Topics Meeting of the Society for Research in Child Development (SRCD)
2016	Student Reviewer for the 2016 Special Topics Meeting of the Society for Research in Child Development (SRCD), Technology and Media in Children's Development (Mentor: Dr. Kaveri Subrahmanyam)
2012	Student Reviewer for the 2013 Biennial Meeting of the Society for Research in Child Development (SRCD), Panel 26: Contexts of Child Development: Family, Neighborhood, Child Care, Media, & Religious Institutions (Mentor: Dr. Heather Kirkorian)

Conference Symposium Organizer and Chair

2017	Co-Organizer, Digital Media and Cognitive Development
	2017 Cognitive Development Society Pre-conference Workshop, Portland, OR.
2016	Chair, Understanding children's learning from interactive touchscreens Symposium
	presented at the 2016 Special Topics Meeting on Technology and Media in Children's
	Development of the Society for Research in Child Development, Irvine, CA.

Academic Community

2013–Present	Student representative to the Interdisciplinary Committee on the Student and
	Early Career Council (SECC) in Society for Research in Child Development (SRCD)

To the University

School of Human Ecology

10.2015	School of Human Ecology (SoHE) Early Childhood Task Force Focus Group, University of Wisconsin-Madison
9.2012–9.2013	Department Representative – School of Human Ecology Colloquium Committee, University of Wisconsin-Madison

Human Development and Family Studies Department

5.2012–9.2013	Professional Development Chair - Human Development & Family Studies Graduate Student Organization (GSO), University of Wisconsin-Madison
9.2011–5.2012	Member – Human Development & Family Studies Graduate Student Organization Graduate Student Organization (GSO), University of Wisconsin-Madison

To the Community

Workshops and Presentations

2016	"Children and screens: New media and new guidance for parents", Co-presentation
	UW Extension Family Living Tech Talk, March 3, 2016
2015	"The impact of technology on learning and development", Keynote Speech Wisconsin Early Childhood Association Annual Meeting, July 21, 2015
2014	"Helping young children learn and grow seminar" 2014 Wisconsin 4-H & Youth Conference, June 25, 2014
2012	"The importance of research on children's learning from touchscreens" UW Campus-Affiliated Preschool Director Meeting, August 15, 2012

Outreach Project Organizer

2013, 2014 "Tracking your eye-movements." Eye-tracking exploration station at the Wisconsin	1
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Science Festival, Madison, WI

Consultation

2013 Education and Outreach Manager (Tangen Travis), Wisconsin Science Festival:

Consultation for a childcare plan during the science festival.

Professional Societies

Association for Psychological Science American Educational Research Association Cognitive Development Society International Congress of Infant Studies Society for Research in Child Development

Qualifications

2008	Korean National Technical Qualification Certificate, Survey Analyst, Junior
2008	Childcare Teacher Certification issued by Korean Ministry for Health, Welfare, & Family Affairs
2007	Microsoft Office Specialist, Master

Computer Skills

Programming Language: R, Python, JavaScript Statistical Computational Tools: R, HLM7, SPSS Content Description Languages: LaTeX, Microsoft Office

Graphic Editor/2D Animation Software: Adobe Photoshop, Toonboom Animation

E-learning Tools: Adobe Captivate Online Survey Software: Qualtrics

Additional Training

Data on the Mind Workshop (6/26/17 - 6/29/17)

NIH Write Winning Grant Proposals workshop (6/3/13)

Grants & Grant Writing Course (2013 Spring)

DelTA Research Mentor Training Seminar (5/29/13 - 6/31/13)

Positive Science Head-Mounted Eye-Tracker On-Site Training (9/28/12)

EyeTracKids, Minneapolis 2012 Eye Tracking Methodology in Child and Infant Research: Tobii pre-conference eye-tracking course (6/6/12)

References

References and additional information available upon request.