

---

**Curriculum Vitae**  
**Timothy James Nokes-Malach\***  
*\*previous surname Nokes*

---

**OFFICE**

Learning Research & Development Center  
Room 713, 3939 O'Hara Street  
University of Pittsburgh  
Pittsburgh, PA 15260

Voice: (412) 624-7789  
Fax: (412) 624-9149  
Email: [nokes@pitt.edu](mailto:nokes@pitt.edu)  
<http://www.lrdc.pitt.edu/nokes>

**PROFESSIONAL EXPERIENCE**

**University of Pittsburgh**

- Associate Professor, Psychology (Primary) and Learning Sciences and Policy (2013-present)
- Assistant Professor, Psychology (Primary) and Learning Sciences and Policy (2007-2013)
- Research Scientist, Learning Research & Development Center (2007-present)

**EDUCATION**

- **Beckman Postdoctoral Fellow**, University of Illinois at Urbana-Champaign (2004-2007)
- **Ph.D., Cognitive Psychology**, University of Illinois at Chicago (2004)  
Minor in Philosophy of Science  
Dissertation: *Mechanisms of Transfer*  
Committee: Stellan Ohlsson (chair), Andrew R. A. Conway, Susan Goldman,  
James Pellegrino, and Thomas Moher
- **M.A., Cognitive Psychology**, University of Illinois at Chicago (2001)
- **B.S., Psychology**, University of Wisconsin at Whitewater (1998)  
Magna Cum Laude; Minor in Philosophy

**RESEARCH INTERESTS**

My research examines human learning, problem solving, and motivation with an aim to understand, predict, and promote knowledge transfer. Specific topics include: 1) identifying the cognitive and metacognitive processes underlying transfer success and failure, 2) exploring the relations between instruction, motivation, cognition, and transfer, 3) examining social and ecological processes that support or inhibit transfer, and 4) investigating the effects of mindfulness meditation on cognition, learning, and transfer. An overarching goal is to develop instructional theories to promote learning and transfer in mathematics and science.

**PROFESSIONAL AFFILIATIONS**

- American Educational Research Association
- Center for Mindfulness and Consciousness Studies (Pitt)
- Cognitive Science Society
- Discipline Based Science Education Research Center (Pitt)
- International Society of the Learning Sciences
- LearnLab (Pittsburgh Science of Learning Center)
- Motivation Center (Pitt)

- Psychonomic Society Member
- Society for the Advancement of Hispanics/Chicanos and Native Americans in Science

## HONORS AND AWARDS

- Nominated for the Tina and David Bellet Teaching Excellence Award, University of Pittsburgh (2015, 2016)
- Beckman Fellowship, Beckman Institute for Advanced Science and Technology, University of Illinois at Urbana-Champaign (2004-2007)
- Cognitive Science Travel Funding Award, National Science Foundation (2001; 2005)
- Abraham Lincoln Fellowship, University of Illinois at Chicago (1999-2000; 2001-2004)
- Research Travel Funding Award, University of Illinois at Chicago (1999-2003)
- ACT-R Summer School Travel Funding Award, Carnegie Mellon University (2002)
- Provost Award for Graduate Research, University of Illinois at Chicago (2002)
- Diversity Fellowship, University of Illinois at Chicago, (2000-2001)
- Golden Key National Honors Society, University of Wisconsin at Whitewater (1997)
- Vice-President of the local chapter of Psi Chi National Honors Society, University of Wisconsin at Whitewater (1997)
- Secretary and Vice-President of the Intertribal Student Association (American Indian Group), University of Wisconsin at Whitewater (1997)

## PUBLICATIONS

<sup>P</sup> Indicates a postdoctoral author, <sup>G</sup> graduate student author, <sup>U</sup> undergraduate student author

## JOURNAL PAPERS

- 1) <sup>G</sup> Chan, J., & **Nokes-Malach, T. J.** (2016). Situative creativity: Larger physical spaces facilitate thinking of novel uses for everyday objects. *Journal of Problem Solving*, 9 (1), 29-45. <http://dx.doi.org/10.7771/1932-6246.1184>
- 2) <sup>P</sup> Bernacki, M., **Nokes-Malach, T.**, <sup>G</sup> Richey, E. J., & <sup>G</sup> Belenky, D. M. (2016). Science diaries: a brief writing intervention to improve motivation to learn science. *Educational Psychology*, 36 (1), 26-46. doi: 10.1080/01443410.2014.895293
- 3) **Nokes-Malach, T. J.**, <sup>G</sup> Richey, J. E., & <sup>G</sup> Gadgil, S. (2015). When is it better to learn together? Insights from research on collaborative learning. *Educational Psychology Review*, 27, 645-656. doi: 10.1007/s10648-015-9312-8
- 4) <sup>G</sup> Zepeda, C., <sup>G</sup> Richey, J. E., Ronevich, P., & **Nokes-Malach, T. J.** (2015). Direct instruction of metacognition benefits adolescent science learning, transfer, and motivation: An in vivo study. *Journal of Educational Psychology*, 107 (4), 954-970. doi: 10.1037/edu0000022
- 5) <sup>P</sup> Bernacki, M. L., **Nokes-Malach, T. J.**, & Aleven, V. (2015). Examining self-efficacy during learning: Variability and relations to performance, behavior, and learning. *Metacognition and Learning*, 10, 99-117. doi: 10.1007/s11409-014-9127-x
- 6) <sup>G</sup> Richey, J. E., & **Nokes-Malach, T. J.** (2015). Comparing four instructional techniques for promoting robust knowledge. *Educational Psychology Review*, 27 (1), 181-218. doi: 10.1007/s10648-014-9268-0

- 7) <sup>P</sup> Bernacki, M. L., Alevan, V., & **Nokes-Malach, T. J.** (2014). Stability and change in adolescents' task-specific achievement goals and implications for learning mathematics with intelligent tutors. *Computers in Human Behavior*, *37*, 73-80.
- 8) **Nokes-Malach, T. J.**, & Mestre, J. (2013). Toward a model of transfer as sense-making. *Educational Psychologist*, *48*(3), 184-207. doi: 10.1080/00461520.2013.807556
- 9) **Nokes-Malach, T. J.**, VanLehn, K., <sup>G</sup> Belenky, D., <sup>U</sup> Lichtenstein, M., & <sup>U</sup> Cox, G. (2013). Coordinating principles and examples through analogy and self-explanation. *European Journal of Education of Psychology*, *28*(4), 1237-1263. doi: 10.1007/s10212-012-0164-z
- 10) <sup>G</sup> Belenky, D. M., & **Nokes-Malach, T. J.** (2013). Knowledge transfer and mastery-approach goals: Effects of structure and framing. *Learning and Individual Differences*, *25*, 21-34. doi: 10.1016/j.lindif.2013.02.004
- 11) <sup>G</sup> Richey, J., E., & **Nokes-Malach, T. J.** (2013). How much is too much? Explanatory text effects on conceptual learning and motivation. *Learning and Instruction*, *25*, 104-121. doi: 10.1016/j.learninstruc.2012.11.006
- 12) <sup>P</sup> Alfieri, L., **Nokes-Malach, T. J.**, & Schunn, C. D. (2013). Learning through case comparisons: A meta-analytic review. *Educational Psychologist*, *48* (2), 87-113. doi: 10.1080/00461520.2013.775712
- 13) <sup>G</sup> Li, M., Frieze, I. H., **Nokes-Malach, T. J.**, & Cheong, J. (2013). Do friends help your study? Mediating processes between social relations and academic motivation. *Social Psychology of Education*, *16* (1), 129-149. doi: 10.1007/s11218-012-9203-5
- 14) <sup>G</sup> Belenky, D. M., & **Nokes-Malach, T. J.** (2012). Motivation and transfer: The role of mastery-approach goals in preparation for future learning. *Journal of the Learning Sciences*, *21* (3), 399-432. doi: 10.1080/10508406.2011.651232
- 15) <sup>G</sup> Gadgil, S., & **Nokes-Malach, T. J.** (2012). Collaborative facilitation through error-detection: A classroom experiment. *Applied Cognitive Psychology*, *26* (3), 410-420. doi: 10.1002/acp.1843
- 16) **Nokes-Malach, T. J.**, Meade, M. L., & Morrow, D. G. (2012). The effect of expertise on collaborative problem solving. *Thinking & Reasoning*, *18* (1), 32-58. doi: 10.1080/13546783.2011.642206
- 17) <sup>G</sup> Gadgil, S., **Nokes-Malach, T. J.**, & Chi, M. T. H. (2012). Effectiveness of holistic mental model confrontation in driving conceptual change. *Learning and Instruction*, *22* (1), 47-61. doi: 10.1016/j.learninstruc.2011.06.002  
[Editor's Choice Article]
- 18) **Nokes, T. J.**, <sup>P</sup> Hausmann, R. G. M., VanLehn, K., & Gershman, S. (2011). Testing the instructional fit hypothesis: The case of self-explanation prompts. *Instructional Science*, *39* (5), 645-666. doi: 10.1007/s11251-010-9151-4
- 19) <sup>G</sup> Jang, J., Schunn, C. D., & **Nokes, T. J.** (2011). Spatially distributed instructions reduce load to improve learning outcomes and efficiency. *Journal of Educational Psychology*, *103* (1), 60-72. doi: 10.1037/a0021994
- 20) **Nokes, T. J.**, & Ash, I. K. (2010). Investigating the role of instructional focus in incidental pattern learning. *Journal of General Psychology*, *137* (1), 84-113. doi: 10.1080/00221300903352125

- 21) <sup>G</sup> Belenky, D. M., & **Nokes, T. J.** (2009). Examining the role of manipulatives and metacognition on engagement, learning, and transfer. *Journal of Problem Solving*, 2 (2), 102-129.
- 22) Meade, M. L., **Nokes, T. J.**, & Morrow, D. G. (2009). Expertise promotes facilitation on a collaborative memory task. *Memory*, 17 (1), 39-48. doi: 10.1080/09658210802524240
- 23) **Nokes, T. J.** (2009). Mechanisms of knowledge transfer. *Thinking & Reasoning*, 15 (1), 1-36. doi: 10.1080/13546780802490186
- 24) **Nokes, T. J.**, & Ohlsson, S. (2005). Comparing multiple paths to mastery: What is learned? *Cognitive Science*, 29 (5), 769-796. doi: 10.1207/s15516709cog0000\_32
- 25) **Nokes, T. J.**, & Ohlsson, S. (2003). Declarative transfer from a memory task to a problem solving task. *Cognitive Science Quarterly*, 3 (3), 259-296.

## BOOK CHAPTERS

- 26) Greeno, J. G., & **Nokes-Malach, T. J.** (2016). Some early contributions to the situative perspective on learning and cognition. In M. A. Evans, M J. Packer, and R. K. Sawyer (Eds.), *Reflections on the Learning Sciences* (pp. 59-75). Cambridge University Press. New York, NY.
- 27) **Nokes-Malach, T. J.**, & <sup>G</sup> Richey, J. E. (2015). Knowledge transfer. In R. Scott and S. Kosslyn (Eds.), *Emerging Trends in the Social and Behavioral Sciences*. Hoboken, NJ: John Wiley and Sons.
- 28) <sup>P</sup> Bernacki, M. L., **Nokes-Malach, T. J.**, & Alevan, V. (2013). Fine-grained assessment of motivation over long periods of learning with an intelligent tutoring system: Methodology, advantages, and preliminary results. In R. Azevedo and V. Alevan (Eds.), *International Handbook of Metacognition and Learning Technologies* (pp. 629-644). NY: Springer. doi: 10.1007/978-1-4419-5546-3\_41
- 29) **Nokes, T. J.** & <sup>G</sup> Belenky, D. M. (2011). Incorporating motivation into a theoretical framework for knowledge transfer. In J. P. Mestre and B. H. Ross (Eds.), *Cognition and Education: The Psychology of Learning and Motivation: Advances in Research and Theory. Volume 55* (pp. 109-135). San Diego, CA: Academic Press. doi: 10.1016/B978-0-12-387691-1.00004-1
- 30) **Nokes, T. J.**, Schunn, C. D., & Chi, M. T. H. (2010). Problem solving and human expertise. In P. Peterson, E. Baker, and B. McGraw (Eds.), *International Encyclopedia of Education, Volume 5* (pp. 265-272). Oxford: Elsevier. doi: 10.1016/B978-0-08-044894-7.00486-3  
 \*Reprinted in: **Nokes, T. J.**, Schunn, C. D., & Chi, M. T. H. (2011). Problem solving and human expertise. In V. G. Aukrust (Ed.), *Learning and Cognition in Education* (pp. 104-111). Oxford: Elsevier.
- 31) Mestre, J. P., Ross, B. H., <sup>P</sup> Brookes, D. T., <sup>G</sup> Smith, A. D., & **Nokes, T. J.** (2009). How cognitive science can promote conceptual understanding in physics classrooms. In I. M. Saleh and M. S. Khine (Eds.), *Fostering scientific habits of mind: Pedagogical knowledge and best practices in science education* (pp. 145-171). Rotterdam, Netherlands: Sense Publishers.
- 32) Ross, B. H., Taylor, E. G., Middleton, E. L., & **Nokes, T. J.** (2008). Concept and category learning in humans. In H. L. Roediger III (Ed.), *Cognitive Psychology of Memory* (pp. 535-556). Volume 2 of *Learning and memory: A comprehensive reference-Cognitive Psychology* (J. Byrne Editor). Oxford, UK: Elsevier.

## CONFERENCE PUBLICATIONS (Peer Reviewed)

- 33) <sup>G</sup> Richey, J. E., <sup>G</sup> Zepeda, C. D., & **Nokes-Malach, T. J.** (2015). Transfer effects of prompted and self-reported analogical comparison and self-explanation. In D. Noelle and R. Dale (Eds.) *Proceedings of the 37<sup>th</sup> Annual Conference of Cognitive Science Society* (pp. 1985-1990). Austin, Texas: Cognitive Science Society.
- 34) <sup>G</sup> Richey, J. E., <sup>P</sup> Bernacki, M. L., <sup>G</sup> Belenky, D. B., & **Nokes-Malach, T. J.** (2014). Relating a task-based, behavioral measure of achievement goals to self-reported goals and performance in the classroom. In P. Bello, M. Guarini, M. McShane, and B. Scassellati (Eds.) *Proceedings of the 36<sup>th</sup> Annual Conference of Cognitive Science Society* (pp. 1287-1292). Austin, Texas: Cognitive Science Society.
- 35) <sup>G</sup> Richey, J. E., **Nokes-Malach, T. J.**, & <sup>U</sup> Wallace, A. (2014). Achievement goals, observed behaviors, and performance: Testing a mediation model in a college classroom. In P. Bello, M. Guarini, M. McShane, and B. Scassellati (Eds.) *Proceedings of the 36<sup>th</sup> Annual Conference of Cognitive Science Society* (pp. 1293-1298). Austin, Texas: Cognitive Science Society.
- 36) Fancsali, S. E., <sup>P</sup> Bernacki, M. L., **Nokes-Malach, T. J.**, Yudelson, M., & Ritter, S. (2014). Goal orientation, self-efficacy, and “online measures” in intelligent tutoring systems. In P. Bello, M. Guarini, M. McShane, and B. Scassellati (Eds.) *Proceedings of the 36<sup>th</sup> Annual Conference of Cognitive Science Society* (pp. 2169-2174). Austin, Texas: Cognitive Science Society.
- 37) <sup>G</sup> Belenky, D. M., & **Nokes-Malach, T. J.** (2013). The role of achievement goal motivation in self-explanation and knowledge transfer. In M. Knauff, M. Pauen, N. Sebanz, and I. Wachsmuth (Eds.) *Proceedings of the Thirty-Fifth Annual Conference of Cognitive Science Society* (pp. 1881-1886). Austin, Texas: Cognitive Science Society.
- 38) <sup>G</sup> Gadgil, S., & **Nokes, T. J.** (2010). Collaborative facilitation through error-detection: A classroom experiment. In S. Ohlsson and R. Catrambone (Eds.), *Proceedings of the Thirty-Second Annual Conference of the Cognitive Science Society* (pp. 2583-2588). Austin, Texas: Cognitive Science Society.
- 39) <sup>G</sup> Belenky, D. M., & **Nokes, T. J.** (2010). Optimizing learning environments: An individual differences approach to learning and transfer. In S. Ohlsson and R. Catrambone (Eds.), *Proceedings of the Thirty-Second Annual Conference of the Cognitive Science Society* (pp. 459-464). Austin, Texas: Cognitive Science Society.
- 40) Asterhan S. C., Schwarz, B. B., Butera, F., Darnon, C., **Nokes, T. J.**, Levine, J. M., <sup>G</sup> Belenky, D. M., <sup>G</sup> Gadgil, S., Resnick, L. B., & Sinatra, G. (2010). Motivation and affect in peer argumentation and socio-cognitive conflict. In K. Gomez, L. Lyons, and J. Radinsky (Eds.), *Learning in the Disciplines: Proceedings of the 9<sup>th</sup> International Conference of the Learning Sciences (ICLS 2010), Volume 2, Short papers, Symposia, and Selected Abstracts* (pp. 211-218). Chicago, IL, USA: ISLS.
- 41) <sup>G</sup> Gadgil, S., & **Nokes, T. J.** (2009). Analogical scaffolding in collaborative learning. In N. Taatgen, H. van Rijn, L., Shoemaker, and J. Nerbonne (Eds.), *Proceedings of the Thirty-First Annual Conference of the Cognitive Science Society* (pp. 3115-3120). Austin, Texas: Cognitive Science Society.
- 42) <sup>G</sup> Belenky, D. M., & **Nokes, T. J.** (2009). Motivation and Transfer: The role of achievement goals in preparation for future learning. In N. Taatgen, H. van Rijn, L., Shoemaker, and J. Nerbonne (Eds.), *Proceedings of the Thirty-First Annual Conference of the Cognitive Science Society* (pp. 1163-1168). Austin, Texas: Cognitive Science Society.

- 43) <sup>P</sup> Hausmann, R. G. M., **Nokes, T. J.**, VanLehn, K., & Van De Sande, B. (2009). The design of self-explanation prompts: The fit hypothesis. In N. Taatgen, H. van Rijn, L., Shoemaker, and J. Nerbonne (Eds.), *Proceedings of the Thirty-First Annual Conference of the Cognitive Science Society* (pp. 2626-2631). Austin, Texas: Cognitive Science Society.
- 44) <sup>P</sup> Hausmann, R. G. M., **Nokes, T. J.**, VanLehn, K., & Van de Sande, B. (2009). Collaborative dialog while studying worked-out examples. In V. Dimitrova, R. Mizoguchi, B. du Boulay, and A. Graesser (Eds.), *Proceedings of the 2009 Conference on Artificial Intelligence in Education: Building Learning Systems that Care: From Knowledge Representation to Affective Modeling* (pp. 596-598). Amsterdam, The Netherlands: IOS Press. doi: 10.3233/978-1-60750-028-5-596
- 45) **Nokes, T. J.**, & VanLehn, K. (2008). Bridging principles and examples through analogy and explanation. In G. Kanselaar, V. Jonker, P. A. Kirschner, and F. J. Prins (Eds.), *International Perspectives in the Learning Sciences: Creating a Learning World, Proceedings of the 8<sup>th</sup> International Conference for the Learning Sciences (ICLS 2008), Volume 3* (pp. 100-102). Utrecht, The Netherlands. ISLS.
- 46) **Nokes, T. J.**, & Ross, B. H. (2007). Facilitating conceptual learning through analogy and explanation. In L. Hsu, C. Henderson, and L. McCullough (Eds.), *Physics Education Research Conference, Vol. 951* (pp. 7-10). Melville, NY: American Institute of Physics Conference Proceedings. doi: 10.1063/1.2820952
- 47) **Nokes, T. J.** (2005). An investigation into adaptive shifting in knowledge transfer. In B. Bara, L. Barsalou, M. Bucciarelli (Eds.), *Proceedings of the Twenty-Seventh Annual Conference of the Cognitive Science Society* (pp. 1660-1665). Mahaw, NJ: Erlbaum.
- 48) **Nokes, T. J.** (2004). Testing three theories of knowledge transfer. In D. Gentner, K. Forbus, and T. Regier (Eds.), *Proceedings of the Twenty-Sixth Annual Conference of the Cognitive Science Society* (pp. 1029-1034). Mahaw, NJ: Erlbaum.
- 49) Ash, I. K., & **Nokes, T. J.** (2003). Instructional focus does not affect implicit pattern learning. In R. Alterman and D. Krish (Eds.), *Proceedings of the Twenty-Fifth Annual Conference of the Cognitive Science Society* (pp. 103-108). Mahaw, NJ: Erlbaum.
- 50) **Nokes, T. J.**, & Ohlsson, S. (2001). How is abstract generative knowledge acquired? A comparison of three learning scenarios. In J. D. Moore and K. Stenning (Eds.), *Proceedings of the Twenty-Third Annual Conference of the Cognitive Science Society* (pp. 710-715). Mahaw, NJ: Erlbaum.
- 51) **Nokes, T. J.**, & Ohlsson, S. (2000). An inquiry into the function of implicit knowledge and its role in problem solving. In L. R. Gleitman & A. K. Joshi (Eds.), *Proceedings of the Twenty-Second Annual Conference of the Cognitive Science Society* (pp. 829-834). Mahaw, NJ: Erlbaum.

## WORKS IN PROGRESS

- <sup>G</sup> Richey, J. E., **Nokes-Malach, T. J.**, & <sup>U</sup> Cohen, K. (submitted). Collaboration facilitates category learning.
- <sup>G</sup> Richey, J. E., Bernacki, M. L., Belenky, D. M., **Nokes-Malach, T. J.** (in revision). Comparing dispositional and dynamic methodological perspectives of achievement goals as predictors of classroom performance.
- <sup>G</sup> Zepeda, C. D., & **Nokes-Malach, T. J.** (submitted). Examining the relations across three metacognitive measures.

- <sup>P</sup> Marshman, E., <sup>G</sup> Zeynep, Y. K., Schunn, C., **Nokes-Malach, T. J.**, & Singh, C. (submitted). A longitudinal analysis of underrepresented students' motivational characteristics in introductory physics courses. *Canadian Journal of Physics*.
- <sup>G</sup> Zepeda, C. D., <sup>U</sup> Hlutkowsky, C. O., <sup>U</sup> Partika, A. C., & **Nokes-Malach, T. J.** (in revision). Identifying teachers supports of metacognition through classroom talk and its relation to growth in conceptual learning outcomes. *Journal of Educational Psychology*.
- Meigh, M. K., Shaiman, S., Tompkins, C. A., Abbott, K. V., & **Nokes-Malach, T. J.** (in preparation). The role of similarity in speech motor learning and transfer.
- <sup>P</sup> Bernacki, M. L., **Nokes-Malach, T. J.**, & Aleven, V. (in preparation). Intelligent tutoring systems promote achievement in mathematics, especially for those with low interest in math.
- Nokes-Malach, T. J.**, <sup>G</sup> Richey, J. E., Ross, B. H., & Mestre, J. P. (in preparation). Conceptual analysis promotes physics learning and problem solving.
- Nokes-Malach, T. J.**, <sup>P</sup> Bernacki, M. L., & <sup>G</sup> Belenky, D. B. (in preparation). Adding warm-ups to lectures: A simple application improves conceptual learning.
- <sup>U</sup> Wallace, A. <sup>G</sup> Richey, J. E., & **Nokes-Malach, T. J.** (in preparation). Predicting achievement through changes in achievement goals, emotions, and study strategies.

## PRESENTATIONS

<sup>P</sup> Indicates a postdoctoral author, <sup>G</sup> graduate student author, <sup>U</sup> undergraduate student author

- 1) **Nokes-Malach, T. J.**, <sup>P</sup> Marshman, E., <sup>G</sup> Kalender, Y., Schunn, C., Singh, C (submitted). Investigating attitudes and performance of students in introductory physics courses: Gender differences. To be presented at the Annual Meeting of the American Association of Physics Teachers, Cincinnati, OH.
- 2) <sup>G</sup> Kalender, Y., <sup>P</sup> Marshman, E., Schunn, C., **Nokes-Malach, T. J.**, Singh, C (submitted). Investigating attitudes and performance of students in introductory physics courses: Racial and ethnic minorities. To be presented at the Annual Meeting of the American Association of Physics Teachers, Cincinnati, OH.
- 3) <sup>G</sup> Boden, K. K., & **Nokes-Malach, T. J.** (2016, April). Examining classroom support of achievement goals through talk. In T. Wallace (Chair), *Investigating cognition and motivation at the classroom level*. Symposium conducted at the annual meeting of the American Educational Research Association, Washington, DC.
- 4) <sup>G</sup> Richey, J. E., <sup>U</sup> Walker, T., <sup>U</sup> Green, C., & **Nokes-Malach, T. J.** (2016, April). Relational mapping: An interactive perspective on classroom-level analogy support. In T. Wallace (Chair), *Investigating cognition and motivation at the classroom level*. Symposium conducted at the annual meeting of the American Educational Research Association, Washington, DC.
- 5) <sup>G</sup> Zepeda, C. D., <sup>U</sup> Hlutkowsky, C. O., <sup>U</sup> Partika, A. C., & **Nokes-Malach T. J.** (2016, April). Identifying teachers' supports of metacognition in the classroom. In T. Wallace (Chair), *Investigating cognition and motivation at the classroom level*. Symposium conducted at the annual meeting of the American Educational Research Association, Washington, DC.
- 6) <sup>G</sup> Zepeda, C. D., & **Nokes-Malach, T. J.** (2015, July). *Capturing the relations between metacognition, self-explanation, and analogical comparison: An exploration of two methodologies*. Poster presented at the Thirty-Seventh Annual Conference of the Cognitive Science Society, Pasadena, CA.

- 7) <sup>G</sup> Chan, J., & **Nokes-Malach, T. J.** (2014, July). *The impact of physical spaces on divergent and convergent problem-solving performance*. Poster presented at the Thirty-Sixth Annual Conference of the Cognitive Science Society, Quebec City, Quebec, Canada.
- 8) <sup>U</sup> Ferrara, A. M., <sup>G</sup> Zepeda, C., & **Nokes-Malach, T. J.** (2014, July). *Investigating the relationship between mindfulness and learning*. Poster presented at the Thirty-Sixth Annual Conference of the Cognitive Science Society, Quebec City, Quebec, Canada.
- 9) <sup>U</sup> Wallace, A., <sup>G</sup> Richey, J. E., & **Nokes-Malach, T. J.** (2014, July). *Changing achievement goals and grades*. Poster presented at the Thirty-Sixth Annual Conference of the Cognitive Science Society, Quebec City, Quebec, Canada.
- 10) <sup>P</sup> Bernacki, M. L., Aleven, V., & **Nokes-Malach, T. J.** (2014, April). *An examination of self-efficacy during a learning episode: Initial levels, changes and associations with learning*. Poster presented at the annual meeting of the American Educational Research Association, Philadelphia, PA.
- 11) <sup>P</sup> Bernacki, M. L., **Nokes-Malach, T. J.**, Aleven, V., & <sup>U</sup> Glick, J. (2014, April). *Intelligent tutoring systems promote achievement in middle school mathematics, especially for students with low interest*. Paper presented at the annual meeting of the American Educational Research Association, Philadelphia, PA.
- 12) **Nokes-Malach, T. J.**, Mestre, J. P., & <sup>G</sup> Belenky, D. M. (2013, April). *A theoretical framework for transfer as sense-making: Applications and examples*. Poster presented at the annual meeting of the American Educational Research Association, San Francisco, CA.
- 13) <sup>G</sup> Belenky, D. M., & **Nokes-Malach, T. J.** (2013, April). *Task-based vs. course-level achievement goals: An experimental investigation of mastery-approach goals and knowledge transfer*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.
- 14) <sup>G</sup> Zepeda, C., <sup>G</sup> Richey, J. E., Ronevich, P., **Nokes-Malach, T. J.** (2013, April). *Explicit instruction of metacognition in a middle school science class leads to metacognitive, academic and motivational benefits*. Poster presented at the biennial meeting of the Society for Research on Child Development, Seattle, WA.
- 15) <sup>G</sup> Zepeda, C., <sup>G</sup> Richey, J. E., Ronevich, P., & **Nokes-Malach, T. J.** (2012, October). *Explicit instruction of metacognition and its benefits to motivation and science learning*. Poster presented at the 2012 Annual Meeting of the Advancing Hispanics/Chicanos & Native Americans in Science, Seattle, WA.
- 16) <sup>G</sup> Belenky, D. M., & **Nokes-Malach, T. J.** (2012, April). *How mastery-approach goal motivations interact with discovery by contrasting cases to facilitate transfer*. Paper presented at the annual meeting of the American Educational Research Association, Vancouver, BC, Canada.
- 17) <sup>P</sup> Bernacki, M. L., **Nokes-Malach, T. J.**, & Aleven, V. (2012, April). *Investigating stability and change in task-specific achievement goals and their effects on math learning with intelligent tutors*. Paper presented at the annual meeting of the American Educational Research Association, Vancouver, BC, Canada.
- 18) <sup>G</sup> Richey, J. E., <sup>P</sup> Bernacki, M. L., <sup>G</sup> Belenky, D. M., & **Nokes-Malach, T. J.** (2012, April). *Predicting performance with a task-based behavioral measure of achievement goals*. Paper presented at the annual meeting of the American Educational Research Association, Vancouver, BC, Canada.



- 19) <sup>G</sup> Li, M., Frieze, I., & **Nokes-Malach, T.** (January, 2012). *Place matters: The influence of place attachment in motivation for learning*. Poster presented to the Thirteenth Annual Meeting of the Society for Personality and Social Psychology, San Diego, CA.
- 20) <sup>P</sup> Alfieri, L., **Nokes, T. J.**, & Schunn, C. D. (2011, September). *Aligning the structural components across learning tasks of case comparisons*. Paper presented at the Annual Meeting of the Society for Research on Educational Effectiveness, Washington, DC.
- 21) <sup>G</sup> Belenky, D. M., **Nokes, T. J.**, & <sup>P</sup> Bernacki, M. L. (2011, August). *Achievement goals over time: How changes in mastery and performance-approach predict deep knowledge*. Paper presented at the 14<sup>th</sup> Biennial European Association for Research on Learning and Instruction Conference, Exeter, UK.
- 22) <sup>G</sup> Belenky, D. M., **Nokes, T. J.**, & <sup>P</sup> Bernacki, M. L. (2011, August). *Achievement goals and learning in a lecture course: Moving towards mastery goals predicts deeper learning*. Poster presented at the Thirty-Third Annual Conference of the Cognitive Science Society, Boston, MA.
- 23) <sup>G</sup> Belenky, D. M., <sup>U</sup> Potter, S. J., & **Nokes, T. J.** (2011, March). *The effect of expected test pressure on learning*. Poster presented at the Fourth Annual Inter-Science of Learning Center Student and Post-Doc Conference, Washington, DC.
- 24) <sup>G</sup> Richey, J. E., <sup>P</sup> Chang, A., **Nokes, T. J.**, & Schunn, C. D. (2010, August). *Using analogical learning in science to improve conceptual understanding*. Poster presented at the Thirty-Second Annual Conference of the Cognitive Science Society, Portland, OR.
- 25) Mestre, J., <sup>P</sup> Docktor, J., <sup>P</sup> Strand, N., Ross, B., **Nokes, T.**, <sup>G</sup> Richey, E. (2010, July). *A conceptual analysis approach to physics problem solving*. Paper presented to the American Association of Physics Teachers Conference, Portland, OR.
- 26) **Nokes, T. J.**, Levine, J. M., <sup>G</sup> Belenky, D. M., <sup>G</sup> Gadgil, S. (2010, July). *Investigating the impact of dialectical interaction on engagement, affect, and robust learning*. Paper presented at the 2010 International Conference of the Learning Sciences, Chicago, IL.
- 27) **Nokes, T. J.**, Mestre, J. P., Ross, B. H., <sup>G</sup> Richey, J. E. (2010, June). *Conceptual analysis and student learning in physics*. Poster presented at the 2010 Institute for Education Sciences Research Conference, Washington, DC.
- 28) **Nokes, T. J.**, & <sup>G</sup> Gadgil, S. (2010, May). Analogical comparison supports collaborative learning in physics. In W. Hirst and S. Rajaram (Chairs), *Collaborative learning and remembering, Part: I*. Symposium conducted at the 22<sup>nd</sup> Annual Convention for the Association for Psychological Science, Boston, MA.
- 29) **Nokes, T. J.**, Mestre, J., Ross, B. H., & <sup>G</sup> Richey, J. E. (2010, May). Conceptual analysis and student learning in physics. In C. L. O'Donnell and E. Albro (Chairs), *Solving problems in school: Concepts, procedures, and instruction to support learning*. Symposium conducted at the 22<sup>nd</sup> Annual Conference for the Association for Psychological Science, Boston, MA.
- 30) <sup>G</sup> Belenky, D. M., <sup>G</sup> Gadgil, S., **Nokes, T. J.**, & Levine, J. (2010, May). *Dialectical interaction, arousal, and learning*. Paper presented at the Third Annual Inter-Science of Learning Center Student and Post-Doc Conference, Boston, MA.
- 31) <sup>G</sup> Gadgil, S., <sup>G</sup> Belenky, D. M., **Nokes, T. J.**, & Levine, J. (2010, May). *Assessing transfer in learning from dialectical interaction*. Poster presented at the Third Annual Inter-Science of Learning Center Student and Post-Doc Conference, Boston, MA.

- 32) Schunn, C. D., Merlino, J., Cromley, J., Massey, C., Newcombe, N., & **Nokes, T. J.** (2010, April). *Translational science of cognitive science in middle school science curricula*. Paper presented at the annual meeting of the American Educational Research Association, Denver, CO.
- 33) <sup>G</sup> Belenky, D. M., & **Nokes, T. J.** (2009, November). *How achievement goals and instructional activities interact to promote or hinder transfer of knowledge*. Poster presented at the 50<sup>th</sup> Annual Meeting of the Psychonomic Society, Boston, MA.
- 34) <sup>P</sup> Chang, A., <sup>G</sup> Strohm, E., **Nokes, T. J.**, & Schunn, C. D. (2009, November). *Using cognitive science to improve middle school science learning*. Poster presented at the 50<sup>th</sup> Annual Meeting of the Psychonomic Society, Boston, MA.
- 35) **Nokes, T. J.**, Ross, B. H., Mestre, J. P., <sup>G</sup> Strohm, E., <sup>P</sup> Brookes, D. T., & <sup>G</sup> Feil, A. (2009, November). *Conceptual analysis facilitates learning and transfer in both laboratory and classroom settings*. Poster presented at the 50<sup>th</sup> Annual Meeting of the Psychonomic Society, Boston, MA.
- 36) <sup>P</sup> Hausmann, R. G. M., **Nokes, T. J.**, VanLehn, K., & Gershman, S. (2009, July). *Revising models or filling gaps? The impact of prompting on self-explanation and robust learning*. Paper presented at the 13<sup>th</sup> Biennial European Association for Research on Learning and Instruction Conference, Amsterdam, The Netherlands.
- 37) Ross, B. H., Mestre, J. P., **Nokes, T. J.**, <sup>P</sup> Brookes, D. T., <sup>G</sup> Feil, A., & <sup>G</sup> Smith A. D. (2009, June). *Conceptual analysis and student learning in physics*. Poster presented at the 2009 Institute for Education Sciences Research Conference, Washington, DC.
- 38) **Nokes, T. J.**, Mestre, J. P., Ross, B. H., <sup>G</sup> Feil, A., <sup>P</sup> Brookes, D., & <sup>G</sup> Smith, A. (2009, April). *Conceptual analysis promotes learning and transfer in physics*. Poster presented at the annual meeting of the American Educational Research Association, San Diego, CA.
- 39) <sup>G</sup> Gadgil, S., & **Nokes, T. J.** (2009, February). *Analogical scaffolding in collaborative learning*. Poster presented at the Second Annual Inter-Science of Learning Center Student and Post-Doc Conference, Seattle, WA.
- 40) <sup>P</sup> Hausmann, R. G. M., & **Nokes, T. J.** (2009, February). *Evidence of transfer in a Physics I Course: An educational data-mining project*. Poster presented at the Second Annual Inter-Science of Learning Center Student and Post-Doc Conference, Seattle, WA.
- 41) <sup>G</sup> Belenky, D. M., & **Nokes, T. J.** (2008, November). *Interest and depth of processing: Examining the role of metacognitive prompts in learning*. Poster presented at the 49<sup>th</sup> Annual Meeting of the Psychonomic Society, Chicago, IL.
- 42) <sup>G</sup> Belenky, D. M., & **Nokes, T. J.** (2008, November). *Use of metacognitive prompts and manipulatives promotes learning and transfer*. Poster presented at the Purdue Winer Memorial Lectures: New Perspectives in Human Problem Solving, West Lafayette, IN.
- 43) <sup>G</sup> Belenky, D. M., & **Nokes, T. J.** (2008, July). *The effect of concrete and abstract manipulatives on efficient and innovative learning*. Poster presented at the Thirtieth Annual Conference of the Cognitive Science Society, Washington, DC.
- 44) **Nokes, T. J.**, VanLehn, K., & <sup>G</sup> Belenky, D. M. (2008, July). *Coordinating principles and examples through analogy and explanation*. Poster presented at the Thirtieth Annual Conference of the Cognitive Science Society, Washington, DC.

- 45) Mestre, J. P., Ross, B. H., **Nokes, T. J.**, <sup>P</sup>Brookes, D., & <sup>G</sup>Feil, A. (2008, June). *Conceptual analysis and student learning in physics*. Poster presented to the 2008 Institute for Education Sciences Research Conference, Washington, DC.
- 46) **Nokes, T. J.** (2008, February). *Professional development: Job hunting* (with Natasha Tokowicz). Workshop given at the First Annual Inter-Science of Learning Center Student and Post-Doc Conference, Pittsburgh, PA.
- 47) **Nokes, T. J.**, & Ross, B. R. (2007, August). *Near-miss versus surface-different comparisons in analogical learning and generalization*. Poster presented at the Twenty-Ninth Annual Conference of the Cognitive Science Society, Nashville, TN.
- 48) Meade, M. L., **Nokes, T. J.**, & Morrow, D. G. (2006, November). *The role of expertise in collaborative memory*. Poster presented at the 47<sup>th</sup> Annual Meeting of the Psychonomic Society, Houston, TX.
- 49) Morrow, D. G., Meade, M. L., **Nokes, T. J.**, & Stine-Morrow, E. A. L. (2006, August). *Expertise predicts collaborative success on memory and problem solving tasks*. Paper presented at the American Psychological Association's Annual Convention, New Orleans, LA.
- 50) **Nokes, T. J.**, Meade, M. L., Morrow, D. G., & Stine-Morrow, E. A. L. (2006, July). *Investigating the effect of domain knowledge on collaborative problem solving*. Poster presented at the Twenty-Eighth Annual Conference of the Cognitive Science Society, Vancouver, BC, Canada.
- 51) **Nokes, T. J.** (2005, November). *Transfer of training for cognitive skills: An investigation of use-specificity*. Poster presented at the 46<sup>th</sup> Annual Meeting of the Psychonomic Society, Toronto, ON, Canada.
- 52) **Nokes, T. J.** (2005, May). *Knowledge transfer: An investigation into the adaptive shifting hypothesis*. Paper presented at the Seventy-Seventh Annual Meeting of the Midwestern Psychological Association, Chicago, IL.
- 53) **Nokes, T. J.**, & Ohlsson, S. (2003, May). *Comparing practice to instruction in learning complex concepts: What is learned and where does it transfer?* Poster presented at the 15<sup>th</sup> Annual Convention of the American Psychological Society, Atlanta, GA.
- 54) Ash, I. K., & **Nokes, T. J.**, (2003, May). *Does attention matter for implicit learning?* Paper presented at the Seventy-Fifth Annual Meeting of the Midwestern Psychological Association, Chicago, IL.
- 55) **Nokes, T. J.**, Ohlsson, S., & Corrigan-Halpern, A. (2002, August). *Learning by analogy versus learning by instruction: Same knowledge, different representations*. Paper presented at the Eighth Annual ACT-R Workshop, Carnegie Mellon University, Pittsburgh, PA.
- 56) **Nokes, T. J.**, & Ohlsson, S. (2002, May). *The effect of schema articulation vs. schema detection on concept acquisition and problem solving performance*. Paper presented at the Seventy-Fourth Annual Meeting of the Midwestern Psychological Association, Chicago, IL.
- 57) **Nokes, T. J.**, & Ash, I. K. (2002, May). *An examination of the role of attentional focus in implicit learning*. Paper presented at the Seventy-Fourth Annual Meeting of the Midwestern Psychological Association, Chicago, IL.

- 58) Ohlsson, S., Kershaw, T., **Nokes, T.**, Orr, M., & Halpern, A. (2002, January). *Creating novel knowledge structures: Knowledge and practice in abstraction, feedback, insight, and perception*. Poster presented at the UIC Poster Fair for Learning, Teaching, Technology & Teacher Development, Chicago, IL.
- 59) **Nokes, T. J.**, & Ohlsson, S. (2001, May). *An investigation into the effect of implicit vs. analogical training on problem solving performance*. Paper presented at the Seventy-Third Annual Meeting of the Midwestern Psychological Association, Chicago, IL.
- 60) Cupal, J., Gonzalez-Marquez, M., & **Nokes, T. J.** (2000, July). *A neural network for learning to use "integral" versus "non-integral" verbs in Spanish sentences*. Paper presented at the Santa Fe Institute Student Paper Symposia, Santa Fe, NM.
- 61) **Nokes, T. J.**, & Ohlsson, S. (2000, May). *Implicit learning and its effect on deliberate problem solving: Transfer of abstract or domain specific knowledge?* Paper presented at the Seventy-Second Annual Meeting of the Midwestern Psychological Association, Chicago, IL.
- 62) **Nokes, T. J.**, Halpern, A. D., & Ohlsson S. (1999, August). *Implicit learning and deliberate problem solving: What is the connection?* Poster presented at the Twenty-First Annual Conference of the Cognitive Science Society, Vancouver, BC, Canada.
- 63) Aks, D. J., **Nokes, T.**, Sprott, J. C., & Keane, E. (1998, November). *Resolving perceptual ambiguity in the necker cube: A dynamical systems approach*. Paper presented at the 39<sup>th</sup> Annual Meeting of the Psychonomic Society, Dallas, TX.
- 64) Aks, D. J., **Nokes, T.**, Sprott, J. C., & Keane, E. (1998, August). *Resolving perceptual ambiguity in the necker cube: A dynamical systems approach*. Paper presented at The Society for Chaos Theory in Psychology & Life Sciences Eighth Annual International Conference, Boston, MA.

## INVITED PRESENTATIONS

- 65) **Nokes-Malach, T. J.** (2017, March). *Investigating the role of motivation and metacognition in promoting knowledge transfer*. Presentation given to the Cognitive Psychology Brown Bag Series, Department of Psychology, University of Illinois at Chicago, Chicago, IL.
- 66) **Nokes-Malach, T. J.**, Richey, E., Gadgil, S. (2016, May). *When is it better to learning together? Insights from research on the costs and benefits of collaborative learning*. Learning in Social Contexts Conference. University of Pittsburgh and Carnegie Mellon University, Pittsburgh, PA.
- 67) **Nokes-Malach, T.**, Betancur, L., Binning, K., Chen, S., Grabowski, J., Kaufman, N., Marshman, E., Rottman, B., Schunn, C., Schuchardt, A., Singh, C., & Votruba-Drzal, E. (2016, April). *Build, understand, and tune interventions that cumulate to real impact*. Poster given at the Envisioning the Future of Undergraduate STEM Education (EnFUSE): Research and Practice Symposium. National Science Foundation, Washington DC.
- 68) **Nokes-Malach, T. J.** (2016, March). *Investigating the role of motivation and metacognition in promoting knowledge transfer*. Colloquium given to the Physics Education Research Group, Department of Physics, University of Illinois at Urbana-Champaign, Urbana, IL.
- 69) **Nokes-Malach, T. J.** (2016, March). *Flipping the script: Innovating large lectures with principles from cognitive science*. Presentation given to the Discipline-Based Science Education Research Center, University of Pittsburgh, Pittsburgh, PA.

- 70) **Nokes-Malach, T. J.** (2016, February). *Knowledge transfer: New approaches for a controversial phenomenon*. Presentation given to the Research Round Table, Department of Communication Sciences and Disorders, School of Health and Rehabilitation Sciences, University of Pittsburgh, Pittsburgh, PA.
- 71) Klahr, D., & **Nokes-Malach, T. J.** (2016, February). *Timing is everything ... sometimes*. Network for the Science of Learning Center's Awardee Meeting 2016. National Science Foundation, Washington, DC.
- 72) Rottman, B., & **Nokes-Malach, T. J.** (2015, October). *Authenticity in educational instruction*. Presentation to the Discipline Based Science Education Research Center, University of Pittsburgh.
- 73) **Nokes-Malach, T. J.** (with Akiva, T., Galla, B., Kelly, S., Wang, M.). (2015, October). *Panel on motivation and engagement*. Learning Sciences and Policy Program and the Applied Developmental Psychology Program. School of Education, University of Pittsburgh.
- 74) **Nokes-Malach, T. J.**, Binning, K., Grabowski, J., Kaufman, N., Rottman, B., Schunn, C., Singh, C., Votruba-Drzal, E. (2015, October). *Build, understand, and tune interventions that cumulate to real impact*. Presentation given to the LRDC faculty. University of Pittsburgh.
- 75) **Nokes-Malach, T. J.** (2015, April). *Science diaries: A writing intervention to improve motivation in middle school science*. Cognitive and Developmental Brown Bag Series, Psychology Department, Carnegie Mellon University, Pittsburgh, PA.
- 76) **Nokes-Malach, T. J.** (2015, March). *The role of motivation in supporting preparation for future learning and knowledge transfer*. Presentation given to the Discipline-Based Science Education Research Center, University of Pittsburgh, Pittsburgh, PA.
- 77) **Nokes-Malach, T. J.** (2014, October). *Knowledge transfer: New approaches to a controversial phenomenon*. Beckman Institute for Advanced Science and Technology 25<sup>th</sup> Anniversary Symposium. University of Illinois at Urbana-Champaign, Urbana, IL.
- 78) **Nokes-Malach, T. J.** (2014, April). *Science diaries: A brief writing intervention to improve motivation to learn science*. Board of Visitors Meeting, LRDC, University of Pittsburgh, Pittsburgh, PA.
- 79) **Nokes-Malach, T. J.** (2014, April). *Science diaries: A writing intervention to improve motivation and achievement in middle school science*. Learning Sciences and Policy Brown Bag Series, University of Pittsburgh, Pittsburgh, PA.
- 80) **Nokes-Malach, T. J.** (2014, February). *Study smarter, not harder with strategies supported by cognitive science*. Academic Resource Center's workshop series. University of Pittsburgh, Pittsburgh, PA.
- 81) **Nokes-Malach, T. J.** (2013, March). *Conceptual learning principles*. School of Nursing's education series: "Placing the Learner First". University of Pittsburgh, Pittsburgh, PA.
- 82) **Nokes-Malach, T. J.**, & <sup>G</sup> Chan, J. (2011, November). *The effects of expansive versus narrow environments on creative problem solving*. Annual induction ceremony of the Psy Chi Chapter, University of Pittsburgh, Pittsburgh, PA.
- 83) **Nokes-Malach, T. J.** (2011, July). *Conceptual analysis facilitates learning in laboratory and classroom settings*. Pittsburgh Science of Learning Center Summer Intern Program, Carnegie Mellon University, Pittsburgh, PA.

- 84) **Nokes, T. J.**, Levine, J. L., <sup>G</sup> Belenky, D. B., & <sup>G</sup> Gadgil, S. (2010, July). *Investigating the impact of dialectical interaction on engagement, arousal, and robust learning*. Pittsburgh Science of Learning Center Summer Intern Program, Carnegie Mellon University, Pittsburgh, PA.
- 85) **Nokes, T. J.**, Levine, J. L., <sup>G</sup> Belenky, D. B., & <sup>G</sup> Gadgil, S. (2010, June). *Dialectical interaction and conceptual learning*. Board of Visitors Meeting, LRDC, University of Pittsburgh, Pittsburgh, PA.
- 86) **Nokes, T. J.**, <sup>P</sup> Hausmann, R. G. M., VanLehn, K., & Gershman, S. (2009, November). *The design of self-explanation prompts: The fit hypothesis*. Science of Learning Centers PI Meeting, Washington, DC.
- 87) **Nokes, T. J.** (2009, October). Using cognitive science to improve student learning. In R. Lopez (Chair), *Brain, mind, and learning: Research at the science of learning centers*. Symposium conducted at the 2009 Annual Meeting of the Advancing Hispanics/Chicanos & Native Americans in Science, Dallas, TX.
- 88) **Nokes, T. J.** (2009, October). Robust Learning. In R. Lopez (Chair), *Learn-a-Palooza*. Plenary symposium conducted at the 2009 Annual Meeting of the Advancing Hispanics/Chicanos & Native Americans in Science, Dallas, TX.
- 89) **Nokes, T. J.** (2009, April). *Taking cognitive science to school: Improving cognitive science and student learning*. Research for Practice Conference, LRDC, University of Pittsburgh, Pittsburgh, PA.
- 90) **Nokes, T. J.** (2009, March). Taking cognitive science to school: How cognitive science can improve conceptual learning in physics classrooms. In N. Newcombe (Chair), *The new learning sciences*. President's Integrative Symposium conducted at the Annual Meeting of the Eastern Psychological Association Conference, Pittsburgh, PA.
- 91) **Nokes, T. J.** (2008, December). *Taking cognitive science to school: How cognitive science can improve conceptual learning in physics classrooms*. Learning Sciences and Policy Brown Bag Series, University of Pittsburgh, Pittsburgh, PA.
- 92) **Nokes, T. J.** (2007, August). *Facilitating conceptual learning through analogy and explanation*. Physics Education Research Conference, Greensboro, NC.
- 93) **Nokes, T. J.**, Meade, M. L., & Morrow, D. G. (2007, June). *Investigating the role of expertise in collaborative tasks*. Pittsburgh Science of Learning Center Summer Intern Program, Carnegie Mellon University, Pittsburgh, PA.
- 94) **Nokes, T. J.** (2006, April). *Creating adaptive knowledge structures and skills: Investigations of learning and transfer*. Cognitive Psychology Brown Bag Series, University of Illinois at Urbana-Champaign, Urbana, IL.
- 95) **Nokes, T. J.**, Mestre, J. P., & Ross, B. H. (2006, April). *Facilitating knowledge transfer in physics*. Physics Education Brown Bag Series, University of Illinois at Urbana-Champaign, Urbana, IL.
- 96) **Nokes, T. J.** (2006, February). *Creating adaptive knowledge structures and skills: Investigations of learning and transfer*. Cognitive Psychology Brown Bag Series, University of Illinois at Chicago, Chicago, IL.
- 97) **Nokes, T. J.** (2005, December). *Understanding transfer: An investigation into multiple mechanisms*. Psychology Colloquium, University of Pittsburgh, Pittsburgh, PA.

- 98) Nokes, T. J. (2004, March). *Investigating multiple mechanisms of knowledge transfer*. Symposium on Reasoning and Learning in Cognitive Systems, Stanford University, Palo Alto, CA.

## TEACHING EXPERIENCE

### *University of Pittsburgh*

- PSY 0005: *Introduction to Cognitive Science (2)*  
- Fall, 2010; Fall, 2012
- PSY 420/421/422: *Cognitive Psychology (11)*  
- Fall, 2007; Spring, 2008; Fall, 2009; Spring 2010; Fall 2011; Spring 2013; Fall 2013; Spring 2015; Fall 2015; Spring 2016; Fall 2016
- PSY 2476: *Topics in Cognitive Psychology: Brown Bag Series, Coordinator (7)*  
- Spring, 2010; Fall, 2010; Spring, 2011; Fall, 2012; Spring, 2013; Fall, 2013; Spring, 2014
- PSY 2476: *Topics in Cognitive Psychology: Knowledge Transfer (3)*  
- Fall, 2008; Fall 2011; Fall 2015
- PSY 2476: *Topics in Cognitive Psychology: Learning and Motivation*  
- Spring, 2011; Spring 2017
- PSY 2476: *Topics in Cognitive Psychology: Metacognition*  
- Spring, 2014

### *Network of Academic Programs in the Learning Sciences (NAPLeS)*

- Webinar – Situative Cognition (w/ James Greeno, March 4<sup>th</sup>, Spring 2014)

### *LearnLab Summer School*

- InVivo Track Instructor, Summer, 2009, 2013, 2014

### *University of Illinois at Urbana-Champaign*

- PSYCH 523: *Problem Solving & Cognitive Skill Acquisition*  
- Spring, 2006

### *University of Illinois at Chicago*

- PSCH 320: *Developmental Psychology*  
- Co-taught with Andrew Corrigan-Halpern, Summer, 2004  
- Co-taught with Trina Kershaw, Summer, 2003
- PSCH 343: *Statistics in Psychological Science*  
- Spring, 2002

## GRANTS

<sup>P</sup> Indicates a postdoctoral collaborator, <sup>G</sup> graduate student collaborator

### ***Current Support (PI: Total \$2,989,284)***

- *Implementing Science of Learning Principles within Educational Practice*  
James S. McDonnell Foundation, Grant # 220020483, 12/16-11/21  
Total costs: \$4,635,718  
Sub-award to the University of Pittsburgh: \$599,992  
Sponsoring Institution: Iowa State University (Shana Carpenter, PI)  
Collaborative Institutions: University of Texas Austin (Andrew Butler, PI), Purdue University (Jeffrey Karpicke, PI), Boston College (David Miele, PI), Texas Christian University (Sarah Uma Tauber, PI), University of Pittsburgh (Timothy Nokes-Malach, PI)

- *Build, Understand, & Tune Interventions that Cumulate to Real Impact*  
National Science Foundation, DUE-1524575, 9/15-8/20  
Total costs: \$1,795,922  
PI: Timothy Nokes-Malach, Co-PI's: Kevin Binning, Joseph Grabowski, Nancy Kaufmann, Ben Rottman, Chris Schunn, Chandralekha Singh, Elizabeth Votruba-Drzal
- *Investigating Motivation and Transfer in Physical Science through Preparation for Future Learning Instruction*  
National Science Foundation, DUE-1534829, 9/15-8/18  
Total costs: \$593,278  
PI: Timothy Nokes-Malach, Co-PIs: Muhsin Menekse; Tanner LeBaron Wallace

***Previous Support (Total: \$1,783,935)***

- *Flipping the Script: Innovating Large Undergraduate Psychology Lectures with Learning Principles from Cognitive Science*  
Total costs: \$14,908  
University of Pittsburgh, Discipline-Based: Science Education Research Center (dB-SERC), 7/15-7/16  
PI: Timothy Nokes-Malach; Co-PI: Cristina Zepeda
- *Innovating Motivation Research: Insights from Urban Middle School Classrooms on the Links between Psychosocial Classroom Activity and Mathematics Learning*  
University of Pittsburgh, Learning Research and Development Center: Seed Grant Competition, 7/14-7/16  
Total costs: \$149,763  
PI's: Timothy Nokes-Malach, Tanner LeBaron Wallace, James Greeno, and Rip Correnti
- *Dialectical Interaction, Motivation, and Metacognition Interventions to Support Robust Learning*  
National Science Foundation, Pittsburgh Science of Learning Center (LearnLab), SBE-0836012, 9/09-2/15  
Sub-award to the University of Pittsburgh: \$785,482  
PI: Timothy Nokes-Malach, Co-PI of the dialectical interaction component: John Levine
- *Microgenetic and Longitudinal Approaches to Assessing the Relationship between Motivation and Affect on Robust Learning*  
National Science Foundation, Pittsburgh Science of Learning Center (LearnLab), SBE-0836012, 9/10-2/15  
Sub-award to the University of Pittsburgh: \$285,467  
PI: Timothy Nokes-Malach, Co-PI: Vincent Alevan
- *The 21<sup>st</sup> Century Research and Development Center on Cognition and Science Instruction*  
Department of Education, Institute for Education Sciences, R305C080009, 7/08-7/13  
Total costs: \$9,995,038  
PI: Joseph Merlino, Co-PI's: Jennifer Cromley, Nora Newcombe, Timothy Nokes, Andy Porter, Christian Schunn



- *Conceptual Analysis and Student Learning in Physics*  
Department of Education, Institute for Education Sciences, R305B070085, 7/07-7/11  
Total costs: \$1,203,164  
Sub-award to the University of Pittsburgh: \$124,646  
PI: Brian Ross, Co-PI's: Jose Mestre, Timothy Nokes
- *Dialectical Interaction and Conceptual Learning*  
University of Pittsburgh, Learning Research and Development Center: Seed Grant Competition, 9/08-9/10  
Total costs: \$74,390  
PI: John Levine; Co-PI: Timothy Nokes
- *Analogical Scaffolding in Collaborative Learning*  
National Science Foundation, Pittsburgh Science of Learning Center (LearnLab), SBE-0354420, 7/08-7/09  
Sub-award to the University of Pittsburgh: \$80,000  
PI: Timothy Nokes, Co-PI: <sup>G</sup> Soniya Gadgil
- *Harnessing What You Know: The Role of Analogy in Robust Learning*  
National Science Foundation, Pittsburgh Science of Learning Center (LearnLab), SBE-0354420, 7/08-7/09  
Sub-award to the University of Pittsburgh: \$80,000  
PI: Timothy Nokes, Co-PI: <sup>P</sup> Robert G. M. Hausmann
- *Bridging Principles and Examples through Analogy and Explanation*  
National Science Foundation, Pittsburgh Science of Learning Center (LearnLab), SBE-0354420, 1/07-6/08  
Sub-award to the University of Pittsburgh: \$189,279  
PI: Timothy Nokes, Co-PI: Kurt VanLehn

## SERVICE

### REVIEWING

#### *Journals*

- Editorial Boards:
  - *Journal of Educational Psychology*
  - *Journal of Experimental Psychology: Applied*
- Ad hoc Reviewer for 24 Journals  
(1) *American Journal of Psychology*; (2) *Cognitive Science*; (3) *Cognition*; (4) *Cognition and Instruction*; (5) *Educational Psychology*; (6) *Educational Psychologist*; (7) *Educational Psychology Review*; (8) *Group Processes & Intergroup Relations*; (9) *Human Factors*; (10) *Instructional Science*; (11) *Learning and Instruction*; (12) *The Journal of Experimental Education*; (13) *Journal of Educational Psychology*; (14) *Journal of Experimental Psychology: Applied*; (15) *Journal of Experimental Psychology: General*; (16) *Journal of Experimental Psychology: Learning, Memory, and Cognition*; (17) *The Journal of Genetic Psychology*; (18) *The Journal of Problem Solving*; (19) *International Electronic Journal of Elementary Education*; (20) *International Journal of Creativity and Problem Solving*; (21) *Learning and Individual Differences*; (22) *Memory & Cognition*; (23) *Physical Review Special Topics – Physics Education Research*; (24) *Psychonomic Bulletin and Review (PB&R)*

*Books*

- *Variation in Working Memory*  
(Eds., A. R. Conway, C. Jarrold, M. J. Kane, A. Miyake, and J. N. Towse)

*Conferences*

- (1) American Educational Research Association's Annual Meeting, (2) American Psychological Society Student Caucus; (3) Cognitive Science Society's Annual Conference; (4) International Conference of the Learning Sciences; (5) Society for Research on Educational Effectiveness
- Cognitive Science Conference Committee Member for Modeling Tutorials, 2004
- Cognitive Science Conference Program Committee; Meta-Reviewer (coordinating reviews and making editorial recommendations on approx. 6-9 papers per year), 2010-present
- Program Committee Member and Reviewer for the Workshop on Non-cognitive Factors & Personalization for Adaptive Learning, Education Data Mining Conference, 2014

*Grants*

- Invited to Review for National Science Foundation's, Education and Human Resources (EHR), REESE program
- Invited to Review for the U.S.-Israel Binational Science Foundation
- Reviewer for the Austria Science Fund, 2014, 2016
- Reviewer for the Social Sciences and Humanities Research Council of Canada, 2015
- Reviewer for the National Science Foundation, Social and Economic Sciences (SES), 2015

**COMMUNITY***National Advisory Boards*

- Advisory Committee Member for the NSF project "*Developing Crosscutting Concepts in STEM with Simulation Theaters of Embodied Learning*" by Dr. Robb Lindgren at the University of Illinois at Urbana-Champaign, 2014-present

*Regional*

- Member of the Diversity Committee for the LearnLab, 2012-2016
- Member of the Executive Committee for the LearnLab, 2008-2016
- Motivation and Metacognition Co-Chair for the LearnLab, 2009-2016
- Junior Faculty Representative to the Executive Committee for the LearnLab, 2007-2009

*Pitt - Dietrich School of Arts and Sciences*

- Member of the Mellon Fellowship Selection Committee, 2013
- Member of Conflict of Interest Committee, 2016

*Psychology*

- Member of the Honors Education Committee, 2015-present
- Chair of the Dept. Institutional Review Board (IRB) Committee, 2015-2016
- Member of the Undergraduate Education Committee (UEC), 2009-2013
- Graduate Student Admissions Committee, 2007, 2009, 2011-2012, 2016 (Chair)
- Faculty Search Committee Member, 2010, 2012, 2013
- Member of the Colloquium Committee, 2009-2012
- Co-Chair of the Tim Post Award Committee, 2014, 2015, 2016
- Member of the Tim Post Award Committee, 2007
- Sloan Fellowship Committee, 2007

*Pitt - School of Education*

- Steering Committee Member, Motivation Center, 2015-present
- Faculty Search Committee Member, 2014

*Pitt – School of Information Sciences*

- Member of P & T committee, School of Information Sciences, 2013

*Pitt – School of Public Health*

- Member of the Center for Mindfulness and Consciousness Studies, 2015-present

*Pitt – Learning Research and Development Center (LRDC)*

- Executive Committee, 2016-present
- Diversity Committee, 2015-present
- Technology Committee, 2010-present
- Strategic Planning Committee's: Education and Learning Neuroscience, 2014
- Semi-centennial Steering Committee, 2012-2013
- Computer Resources Committee, 2009
- Research-Practice Conference Planning Group, 2009
- Organizer of the Higher-order Cognition Group Talk Series, 2007-2008

*University of Illinois Chicago*

Psychology

- Diversity Advisory Committee, 2003

**POSTDOCTORAL MENTORING**

- Eric Kuo

*Alumni*

- Louis Alfieri (Learning Scientist at Robomatter)
- Matthew L. Bernacki (Assistant Professor of Educational Psychology at UNLV)
- Alicia Chang (User design at Google)
- Robert G. M. Hausmann (Cognitive Scientist at Carnegie Learning)

**GRADUATE STUDENT MENTORING**

*Current*

- Cristina Zepeda (5<sup>th</sup> year)
- Kelly K. Boden (1<sup>st</sup> year)
- Nabila Jamal-Orozco (1<sup>st</sup> year)

*Alumni*

- Brendan Barstow, MA
- Daniel M. Belenky, PhD (Senior Research Scientist at Pearson)
- Soniya Gadgil, PhD (Postdoc at Carnegie Mellon University)
- J. Elizabeth Richey, PhD (Assistant Professor at Miami University)

**Student Committees**

**University of Pittsburgh**

- ***Dietrich School of Arts and Sciences***

- *Psychology*

- Cognitive

- Barstow, Brendan (Mentoring, MA Committee)
- Bathgate, Meghan (Mentoring; Specialty Exam, Dissertation)
- Belenky, Daniel (Mentoring; MA Thesis Chair; Specialty Exam; Dissertation Chair)
- Bernstein, Deborah (Specialty Exam; Dissertation)
- Chan, Joel (Mentoring; MA Thesis; Specialty Exam; Dissertation)
- Derringer, Cory (Mentoring; MA Thesis)
- Gadgil, Soniya (Mentoring; MA Thesis Chair; Specialty Exam; Dissertation Chair)
- Harris, Lindsay (Mentoring)
- Holcomb, Michelle (Mentoring)
- Jang, JooYoung (Mentoring; MA Thesis; Specialty Exam; Dissertation)
- Liu, Allison (Mentoring; MA Thesis)
- Palmquist, Sasha (Dissertation)
- Patchan, Melissa (Mentoring; Comprehensive Exam; Dissertation)
- Richey, Elizabeth (Mentoring; MA Thesis Chair; Specialty Exam, Dissertation Chair)
- Soo, Kevin (Mentoring, MA Thesis)
- Wong, Tsunhin (Mentoring; MA Thesis)
- Zepeda, Cristina (Mentoring; MA Thesis Chair)

- Developmental

- Henry, Daphne (Specialty Exam)
- Koury, Amanda (Specialty Exam)

- Social

- Alexander, Kira (Dissertation)
- Chen, Susie (MA Thesis)

- Individualized

- Li, ManYu (Mentoring; MA Thesis; Dissertation)

- ***School of Health and Rehabilitation Sciences***

- *Communication Sciences and Disorders*

- Meigh, Kimberly (Specialty Exam; Dissertation)

- ***School of Education***

- *Learning Sciences and Policy*

- Schuchardt, Anita (Dissertation)
- Quintana, Rafael (Milestone 1)

**Carnegie Mellon University**

- ***School of Computer Science***

- *Human Computer Interaction Institute*

- Long, Yajin (Dissertation)

**POST-BACCULARATE (Hot Metal Bridge Program)**

- Jamal-Orozco, Nabila, 2015-2016
- Zepeda, Cristina, 2011-2012

**UNDERGRADUATE STUDENT MENTORING***University of Pittsburgh*

*Honors Thesis Committees (13); † indicates served as the primary advisor*

- Caroline Altaras • Jennifer Bracken • Merete Chaplin<sup>†</sup> • Cassie Chew • Kara Cohen<sup>†</sup> • Emily Diamond • Amanda Ferrara<sup>†</sup> • Tessa Lewis-Whitson<sup>†</sup> • Karen Garelik • Sam Potter<sup>†</sup> • Gaby Russo<sup>†</sup> • Ori Tamir • Aleza Wallace<sup>†</sup> •

*First Experiences in Research Students (12)*

- Lauren Baff • Alex Dowels • Margaret Kelly • Timothy Lee • Alex Harshberger • Ahn Huynh • Nicholas Moellers • Kyrstin Moltner • Nick Oh • Catherine Park • Aleza Wallace • Emma Vogan

*Research Assistants (44)*

- Dinya Aboud • Jeremy Addison • Caroline Altaras • Mike Ansell • Ranem Atia • Merete Chaplin • Kara Cohen • Sean Cooper • Hannah DeCleene • Christine Ebdlahad • Morgan Everett • Amanda Ferrara • Michelle Francis • Stephen Grivnow • Eliza Gilpin • Julia Glick • Alicia Heim • Sarah Honsaker • Christina Hlutkowsky • Alessandra Karam • Jonas Kerner • Tessa Lewis-Whitson • Kylene Lovell • Jing Liu • Max Lichtenstein • Diksha Mishra • Alex Matrolonardo • Darren Pifer • Sam Potter • Ava Salimnejad • Kristen Sawl • Emily Schimdt • Spencer Schimdt • Julianna Sincavage • Amanda Sheller • Courtney Stein • Douglas Stouch • Alyssa Thatcher • Tatum Walker • Linnea Warren • Emily Wenz • Mark Wertz • Christopher Wiltrout • Qingqing Yang •

*Paid Summer Interns, Funded through the LearnLab (7), Funded through LRDC (1)*

- Greg Cox (University of Maryland) • Fred Diego (Indiana University) • Corinne Green (The University of Houston) • Emily Greenwood (University of Chicago) • Norah Hass (Norte Dame) • Anne Partika (The College of Wooster) • Kelly Rivers (Carnegie Mellon University) •

*Teaching Assistants (25)*

- Toyin Ajayi • Margaret Boldry • Chi Bui • Merete Chaplin • Twany Duliba • Elisabeth Estes • Morgan Everett • Emily Faust • Christina Fasolas • Ashley Griffin • Gwen Hoeffgen • Amanda Hopcroft • Alessandra Karam • Erin Karahuta • Monica Kim • Emily Kosenske • Jenny Ly • Jessica Nederlanden • Chelsea Proulx • David Raboy • Mark Ruffalo • Victoria Scott • Rachel Tang • Emily Wenz • Sarah Witter •

*University of Illinois*

- I supervised a total of 27 undergraduates in directed research (16 students for one semester and 11 students for two).

**ADDITIONAL EDUCATIONAL EXPERIENCES**

- **LearnLab Summer School**, June 2007  
Carnegie Mellon University  
Instructor: Ken Koedinger
- **ACT-R Summer School**, July 2002  
Carnegie Mellon University

Instructors: John R. Anderson and Christian Lebiere

- **Oxford Summer School on Connectionist Modeling**, July 2001  
University of Oxford  
Instructors: Kim Plunkett and Edmond Rolls
- **Complex Systems Summer School**, June 2000  
Santa Fe Institute  
Supervisor: Melanie Mitchell
- **Soar Programming Tutorial**, May 1999  
University of Michigan  
Instructor: John E. Laird

## References

**Michelene T. H. Chi**, Dorothy Bray Endowed Professor of Science and Teaching  
Division of Educational Leadership and Innovation  
Mary Lou Fulton Teachers College  
Arizona State University  
mtchi@asu.edu

**Jose Mestre**, Professor  
Departments of Physics and Educational Psychology  
Colleges of Liberal Arts and Sciences and Education  
University of Illinois Urbana-Champaign  
mestre@illinois.edu

**Stellan Ohlsson**, Professor  
Department of Psychology  
Adjunct Professor of Computer Science  
College of Liberal Arts and Sciences  
University of Illinois at Chicago  
stellan@uic.edu

**Brian H. Ross**, Professor and Associate Dean  
Department of Psychology  
Executive Associate Dean of Social / Behavioral Sciences  
College of Liberal Arts and Sciences  
University of Illinois Urbana-Champaign  
bhross@illinois.edu