**CURRICULUM VITAE**

NAME:  **Julie Gess-Newsome**

TITLE: Retired - Dean of Academic Affairs, OSU-Cascades

RANK: Professor Emeritus

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AREAS OF SPECIALIZATION: Science Education, Teacher Cognition (Pedagogical Content Knowledge), Teacher Development and Education

**I. EDUCATIONAL HISTORY**

**University**

Ph.D.  Oregon State University, Corvallis, OR 1992

 Science Education

Dissertation: *Biology Teachers' Perceptions of Subject Matter Structure and its Relationship to Classroom Practice*

M.A.  University of Northern Colorado, Greeley, CO 1982

 Curriculum and Instruction/ Outdoor Education

B.A.  Northland College, Ashland, WI 1979

 Secondary Education/Biology

**Honors and Awards**

Northland College Distinguished Alumni in Education, 2016.

National Association for Research in Science Teaching Outstanding Paper Award: “Enhancing teacher knowledge and pedagogical reasoning: A case study of cooperating science teachers that mentor preservice teachers,” coauthored with Shelley Rodriguez, 2012.

Outstanding Science Teacher Educator of the Year, Association for Science Teacher Education, 2010.

Distinguished Achievement Award from the Association of Educational Publishers for the book “Reforming Secondary Science Instruction” in the category of Professional Development/School Improvement, grades 9-12, 2010.

Outstanding Supervisor Award, Northern Arizona University, 2006.

University of Utah, Graduate School of Education, Teacher of the Year Award,1997.

Finalist in the University of Utah Presidential Teaching Scholar Awards, 1995.

Outstanding Higher Education Science Educator of the Year, Utah Science Teachers Association, 1995.

American Education Research Association - Division K (Teaching and Teacher Education) Dissertation of the Year, 1993.

National Association for Research in Science Teaching Dissertation of the Year, 1993.

Spencer Dissertation Year Fellowship for Research Related to Education, 1990-91.

Oregon Merit Scholarship for Outstanding Graduate Students, Oregon State University, 1990-91.

Phi Kappa Phi Honor Society, Oregon State University, 1990.

Wyoming NASA Teacher in Space Finalist, 1986.

Wyoming Biology Teacher of the Year, National Association of Biology Teachers, 1986.

Phi Delta Kappa Education Honor Society, University of Northern Colorado, 1979.

Graduation with Distinctions in Education, Northland College, 1979.

**II. PROFESSIONAL HISTORY**

2020-present Professor Emeritus, Oregon State University

2016-2020 Dean of Academic Affairs, Oregon State University-Cascades, Bend, Oregon.

2016 Interim Dean of Academic Programs, Oregon State University-Cascades, Bend, Oregon.

2013-2016 Associate Dean, Division of Human Health and Wellness, Oregon State University-Cascades, Bend, Oregon.

2011-2013 Dean, Graduate School of Education, Willamette University, Salem, Oregon.

2000-2011 J. Lawrence Walkup Distinguished Professor of Science Education; Director, Center for Science Teaching and Learning; Northern Arizona University, Flagstaff, Arizona.

2002-2011 Professor of Science Education, Department of Teaching and Learning (College of Education) and Department of Biological Sciences (College of Forestry, Engineering, and Natural Science), Northern Arizona University, Flagstaff, Arizona.

2000-2002 Associate Professor of Science Education, Department of Teaching and Learning, Department of Biological Sciences, Northern Arizona University, Flagstaff, Arizona.

1999-2000 Interim Chair, Department of Educational Studies, University of Utah, Salt Lake City, Utah.

1998-2000 Associate Professor of Science Education, Department of Educational Studies, University of Utah, Salt Lake City, Utah.

1994-1998 Director of Teacher Certification, Department of Educational Studies, University of Utah.

1991 - 1998 Assistant Professor of Science Education, Department of Educational Studies, University of Utah, Salt Lake City, Utah.

1990 - 1991 Spencer Dissertation-Year Fellow for Research Related to Education.

Summer, 1991 Instructor, Science and Mathematics Education, Oregon State University, Corvallis, Oregon.

1987 - 1990 Teaching Assistant, Department of Science, Mathematics, and Computer Science Education, Oregon State University, Corvallis, OR.

1980 - 1987 Science Teacher, Evanston High School, Evanston, Wyoming.

1982 - 1983 Teacher (summers), Wyoming State Hospital - Adolescent Program, Evanston, Wyoming.

1979 - 1980 Science Teacher, Cheyenne-Eagle Butte High School, Cheyenne River Sioux Reservation, South Dakota.

1978 - 1979 Director, Educational and Recreational Activities, Upward Bound, Northland College, Ashland, Wisconsin.

1976 - 1977 Technologist (summers), Department of Natural Resources, Bayfield, Wisconsin.

**III. PROFESSIONAL ORGANIZATIONS**

**National Affiliations**

American Educational Research Association (AERA)

Association for Science Teacher Education (ASTE)

National Association for Research in Science Teaching (NARST)

National Science Teachers Association (NSTA)

**National and Regional Leadership Positions** (current)

Board Member, Girl Scouts of Oregon and Southwest Washington. 2016-present.

**IV. SCHOLARLY PUBLICATIONS AND ACTIVITY**

**Google Scholar Indices** as of 01/09/2020

|  | All | Since 2015 |
| --- | --- | --- |
| Citations | 7367 | 3188 |
| h-index | 31 | 21 |
| i10-index | 40 | 32 |

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**Journal Articles**

Gess-Newsome, J., Taylor, J.A., Carlson, J., Gardner, A.L., Wilson, C.D., & Stuhlsatz, M.A.M. (2019). Teacher pedagogical content knowledge, practice, and student achievement. *International Journal for Science Education*. 41, 7, 944–963 https://doi.org/10.1080/09500693.2016.1265158

Drits-Esser, D., Gess-Newsome. J., & Stark, L.A. (2016): Examining the sustainability of teacher learning following a year-long science professional development programme for inservice primary school teachers, *Professional Development in Education*, DOI: 10.1080/19415257.2016.117966

Kirschner, S., Borowski, A., Fischer, H., Gess-Newsome, J., & von Aufschnaiter, C. (2016). Developing and evaluating a paper-and-pencil test to assess components of physics teachers’ pedagogical content knowledge. *International Journal of Science Education*, 38, 1343-1372.

Levy, A.J., Jia, Y., Marco-Bujosa, L., Gess-Newsome, J., & Pasquale, M. (2015). Science specialists or classroom teachers: Who should teach elementary science? The *Science Educator*, 24(2), 1-12.

Bosch, P. C., & Gess-Newsome, J. (2014). An evaluation of student interpersonal support in a Spanish-English nursing program. *Qualitative Research in Education, 3*(1) 30-50. doi: 10.4771/qre.2014.35http://

Bosch, P.C., Doshier, S.A., & Gess-Newsome, J. (2012). Bilingual nurse education program: Applicant characteristics that predict success. *Nursing Education Perspectives*: March 2012, Vol. 33, No. 2, pp. 90-95. <http://www.nlnjournal.org/toc/nhcp/33/2>

Schwartz, R.S., & Gess-Newsome, J. (2008). Elementary science specialists: A pilot study of current models and a call for participation in the research. *The Science Educator*. *17*(2), 19-30. Also available for free download at: [www.nsela.org/publications/17article5.pdf](http://www.nsela.org/publications/17article5.pdf)

Ueckert, C., & Gess-Newsome, J. (2008). Increasing student involvement in learning. *The Science Teacher*. 75 (9), 47-52.

Gess-Newsome, J. (2008). BSCS at 50: Building partnerships to improve science teaching and learning. *The American Biology Teacher*, 20 (3), 136-137+.

Smith, L., & Gess-Newsome, J. (2004). Elementary science methods courses and the *National Science Education Standards*: Are we adequately preparing teachers? *Journal* *of Science Teacher Education, 15*, 91-110.

Gess-Newsome, J., Blocher, M., Clark, J., Menasco, J., & Willis, E.M. (2003). Technology infused professional development: A framework for development and analysis. *Contemporary Issues in Technology and Teacher Education*, [www.citejournal.org/vol3/iss3/general/artcile2.cfm](http://www.citejournal.org/vol3/iss3/general/artcile2.cfm)

Gess-Newsome, J., Southerland, S.A., Johnston, A, & Woodbury, S. (2003). Educational reform, personal practical theories, and dissatisfaction: The anatomy of change in college science teaching. *American Educational Research Journal, 40*(3), 731-768.

Southerland, S.A., Gess-Newsome, J., & Johnston, A. (2003). Portraying science in the classroom: The manifestation of scientists’ beliefs in classroom practice. *Journal for Research in Science Teaching, 40*(7), 669-691.

Woodbury, S., & Gess-Newsome, J. (2002). Overcoming the paradox of change without difference: A model of change in the arena of fundamental school reform. *Educational Policy, 16*(5), 763-782.

Gess-Newsome, J. (2002). Reactions to Bull, Bull, Garofalo, and Harris- Grant Challenges: Preparing for the Technological Tipping Point. *Contemporary Issues in Technology and Teacher Education. 2*(1). [www.citejournal.org/vol2/iss1/toc.cfm](http://www.citejournal.org/vol2/iss1/toc.cfm)

Gess-Newsome, J. (2002). The use and impact of explicit instruction about the nature of science and science inquiry in an elementary science methods course. *Science and Education, 11*, 55-67.

Southerland, S.A., & Gess-Newsome, J. (1999). Preservice teachers’ views of inclusive science teaching as shaped by images of teaching, learning, and knowledge. *Science Education, 83*, 131-150.

Gess-Newsome, J. (1999). Comments on “Educating teachers” paper set: Expanding questions and extending implications. *Science Education, 83,* 385-391.

Hyde, M.S., & Gess-Newsome, J. (1999). Adjusting our educational practice in an attempt to increase female persistence in the sciences. *Journal of College Student Retention, 1*(4), 335-355.

Gess-Newsome, J. (1999). Delivery models for elementary science instruction: A call for research. *Electronic Journal of Science Education, 3*(3), 1-8.

Bullough, R.V.Jr., Burbank, M., Gess-Newsome, J., Kauchak, D., & Kennedy, C. (1998). ‘What matters most: Teaching for America’s future?’ A faculty response to the Report of the National Commission on Teaching and America’s future. *Journal of Education for Teaching, 24*(1), 7-32.

Gess-Newsome, J., & Lederman, N.G. (1995). Biology teachers' perceptions of subject matter structure and its relationship to classroom practice. *Journal of Research in Science Teaching, 32*(3), 301-325.

Lederman, N.L., Gess-Newsome, J., & Latz, M.S. (1994). The nature and development of preservice science teachers’ conceptions of subject matter and pedagogy. *Journal of Research in Science Teaching, 31*(2), 129-146.

Gess-Newsome, J., & Lederman, N.G. (1993). Preservice biology teachers' knowledge structures as a function of professional teacher education: A year-long assessment. *Science Education, 77*(1), 25-45.

Lederman, N.G., Gess-Newsome, J., & Zeidler, D. (1993). A summary of research in science education – 1991 (Special Issue). *Science Education, 77*(5), 465-559.

Reprinted as: Lederman, N.G., Gess-Newsome, J., & Zeidler, D. (1993). *A summary of research in science education - 1991*. Columbus, Ohio: ERIC Clearinghouse for Science, Mathematics, and Environmental Education.

Lederman, N.G., & Gess-Newsome, J. (1992). Do subject matter knowledge, pedagogical knowledge, and pedagogical content knowledge constitute the Ideal Gas Law of science teaching? *Journal of Science Teacher Education, 3*(1),16-20.

Lederman, N.G., & Gess-Newsome, J. (1991). Metamorphosis, adaptation, or evolution? Preservice science teachers' concerns and perceptions of teaching and planning. *Science Education, 75*(4), 443-456.

Gess-Newsome, J., & Lederman, N.G. (1990). The preservice microteaching course and science teachers' instructional decisions: A qualitative analysis. *Journal of Research in Science Teaching, 27*(8), 717-726.

Gess-Newsome, J. (1989). Unfolding the mysteries of DNA. *The Science Teacher, 56*(6), 74-75.

Reprinted as: Gess-Newsome, J. (1991). Unfolding the mysteries of DNA. *The Oregon Science Teacher*. May, 1991, 25-27.

**Scholarly Books**

Levy, A. J., Pasquale, M., Gess-Newsome, J., Jia, Y., & Marco-Bujosa, L. (2013). *Elementary science specialist study: Categories, constructs, and related item*s. Unpublished instrument. Education Development Center, Inc. Supported by NSF grant No. 0910290.

Gess-Newsome, J., Luft, J., & Bell, R.L. (Eds.) (2009). *Reforming secondary science instruction*. Reston, VA: NSTA Press.

Recipient of the Distinguished Achievement Award from the Association of Educational Publishers for the book “Reforming Secondary Science Instruction” in the category of Professional Development/School Improvement, grades 9-12.

Luft, J., Bell, R.L., & Gess-Newsome, J. (Eds.). (2008). *Science as inquiry in the secondary setting*. Reston, VA: NSTA Press.

Bell, R.L., Gess-Newsome, J., & Luft, J. (Eds.). (2008). *Technology in the secondary science classroom.* Reston, VA: NSTA Press.

Gess-Newsome, J., & Lederman, N.G., Editors. (1999). *Examining pedagogical content knowledge: The construct and its implications for science education*. Kluwer Academic Publishers: Dordrecht, The Netherlands.

*Book Review*: Barnett, J. (2003). *Examining pedagogical content knowledge: The construct and its implications for science education*. Science Education, 87(4), 615-618.

*Book Review*: Veal, W.R., Van Driel, J., & Hulshof, H. (2001). PCK: How teachers transform subject matter knowledge. *International Journal of Leadership in Education, 4*(3), 285-291.

 *Book Review*: Van Driel, J., Veal, W.R., & Janssen, F.J.J.M. (2001). Pedagogical content knowledge: An integrative component within the knowledge base for teaching. *Teaching and Teacher Education, 17*, 979-986.

**Scholarly Chapters**

Chan, K., Rollnick, M., & Gess-Newsome, J. (2019). A grand rubric for differentiating the quality of science teachers’ pedagogical content knowledge. In Hume, A., Cooper, R., & Borowski, A., *Repositioning PCK in teachers’ professional knowledge*. (pp. 251-270) Singapore: Springer.

Gess-Newsome, J. (2015). A model of teacher professional knowledge and skill including PCK: Results of the thinking from the PCK Summit. In Berry A., Friedrichsen, P. & Loughran, J. (Eds). *Re-examining pedagogical content knowledge in science education*. (pp. 28-42). London: Routledge Press.

Carlson, J., Stokes, L., Helms, J., Gess-Newsome, J., & Gardner, A. (2015). The PCK Summit: A process and structure for challenging current ideas, provoking future work, and considering new directions. In Berry A., Friedrichsen, P. & Loughran, J. (Eds). *Re-examining pedagogical content knowledge in science education*. (pp. 14-27). London: Routledge Press.

Gess-Newsome, J. (2013, revised edition in 2018). Pedagogical content knowledge. In J. Hattie & E.M. Anderman (Eds.), *International guide to student achievement*. (pp. 257-259). New York, NY: Routledge.

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Gess-Newsome, J., & Austin, B. (2010). The role of teacher leadership in science education reform. In J. Rhoton (Ed), *Science education leadership: Best practices for the new century*. (pp. 95-111). Reston, VA: NSTA Press.

Gess-Newsome, J., Menasco, J., & Clark, J. (2009). Reform, one teacher at a time. In Gess-Newsome, J., Luft, J., & Bell, R.L. (Eds.) *Reforming secondary science instruction*. (pp 13-24). Reston, VA: NSTA Press.

Ueckert, C.A., & Gess-Newsome, J. (2007). Active learning in the college science classroom. (pp. 147-154). *NSTA's handbook of college science teaching: Theory, research, and practice.*  Reston, VA: NSTA Press.

Johnson, G., & Gess-Newsome, J. (2007). Mathematics and science. In Arizona Policy Education Initiative, *The space between: Why the middle years matter*. A study on Arizona Education in the middle years commissioned by the Helios Education Foundation.

Gess-Newsome, J. (2001). The professional development of science teachers for science education reform: A review of the research. In Rhoton, J., & Bowers, P. (Eds.), *Professional development: Planning and design* (pp. 91-100). Reston, VA: NSTA Press.

Hyde, M.S. & Gess-Newsome, J. (2000). Factors that increase persistence of female undergraduate science students. In M. Hunt (Ed.), *Women succeeding in the sciences: Theories and practices across the disciplines* (pp. 115-137). Lafayette, IN: Purdue University Press.

Gess-Newsome, J., & Southerland, S.A. (2000). Teaching science for all. In Wade, S.E. (Ed.) *Preparing teachers for inclusive education: Case pedagogies and curricula for teacher educators* (pp. 77-100). Mahwah, NJ: Lawrence Erlbaum Associates.

Gess-Newsome, J. (2000). Bravely charting you professional growth. In D. Tippins & T. Koballa (Eds.), *The promise and dilemmas of teaching middle and secondary science: A classroom case handbook* (pp. 256-257). Upper Saddle River, NJ: Merrill Education/Prentice Hall.

Gess-Newsome, J. (1999). Pedagogical content knowledge: An introduction and orientation. In Gess-Newsome, J., & Lederman, N.G. (Eds.), *Examining pedagogical content knowledge: The construct and its implications for science education* (pp. 3-20). Kluwer Academic Publishers: Dordrecht, The Netherlands.

Gess-Newsome, J. (1999). Secondary teachers’ knowledge and beliefs about subject matter and its impact on instruction. In Gess-Newsome, J., & Lederman, N.G. (Eds.), *Examining pedagogical content knowledge: The construct and its implications for science education* (pp. 51-94). Kluwer Academic Publishers: Dordrecht, The Netherlands.

Lederman, N.G., & Gess-Newsome, J. (1999). Reconceptualizing preservice and inservice science teacher education for secondary teachers. In Gess-Newsome, J., & Lederman, N.G. (Eds.), *Examining pedagogical content knowledge: The construct and its implications for science education* (pp. 199-214). Kluwer Academic Publishers: Dordrecht, The Netherlands.

**Published Abstracts and Proceedings**

Gess-Newsome, J. (2000, October). The redesign of a professional organization to support redesign in science education. In the *Proceedings of the redesign in science education conference (RISE)*, Columbus, Ohio. (pp. 147-161). The Ohio State University: Columbus, OH.

Gess-Newsome, J. (1999). The use and impact of explicit instruction about the nature of science and science inquiry in an elementary science methods classroom. In the web proceedings of *The fifth international history, philosophy, and science teaching conference*, Como, Italy.

# Funded Grants

Carlson, J., & Gess-Newsome, J. (January, 2012) A proposal to augment the NSF funded PCK Summit: Current and future research directions. *Spencer Foundation*, $39,000, (1 year).

Gess-Newsome, J., Carlson, J., & Gardner, A. (November, 2010). A PCK Summit: Current and future research directions. *National Science Foundation: REESE*. $250,000, (2 years).

Marks, J., Coles, R., Hungate, B., Snider, K.J., Kaufman, D., & Gess-Newsome, J. A climate change curriculum for the four-corners region of the US. (September 2010). *National Science Foundation Climate Change Education Phase* I. $1,000,000, (2 years).

Gess-Newsome, J., Kirkley, J., & Vannette, T. (June, 2010). Applied research in science education. *National Science Foundation Math/Science Partnerships – START.* $146,010, (1 year).

Guerrero, S., Gess-Newsome, J., Cardenas, S., McShane, J., Garner, J. (March 2010). Northern Arizona University Noyce Fellows Program. *National Science Foundation Noyce Scholarship program*. $1,450,000, (5 years).

Levy, A. J., Gess-Newsome, J., & Pasquale, M. (November, 2008). Elementary science specialists and classroom generalists: Are there differences in science instruction, student achievement, and cost? *NSF under the Empirical Research strand of REESE (Research and Evaluation on Education in Science and Education)*, $1,000,000 ($30,000 subcontract to NAU), (3 years).

Gess-Newsome, J. (March 2009). Research Corporation Mini-Grant to Support STEM Education in Northern Arizona, Research Corporation for Science Advancement, $5000, (1 year).

Gess-Newsome, J., & McShane, J. (November 2007). NAUTeach: A replication grant to implement UTeach at NAU. *National Math and Science Initiative*, $1,400,000 in start-up, $1,000,000 in match to an endowment, (5 years).

Ueckert, C., Kesler, K., Gess-Newsome, J., & Watwood, M. (February 2008). Biotechnology Integration Opportunities for Teacher Education and Content (BIOTEC). *National Science Foundation, GK12 program*, $2.7 million, (5 years).

Ueckert, C., & Gess-Newsome, J. (July, 2007) Incorporating Learner Centered Education Strategies in Large Enrollment Biology Lectures. *Arizona Board of Regents – Learner Centered Education, & National Center for Academic Transformation*, $49,518, (2 years). (Not funded in year 2 based on internal assessment of the inability to meet funder timelines).

Huenekke, L., & Gess-Newsome, J. (April, 2007). The Teacher as Investigator: K-12 Teacher Research and Learning Program at Northern Arizona University. *Science Foundation Arizona – Teacher Research/Learning*, $975,000, (3 years).

Gess-Newsome, J. (February, 2006). Creating a Masters of Arts in Science Teaching at Northern Arizona University. *Arizona Board of Regents - Improving Teacher Quality*, $171,000, (1 year).

Ueckert, C.A., & Gess-Newsome, J. (October, 2005). Incorporating Learner Centered Education Strategies in Large Enrollment Biology Lectures. *Arizona Board of Regents – Learner Centered Education Grant*, $24,999, (1.5 years).

Luft, J., Gess-Newsome, J., & Bell, R. (August, 2005). Transformative research anchored in science learning and teaching environments (TRANSLATE). *National Science Foundation- Small Grants for Exploratory Research*. Sub-award of $24,664, (1.5 years).

Luft, J., Gess-Newsome, J., & Slater, T. E-mentoring for student success. (June, 2005). *National Science Teachers Association*, $20,000, (1 year).

Powell, J.C, Taylor, J., & Gess-Newsome, J. (May, 2005). Project BEST: Better education for science teachers (Renamed: Project PRIME: Promoting reform through instructional materials that educate). *National Science Foundation- Teacher Professional Continuum*, $2,479,777, (5 years).

Parnell, R.A., Gess-Newsome, J., & Ford, M.P. (2004). NAU Eco-House sustainable living learning community. *NAU Undergraduate Student Recruitment and Retention Grants.* $2,500, (1 year).

Gess-Newsome, J. (July, 2004). Using state and national standards for curriculum planning: Creating a culture of professional communication at Vulture Peak Middle School. *Arizona K-12 Center Fast Track*, $10,000, (1 year).

Gess-Newsome, J. (February, 2004). Creating a Masters of Arts in Science Teaching at Northern Arizona University. *Arizona Board of Regents - Improving Teacher Quality*, $120,000, (2 years).

Haden, C, & Gess-Newsome, J. (September, 2003). An evaluation sub-contract to The Northern Arizona University Engineering Talent Pipeline Program, *The William and Flora Hewlett Foundation*. $100,000 (4 years).

Kain, D., Gess-Newsome, J., Markel, S., & Stone, W. (December, 2002). Learning science: A shared opportunity for high schools, colleges and universities. *Eisenhower Professional Development Program – Arizona Board of Regents*. $54,100 (1 year).

Gess-Newsome, J. (April, 2002). Faculty Improving Student Achievement Success. *Learner Centered Education Grant, Arizona Board of Regents*. $25,000 (1 year).

Rowland, P., Anderson, D., Ort, M., Ostergren, D., & Gess-Newsome, J. (February, 2002). Science education for new civic engagements and responsibilities (SENSER*). National Science Foundation*. $3,500 (1 year).

Wycoff, S., Gess-Newsome, J., & Luft, J. (December, 2001). Arizona cross-institutional graduate program in mathematics and science for teachers. *Eisenhower Professional Development Program – Arizona Board of Regents*. $100,000 (1 year).

Gess-Newsome, J. (August, 2001). Standards-based assessments in science (PASS) and mathematics (MARS) for 15 middle schools. *Arizona Teacher Enhancement Coalition (AzTEC). Department of Education*, $300,000 (3 years).

Gess-Newsome, J. (August, 2001). Faculty Improving Student Achievement Success*. Arizona Teacher Enhancement Coalition (AzTEC). Department of Education*, $165,000 (3 years).

Gess-Newsome, J. (December, 2000). A pre-approved professional development program for the Arizona Middle School Mathematics and Science Initiative. A joint project of the *Arizona K-12 Center, the Arizona Board of Regents, and the Arizona Community Foundation*. $735,000 (3 years).

Drickamer, L., & Gess-Newsome, J. (1999). Grant No. 959: Equipment for the New Science Facility and Science Teacher preparation. A grant obtained by Lee Drickamer for which he asked me to be a co-PI. *The Flinn Foundation*. $517,100 (6 years).

Gess-Newsome, J., & Niederhauser, D. (October, 1996). Using laserdiscs and CD ROMs in science methods courses for teachers. Technology starter/mentor grant: Laser disk technology for elementary teachers. *University of Utah Grant Program.* $5750 (1 year).

Gess-Newsome, J., & Southerland, S.A. (May, 1996). First Grade Science Teacher Resource Book. *Utah State Office of Education and Granite and Davis School Districts*. $8100 (1 year).

Grey, G.C., Gardner, S., Cline, C., Harrison, T., & Gess-Newsome, J. (June, 1995). The development and implementation of a model integrated, introductory science course at Westminster College of Salt Lake City. *National Science Foundation*. $100,000 (2 years).

Ingebretsen, R., & Gess-Newsome, J. (August, 1994). Human anatomy and physiology. *Dwight D. Eisenhower Mathematics and Science Education Act*. $3,500 (1 year).

Gess-Newsome, J. (September, 1993). Revision of the Utah secondary science state core curriculum. *Far West Labs*. $50,000 (1 year).

Gess-Newsome, J. (September, 1993). Preparation of a teacher resource book for elementary teacher to accompany the newly revised Utah elementary science core curriculum. *Utah State Office of Education*. $10,000 (1 year).

Gess-Newsome, J., Rudolph, S., Grey, G., & Preston, L. (April, 1994). Physical and earth science laboratory program for elementary teachers. *Dwight D. Eisenhower Mathematics and Science Education Act.* $27,773 (1 year).

Rudolph, S., Grey, G., Rettie, D., & Gess-Newsome, J. (April, 1993). A physical science laboratory program for training and endorsing secondary and junior high teachers. *Dwight D. Eisenhower Mathematics and Science Education Act*. $37,453 (1 year).

Gess-Newsome, J., & Rudolph, S. (April, 1993). Physics 150: A hands-on laboratory section for prospective elementary teachers to accompany Physics 101. *University Teaching Committee*. $6000 (1 year).

Andrade, J.A., Gess-Newsome, J., & Ragsdale, R. (October, 1992). ELEM-NET: Enhancing the chemistry experience in Utah elementary schools: A model project. *Camille and Henry Dreyfus Foundation*. $25,000 (1 year).

Gess-Newsome, J. (June, 1990). Biology teachers' perceptions of subject matter structure and its relationship to classroom practice. *Spencer Dissertation Year Fellowship for Research Related to Education.*  $15,000 (1 year).

**Scholarly Paper Presentations**

**National and International Meetings (Recent)**

Gess-Newsome, J., Carlson, J. (2016). Teacher professional knowledge base and skills data analysis tools from Project PRIME. PCK Summit II: Analyzing science teachers’ pedagogical content knowledge: Digging into the data, Leiden, Netherlands.

Gess-Newsome, J. (September, 2013). The PCK Summit consensus model and definition of pedagogical content knowledge. A paper accepted for presentation at the European Science Education Research Association, Nicosia, Cyprus.

Gess-Newsome, J., & Carlson, J. (April, 2013). A report on the PCK Summit: Current and future research directions. Presented at the annual meeting of the National Association for Research in Science Teaching, Rio Grande, Puerto Rico.

Carlson, J., & Gess-Newsome, J. (January, 2013). An international perspective on pedagogical content knowledge (PCK). Presented at the annual meeting of the Association for Science Teacher Educators, Charleston, South Carolina.

Gess-Newsome, J., Carlson, J., Gardner, A.L., Taylor. J.A., Wilson, C., Stuhlsatz, M. (March, 2012). Promoting reform through instructional materials that educate. A related paper set presented at the annual meeting of the National Association for Research in Science Teaching, Indianapolis, IN.

Borowski, A., Kirschner, S., Carlson, J., Henze, I., Gess-Newsome, J., Fisher, H.E., & van Driel, J. (March, 2012). Different ways to investigate teachers’ pedagogical content knowledge. A symposium presented at the annual meeting of the National Association for Research in Science Teaching, Indianapolis, IN.

Gess-Newsome, J., & Carlson, J. (January, 2012). “Multiple lenses on the development and implementation of teacher content and pedagogical content knowledge resulting from transformative professional development.” A paper presented at the annual meeting of the Association for Science Teacher Education, Clearwater Beach, FL.

Borowski, A., Carlson, J., Fischer, H.E., Henze, I., Gess-Newsome, J., Kirschner, S., & van Driel, J. (September, 2011). Different models and methods to measure teachers’ pedagogical content knowledge. A paper set presented at the semi-annual conference of the European Science Education Research Association, Lyon, France.

Gess-Newsome, J. (September, 2011). “STEM retooling for the global market.” A panel presented at the Enhancing our Global Impact Through STEM Innovation Conference, Johnson C. Smith University, Charlotte, NC.

Gess-Newsome, J., Cardenas, S., & Austin, B. (April, 2011). “Teacher explanations for changes in pedagogical content knowledge”. A paper presented as part of a paper set by Gardner, A.L., Carlson, J., Wilson, C.D., Stuhlatz, M.A., Taylor, J.A., & Gess-Newsome, J., “Impact of educative materials and transformative professional development on teachers’ pedagogical content knowledge and practice.” National Association for Research in Science Teaching, Orlando, FL.

Gess-Newsome, J., & Gardner, A.L. (April, 2011). “A PCK rubric to measure teachers’ knowledge of inquiry-based instruction using three data sources.” A paper presented as part of a paper set “Measuring Teacher Inquiry Knowledge” at the annual meeting of the National Association for Research in Science Teaching, Orlando, FL.

Rodriguez, S. R., & Gess-Newsome, J. (April, 2011). “Enhancing teacher knowledge and pedagogical reasoning skill: A case study of cooperating science teachers that mentor teacher candidates.” A paper presented at the annual meeting of the National Association for Research in Science Teaching, Orlando, FL.

Carlson, J., Gardner, A.L., & Gess-Newsome., J. (January, 2011). “Assessing pedagogical content knowledge among secondary school science teachers.” A paper presented at the annual meeting of the Association for Science Teacher Educators, Minneapolis, MN.

McShane, J., Gess-Newsome, J., Wolf, D., & Thompson, D. (May, 2010). “Rural delivery of Step 1 and 2.” A paper presented at the UTeach National Conference, University of Texas, Austin, TX.

Gess-Newsome, J., Cardenas, S., & Crites, C. (May, 2010). “NCATE and UTeach replication.” A paper presented at the UTeach National Conference, University of Texas, Austin, TX.

Carlson, J., Gess-Newsome, J., Gardner, A., Taylor, J. (May, 2010). “How professional development based educative materials affects teacher PCK, classroom practice, and student achievement.” A paper presented at the annual meeting of the American Educational Research Association, Denver, CO.

Gess-Newsome, J. (April 2010). “Pedagogical content knowledge and how people learn as a framework for science teacher preparation.” A paper presented as part of a paper set titled “Teacher knowledge(s) and teacher change: Reflections on conceptualizations that inform research and teacher education practice” to the annual meeting of the National Association for Research in Science Teaching, Philadelphia, PA.

Gess-Newsome, J., & Carlson, J. (April 2010). “Looking for PCK in all the wrong places.” A paper presented at the annual meeting of the Association for Science Teacher Educators, Sacramento, CA.

Carlson, J., Taylor, J., & Gess-Newsome, J. (November 2009). “Looking for PCK in all the wrong places.” A paper presented at the NSF DRK-12 PI Meeting, Washington, DC.

Carlson, J., & Gess-Newsome, J. (October 2009). “The role of transformative professional development based on educative materials in affecting teacher pedagogical content knowledge, classroom practice, and student achievement.” A session selected by the National Association for Research in Science Teaching and presented at the central region annual conference of the National Science Teachers Association, Minneapolis, MN.

Gess-Newsome, J., & McShane, J. (May, 2009). “Rural delivery of Step 1 and 2.” A paper presented at the UTeach National Conference, University of Texas, Austin, TX.

Gess-Newsome, J. (May, 2009). “NCATE and UTeach replication.” A paper presented at the UTeach National Conference, University of Texas, Austin, TX.

van Driel, J., Shanahan, T, Gess-Newsome, J. (April 2009). “The state of elementary science education.” A symposium presented at annual meeting of the National Association for Research in Science Teaching, Garden Grove, CA.

Good, R., Southerland, S., Gess-Newsome, J., Lederman, N., Smith, M., & Scharmann, L. (April 2009). “Should pseudoscience studies become an integral part of NOS and scientific inquiry curricula?” A symposium presented at annual meeting of the National Association for Research in Science Teaching, Garden Grove, CA.

Van Driel, J., & Gess-Newsome, J. (April 2009). “The development of PCK in the context of pre-service science teacher education.” A paper presented at annual meeting of the National Association for Research in Science Teaching, Garden Grove, CA.

Gess-Newsome, J., Carlson, J., & Wilson, C.W. (April 2009). “The role of transformative professional development based on educative materials in affecting teacher PCK, classroom practice, and student achievement.” A paper presented at annual meeting of the National Association for Research in Science Teaching, Garden Grove, CA.

Gess-Newsome, J. & Carlson, J. (March, 2009). “The role of educative curriculum materials and professional development on teacher practice and student learning.” A paper presented at the national annual conference of the National Association of Science Teachers, New Orleans, LA.

Carlson, J., & Gess-Newsome, J. (January 2009). “The impact of teacher knowledge on classroom practice and student achievement.” A paper presented at the annual meeting of the Association of Science Teacher Educators, Hartford, CO.

Gess-Newsome, J. & Carlson, J. (November, 2008). “The role of educative curriculum materials and professional development on teacher practice and student learning.” A paper presented at the regional conference of the National Science Teachers Association, Portland, OR.

Carlson, J., & Gess-Newsome, J. (November 2008). “Challenges of conducting research in the real world.” An interactive session presented at the National Science Foundation DRK-12 PI meeting, Washington, DC.

Gess-Newsome, J. (June 2008). “**Action research, student learning, and change: Reform in undergraduate STEM teaching**.” A paper presented at the NSF sponsored conference Facilitating Change in Undergraduate STEM, Kalamazoo, MI.

Gess-Newsome, J., Powell, J.C., Taylor, J., Gardner, A.L. (April 2008). “Impacting teacher knowledge, teacher practice, and student achievement: The role of educative curriculum materials and professional development.” A paper presented at the annual meeting of the National Association of Research on Science Teaching, Baltimore, MD.

Powell, J.C., Gess-Newsome, J., Taylor, J., & Gardner, A. (January 2008). “The impact of professional development and educative curriculum materials on teacher knowledge, teacher practice, and student achievement.” A paper presented at the annual meeting of the Association of Science Teacher Educators, Saint Louis, MO.

Beeth, M.E., Ladwig, T., Abell, S., Vokmann, M., Friedrichsen, P., Luft, J., & Gess-Newsome, J. (January, 2008). “Alternative science teacher preparation: Collective experiences and what we know about projects in different stages of development.” A paper presented at the annual meeting of the Association of Science Teacher Educators, Saint Louis, MO.

Meyer, J., Gess-Newsome, J., Clark, J., & Keeley, P. (January, 2007). “Using *Curriculum Topic Study* to deepen in-service teacher understanding of science content and pedagogy.” A paper presented at the annual meeting of the Association of Science Teacher Educators, Clearwater Beach, FL.

Friedrichsen, P., Hanuscin, D., Gess-Newsome, J., & Schwartz, R. (January, 2007). “Working in two worlds: Developing a research identity as a joint appointment.” A paper presented at the annual meeting of the Association of Science Teacher Educators, Clearwater Beach, FL.

Taylor, J.A., & Gess-Newsome, J. (January, 2007). “Exploring tools and methods for measuring pedagogical content knowledge.” A paper presented at the annual meeting of the Association of Science Teacher Educators, Clearwater Beach, FL.

Czerniak, C.M., Shymansky, J., Yore, L., Yore. S.A., Duncan, C., Simmons, P.E., Lunetta, V., McComas, B., Schneider, R., Goldston, D., Krajcik, J., Gess-Newsome, J., Lumpe, A., & Templin, M. (January, 2007). “Effective and efficient reporting of complex science education professional development projects and teacher education research studies in journals.” A workshop presented at the annual meeting of the Association of Science Teacher Educators, Clearwater Beach, FL.

Luft, J.A., Bell, R., & Gess-Newsome, J. (August, 2006). “Exploring new (and free) materials from NSF for secondary science teachers.” A paper presented at the annual meeting of the School Science and Mathematics Association, Missoula, MT.

Gess-Newsome, J., Clark, J., & Menasco, J. (April, 2006). “Ubiquitous computing: Seeds of a technological or pedagogical revolution?” A paper presented at the annual meeting of the National Association for Research in Science Teaching, San Francisco, CA.

Tillotson, J.W., Yager, R., Penick, J., Young, M., Gess-Newsome, J., Luft, J., Czerniak, C., & Anderson, R. (April, 2006). “Identifying issues, problems, barriers and seeking solutions to exploring the teacher education continuum: Examples from investigating the meaningfulness of preservice programs across the continuum of teaching (IMPPACT) in science education.” A special colloquium presented at the annual meeting of the National Association for Research in Science Teaching, San Francisco, CA.

Gess-Newsome, J., & Haden, C. (January, 2006). “Action research, student learning, and change: Reform in STEM college teaching.” A paper presented at the annual meeting of the Association of Science Teacher Educators, Portland, OR.

Meyer, J., & Gess-Newsome, J. (January, 2006). “A continuum of science professional development programs: Does it exist? What kinds of teachers use each type? And Where does research fit?” A paper presented at the annual meeting of the Association of Science Teacher Educators, Portland, OR.

Hanuscin, D. L., Weld, J., Dass, Max, Schwartz, Renee, Nehm, R., Gess-Newsome, J., & Ohana, C. (January, 2006). “Working in two worlds: Perspectives on joint appointments.” A paper presented at the annual meeting of the Association of Science Teacher Educators, Portland, OR.

Gess-Newsome, J. (April, 2005). “STEM college teaching reform: Who’s participating? Why? And what does this tell us about the potential to impact change?” A paper presented the annual meeting of the National Association for Research in Science Teaching, Dallas, Texas.

Gess-Newsome, J., Simmons, P., & Norman, K. (January, 2005). “Fleshing out the science education matrix: Cognition and learning, subject area knowledge and the nature of science, teacher’s role, student’s role, learning environment, and assessment.” A paper presented at the annual meeting of the Association for the Education of Teachers of Science, Colorado Spring, CO.

Gess-Newsome, J., Simmons, P., & Norman, K. (January, 2005). “Fleshing out the science education matrix: Affective domain, cultural context, technology, facilities, management, policy, and workforce development.” A paper presented at the annual meeting of the Association for the Education of Teachers of Science, Colorado Spring, CO.

James, M.C., Gess-Newsome, J., Fetters, M.K., Vellom, P., Rillero, P., Kang, N-H., (January, 2005). “Using pedagogical analogies to improve the science teaching performance of preservice elementary teachers: Implementation of a large scale research project.” A paper presented at the annual meeting of the Association for the Education of Teachers of Science, Colorado Spring, CO.

Gess-Newsome, J., Norman, K., & Luft, J. (January, 2005). “Professional meetings, professional conversations: What should be the nature of AETS session?” A paper presented at the annual meeting of the Association for the Education of Teachers of Science, Colorado Spring, CO.

Gess-Newsome, J., Menasco, J., Moorhead, K., Clark, J., Haden, C., & Meyer, J. (November 2004). “Following the journey: Systemic reform in middle level science.” A paper presented at the National Science Teachers Association Western Regional Meeting, Seattle, Washington.

Gess-Newsome, J., Luft, J., and others. (January, 2004). “Professional meetings, professional conversations: What should be the nature of AETS sessions?” A paper presented at the Annual Meeting of the Association for the Education of Teachers of Science, Nashville, TN.

Gess-Newsome, J. (April, 2003). “Implications of the definitions of knowledge and beliefs on research and practice in science teacher education.” A paper presented at the Annual Meeting of the National Association for Research in Science Teaching, Philadelphia, Pennsylvania.

Gess-Newsome, J., Clark, J., & Menasco, J. (January/February, 2003). “Ubiquitous computing: Seeds of a technological or pedagogical revolution?” A paper presented at the Annual Meeting of the Association for the Education of Teachers of Science, St. Louis, Missouri.

Smith, L., & Gess-Newsome, J. (January, 2002). “Are elementary science methods courses preparing teachers to address the National Science Education Standards.” A paper presented at the Annual Meeting of the National Association for Research in Science Teaching, Charlotte, North Carolina.

Luft, J., Gess-Newsome, J., Abell, S., Staver, J., Van Sickel, M. (2002). “Scholarly writing for science educators’ workshop.” A pre-session workshop presented at the Annual Meeting of the National Association for Research in Science Teaching, Charlotte, North Carolina.

Gess-Newsome, J., Southerland, S.A., Johnston, A & Woodbury. (March, 2001). "Offering a model of reform: The interaction of factors and their impacts on scientist’s practice of reform-based teaching." A paper presented at the Annual Meeting of the National Association for Research in Science Teaching, Saint Louis, Missouri.

Thompson, A., Gess-Newsome, J., Zbiek, R., Swenson, J., Yeager, E., & Carroll, T. (March, 2000). “Keynote panel: A teacher education guidelines for the infusion of technology across the content areas.” A paper presented at the annual meeting of the Society for Information Technology and Teacher Education, Orlando, Florida.

Gess-Newsome, J., Southerland, S.A., Johnston, A & Woodbury. (January, 2001). "Reforming the reformers: Conceptual change of scientist’s conceptions of teaching and learning." A paper presented at the Annual Meeting of the Association for the Education of Teachers of Science, Costa Mesa, California.

Gess-Newsome, J., Weinburgh, M., & Staver, J. (January, 2001). "AETS: The who, when, why, and how." A paper presented at the Annual Meeting of the Association for the Education of Teachers of Science, Costa Mesa, California.

Weinburgh, M., & Gess-Newsome, J. (January, 2001). "Getting to know AETS." A paper presented at the Annual Meeting of the Association for the Education of Teachers of Science, Costa Mesa, California.

Gess-Newsome, J. (2000, September). “National Technology Leadership Initiative: An interdisciplinary cross-association initiative.” A paper presented at the National Technology Leadership Initiative Retreat sponsored by the US Department of Education, the Center for Technology and Teacher Education, and the Society for Information Technology and Teacher Education, Reston, VA.

Gess-Newsome, J. (2000, September). “Content area position statements – the preparation of science teachers.” A statement delivered at the National Technology Leadership Initiative Retreat sponsored by the US Department of Education, the Center for Technology and Teacher Education, and the Society for Information Technology and Teacher Education, Reston, VA.

Gess-Newsome, J. (2000, October). “The redesign of a professional organization to support redesign in science education.” A paper presented at The Redesign in Science Education Conference (RISE), Columbus, Ohio.

Good, R., Lederman, N.G., Gess-Newsome, J., Cummins, C., McComas, W., & Anderson, O.R. (April, 2000). "Guidelines for nature-of-science (NOS) researchers.”A paper presented at the Annual Meeting of the National Association for Research in Science Teaching, New Orleans, Louisiana.

Southerland, S.A., Gess-Newsome, J., & Johnston, A. (April, 2000). "How do teachers' views impact their students' understandings: Planning, teaching, and learning the nature of science." A paper presented at the Annual Meeting of the National Association for Research in Science Teaching, New Orleans, Louisiana.

Gess-Newsome, J., Southerland, S.A., & Johnston, A. (January, 2000). "Translation of teachers' views to student understandings of the nature of science: Examining a reform based college science course." A paper presented at the Annual Meeting of the Association for the Education of Teachers of Science, Akron, Ohio.

Good, R., Lederman, N.G., McComas, W., Gess-Newsome, J., & Cummins, C. (January, 2000). "Nature of science: Implications for research, assessment, and teacher education." A paper presented at the Annual Meeting of the Association for the Education of Teachers of Science, Akron, Ohio.

Abell, S.A., Gess-Newsome, J., Enochs, L., & Berg, C. (January, 2000). "Publishing in science education journals." A paper presented at the Annual Meeting of the Association for the Education of Teachers of Science, Akron, Ohio.

Gess-Newsome, J., Staver, J., Flick, L., & Boone, B. (January, 2000). "Looking to the future: Potential changes in the organizational structure of AETS." A paper presented at the Annual Meeting of the Association for the Education of Teachers of Science, Akron, Ohio.

**Summary of *Past* Presentations at National/International Meetings**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Association Year->** | **99** | **98** | **97** | **96** | **95** | **94** | **93** | **92** | **91** | **90** | **89** |
| Nat’l Assoc for Res in Sci Tchg | 2 |  |  | 1 | 2 | 2 | 2 | 2 | 3 | 1 | 1 |
| Assoc for Ed of Teachers of Sci | 2 | 2 | 1 |  | 2 | 3 | 2 | 2 | 2 | 1 | 1 |
| American Ed Research Assoc | 2 |  | 1 | 1 |  |  | 2 |  | 1 |  |  |
| National Science Teachers Assoc |  |  |  |  | 1 | 1 |  |  |  | 1 |  |
| Int’l Hist, Philos, & Sci Teach Conf | 1 |  |  |  |  |  |  |  |  |  |  |
| Conf on Women Success in Sci |  |  | 1 |  |  |  |  |  |  |  |  |
|  **Total** | **7** | **2** | **3** | **2** | **5** | **6** | **6** | **4** | **6** | **3** | **2** |

**Regional Meetings (Recent)**

Gess-Newsome, J. (October, 2010). “Professional development that changes classroom practice.” A paper presented at the annual meeting of the Arizona Science Teachers Association, Mesa, AZ.

Bloom, N., Austin, B., Cardenas, S., Gess-Newsome, J., & Menasco, J. Assessment activities at the Center for Science Teaching and Learning (CSTL). A poster presented at the Northern Arizona University Annual Assessment Fair, April, 2009.

Ueckert, C., & Gess-Newsome, J. (October 2007). “Active learning: How can you involve your students in the learning process?” A presentation at the annual meeting of the Arizona Science Teachers Association, Mesa, AZ.

Benford, R., & Gess-Newsome, J. (April, 2007). “Possible causes of DFWs in gateway business, math, and science courses at NAU. A presentation at the Northern Arizona University Annual Assessment Fair, Flagstaff, AZ.

Gess-Newsome, J., Clark, J., & Cardenas, S. (October, 2005). “Making curriculum decisions: Selecting secondary science instructional materials.” A presentation at the annual meeting of the Arizona Science Teachers Association, Mesa, AZ.

Gess-Newsome. J. (October, 2004). “Examples of action research that show change science teaching and learning.” A paper set presented at the state meeting of the Arizona Science Teachers Association, Mesa, AZ.

Gess-Newsome, J. (October, 2001). “Shades of Inquiry: How to move your instruction towards more inquiry based teaching approaches.” Paper presented at the state meeting of the Arizona Science Teachers Association, Phoenix, AZ.

**Summary of *Past* Presentations at Regional Meetings**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Association Year->** | 96 | 95 | 94 | 93 | 92 | 91 | 90 | 89 | 88 | 87 | 86 | 85 |
| UT Assoc of Superv & Curr Devel | 1 |  |  |  |  |  |  |  |  |  |  |  |
| Nat’l Sci Teachrs Assoc (regional) |  | 1 | 1 |  |  |  |  |  |  |  |  |  |
| OR Education Research Assoc |  |  |  | 1 |  |  |  |  |  |  |  |  |
| Nat’l Changhua Univ (Taiwan) |  |  |  | 3 |  |  |  |  |  |  |  |  |
| UT Society for Environmental Ed |  |  |  |  | 1 |  |  |  |  |  |  |  |
| OR Academy of Sciences |  |  |  |  |  | 2 | 2 | 3 | 2 |  |  |  |
| Math/Sci Teach Improve Conf |  |  |  |  |  |  |  |  | 1 |  |  |  |
| Wyo Sci Teachers Assoc |  |  |  |  |  |  |  |  |  |  | 1 | 2 |

**Keynote Addresses and Invited Presentations**

**Keynote Addresses**

Gess-Newsome, J. (2016). Revisiting the consensus model of teacher professional knowledge and skills. PCK Summit II: Analyzing science teachers’ pedagogical content knowledge: Digging into the data, Leiden, Netherlands.

Gess-Newsome, J. (October, 2010). “The past and future of pedagogical content knowledge.” An invited presentation to the faculty at the *University of Essen, Germany*.

Gess-Newsome, J. (September, 2010). “Shades of inquiry.” An invited presentation given the faculty and students at the *University of Utah*.

Gess-Newsome, J. (September, 2010). “Science and mathematics education: Are colleges of education obsolete?” An invited key note presentation sponsored by the *College of Education, the College of Science, and the University Center for Science and Mathematics Education at the University of Utah*.

Bommersbach, J., Russell, S., Ybarra-Hernandez, R., Benally, J., Charles, C., & Gess-Newsome, J. (October, 2010). Innovations in youth development. A panel discussion to be presented at the annual conference of the *National Association of Extension 4-H Agents*, Scottsdale, AZ.

Gess-Newsome, J. (December 5, 2009). “Enhancing and sustaining the science teaching profession.” Key note address at the Arizona Science Teachers Association Annual Business Meeting and Breakfast at the regional meeting of the *National Science Teachers Association*, Phoenix, AZ.

Gess-Newsome, J. (August, 2009). “Shifting cultural scripts in science teacher preparation.” Invited key note presentation at the *Iowa Science and Mathematics Teacher Educators Summit*, Des Moines, Iowa.

Gess-Newsome, J. (July 31, 2003). “Connecting science, inquiry, and how students learn.” Invited presentation and key note address at the *Tucson Unified School District Next Steps Conference*, Tucson, AZ.

Gess-Newsome, J. (October, 2002). “Why content-generic professional development does not work.” Keynote address to be presented at the state meeting of *the Arizona Science Teachers Association*, Mesa, AZ.

Gess-Newsome, J. (October, 2002). “Why content-generic professional development does not work.” Keynote to be presented at the state meeting of the *Georgia Science and Mathematics Professional Development Opportunities Conference*, Athens, GA.

Gess-Newsome, J. (January, 2001). “How would we change if we were not afraid? The redesign of AETS.” President’s keynote address at the annual meeting of the *Association for the Education of Teachers of Science*, Costa Mesa, California.

Gess-Newsome, J. (1987). "Launch into the future: Life on the space shuttle." Keynote address at the *Annual Regional Conference and Jamboree of the Southwest Wyoming Girl Scouts of America*, Evanston, Wyoming.

Gess-Newsome, J. (1987). "Building bright new futures with bold new dreams: A career in science teaching." Keynote address for *Expanding Your Horizons: A conference for junior and senior high school girls interested in career options in science and mathematics*, Billings, Montana.

Gess-Newsome, J. (1987). "Setting your sights on the future: The space program and you." Keynote address for the *Annual Meeting of the Wyoming Future Homemakers of America*, Gillette, Wyoming.

Gess, J. (1984-1987). "Teacher in Space." More than 20 presentations to various community and school groups, including the Evanston Rotary Club, the Young Astronauts, and elementary, secondary, and college students in Evanston, WY, and Corvallis, OR.

**Editorial Appointments (past)**

Reviewer, Science Education, 2008-2012.

Reviewer, *Journal of Teacher Education*, December, 2005-2008.

Senior Reviewer, *Journal for Research in Science Teaching*, 2000-2008.

Editorial Board, Science Education, 2000-2008

Editorial Board, *Journal for Science Teacher Education*, 1998-2003.

Editor, Science Teacher Education Section of *Science Education*, 1998-2000.

Guest Reviewer, *American Educational Research Journal*, 2000.

Co-Editor, Teacher Education Section of *Science Education*, 1996-8.

Editorial Board, *Journal of Research in Science Teaching*, 1994-1998.

Editorial Board, *Teacher Education Section of Science Education*, 1993 – 1996.

Editorial Reviewer, *School Science and Mathematics*, 1988-1994.

**V. TEACHING**

 **Oregon State University-Cascades**

Elementary Methods: Natural and Social Science

 Elementary Science Methods

Field Practicum

Examining the *Next Generation Science Standards*

# Northern Arizona University

***Graduate Courses***

Teach & Learn Science & Math

Leadership Development

Curriculum Design & Evaluation in Sci & Math

Action Research

Standards-based Assessment

Science Teaching and Learning

College Science Teaching – I

College Science Teaching – II

Science Curriculum & Instruction

Science Assessments that Facilitate Learning

Nature of Science: Evidence and Explanation

# University of Utah (Overall teaching evaluation mean of 6.59 on a scale of 7.00)

***Undergraduate Courses*** ***Graduate Courses***

 Science in the Elementary Schools Science Curriculum and Instruction

 Secondary Science Methods Quantitative Research Paradigms

 Physics Lab for Elementary Teachers Foundations of Teaching

 Introduction to Teaching College Teaching

 Strategies of Teaching and Assessment Pedagogy of Teacher Education

**Graduate Students: Theses and Projects**

 ***Masters Students Completed at NAU:***

MAST Cohort – Completed with Portfolio, Chair (unless otherwise indicated)

Beryn Golub, MAST, 12/10

Jeff Scroggins, MAST, 12/10

Jody Evans, MAST, 5/10

Erin Stuart, MAST, 3/10

Sylvia Garcia-Lohr, MAST 12/09

Mary Giannola, MAST 12/09

Briana Clark, MAST 12/09

Amanda Grunden 3/09

Eric Regh, MAST 4/09

Jeff Meilander 4/09

Valarie Sherrill, MAST, 10/08

Justin Sherrill, MAST, 10/08

Shoshanna Kroeger, MAST, 7/06

Vicki Massey, MAST, 8/06

Sonja Braswell, MAST, 8/06

Deloy Bateman, MAST, 8/06

Carrie Jenkins, MAST, 9/06

Tammy Naef, MAST, 11/06

Dennis Meyer, MAST, 11/06

Scott Currier, MAST, 11/06

Curt Craig, MAST, 11/06

Amy Nickel, MAST, 11/06

Abby Rice, MAST, 11/06

Shuryl Marargee, MAST, 10/06

Kelli Rhoda, MAST, 10/06

Davena Crosley, MAST, 12/06

Robert Matz, MAST, Committee member, 4/07

Scott Davidson, MEd in Secondary Ed, Chair, 5/07

Caren Walker, MEd in Secondary Ed, Chair 5/06

Mindy Cochran, MEd in Secondary Ed, Chair, 4/05

Doug Freidman, MAT-Biology, Chair, Completed with portfolio, 12/05

Christine Betko, MAST, Chair. Completed with portfolio, 12/05

Kristine Salminen, MAT-Biology & MEd with Certification, 7/05

Pam Floyd, MEd in Secondary Ed, Chair, 12/04

Tom Shrake, MAT-Biology, Completed with portfolio, 5/04

 Rachael Steagall, MAT-Biology, Completed with portfolio 8/21/03

Kristen Moorhead, MED in Secondary Education, Chair 7/03

***Completed PhD Students - Committee Chair*:**

Dina Drits, PhD, 2010. Co-chair with Louisa Stark*. Elementary teachers’ science practice, beliefs and content knowledge during and following a reform-based professional development program.*  Department of Teaching and Learning, University of Utah.

Paul Bosch, EdD, 2008. *An evaluation of a bilingual nurse training program*. Curriculum and Instruction, Northern Arizona University.

Vicki Ardisana, EdD, 2007. *Standards-based mathematics strategies for the improvement of academic language: A quasi-experimental study*. Curriculum and Instruction. Northern Arizona University.

Hilary Sterling, EdD, 2006. *Beginning elementary school teachers’ perceptions of structural and cultural context factors impacting their science teaching*. Curriculum and Instruction. Northern Arizona University.

Scott Smith, PhD, 2000. *Does a classroom emphasis on mental computation assist in mitigating the gender gap?* Department of Educational Studies, University of Utah.

Sonia Woodbury, PhD, 2000. *The reform of practice and the practice of reforms: Teachers change in high school mathematics*. Department of Educational Studies, University of Utah.

Sandra Petersen, PhD, 1998. *Reducing alienation in African American female students who have dropped out and enrolled in a job corps high school*. Department of Educational Studies, University of Utah.

Michelle Hyde, PhD, 1997. *A case study of undergraduate female students majoring in math, science and engineering: An analysis of persistence and success*. Department of Educational Studies, University of Utah.

Joyce Sibbett, PhD, 1997. *Reflection in practice: An exploratory study of student teacher reflection*. Department of Educational Studies, University of Utah.

 ***Completed PhD Students - Committee Member:***

Alica Moore, EdD. 2016. *Evaluating outcomes-based funding in community college*. College of Education, Oregon State University.

Shelly Rodriguez, PhD. 2013. *What they see: The noticings of secondary science cooperating teachers as they observe preservice teachers.* College of Education, University of Texas at Austin.

Carol Haden, EdD, 2006. *Retention of underrepresented minority students in engineering degree programs: An evaluation study*. Department of Teaching and Learning. Northern Arizona University.

Kathy Frederiksen, PhD, 2005. *A comparative analysis of alarm calls across the five species of North American prairie dogs*. Department of Biological Sciences, Northern Arizona University.

Sandee Bondrua, EdD, 2003. *The effects of mentoring release models on beginning teachers’ job satisfaction*. Department of Teaching and Learning. Northern Arizona University.

Elizabeth Brown, PhD, 2003. *Learning to teach mathematics for understanding: Case studies of three elementary teachers from a reform-oriented program*. Department of Teaching and Learning, University of Utah.

Adam Johnston, PhD, 2000. *A conceptual change analysis of the nature of science conceptions: the deep roots of entangled vines of conceptual ecology*. Department of Educational Studies, University of Utah.

Jackie Jensen, PhD, 2001. *Constructivism & supporting environments: Exploring instructional salience in preservice teacher education*. Department of Educational Studies, University of Utah.

Mark Petersen, MS, 1999. *Developing and implementing a museum applications program within a public school classroom*. Department of Biology, University of Utah.

Adam Johnston, MS, 1997. *A computer interactive student laboratory investigating the properties of heat and temperature.* Department of Physics, University of Utah.

Clifford Mayes, PhD, 1996. *The Holmes Reports: Historical contexts and present applications*. Department of Educational Studies, University of Utah.

Paul Reeves, MS, 1995. *Invertebrate fossils and Utah science teachers: Resources and locales*. Department of Biology, University of Utah.

Phyllis Ryan, PhD, 1994. *Foreign language teacher’s perceptions of culture and the classroom: A case study*. Department of Educational Studies, University of Utah.

Christine Walquist, PhD, 1994. *Teacher assessment: Thought and practice in cooperative learning group decisions.* Department of Educational Studies, University of Utah.

Stacey Bushnell, MS, 1994. *Maternal utilization of educational handouts*. College of Nursing, University of Utah.

Karen Jane Olsen, MS, 1994*. Adolescent pregnancy prevention: Designing an effective approach*. College of Nursing, University of Utah.

***Completed Masters Theses - Committee Chair*:**

Jessica McGrath, MA in Sustainable Communities. November, 2009. *A gardening education: how a high school gardening curriculum can connect students to place and purpose.* Major in Sustainable Communities, School of Social and Behavioral Sciences, Northern Arizona University.

**VII. SERVICE**

**National and Regional Leadership Positions** (past positions, current listed on page 3)

Member, Board of Directors, **BSCS (Biological Sciences Curriculum Study)**, January 2010 –2015.

**Association for Science Teacher Educators** (formerly the Association for the Education of Teachers of Science)

Member, Oversight Committee, 2002-2004.

Member, Ad Hoc Committee on Preparing Science Teacher Educators, 2002-2004.

Member, Professional Development Committee, 2003-present.

Chair, Ad Hoc Committee to Develop Policy on Sponsorships, 2002-2003.

President, 1999-2002.

Chair, Long Range Planning Committee, 2001-2002.

Chair, Program Committee, 2000-2001.

Member, Publications Committee, 1996-2000.

Chair, Financial Advisory Committee, 1999-2000.

Chair, International Science Education Committee, 1998-1999.

Chair, NCATE Subcommittee of NSTA Science Teacher Education Committee, 1999-2000.

Director-at-Large, 1996-1999.

Chair, Awards Committee, 1996-1998.

Member, Ad Hoc Committee on Science Faculty Development, 1996-1997

Chair, Program Committee, AETS program at the Western Regional meeting of the National Science Teachers Association, Salt Lake City, 1994-1995

Chair, Ad Hoc Committee to Review National Standards Projects, 1993-1995

Member, Awards Committee, 1993-1995

Member, Program Committee, Western Regional Conference, 1993

Member, Program Committee, AETS Regional Conference at NSTA, Las Vegas, 1994

Secretary-Treasurer, Northwest Region of the AETS, 1990-1993

Member, Membership Committee, 1991-1993

Member, Nominating Committee, Northwest Region of the AETS, 1990

**National Association for Research in Science Teaching**

Board of Directors, National Association for Research in Science Teaching, 2004-2007.

Chair, External Policy and Relations Committee, National Association for Research in Science Teaching, 2004-2007.

NARST Task Force for Restructuring, 2005-2006.

Member, NARST Search Committee for an association management company, 2005-6.

Chair, NARST Task Force to rewrite the bylaws and operating procedures, 2005-6.

Co-Chair, Teaching Conference Strand Coordinator, Strand 3: Teaching, 2001-2003.

Member, Financial Advisory Committee, 1994-1997

Member, Awards Committee for *Journal for Research in Science Teaching*, 1990-1993

 **National Science Teachers Association**

Member, NSTA Council as Affiliate President Representative for the AETS, 2000-2002.

Member, Committee on Preservice Science Teacher Preparation, 2000-2002.

07/07/2020