From the Editor

John Wulsin

Waldorf high school teachers want their students to meet, engage, understand the technology of their times, in ways that enable them to meet technology of the future healthily as well. On the other hand, we're acutely aware, at the actual dawning of their increasingly individualized thinking, how crucial simply writing by hand in ninth and tenth grades can still be in increasingly individualizing those burgeoning capacities for thinking. We have a graduate who was instrumental in managing the robot landing on Mars, one who is at the cutting edge of computer/human interface in various kinds of handicaps, physical and otherwise, one who already as a high school senior was hosting a weekly radio program, advising businesses and institutions about strategies for coping with hackers. Many Waldorf graduates excel at both computer programming and creating websites for a whole range of needs, combining technical and artistic capacities and the ability to recognize the essential nature of any particular enterprise.

Generally, it may be fair to say that Waldorf students, having not been formed by technological influences in their childhood, are free to *inform* the technologies they later work with, exercising flexible ways of thinking and with the ability to sustain large, unifying imaginations. In their formative years, Waldorf students have not been programmed to operate like computers. Therefore they are free to work in technology, with it without being "of" it.

In conjunction with its annual board meeting in April, the Research Institute held its third weekend colloquium, this one jointly with the Pedagogical Section Council on the theme of technology in education. During the course of two days, Arthur Zajonc and Jason Yates made presentations based on their research in the fields of computer programming and quantum physics. As a result of this weekend retreat, a range of articles has been gathered for the *Research Bulletin*, as well as for a collection of essays prepared by Waldorf Publications on this current "hot topic."

Dr. Michaela Glöckler, in our keynote article, sets the stage for our explorations by both celebrating the fortunate timing of contemporary technology for humanity at large, and calling for us to awaken to the crucial questions of appropriate timing for the effects of technology in relation to the healthy growth of each individual, especially in childhood.

Michael Holdrege, long-time Waldorf high school science teacher, illuminates and elaborates many of the distinctive forms, capacities, and qualities of the most essential element in our contemporary technology, silica. Gopi Krishna Vijaya offers a first installment, from a contemporary perspective, of historical contexts of streams of human thought leading toward current technology. Jason Yates, both computer technician and eurythmist, offers a first installment of his endeavors to articulate the essential gesture of our digital world.

George Russell, emeritus professor of biology at Adelphi University and former editor-in-chief of *Orion* magazine, has edited a collection of articles in *Children and Nature*. Here he shares reflections on children's relationships to both nature and technology.

Lowell Monke, long-time teacher of computer science to adolescents and Professor of Education at Wittenberg University, shares grounded perspectives on appropriate timing of technology education for growing youth.

Patrice Maynard, former class teacher and current director of Waldorf Publications, offers insights on technology from within the experience of Waldorf schools.

In one of three reports, Amalia Pretel-Gray shares her journey as a language-oriented class teacher, experiencing gradual and even dramatic transformations catalyzed through training in "Teaching Sensible Science." Marianne Alsop, of the Online Waldorf Library, reports on recent Spanish and Mandarin translations, accessible of course throughout the world. Recent Early Childhood additions range from *Seeking Sourdough* to *Seeking the Spirit*. The first audio books have been added to the Library, including both assessment and physics. Patrice Maynard reports on recent Waldorf Publications, which range from new research on Waldorf graduates to Lakota stories from the classroom at the Pine Ridge Reservation in South Dakota, from medical insights to extra help for children.

In the wake of Tertia Gale's illness and recent death, the board of the *Research Bulletin* asked me to serve as temporary guest editor, to relieve Elan of his duties for this issue. It turns out that the Tertia many of us knew, with all her various rich dimensions, had also served as keen, hawk-eyed proofreader/copy editor for the *Research Bulletin* for many years, assuring a fine, professional level of clarity and correctness. We are grateful for the devoted keenness of her attentions to this journal's work.

As a long-time Waldorf high school English teacher, I certainly feel little authority to legitimately introduce this particular issue, focusing primarily on technology. But as a career-long "editor-in-the–trenches," I feel fully the right to declare that I am deeply impressed with the quality of perspectives of these articles; I feel it a privilege to host their offering to our readers.

The *Research Bulletin* has received, in fact, such a wealth of fine articles exploring technology that we have decided to continue to broaden and deepen our understanding with further articles on technology in the spring issue.

May these articles, with their outstanding historical perspectives, their scientific, mathematical, philosophical, and educational savvy, and their deep understanding of human nature, help us all neither to fear technology nor to be seduced by it, but rather to become increasingly able to use it to further fulfill our humanity.

Authors who wish to have articles considered for publication in the *Research Bulletin* should submit them directly to the Editor at: waldorfresearchbulletin@gmail.com.