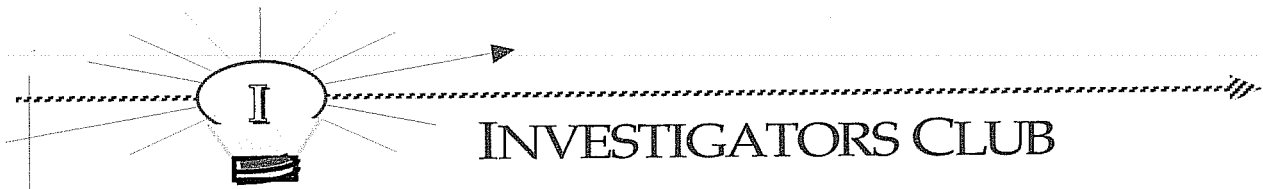


# Investigator's Club



# INVESTIGATORS CLUB

Monday, September 22, 2008

To the Trustees of Cary Memorial Library:

Our proposal for the Stone Building at 735 Massachusetts Avenue is for a community Science Education Center. As such, it is an ambitious and visionary undertaking. Our idea leaves many details to be worked through. In part this results from the fact that we became aware of the RFP only last Thursday, after reading the front-page article in the Lexington Minuteman! Our proposal requires community involvement and participation. Even with more time, it would require much discussion and collaboration – and working through the details – by the citizens of Lexington.

Thank you for considering our proposal.

Richard Sohmer and Sarah Michaels

*Sarah Michaels*  
*Richard Sohmer*

DIRECTORS: R. SOHMER [rsohmer@mac.com](mailto:rsohmer@mac.com) S. MICHAELS [iclub@comcast.net](mailto:iclub@comcast.net)

292 Waltham Street Lexington, Massachusetts 02421

tel: 781.589.4401

<http://investigatorsclub.com>

**The Investigators Club:  
A 21<sup>st</sup> Century Science Education Center for  
Lexington Residents and for the Commonwealth —  
Serving Students, Parents, and Teachers**

**A Proposal for Possible Use of the Ellen Stone Building**

**Abstract:**

We are Lexington residents and a (husband and wife) team of science educators and educational researchers — with over 20 years of experience developing science curricula, running major research grants, publishing articles and books in science education, directing university-based teacher education, and developing multi-media tools demonstrating innovative practices in science education. Drawing on a proven track-record of grant getting, research and development efforts in science teaching and learning, we propose to bring together in a single “Science Education Center” a set of programs and resources to serve children, parents, and teachers — in Lexington and beyond.

Here is the vision in its fully-funded form: The “Investigators Club” Science Education Center would run two self-supporting “demonstration” state-of-the-art programs for students (a Pre-K demonstration program emphasizing math and science and an after-school program for students in 5<sup>th</sup>-8<sup>th</sup> grade centering on conceptual physics and topics such as the atomic-molecular theory of matter). In addition, the Center would build, over time, an endowment (through partnerships with the bio-tech industry, the Massachusetts Department of Education, private donors, and research funding), which would support a Director and permanent, small staff. With funds generated from the endowment, the Center would provide resources for families in Lexington and neighboring communities as well as for teachers across the Commonwealth. As a Science Resource Center and lending library, the Center would 1) provide kits (and workshops in their use) for parents and teachers, 2) support mentoring apprenticeships for pre-service teachers (in affiliation with nearby universities (Tufts, Brandeis, and Lesley University), and 3) produce state of the art “useable knowledge” in the form of Professional Development tools — video materials, curriculum guides, DVDs and print materials showcasing exemplary practice) all based on the National Research Council’s recent consensus studies *Taking Science to School* and the practitioner volume, *Ready, Set, SCIENCE!: Putting Research to Work in K-8 Science Classrooms*. (Note that *Ready, Set, SCIENCE!* was co-authored by one of the Principal Investigators of this proposal). The Investigators Club Science Education Center would also provide a welcoming space for residents to come during the day, to access computers, read newspapers, meet neighbors, and discuss the big science-related issues of our day!

*1. Name of your organization:*

The Investigators Club, currently an independent R&D and consulting organization.

Richard Sohmer, Director of the Investigators Club, runs research grants, consults for the Merck Institute for Science Education, and for school districts around the country. He has a Ph.D. in Discourse and Mind from Clark University. Sarah Michaels, Associate Director of the Investigators Club, is Professor of Education and Senior Research Scholar at the Hiatt Center for Urban Education at Clark University. She has a Ph.D. in Language and Literacy from U.C., Berkeley.

*2. Please provide contact name, address, phone number and email address.*

Dr. Richard Sohmer —  
292 Waltham St., Lexington, MA 02421  
Phone: 781-589-4401  
E-mail: [rsohmer@mac.com](mailto:rsohmer@mac.com)

Dr. Sarah Michaels —  
292 Waltham St., Lexington, MA 02421  
Phone: 781-861-5055  
E-mail: [smichaels@clarku.edu](mailto:smichaels@clarku.edu)

*3. What is your Legal Status: e.g., not for profit, 501 (c) (3), educational.*

The Investigators Club is a non-incorporated consulting organization.

*4. Please describe your intended use of the building or part of the building and how that fits within the deed restrictions.*

The entire building would be used by the Investigators Club Science Education Center. We would have two dedicated classroom spaces, one for the Pre-K program and one for the after-school program. Each classroom space would be outfitted with state-of-the-art multi-media capabilities (to support on-going digital documentation of our educational programs). Each classroom space would also double as after-hours conference meeting space (for parent workshops and teacher seminars). We would create storage space for portable chairs, so that the classrooms could be easily changed into conference rooms for weekend and evening workshops and presentations. Other spaces would be designed to hold the curriculum materials, lending science kits, professional development resources, with table and counter space dedicated to working with these materials, so that residents could see and interact with the science materials. We would also have a small community meeting place with a bank of computers linked to the internet, comfortable chairs and newspapers, and a small kitchen with a high quality coffee maker, to allow residents to visit, read newspapers, access computers, and meet with neighbors. And of course, we'd recruit the services of retired Lexington residents who have professional

science backgrounds to be mentors in our after-school program, helping students with science fair projects and homework.

*5. How would the Lexington community benefit from this use?*

- 1) Lexington would gain an experimental, state-of-the-art Pre-K Program that emphasizes mathematics and science. This program would be self-supporting, by charging tuition (based on a sliding scale of income, so that low income children would attend for free). The program would be run by a professional staff (with expertise in early childhood education and science), with a ratio of 1 adult teacher per 8 children. As a dedicated “laboratory” program, the Pre-K Program would serve Lexington children (and parents), but it would also generate “useable knowledge” (in the form of videos, DVDs, curriculum materials, and research knowledge) which could be used by parents and teachers, and Early Education Programs throughout the Commonwealth.
- 2) Lexington would gain a demonstration after-school program (for students in grades 5-8) that centered around doing and learning science (in particular conceptual physics, foundational for all future science learning), and preparing these students to become paid mentors in the program when they enter high school. The program would be self-supporting, by charging a program fee (again, on a sliding scale so that low-income families would pay nothing), with a professional staff to student ratio of 1:15. Like the Pre-K program, this after-school program would also generate “useable knowledge” (in the form of videos, DVDs, curriculum materials, and research knowledge) which could be used by parents, teachers, schools, and after-school programs throughout the Commonwealth.
- 3) The Center would provide lending science kits (such as “The Mystery Box,” “Three Candles Demonstration,” and “The Balloon Jar”) for home science activities, with parent workshops to support parents to use them well.
- 4) The Center would also apprentice pre-service teacher candidates who seek state-of-the-art placements in science education (both Pre-K and after-school programs). The Center, through Michaels’ affiliation with Clark University, would be able to provide certification credits and Professional Development Points (PDPs) for teachers from neighboring districts and communities. Teachers from around the area would come to Professional Development workshops in science education, in collaboration with the State Department of Education.
- 5) The Center would provide a welcoming place for residents to come during the day, to use computers, read newspapers, and meet with friends. Coffee, refreshments, and comfortable chairs would be provided.

*6. Who would be the intended users?*

Intended users would include children (Pre-K children and students in grades 5-8), parents, retired Lexington residents, and teachers from around the Commonwealth. The Center would also provide useable knowledge about state-of-the-art science instruction for teachers, schools, after-school programs, and colleges and universities.

*7. Would the facility be open to the public? By appointment? With regularly scheduled hours? How many hours would it be open to the public?*

The Center would be open from 8 AM – 6 PM, Monday through Friday (with full-time staffing), and open in the evenings and weekends for scheduled workshops and presentations.

*8. How would the facility and proposed use be staffed?*

The Center would employ a Director and two half-time administrative assistants, 3-5 teachers (depending on program needs) for the Pre-K Program and the After-School Program, and a variety of volunteer and paid “mentors” for the after-school.

*9. What kind of parking would your facility require for the proposed use?*

The Center would require parking for 2-3 full-time staff, temporary parking for 5 cars (for pick-up and drop-off of children) and nearby parking for approximately 20 cars for workshop attendees.

*10. What physical renovations, appropriate to a building in an historic district, do you anticipate would be needed?*

Based on HTK’s Option 1 – it appears that a kitchen would have to be included.

*11. What furnishings do you anticipate would be needed for the proposed use?*

Classroom furniture (tables and chairs for Pre-K children and after-school students), a working kitchen, science lab equipment, portable, stacking chairs for adult workshops, work tables for science materials, computers and comfortable chairs for reading room.

*12. Briefly describe the financial/business plan for operating the building for the proposed use. Please explain.*

We have not yet developed a comprehensive financial/business plan. We would look to collaboration with town leaders and modest support (to pay appropriate consultants) to develop this plan. Sohmer and Michaels would provide their time without charge in the development of the business plan..

*13. Please explain your group’s affiliation, if any, with the Town.*

We are residents of Lexington.

*14. Please add any further information in support of your proposal that has not been addressed.*

Sohmer and Michaels have a long track-record of work in the field of science education, working with Pre-K Programs, elementary schools, middle schools, and high schools. We have developed a highly regarded after-school program, which ran in Worcester, MA (with support from 2 major grants from the Spencer Foundation) from 1995-2004. We have developed a Pre-K Program in Math and Science (with support from a grant from the Davis Foundation and the Springfield Public Schools) which is currently running in 5 Pre-K Centers (both public and private) in Springfield, MA. We have documented research findings for both the Pre-K Program and the After-School Investigators Club, with publications in books, referred journals, and monographs. We have produced DVDs which are used by teachers and schools in Massachusetts and around the country. We have designed a “virtual” after-school which supports science education for children who are home after school, called “The Virtual Investigators Club.”

Materials from each of these initiatives is included with this proposal:

- 1) *Ready, Set, SCIENCE!: Putting Research to Work in K-8 Science Classrooms.* This book, co-authored by Sarah Michaels, was sponsored by the National Research Council, and published by the National Academies Press. It recently won an award from the Association of Educational Publishers as the best professional development book of 2008. The book is being used by the Mass. Department of Education in its professional development work with teachers throughout the Commonwealth.
- 2) Publication about the Investigators Club, describing its practices and research findings.
- 3) Report on the Pre-K in Math and Science Project, funded by the Davis Foundation and the Springfield Public Schools, describing the practices and research evidence of successful learning.
- 4) Plan for “The Virtual Investigators Club,” describing a program that could easily be put in place, once the actual Investigators Club is up and running.

Brief Biographies of Sarah Michaels and Richard Sohmer:

**Sarah Michaels** is Professor of Education and Senior Research Scholar of the Jacob Hiatt Center for Urban Education at Clark University. A sociolinguist by training, she has been actively involved in teaching and research in the area of language, culture, the discourses of math and science, and school reform. Prior to coming to Clark in 1990, Michaels served as Director of the Literacies Institute in Newton, MA, funded by the Mellon Foundation. She also directed projects on language and schooling with funding from the Spencer Foundation, Carnegie, and the Department of Education, while serving as a Research Associate and Instructor at the Harvard Graduate School of Education. She has been the PI or Director of grants and programs (from foundations, state and federal agencies, and private donors) totaling over \$12 million. She was the founding Director of the Hiatt Center for Urban Education and works to bring together teacher education, educational research on classroom discourse, and district-based efforts at educational reform.

Michaels is currently involved in a variety of research projects which focus on academically productive talk in math, science, and English Language Arts, from Pre-Kindergarten through 12th grade. In these projects, she is working on curriculum and professional development so that it focuses central attention on rigorous, coherent, and equitable classroom discourse. She just completed a book for the National Research Council (co-authored with Andy Shouse and Heidi Schweingruber) called *Ready, Set, Science!: Putting Research to Work in the K-8 Science Classroom*. This book won a 2008 award from the Association of Education Publishers as the best professional development book of the year. Michaels is also a co-author of the CD-ROM suite of tools, *Accountable Talk: Classroom Conversation that Works* (in collaboration with the Institute for Learning at the University of Pittsburgh), which is currently being used in large urban districts throughout the country. In promoting teacher research, she works to support teachers as theorizers, curriculum innovators, and educational leaders who use the tools of ethnography and discourse analysis in generating new and useable knowledge for improving instruction and student learning in their own and others' classrooms. She holds a B.A. from Barnard College and a Ph.D. in Education (Language and Literacy) from the University of California, Berkeley.

**Richard Sohmer** is the founder and co-designer of the Investigators Club, an after-school science program for inner-city middle school students. Since 1995, he has been the co-Principal Investigator of a Spencer Foundation major grant, "Socializing Motivation and Academic Efficacy: The Power of a Practice" and co-Principal Investigator of the "Pre-K in Math and Science Project," funded by the Davis Foundation and the Springfield Public Schools. He has consulted for the Merck Institute for Science Education, and served as the lead science facilitator in their 2008 Leadership Academy for Science Instruction. Building on his work as a Renaissance musician and professional housebuilder, he is interested in the architecture of intersubjectivity via apprenticeship structures. His current research focuses on documenting the principles and practices that promote successful science learning in the Investigators Club as well as the apprenticeship of teachers new to the Investigators Club practice. Sohmer holds a B.A. from St. Johns College, and a Ph.D. in Discourse and Mind from Clark University.