

Teachers' Cancer Cluster La Quinta Middle School

Sam Milham, MD and Lloyd Morgan

Who We Are: Introductions

Sam Milham Jr. MD

- Albany Medical College, September 1954-June 1958, M.D. Alpha Omega Alpha.
- Intern, U.S. Public Health Hospital, Boston, Massachusetts, July 1958-July 1959.
- U.S. Public Health Service Residency in Public Health. Assigned to Monroe County Health Department, Rochester, New York, July 1959-August 1960.
- Johns Hopkins School of Hygiene and Public Health, September 1960-June 1961, M.P.H.
- Senior Resident in Epidemiology. Epidemiology Residency Program, New York State Department of Health, June 1961-1962.
- Development Consultant. New York State Department of Health, 1963-1967.
- Assistant Professor, Department of Pediatrics, Albany Medical College, July 1964-1967.
- Diplomate, American Board of Preventive Medicine, June 1966.
- Associate Professor, University of Hawaii School of Public Health and Medical School, 1967-1968.
- Travel Fellowship, International Agency for Research on Cancer (IARC) 1971.
- Section Head, Epidemiology Section, Washington State Department of Health, 1968-1986.
- Travel Fellowship, International Cancer Research Technology Transfer, 1981.
- Washington State Public Health Association Annual Award, 1986.
- Chronic Disease Epidemiologist, Washington State Department of Health, 1968-1988.
- Clinical Associate Professor, University of Washington School of Public Health, 1968--.
- Section Head, Chronic Disease Epidemiology Section, Washington State Department of Health, 1988-May 1992.
- Adjunct Professor, Mount Sinai School of Medicine, 1989--.
- Robert Carl Strom Foundation Humanitarian Award, 1990.
- Member of Bioelectromagnetics Society, 1984--.
- Self-employed, June 1992.
- Elected to Fellowship, Collegium Ramazzini, October 1994.
- Ramazzini Award. 1997
- 100 + peer reviewed scientific publications

Who We Are: Introductions

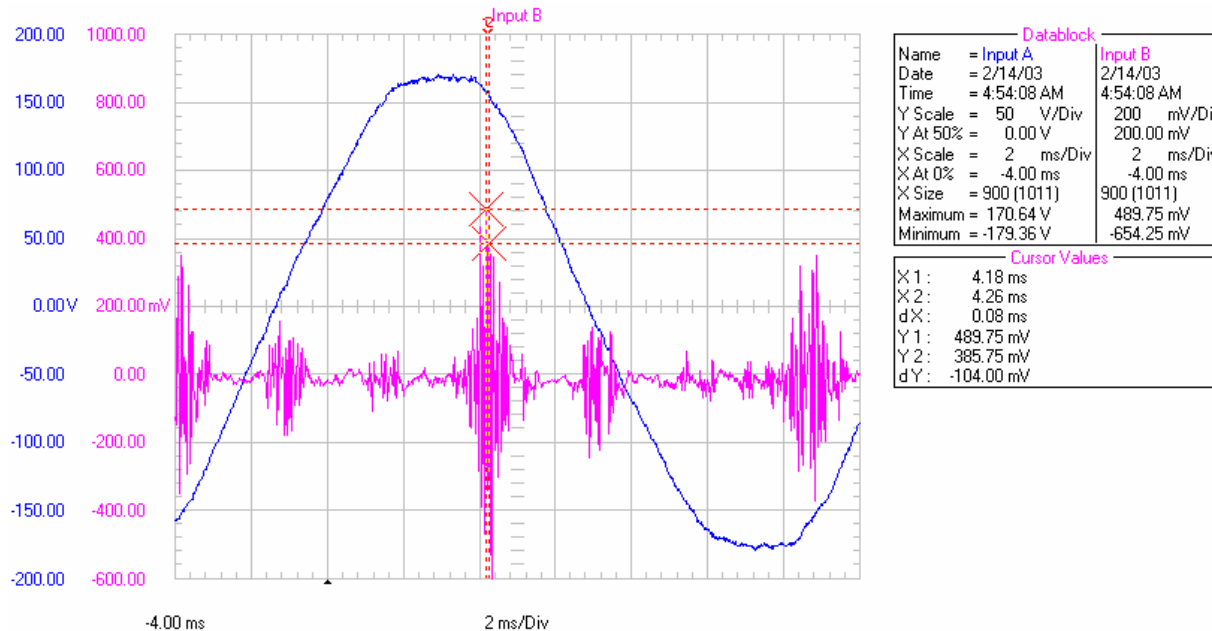
Lloyd Morgan

- **Director, Central Brain Tumor Registry of the United States (CBTRUS)**
- **Member, Bioelectromagnetics Society (BEMS)**
- **Member, Brain Tumor Epidemiology Consortium (BTEC)**
- **Former Board Member, North American Brain Tumor Coalition (NABTC)**
- **Bachelors of Science, Electronic Engineering, University of California, Berkeley**
- **Electronic Engineer (38 years experience, retired 2002)**
- **Columnist for Powerwatch (<http://www.powerwatch.org.uk/columns/morgan/index.asp>)**
- **Listed author, Long-term use of cellular phones and brain tumours - increased risk associated with use for > 10 years. Occup Environ Med. 2007 Apr 4; [Epub ahead of print]**
- **Introduced the Benign Brain Tumor Registries Amendment Act into Congress (became law in 2002)**
- **Twelve year brain tumor survivor**
- **Twelve year's research and investigation into the health effects from exposure to electromagnetic fields (EMFs)**

Cluster Abbreviated: Introductions

- Teachers ask for our involvement about 3 years ago
 - 11 cancers, then
 - What has happened since
 - District's non-cooperation
 - District's cover-up
- Now
 - 18 cancers among 137 teachers
 - One possibility in 10,000 that this is due to chance
 - Strong evidence that cancer cluster is the result of excessive “dirty power”

Sidebar: What is Dirty Power?



THE WAVEFORM WAS COLLECTED IN ROOM 101 OF THE BRIGHTON SCHOOL. CHANNEL 1 WAS CONNECTED TO THE UTILITY SUPPLIED 120 VAC POWER. CHANNEL 2 WAS CONNECTED TO THE SAME POTENTIAL EXCEPT THROUGH THE GRAHAM UBIQUITOUS FILTER. THE AREA BETWEEN THE CURSORS REPRESENT A FREQUENCY OF 12.5 KILO HERTZ. NO GRAHAM/STETZER SOLUTIONS FILTERS WERE BEING UTILIZED AT THE TIME. THE AMPLITUDE OF THE BURST SHOWN IS 489 MV.

2nd Sidebar: Calculation Methodology

- Expected cancer rate
 - Used published California Cancer Registry cancer incidence rates by age, gender, non-Hispanic white
 - Beginning with the age of the teacher at hire
 - Determine the specific incidence rate
 - With each additional year, add a year to the teacher's age
 - Determine the specific incidence rate
 - End on June 2007 or upon death
 - Assumes no additional cancer diagnoses

The Cover-up Begins

Specialist discounts cancer cluster at school

THE DESERT SUN SUNDAY FEBRUARY 22, 2004

At least 11 teachers have been diagnosed with cancer at La Quinta campus; 3 died

BY MIKE PERRAULT
THE DESERT SUN

LA QUINTA — A renowned doctor and cancer specialist says there's not enough evidence to indicate La Quinta Middle School is a "cancer cluster," but some of the nearly dozen teachers who've been diagnosed with cancer at the school still wonder whether a more in-depth probe is needed.

Whether it's mere coincidence or some mysterious common cause, the Desert Sands Unified School District is taking the matter seriously.

The district this month called in Dr. John W. Morgan, a leading cancer epidemiologist with the Loma Linda University Cancer Research Institute. Epidemiologists like Morgan study causes and controls for diseases, and he said it appears the teachers' cancer rates were not abnormally high.

"He was glad to come out to the staff and relieve their fears," said Charlene Whitlinger, Desert Sands' assistant superintendent of business services.

"Because we do not have a

What makes a cancer cluster?

A suspected cluster is more likely to be a true cluster, rather than a coincidence, if it involves any of the following:

- A large number of cases of one type of cancer, rather than several different types.
- A rare type of cancer rather than a common type.
- A number of a certain type of cancer in age groups not usually affected by that cancer.

These situations may indicate a common source or means by which cancer develops.

SOURCE: CDC, NATIONAL CANCER INSTITUTE

cancer cluster," she said.

But Gayle Cohen, who started at the school when it opened 15 years ago, has watched so many friends develop cancer that she and others still wonder if there may not be more to it.

Teacher Dave Loveless died of bone marrow cancer, and Cal Sarver developed and died of throat cancer. Both taught at one time in room 301, as did a third teacher, who was diagnosed
Please see CANCER, A11

**Today: 18 cancers have been diagnosed in 16 teachers,
at LQMS**

"... it appears that the teachers' cancer rates were not abnormally high."⁷

April 2007

Dr. Sam Milham & Lloyd Morgan
[smilham@dc.rr.com & bilovsky@aol.com]

Brief History of Cancer Cluster

- Late 03: Teachers, alarmed by 11 cancers, contact Dr. Wilson
- Feb 04: Dr. Milham reads news report
 - Offers to investigate at no charge
 - District rebuffs offer
- Feb 05: Teacher invites Dr. Milham and Mr. Morgan, after school, to examine 7 rooms
 - High dirty power and high magnetic fields
 - Letter to Dr. Wilson explaining possible violation of electrical code and potential fire hazard
 - Response: “unlawful trespass” and “Homeland security” breach
- Mar 05: District hires Hygienetics
 - To measure LQMS magnetic fields
 - Confirms findings of Milham and Morgan
 - District takes no action

Brief History of Cancer Cluster

- May 05: CAL-OSHA complaint
 - President, Desert Sands teacher's union refuses to file complaint
 - Thirty LQMS teachers file complaint
- May 05 to May 06: OSHA tells cancer registry to search for cancers using list of LQMS teacher's names
 - Dr. Wilson delays providing names for a year
- May 06: Dr. John Morgan & Dr. Milham present their findings to District's Board of Education
 - Now, 15 cancers, 3-fold more than expected
 - Dr. Morgan: Melanoma $>1/3$ of all cancers, above expected
 - Dr. Milham: Melanoma, 11-fold more than expected
 - Risk of cancer increases with time at LQMS
- Jun 06: Dirty power and magnetic field measurements-problems found
 - 13 rooms found to have dirty power values larger than meter can measure
 - Rooms 304 and 404 have magnetic field problems
- Aug 06: District tells media, "no problem at LQMS"

Brief History of Cancer Cluster

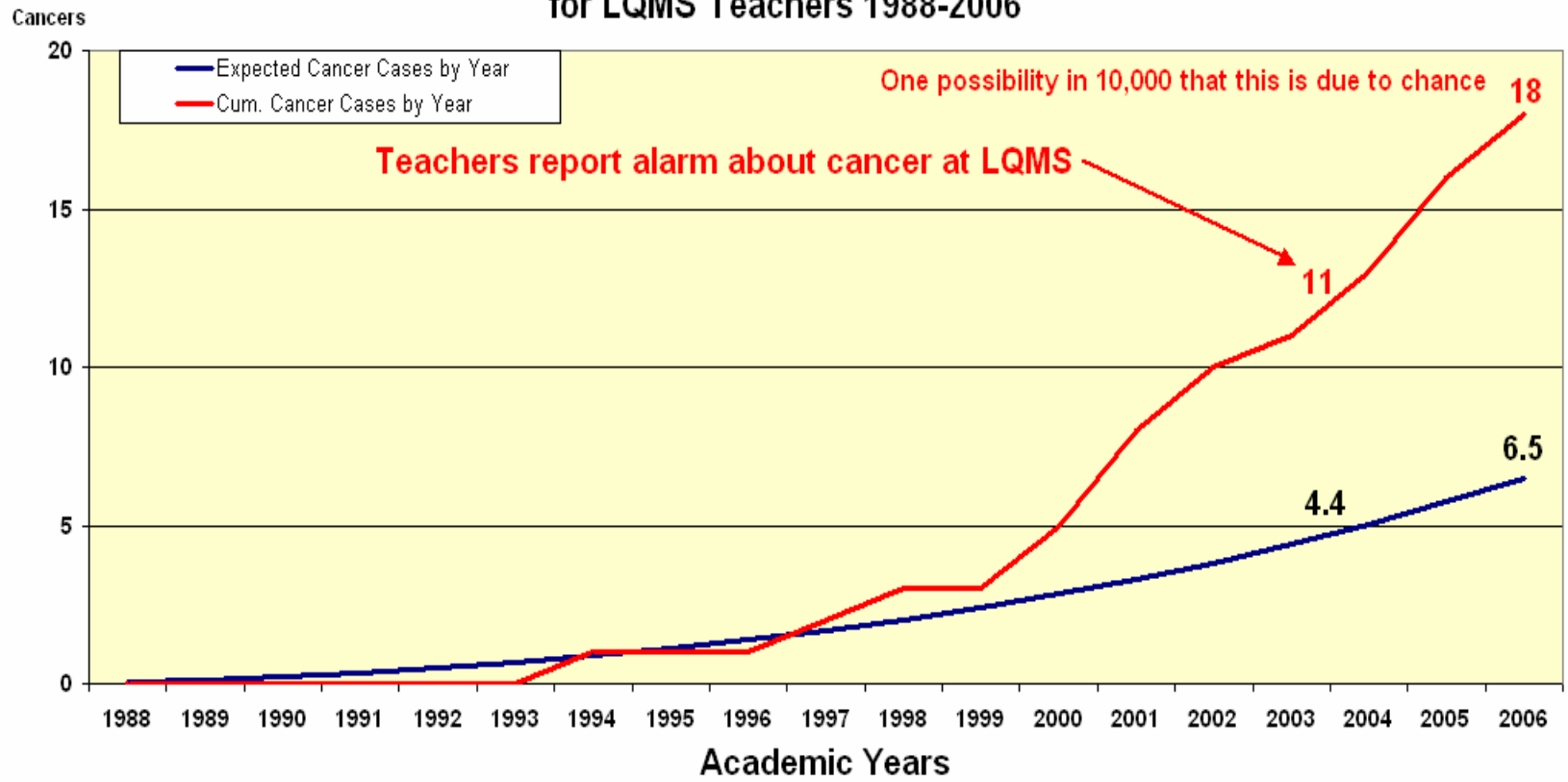
- Mar 07: Cal-DHS “Dirty Power” report
 - Now: 18 cancers – a significant excess
 - Dr. Neutra reports dirty power levels are “unusual”
 - Dr. Milham reports, 13 rooms had dirty power levels higher than meter could measure ($\geq 2,000$)
 - Cancer risk at LQMS increases as cumulative dirty power exposure increases
 - Highest cancer risk in the 13 rooms
- Apr 3, 07: “Official” DHS report emailed to Dr. Wilson
 - Teachers request Dr. Wilson to send a copy
 - As of today, no teacher or District Board member has received a copy
 - No admission of cancer cluster by District nor leadership to find and fix health hazards.

Excess Teachers' Cancer at LQMS

- There are nearly 3 times more cancer than expected at LQMS
 - Adjusting for age, aging, sex and race
 - 18 primary cancers
 - 6.5 expected
 - One possibility in 10,000 that this is due to chance

All Cancers at LQMS

Expected Cancers Versus Actual Cancers for LQMS Teachers 1988-2006

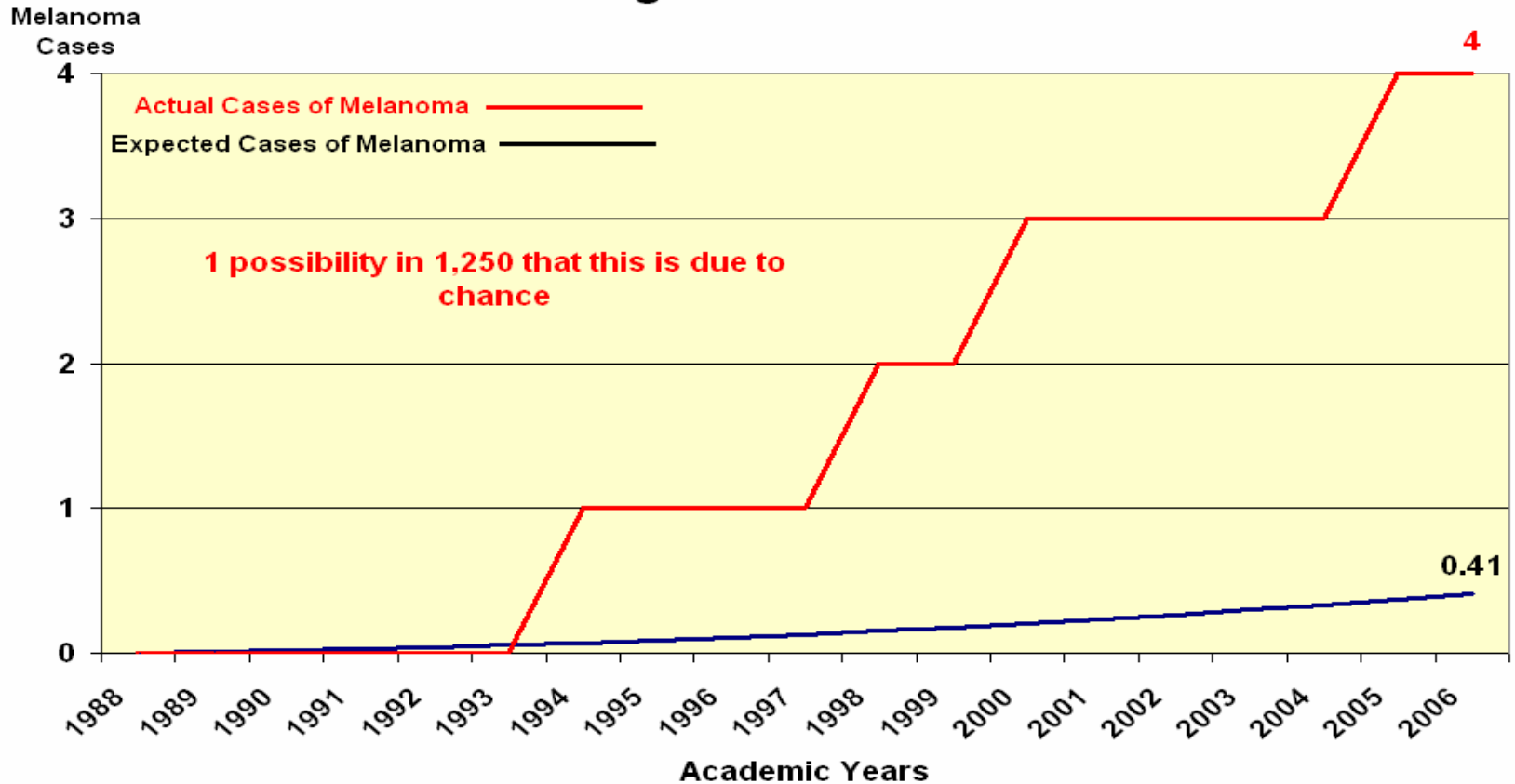


Melanoma at LQMS

- Melanoma: 4 cases at LQMS
 - Nearly 10-fold excess above expected
 - Is this because LQMS is in a desert?
 - Melanoma incidence rates
 - » Nevada: 17.7 per 100K people per year
 - » Clark County (Las Vegas): 17.7 per 100K people per year
 - » California: 16.3 per 100K people per year
 - » **LQMS: 159.7 per 100K people per year**
 - **LQMS melanoma cannot be explained because it is in a desert**

Melanoma at LQMS

Melanoma Among LQMS Teachers 1988-2006



Why a Cancer Cluster at LQMS?

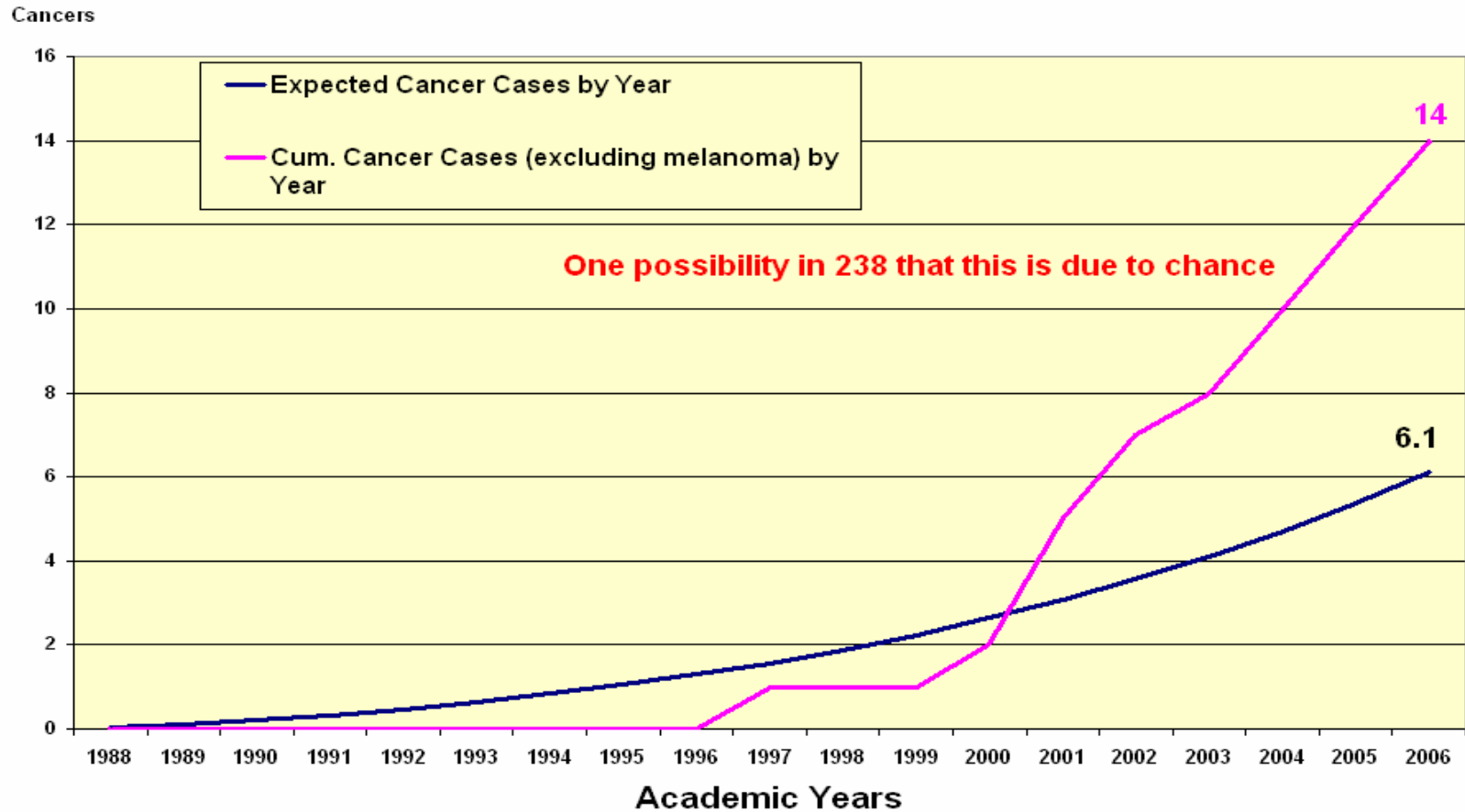
- LQMS has unusual levels of “dirty power” when compared to homes, offices and another school
 - Dirty power meter
 - Microsurge II meter (MS II)
 - Designed by Professor Emeritus, Electrical Engineering, University of California Berkeley
 - » US Patent 6,914,435 B2
 - Measurement is in “MS II units”
 - Meter “overloads” for reading ≥ 2000
 - 25% of all rooms at LQMS have reading above what the meter can measure (an “overload” condition)

Cancer at LQMS (Excluding Melanoma)

- There are greater than 2 times more cancer (excluding melanomas) than expected at LQMS
 - Adjusting for age, aging, sex and race
 - 14 primary cancers
 - 6.1 expected
 - One possibility in 238 that this is due to chance

LQMS Cancer (excluding melanoma)

LQMS Cancer (excluding melanoma) by Year

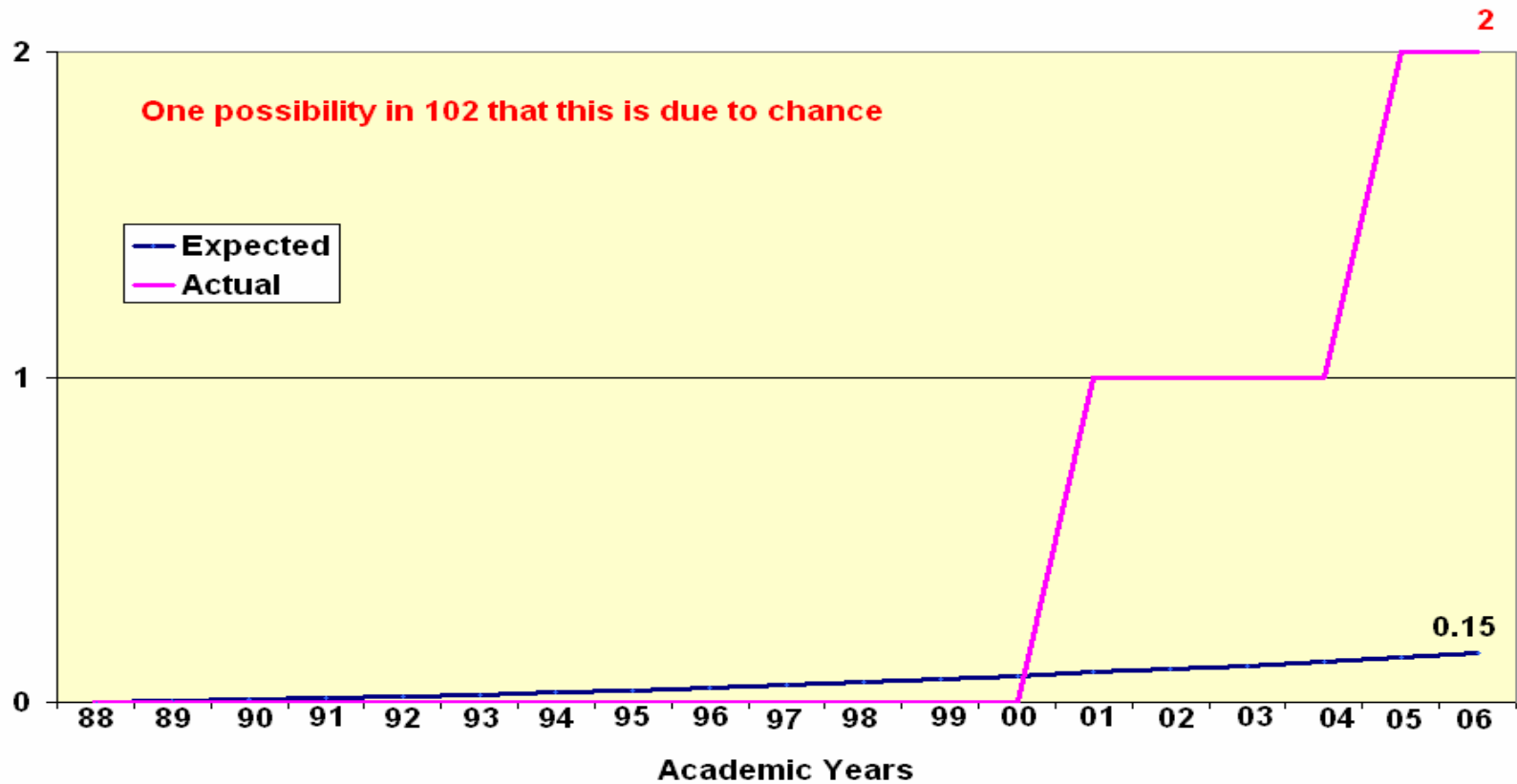


Other Cancers at LQMS

- **Thyroid cancer: 2 cases at LQMS**
 - Over 13-fold excess above expected
 - One possibility in 102 that this is due to chance
- **Uterine cancer: 2 cases at LQMS**
 - Over 9-fold excess above expected
 - One possibility in 52 that this is due to chance
- **Breast cancer: 2 cases at LQMS**
 - 1.3-fold excess at above expected
- **Other cases at LQMS (1 case each)**
 - Colon, pancreas, ovary, larynx, lymphoma, polycythemia, multiple myeloma, leiomyosarcoma

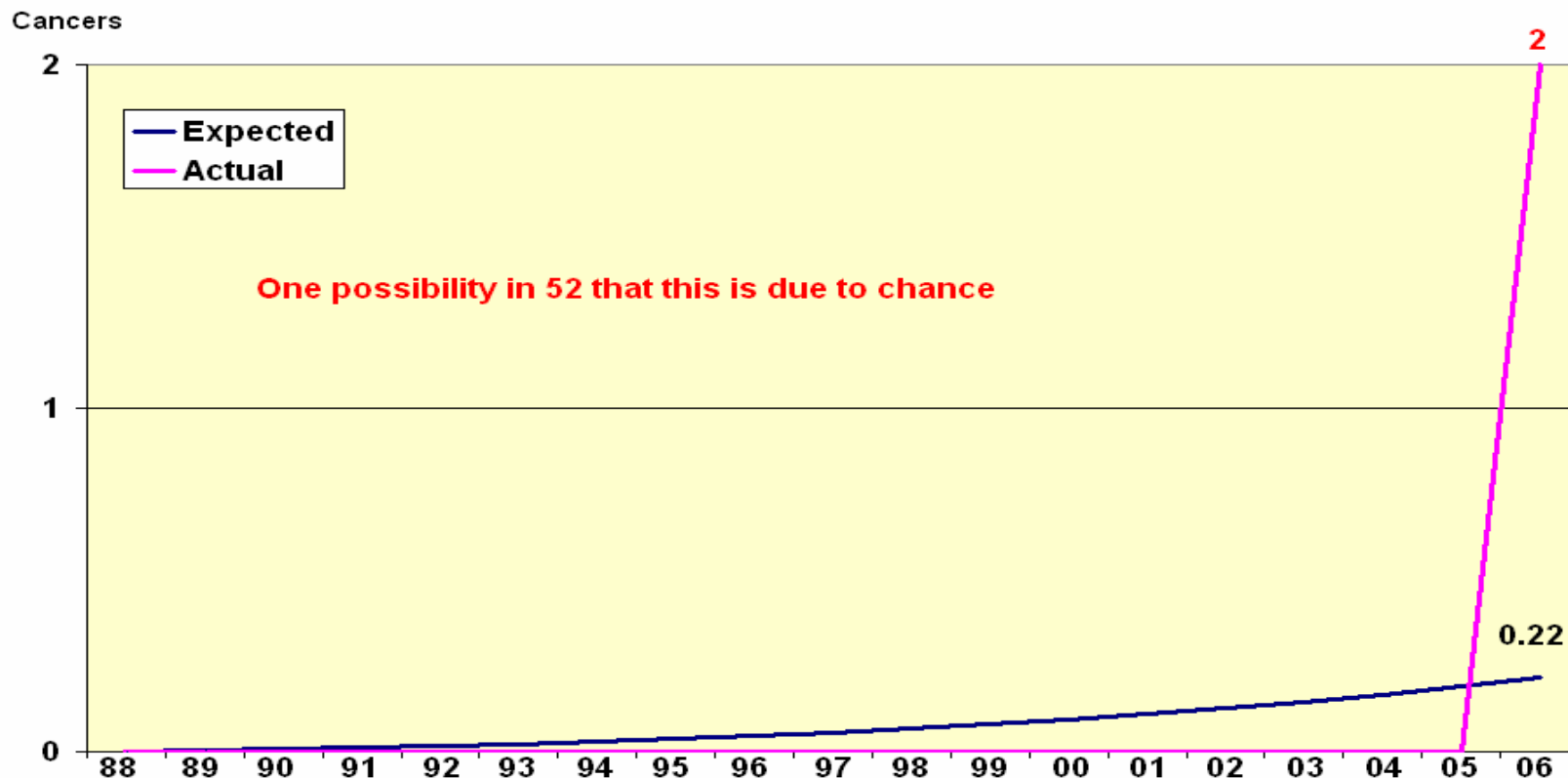
Thyroid Cancer at LQMS

Thyroid Cancers at LQMS

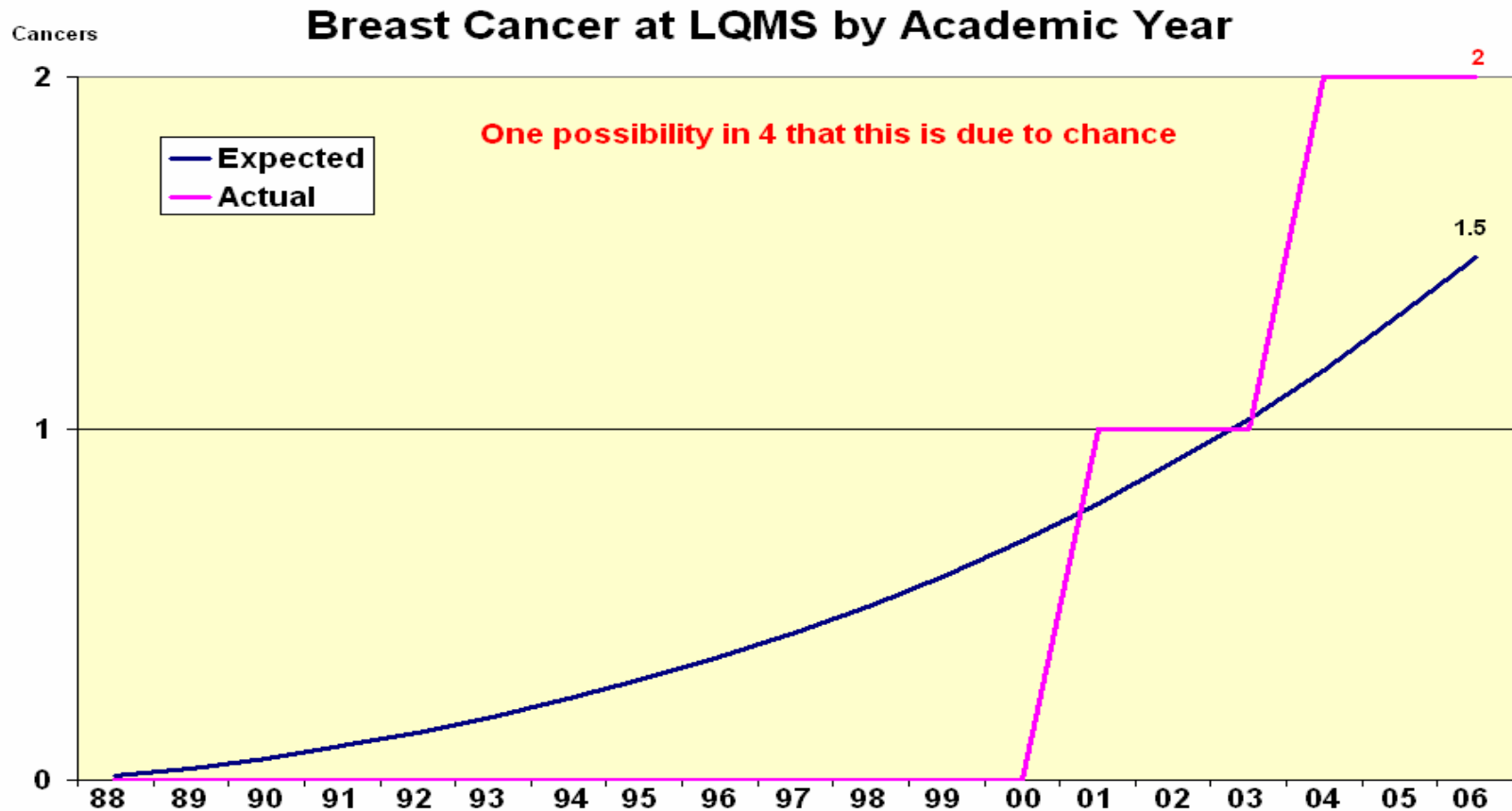


Uterine Cancer at LQMS

Uterine Cancer at LQMS by Academic Year

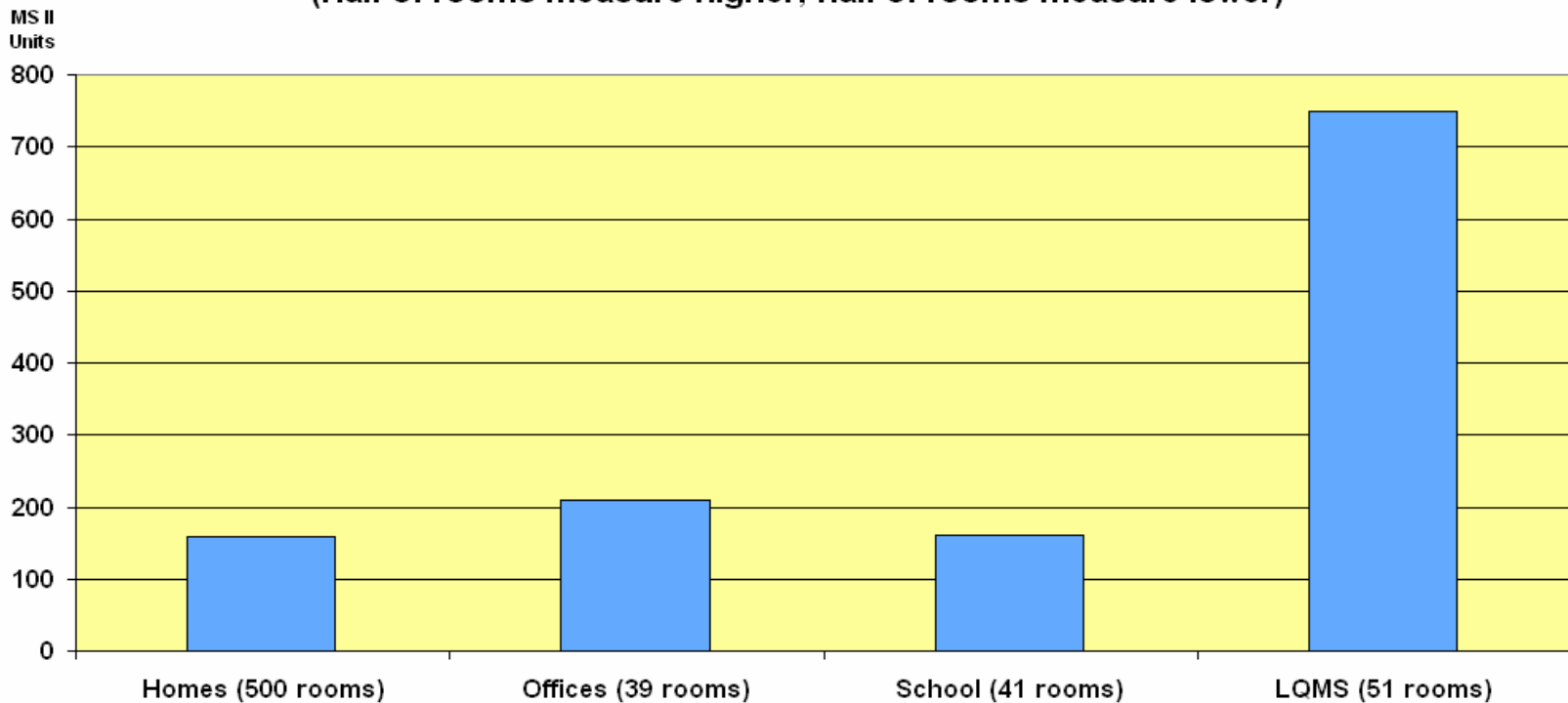


Breast Cancer at LQMS



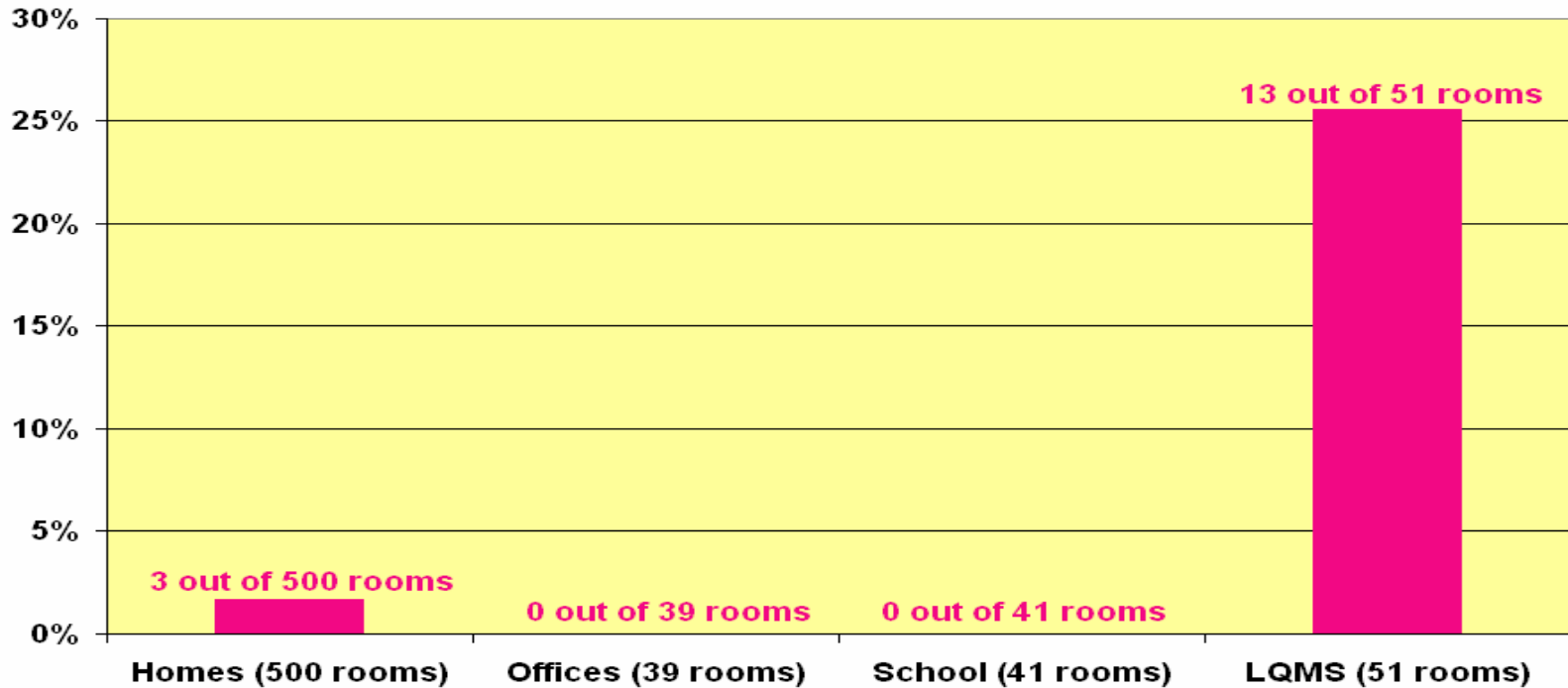
Dirty Power at LQMS and Other Places

Median Dirty Power Measurements
(Half of rooms measure higher; half of rooms measure lower)



What Percentage of Rooms Have Readings Above What the Meter Can Measure?

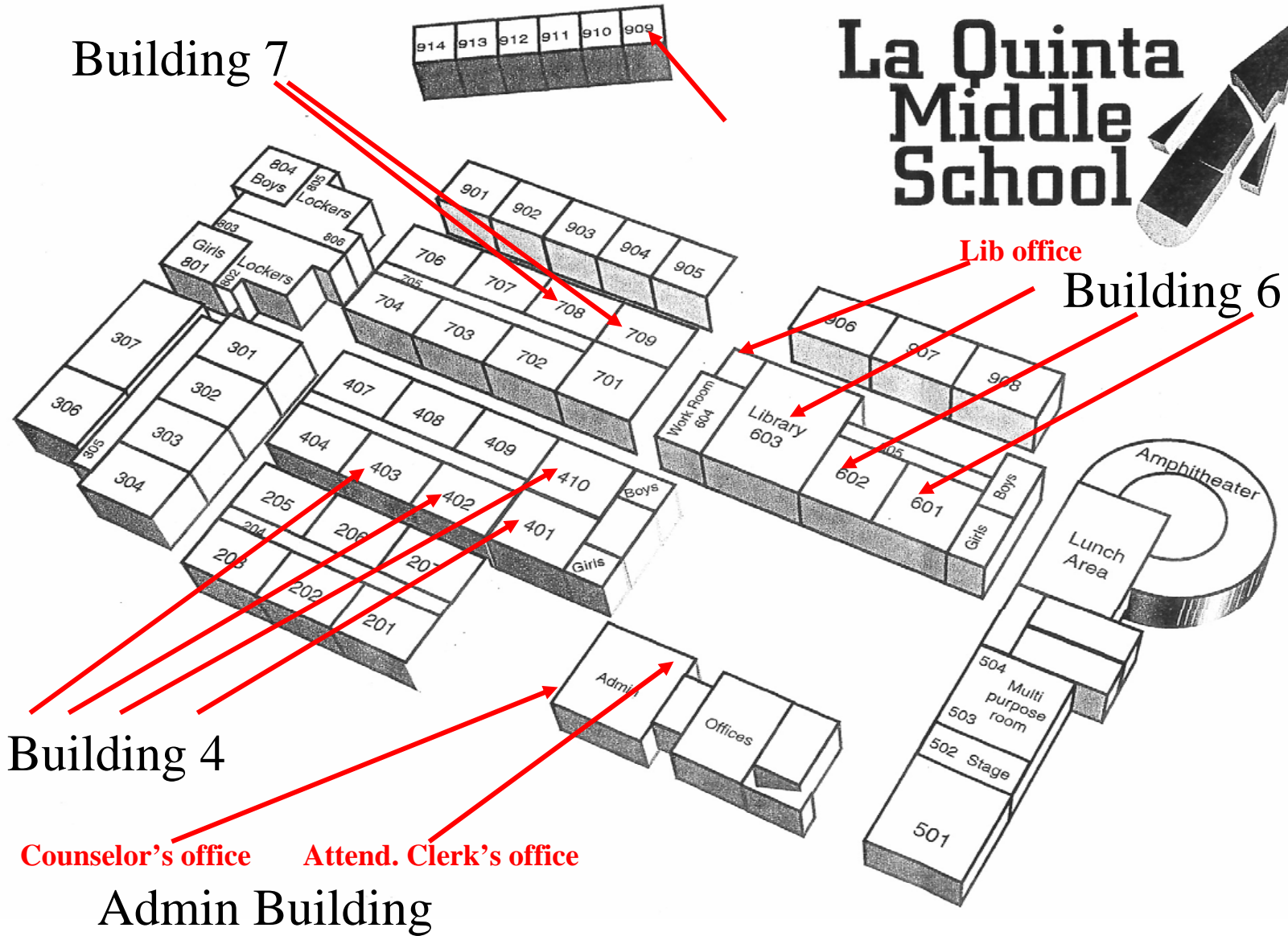
Percentage of Rooms Above What the Dirty Power Meter Can Measure (≥ 2000)



Dirty Power Values at LQMS

Room	MS II Units	Room	MS II Units	Room	MS II Units
201	570	501 (Music CR)	NA	909	2000
202	400	502	NA	910	800
203	580	601	2000	911	1150
205	440	602	2000	912	500
206	260	603 (Library)	2000	913	NA
207	275	701	160	914	1250
301	590	702	148	915	NA
302	260	703	270	916	NA
303	730	704	240	917	NA
304	750	706	480	918	NA
306	280	707	1425	919	NA
307	NA	708	2000	920	NA
401	2000	709	2000	Band Office	NA
402	2000	901	850	Band Room	NA
403	2000	902	195	Boys Locker Room	NA
404	1960	903	500	Girls Locker Room	NA
407	1840	904	310	Library Office	2000
408	620	905	125	Dean	400
409	870	906	250	Counselor	2000
410	2000	907	750	Room below Counselor	1500
		908	450	Conf. Rm	1000
				Attend	2000
				Conf	1800
				Fac Lnge	1450

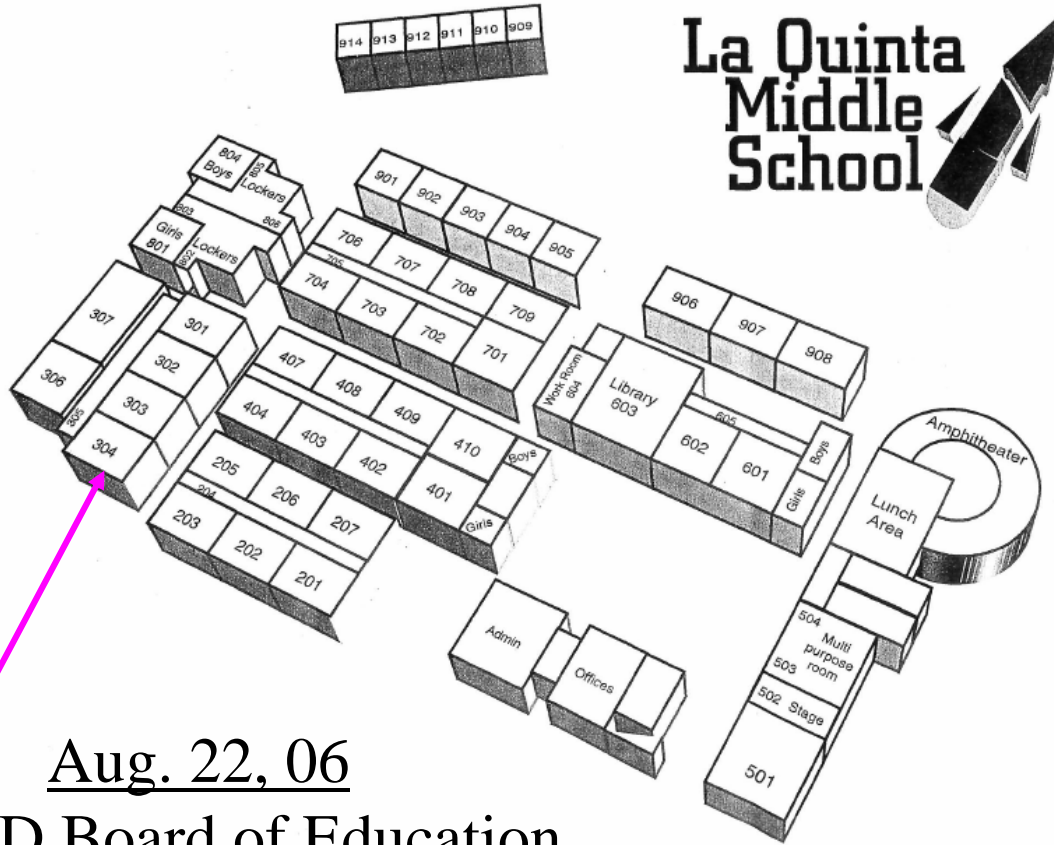
LQMS Rooms With Dirty Power Levels Too High To Measure



April 2007

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Broken Promises



Aug. 22, 06

DSUSD Board of Education
Meeting

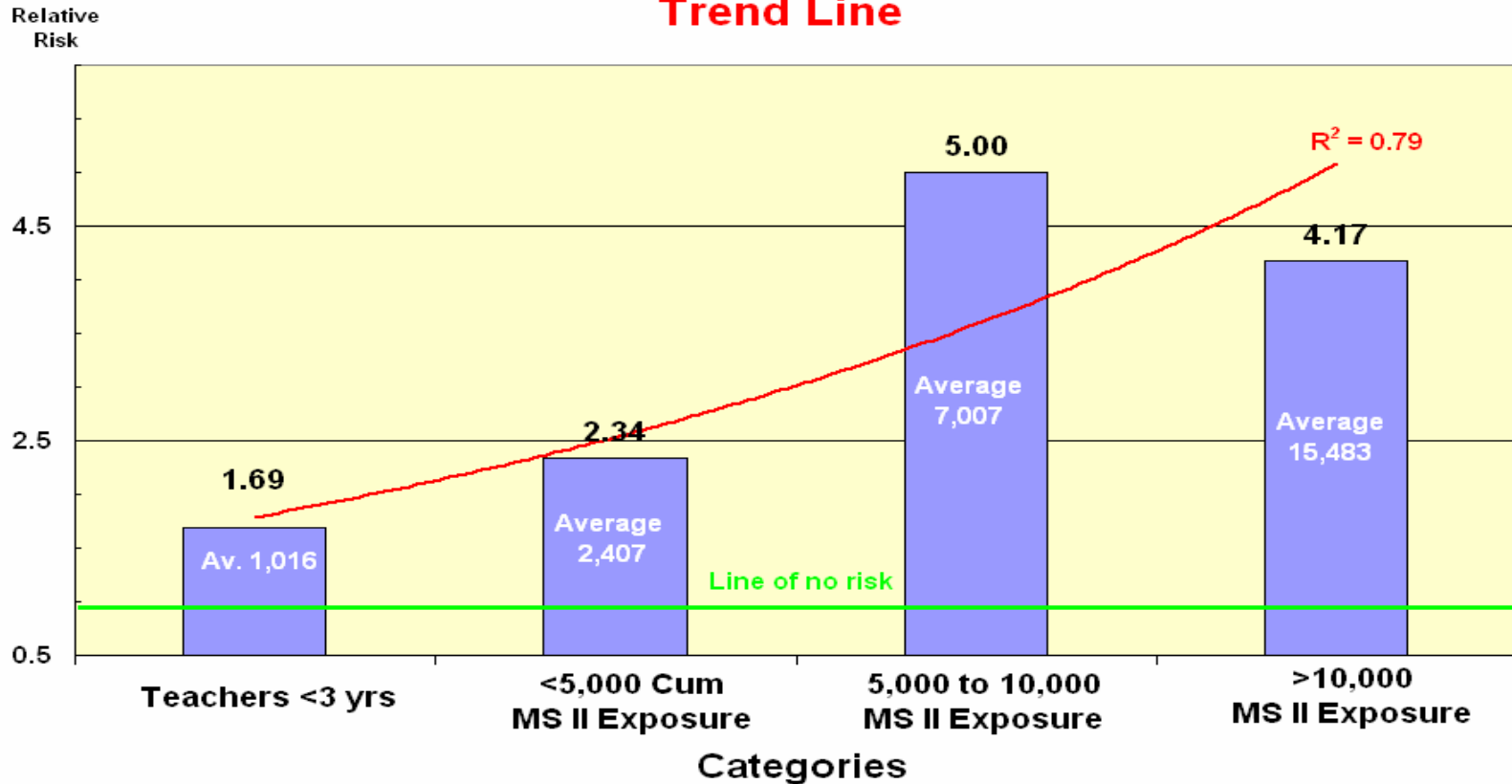
“The District will install shielding between the main electrical room and classroom 304 . . . within the next 4 to 5 months”

Is Dirty Power a Risk for Cancer at LQMS?

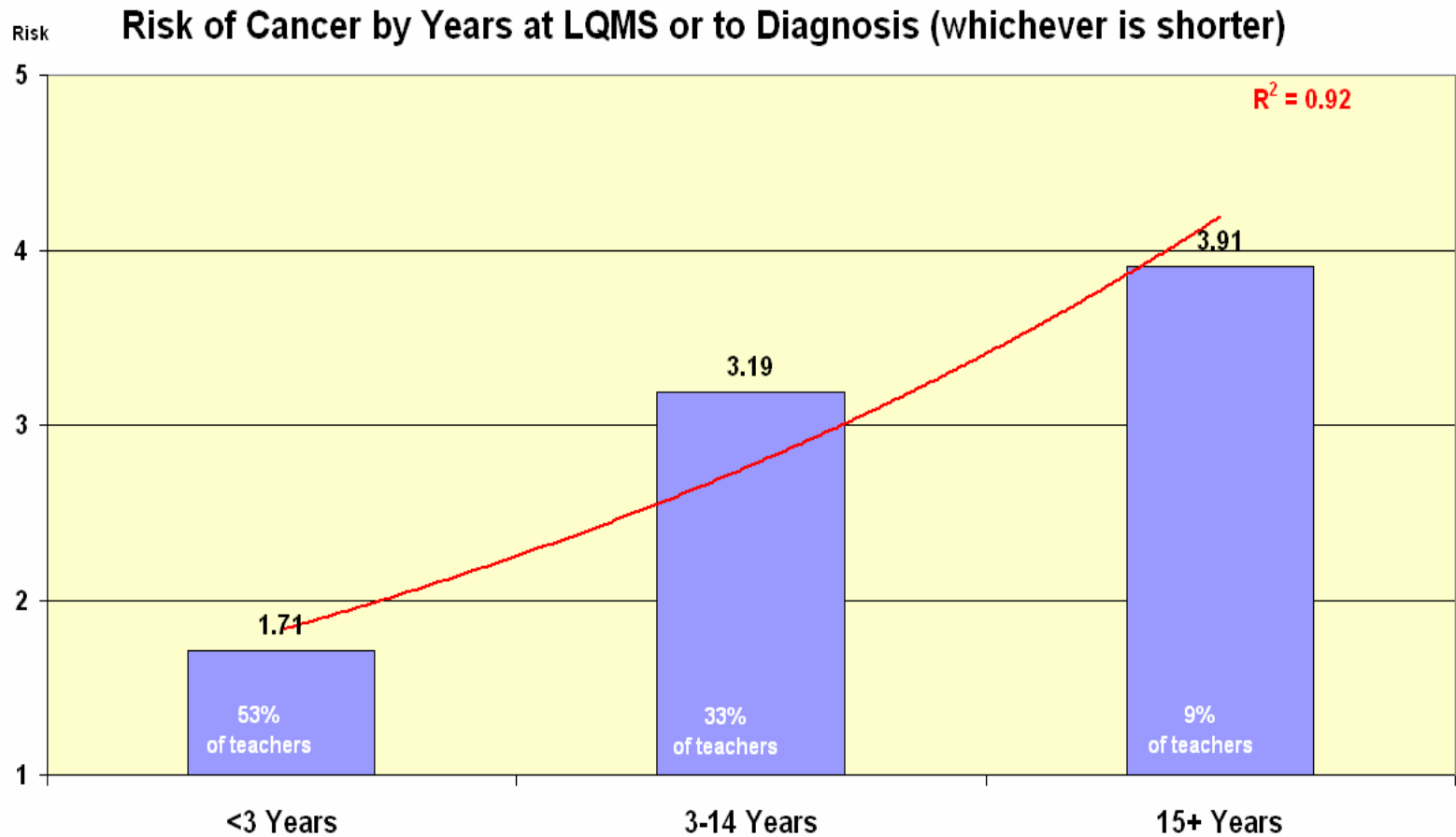
- Risk of cancer from ever being in ≥ 2000 room
 - 5.1-fold
- Risk of cancer from ever being in > 2000 room and employed at LQMS > 10 years
 - 7.1-fold
- Risk of cancer from never being in ≥ 2000 room
 - 1.8-fold

Is Dirty Power a Risk for Cancer at LQMS?

Risk of Cancer by Cum. Av. Exposure Category with Trend Line



Does Risk of Cancer Increase with Time at LQMS?



There Is a Problem at LQMS

- US Government and World Health Organization
 - EMFs are a “possible human carcinogen”
- The electrical system is “unusual”
 - Employees and students have an expectation of a safe and healthy environment
- Suggested actions per Cal-DHS
 - Find and eliminate high dirty power levels
 - **Fix the problem!**
- Is there a cancer risk for LQMS students?
 - We do not know. Students attend LQMS for 3 years
 - For <3 years the teachers’ risk of cancer is 1.7-fold above expected
 - This question could be answered
 - Investigate the cancer incidence among all LQMS students, past and present

Others Maladies Associated with Dirty Power

- Asthma
- Elevated blood glucose
- Fibromyalgia
- Chronic fatigue syndrome

- We have no knowledge of these problems at LQMS, but
 - If and when the dirty power problem is mitigated at LQMS, or after leaving LQMS
 - Notify us if you see any changes in these or other health issues

Teachers, Staff, Parents and Students Should Be Informed per Recommendation of Cal-DHS

- District to inform all present and former teachers, staff and students of cancer cluster findings and advise them to get melanoma screening
- District to notify local media of the truth of the cancer cluster and advise as to melanoma screening for all present and former teachers and students

Acknowledgments

- To all the teachers who **REFUSED** to let this problem be ignored

- To the LQMS teachers and staff who sadly lost their lives before remedies were found
 - David Loveless, deceased June 17, 1998
 - Cal Sarver, deceased November 30, 2003
 - Van Vantress deceased 2003
 - Tomijean Doeberiner deceased, 2006
 - Attendance clerk, not included in risk calculations

Last Thoughts

- Questions and Answers
- Next Steps (What is to be done)

Contact Information

■ Teachers Contact

■ Gayle Cohen

- Email: gayleic@aol.com
- Phone: 760 341-0207

■ Technical Contacts

■ Sam Milham, MD

- Email: smilham@dc.rr.com or smilham2@comcast.net
- Phone: 760 775-5878; after April 27, 360 866-0256

■ Lloyd Morgan

- Email: bilovsky@aol.com
- Phone: 510 841-4362