



SWIM-MASTER

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SPORTS MEDICINE NOTES TO MASTERS SWIMMERS

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Body Build and Aging

Many of you may remember my study of body build (somatotype) of men Masters swimmers conducted at the outdoor championships in Bloomington, IN, back in 1972. A major finding of these studies was that no significant difference in body build was found between swimmers in their 40's vs swimmers in their 50's. Similarly, Masters champions could not be readily differentiated from nonchampions on the basis of body build. Once a Masters swimmer obtains at least fair conditioning, his body build closely resembles that of other Masters swimmers.

Taking the average body build of Masters swimmers as a group, it was seen to be on the heavily muscled side (enomesomorph). This body build is in contrast to that of the average youthful swimmer of today whose body is on the lean and muscular side (ectomesomorph). At first, it seemed that the heavier features of the Masters swimmers' somatotype represented change secondary to aging. But when Dr. Lindsay-Carter and I reviewed somatypes of 1948 Olympic swimmers (who are members of the same generation as the Masters swimmers studied in Bloomington), these results were very nearly the same as ours. In other words, the body build for champion male swimmers of this generation (born approximately between 1920 and 1930) has stayed remarkably the same over their lifetimes.

Decline of Swim Performance with Age

A second study, which was reported in Medicine in Science and Sports last year, dealt with the fall-off in swim performance across Masters' age groups. Dr. Arthur and I have examined Masters' records since the first meet in Amarillo, TX, in 1970. Regardless of the yearly improvement in record times, the fall-off over 35 years (25-29 yrs.) has always been very close to 1% per year. It's important to emphasize that this decline in swim performance is an average value. That means some people will decline faster, others slower, but the average will be 1% per year. It is also important to emphasize that this decline has been observed in individual swimmers who maintain nearly the identical swimming workouts year after year. Many Masters swimmers find that each year they lengthen their workouts, or swim harder during their time in the pool, than in past years. Such increases in training intensity will camouflage (for a while) the age-related fall-off in swim performance.

Decrement in maximal oxygen uptake (V_{O_2}) of 1% per year has been found in studies of sedentary adults, active athletes, as well as in world champions. All humans appear to experience a decline of approximately 1% per year in this vital physiological function, starting in their early 20's through old age. While sedentary men show a V_{O_2} of around 40 ml/kg/min at age 25 and decline towards 28/ml/kg/min by age 55, champion athletes have a V_{O_2} of around 70 ml/kg/min at age 25 and decline to a value near 50 ml/kg/min by age 65. A seeming paradox is that the champion athlete at age 55 has a higher V_{O_2} than does a sedentary man of 25 years. However, this doesn't mean that the trained athlete has reversed the aging process. Furthermore, a sedentary individual at, say, 45 years of age, can begin a physical fitness program and raise his maximal oxygen consumption

over a few years' time. Once again, although this individual has improved his physical condition, he has not avoided the aging process. Once he settles on his new level of activity, his 1% per year decline will again become evident. The advantage of training is that one's 1% per year decline is on a higher "glideslope" than that of the sedentary individual.

Finally, for freestyle and backstroke, the observed decline in Masters swim performance was slightly less than 1% per year--around .8% per year. For butterfly the fall-off was slightly more than 1% per year. As I pointed out in the article, it's great fun to extrapolate backwards in time, to the age of 25 or so, from your present times to estimate what you might have been able to swim in your youth if you trained then as you do today. When this is done with Masters champions' times, the results come very close to current-day records. This makes a good deal of sense since many of our current Masters champions were record holders in their youth--and certainly then didn't utilize the training methods and distances popular today.

The Rise and Fall of Body Energy

Utilizing swim records data from young age group champions through 50-59 years Masters champions, for boys and men, I constructed the following graph (Figure 1) which I label the rise and fall of body energy. Competitive swimming is perhaps one of humans' best measures of all-out cardiovascular and muscle performance. This "stress test" is continuously carried out by athletes in their early teens through old age. A standard time measurement of competitive swim performance then, such as the 100-yard freestyle event, illustrates the acquisition and ensuing gradual loss of body energy over 50 years of human life. As can be seen on the graph, there is a remarkably rapid acquisition of strength and performance during the teenage years--leading to world record performances by swimmer athletes in their late teens or early 20's. Then starts the 1% per year decline in performance which continues steadily to at least 60 years of age. (We need more data from older swimmers to extend these studies into age groups older than 55-59 years.) An encouraging finding in the observed decline of body energy is that energy doesn't "go all at once." The gradual, linear fall-off in swim performance (energy) suggests that aging is a regularized, gradual process. The 1% per year slope of the decline "reassures" us that at 60 years of age, for instance, a person is still 70% the person he was at 30 years of age.

An utilitarian aspect of Figure 1 is its use for swim meets where Masters and age group swimmers swim together. The graph helps to decide how to compose the heats. For example, 60-year old Masters swimmers and 10-year old age group swimmers would make an exciting race--champions in both groups would swim the 100-yard freestyle in slightly less than 1 min. Similarly, 40-year old Masters swimmers should be placed with 11-12-year old age group athletes; 30-year old Masters swimmers with 13-14-year old age groupers; and 25-year old Masters swimmers would be a close match for 15-17-year old age group swimmers.

The Diminishing Benefits of Increasing Workouts

A second graph (Figure 2) presents a composite of information provided me by Masters champions who continued year after year, regardless of the fact they had to improve their swim times each year, despite aging, to remain a champion. These men and women all found they had to extend their distance swum per day (as well as the intensity of the workouts) in order to achieve this goal. From this information I calculated a curve which summarizes the per-

centage gains swimmers achieve with progressive increases in distances swum.

If maximal swim performance is accepted to be that performance achieved on a daily workout of 22,000 yards per day, then per cent of maximal performance (% max) can be estimated for lesser distances. Increases in distances swum and concomitant increases in performance can be read off the curve. For example, swimming 1,000 yards a day allows one to achieve about 75% of his or her maximal performance. Increasing the workout from 1,000 to 2,000 yards per day is accompanied by a 10% (to 85% max) improvement in swim times. To gain another 10% improvement, however, (to 95% max), the swimmer must triple his distance--to nearly 7,000 yards per day. Finally, to achieve the remaining 5% (to 100% max) the swimmer must again triple the workout--to nearly 20,000 yards per day. As 20,000 yards requires about seven hours of swimming, very few Masters swimmers will achieve 100% maximal performance. Most of the Masters champions in my sample had gone from 75 and 80% max in 1971 to 95 to 97% max by 1975.

Thus, I conseil Masters swimmers that if they can only afford an hour a day to swim, they won't be a Masters champion but they can estimate if they would be in the running for a championship had they the time and desire to train longer. In other words, swimmers covering 2,000 yards per day can take their best time and see if a 10% improvement (which would come at 7,000 yards per day) would be competitive for a championship. If so, they can feel content that they have the potential of a Masters champion. Finally, for those swimmers who are still developing their swim skills and conditioning, this graph is an underestimation of their eventual performance. With increased swimming, they will improve their swim skills as well as their endurance. Thus, they should not be too discouraged if a projection of their current times does not come close to a current Masters record in their age group.

SWIMMING NEWS

CORRECTION: A mistake in the times printed from the SC Nations last month has been brought to my attention. Jamee Stewart won the 25-29 Women's 50 yard butterfly in the time of 28.1. The back-up time had to be used.....

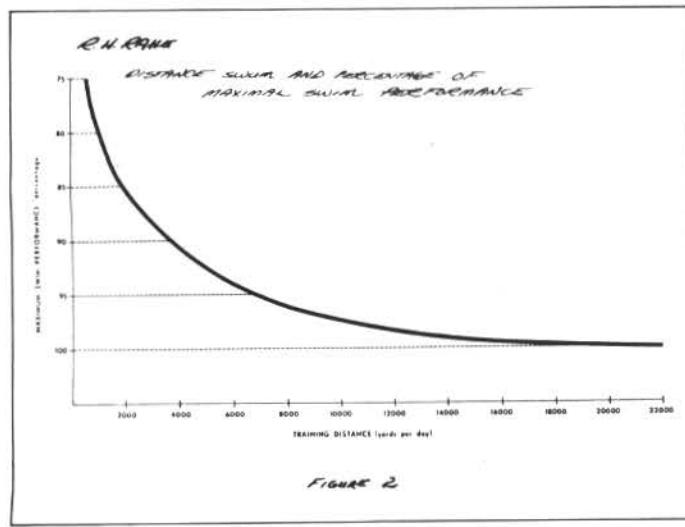
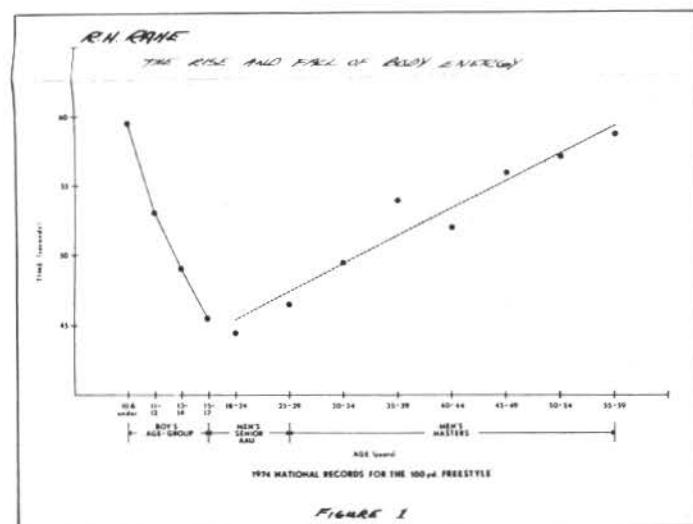
APOLOGY: The following letter was received from Daniel A. Per-Lee, Attorney at Law: "On page 12 of your June, 1976 issue, there appears an article, without attribution, under the headline 'Woman Swims to Beat Polio, Wins 5 Gold Medals at Age 82'. This article was taken nearly verbatim from an article written by my wife, Myra S. Mobil, which appeared on page D-1 of the May 20, 1975 issue of the Washington Post, and was published without the permission either of Miss Mobil or the Washington Post. Consequently, Miss Mobil is requesting that you publish in the next-occurring issue of Swim-Master, a proper attribution of this story and an apology for the failure so to attribute it in the June, 1976 issue. A prompt reply to this letter is expected." We are truly sorry for not giving Miss Mobil credit for the article that appeared in the June issue. Sometimes people send in articles without even the name of the paper. We just try to make Swim-Master newsy and representative of all Masters swimmers.....

RECORDS & TOP TEN September 15th was the end of the 1976 swimming year for records and top ten. Enid Uhrich, Ed Reed and Ted Haartz ask your continued cooperation in sending in the meet results. September 30th was their deadline for receiving meet results and/or Association Top Ten Times so that the National compilation can be completed, typed and published in December. Failure to have met the 9/30 deadline could mean that some swimmers' times will not be published. The pasted up copy of the Masters Top Ten Times for 1976 must be submitted to Al Schoenfeld, Editor of Swimming World by November 5th. This does not give us much time to do all of this work! All data in correct event form from all meets should be sent to Ted Haartz, 155 Pantry Rd., Sudbury, MA 01776. If you have any problem, call Ted at work 617-263-2741 or at home 617-443-2977.....

CONGRATULATIONS were received from Carl O. Bauer, Father of A.A.U. Age-Group Swimming who visited us at the Nationals in St. Louis - "Dear June, A world of warm wishes today for a world of happiness always! With hearty congratulations to the 1976 A.A.U. Masters Championship Swimming Meet. More power to you!".....

FROM LAS VEGAS Louis P. Silverman writes, "After a 45-year hiatus in swimming competition, I got involved in swimming for exercise - swam in my first meet Aug. 15th, So Pac area Masters Swim meet - and got a bronze in 1500 mtr. 65-69 yr group. I am 'hooked' - met a nice group of people -."..... **SERVICES** for Richard Bosse, 79, were held 8/20. Daniel E. Whiteley, Jr. writes, "Dick's death was unexpected as he was always in excellent condition for his age and was getting ready for the National LC Championships in St. Louis when he died. A former national record holder in the 50 meter breaststroke, Dick was the Dean of the Southern Ohio Masters and was held in fond esteem by all his team mates. He was a volunteer life guard and swimming instructor at the downtown YMCA, giving unselfishly of his own time by helping the neophytes and the handicapped learn to swim. He contributed much to swimming here in Cincinnati and will certainly be missed.".....

PICTURES ON PAGE 3 FROM NATIONALS IN ST. LOUIS (1) Dr. Ramsom Arthur, Dr. Bumpy Jones and Judith Coble; (2) Dale Trinka, Wade Barber (Happy Meet Director) and Ron Buss; (3) Molly (Botkin) Rossiter and Jennifer Parks; (4) Fred Schlicher (fastest Masters swimmer), Fred's father (follows Fred to the meets) and Ted Haartz; (5) Ann Graham (cup cake cutie); (6) Bill Lough, National President of the Australian Union of Senior Swimmers-International; (7) Tim Garton and Phil Moriarty (Yale Swim Coach); (8) Alex Dalmau of Caracas, Venezuela and from Ecuador, A. Sangster and Pedro Garcia; (9) Frank Sykes (member of the AUSSI Committee) and Mary Connolly, Honorary Treasurer of the AUSSI; (10) Hud Stewart of Canada and Larry Smith of the New England Masters; and (11) unidentified women getting attention from the doctor of the meet - John Nelson, Olympic swimmer in 1964 and 1968.....





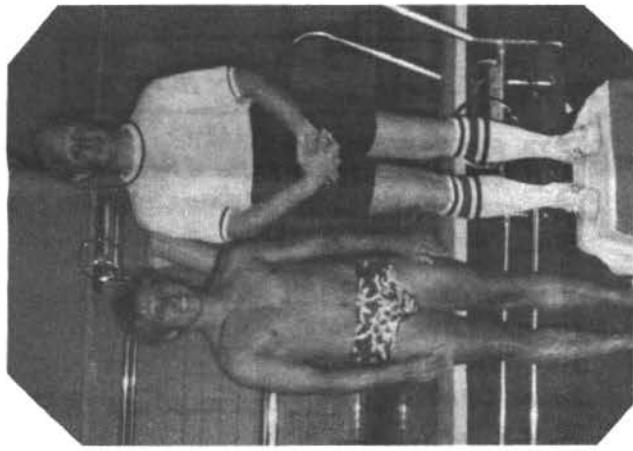
NATIONALS

1976

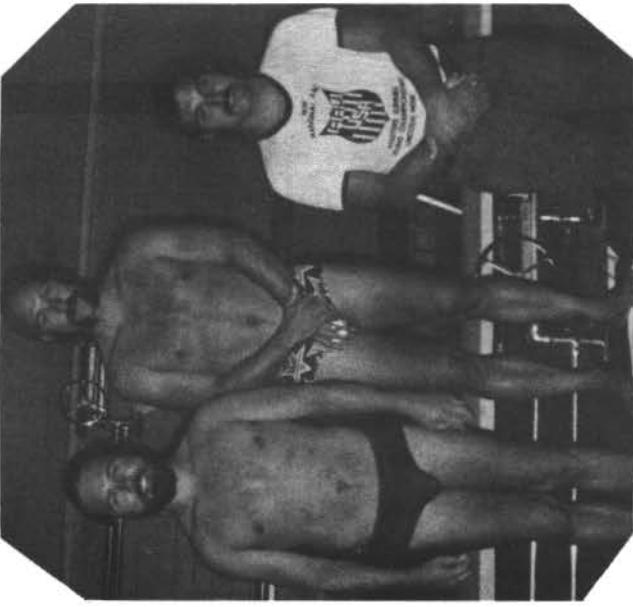
MASTERS DIVING - SUMMER NATIONALS - SEPT. 3-5 '76 - LINCOLN, NE.



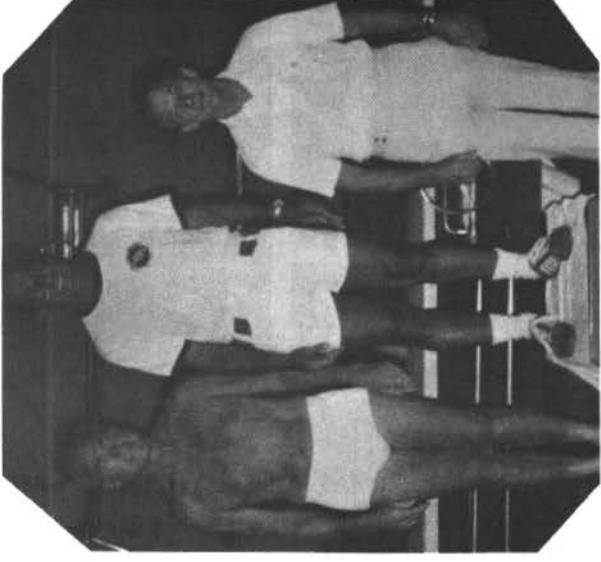
35-39 (L) FRED FOX, 2ND 1 M & 3 M.
(C) JOHN DEJINGER, 1ST 1 1/2 M.
(R) KARL KLEMAN, 3RD 1 1/2 M.



30-34 (L) BOB WILSON, 1ST 3 M, 2ND 1 M.
(C) STEVE SORENSEN, 1ST 1 M, 2ND 3 M.
(R) ROB WALKER, 1ST 1 M, 2ND 3 M.
(K) RAY POWERS, 3RD 1 M, 4TH 3 M.



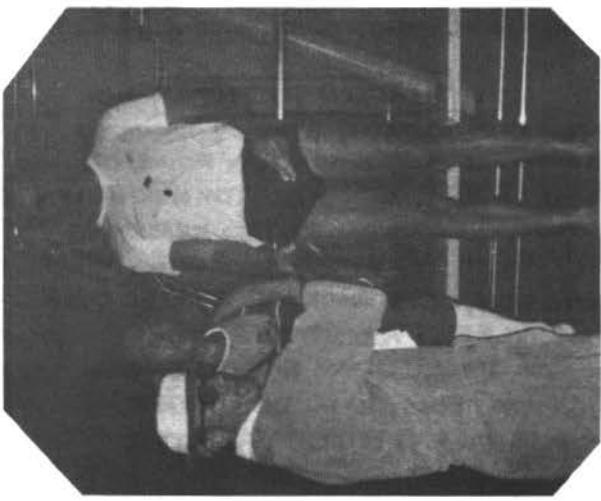
25-29 (L) JIM BRINSON, 1ST 3 M, 2ND 1 M.
(C) ROB WALKER, 1ST 1 M, 2ND 3 M.
(R) RAY POWERS, 3RD 1 M, 4TH 3 M.
(K) JACK HARBOUR, 1ST 3 M, 2ND 1 M.



50-59 (L) TED KERSTING, 2ND 1 1/2 M & 3 M.
(C) TOM HAIRABEDIAN, 1ST 1 1/2 M.
(R) BILL BURKESS, 3RD 1 1/2 M.



40-44 (L) JIM STEVENS, 2ND 1 1/2 M. 45-49 (L) ALICE DYER, 4TH 1 1/2 METER
PETE AYER, 2ND 1 1/2 METER
ED CRAVEN, 1ST 1 M, 3RD 3 M.
JACK HARBOUR, 1ST 3 M, 2ND 1 M.



40-44 (L) JIM STEVENS, 2ND 1 1/2 M.
(R) RICH LAWLER, 1ST 1 1/2 M.
(K) JACK HARBOUR, 1ST 3 M, 2ND 1 M.
(M) (NON CLOWN DIVING EVENT)



MARY O'BRIEN AWARDS 1ST
TO FRANK MCGUIGAN, 2ND
TO BILL MCALISTER, 1 METER.
BILL WON 3 METER & FRANK
WAS 2ND (60-69)



JOLLY JOHN SABLE
1ST 1 METER
1ST 3 METER
(70-79)



L. GERTA ROSS
1ST 1M, 3M, (70-79)
1ST SR.GR.MASTER



R. MARSHA LUTZ
1ST 1M, 3M (25-29)
1ST GRAND MASTER

DR. BILL WEYRAUCH
CONGRATULATING
LOIS GOTTHARDT,
1ST 1M, 3M (30-34)



← TOP ROW - **45 & UP SENIOR GRAND MASTER**

L. GERTA ROSS, WOMEN'S CHAMP
JACK HARBOURNE, MEN'S CHAMP
ED CRAREN 2ND TOM HAIRABEDIAN 3RD
BILL MCALISTER 4TH

← BOTTOM ROW - **GRAND MASTER**

L. MARSHA LUTZ, WOMEN'S CHAMP
JIM BRINSON, MEN'S CHAMP
JOHN DEININGER 2ND, FRED FOX 3RD
RICH LAWLER 4TH



GROUP PICTURE →

TOP ROW (L.) KARL KLEMAN, STEVE SONNISON
JIM STEVENS, JIM BRINSON, RAY POWERS,
ROB WENNSTEDT, 2ND ROW TOM HAIRABEDIAN
PETE AYER, BILL BURGESS, TED KERSTING
JACK HARBOURNE, 3RD ROW ED CRAREN
BOB WILSON, LOIS GOTTHARDT, ALEC DYER
RICH LAWLER, FRED FOX.
BOTTOM ROW JOLLY JOHN SABLE, MARSHA
LUTZ, GERTA ROSS, JOHN DEININGER,
FRANK MCGUIGAN, BILL MCALISTER

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1976 SWIM CALENDAR 1977

VOL V - No 8

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|---|
| New England Masters Swim Club - Joy Miller, 401 Essex St., Hamilton, MA 01936 |
| OCT 12, OCT 24, NOV 9, DEC 5, DEC 14, JAN 9, JAN 23, FEB 8, MAR 8, MAR 20, APR 12, MAY 10, APR 23-24, JUN 7 |
| Pacific Association - Dore Schwab, Gray Oaks, Box 772, Ross, CA 94957 |
| OCT 9-10, NOV 20-21, DEC 4/5 |
| Inland Empire Association - Harry Lewis, 944 E. 39th, Spokane, WA 99203 |
| NOV 20-21, MAR 12-13, APR 30-MAY 1 |
| Pacific Northwest Association - Steve Engel, 2005 S. 308th, Federal Way, WA 98002 |
| NOV 6-7, DEC 18-19, JAN 29-30, MAR 5-6, APR 2-3, JUN 4-5, JUL 16-17 |
| Oregon Association - Connie Wilson, 10315 S.E. 82nd, Portland, OR 97266 |
| NOV 6-7, JAN 15-16, FEB 26-27, APR 2-3, APR 22-24, JUN 11-12, AUG 12-14 |
| OCT 10 Palomar College - Jerry Siefert, 5619 Sandburg Ave., San Diego, CA 92122 |
| OCT 10 Leatherstocking Open - Pat Clinton, ACC Gymnasium, Cooperstown, NY 13326 |
| OCT 15-16 Glastonbury Open - Dot Donnelly, 401 Shuttle Meadow Av, New Britain, CT 06052 |
| OCT 25 Watertown - David Beardsley, 1380 Terr. Dr. #102, Roseville, MN 55113 |
| NOV 6 Bartlesville - Masters Swim Meet Dir., Phillips Petroleum Co., B-66 Adams Bldg., Bartlesville, OK 74004 |
| NOV 6-7 Southeastern - John P. Crews, M.D., 101 Doctors' Bldg, Oak Ridge, TN 37830 |
| NOV 7 SPA Diving - Brud Cleaveland, 1520 Bay St., Santa Monica, CA |
| NOV 7 Ryall Relays - Beth Gabriel, 516 Ford St., Geneva, IL 60134 |
| NOV 13 DC Masters - Bob Husson, 3282 Aberfoyle Pl. NW, Washington, DC 20015 |
| NOV 14 New Canaan - Anne Hummel, 31 Nursery Road, New Canaan, CT 06840 |
| NOV 21 Blue Hen Pentathlon - Harry Rawstrom, Carpenter Sports Bldg., University of Delaware, Newark, DE 19711 |
| NOV 26-27 MASTERS SWIM CLINIC - Dr. Paul Huttinger, Western Illinois U., Macomb, IL ten. |
| DEC 5 N. Suburban Y - Edie Terry, 1821 Sunnyside Cir., Northbrook, IL 60062 |
| DEC 18 DC Masters 1650 - Bob Husson (above) |
| JAN 8 Mid-Winter - Daniel Davis, 434 Mix Ave., Hamden, CT 06514 |
| JAN 14-15 IL Inst. of Tech. - Frank Havlicek, 781 N. Milton Rd., Palatine, IL 60067 |
| JAN 22 DC Masters - Bob Husson (above) |
| JAN 29-30 UNCC Masters - Richard Bober, 5415 Finsbury Pl., Charlotte, NC 28211 |
| FEB 20 Shabonna Sharks - Ingrid Stine - 4119 N. Pittsburg, Chicago, IL 60634 |
| MAR 13 St. Chas. Park Dist., Meredith Scanlon, 71 McKinley, St. Charles, IL 60174 |
| APR 18-19 WIU - Dr. Paul Huttinger, Western Illinois U., Macomb, IL |
| APR 30-MAY 1 State Meet - Beth Gabrial (above) |