



“If I would study any old, lost art, let us say, I must make myself the artisan of it...”

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Frank Lukes, Editor
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ATLAT VS. BISON AGAIN, Part 2
By John C. Whittaker and Devin Pettigrew

Editor Note: This article is the second of a two part series from John Whitraker and Devin Pettigrew. Please refer to the Fall 2023 edition of *The Atlatl* for part one of this series.



Figure 1. Dust preparing to launch a heavy composite dart. Pettigrew with Casio EX-F1 camera to record dart flight.

Last time we talked about hafting issues. This time we want to explore hafting and point damage in more detail. Archaeologists frequently interpret past technology with a point of view that has sometimes been formalized as ‘design theory.’ A good short introduction is Brian Hayden’s recent (2022) *Understanding Chipped Stone Tools*. He says design theory “is a conceptual approach focused on the user’s decisions in the design of tools and what the tools were used for.” Design theory sees technology as solving problems, like how to hunt successfully, and considers the constraints on the producers and users of technology, like raw material availability and manufacturing skill, or the toughness of hide in different species of game. This in general is a useful way to look at human technology, and we all do it to some extent in our own lives, but it raises some problems for archaeologists. We can never be told by a prehistoric person what they think they were doing; all we

have is the evidence from the artifacts they made and used. To interpret artifacts thus involves some imaginative leaps. In many cases these are simple enough “common sense” understandings of the world: you need sharp edges to cut, for instance.

However, archaeological interpretations based on design theory can suffer from several weaknesses. One is the assumption that artifacts that have survived for us to study are actually representative of a common technology used in the past, and must have been optimal solutions to the problems their makers were trying to deal with. Another is the application of untested “common sense” ideas to the details of artifacts. The cutting ability of sharp edges has been tested many times and is not really in doubt. But we probably should still ask how sharp must the best edge be for a given application, and what shape, and how do we measure those aspects?

And some ‘design theory’ ideas are not thought out very well. Many are not properly tested. One suggestion we have read several times is that because stone points are fragile, and fractured stone can be sharp, a point that breaks in a wound should continue cutting, and might even do more damage than if it hadn’t broken. Maybe some are even designed to break – consider the notches on some points, which ‘encourage’ them to break through the stem. Ideas like this that enter the literature without proper testing, but are com-

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monly cited, and can turn into embedded “common sense” understandings in archaeological thinking. As with any science, it is useful and necessary to rethink old ideas.

It seems unlikely that a point that has lost its sharp edges and tip will continue to work as well – this is a simple design theory counter-argument to the fractured point idea. Moreover, fracture involves energy expenditure, and that is energy taken away from the energy driving a projectile through the target. These are things we can test through various kinds of experiments. Maybe stone points, properly hafted, are not as fragile as we think. Perhaps a more sophisticated way to think about their fracture is to see it as a problem to be solved: when they break on impact, how can you minimize or manage the damage so that it has the least effect on penetration?

This brings us back to the problem of dart design. The darts Pettigrew built for the bison experiments are based on ideas tested by considerable experience of many atlatlists, and some formal testing. They are intended to solve problems of accuracy and penetration into large, tough animals. To solve this last problem, we should expect fairly hefty, strong darts (e.g., Figure 1). Our previous bison experiments support this, as do the experiences of other experimenters. The Paleoindian points used by Clovis people and other hunters of large fauna are relatively big and stout, also suggesting that they were hafted on darts to match. Ethnographic Australian darts used on kangaroos are also heavy.

Increased weight tends to increase kinetic energy of a dart’s impact. In a statistical analysis of ballistic variables from the previous carcass experiments, kinetic energy is the single most important measure of penetrating ability, and kinetic energy is strongly correlated with dart mass, since to a point of diminishing returns (dependent on the strength and skill of the thrower), heavier objects thrown by humans tend to carry more energy (Pettigrew et al. 2023). However, the statistical analysis we cite considers only shots with good dart mechanics, not shots that impacted at skewed angles or experienced other problems, such as failure of various components. The bison experiments also teach us about the various challenges in designing effective hunting darts – challenges that can be met with multiple different solutions.

For instance, velocity has a more significant impact on kinetic energy than does mass ($KE=1/2$ Mass times Velocity squared), and heavier darts can be challenging to throw with sufficient velocity. Too much weight is also an enemy of range and accuracy, as the thrower struggles to maintain control and achieve a high velocity. As we noted in Part I of this article (see last issue), straight dart flight and strong shafts can out-perform more massive darts with poorer flight when penetrating bison. This indicates that speed, balance, and good tuning are important to manufacturing optimum hunting darts. One way to deal with these compromises is to engineer a dart that combines strength and excellent flight with the right amount of added weight for any given prey.

Our goal in these experiments is to mimic the general function of ancient darts, but the unique requirements of carrying out an experiment have challenged us to make some innovations. In our prior experiments, when darts impacted heavy bone with a lot of force the foreshafts could become so lodged in the mainshaft socket that we had to stop and cut the bindings to remove them. This costs valuable time and some of the dart’s energy is lost in the impact. Additionally, it is important that darts retain the good qualities of flight mentioned above and do not become warped over the course of many throws. These are similar to, but in some ways different from, the constraints of ancient hunts, when darts may need to function for more than one shot before being maintained back at camp.



Figure 2. Dart construction. A: fletched proximal end with wooden nock piece inserted into cane. B: mainshaft scarf joint. C: forward cane socket piece (covered by sinew) on wooden mid-shaft, with point on foreshaft ready. D: Clovis point on foreshaft set in socket.

Most of the darts for this experiment were multi-part constructions. A small willow or ash nock piece was inserted into a hindshaft of tonkin cane (Figure 2:a), which in turn was scarfed to a midshaft of ash (Figure 2:b). The socket-bearing forward end of the shaft was a ~10cm piece of tonkin cane glued to the ash midshaft. The midshaft is tapered to reach about halfway into the cane (or a plug is inserted into an all-cane dart). The foreshafts in turn are carefully worked to fit snugly into the forward cane socket but to butt up against the midshaft or plug down in the socket (Figure 2:c, d). This resolves the problem of the foreshafts being driven into the socket by high impact forces.

As we discussed in Part I, solid hafting for the point is also a crucial element of dart strength. This problem only becomes more pronounced as darts become more massive, since kinetic energy of impact works not only on the target but back on the projectile. But in addition to being strong, a haft also needs to be aerodynamic enough to reduce drag during penetration. We can see this in the Tracker program (see Part 1) as hafted points penetrate the hide – the most rapid deceleration often occurs when the haft encounters the skin. In absence of surviving shafts and hafts in the archaeological record, some elements of projectile point morphology may reflect attempts to make hafts simultaneously strong and aerodynamic. Additionally, point morphologies can



Figure 3. A Folsom point that survived five trips to the bison. This point penetrated deeply into the thorax on the first two shots before its haft became damaged

reflect the challenges of designing projectile points from inherently brittle materials (knappable stone) to be simultaneously sharp enough to penetrate tough hide and durable enough to withstand hard bone impacts.

Folsom points come from the sites of early hunters on the Plains and elsewhere who hunted a lot of large extinct bison (*Bison antiquus*). The best Folsom points have long flutes that thin the point on both sides from the base. It is difficult to make good Folsom points, partly because the fluting process is risky, so we assume it was important. The final point is thin and appears to be fragile. Many theories have been proposed to explain Folsom fluting, but the most likely explanation is that it provided strong and stable hafting, with more flexible elements clamped on the sides of a brittle but sharp core. With the point supported by a deeply notched foreshaft, perhaps cutting edges would survive an impact that damaged the tip, or at least remain in place to cut a wound if the point broke, and perhaps a Folsom point that lost only its tip could be easily resharpened, explaining the many examples of short and stubby Folsom points (Ahler and Geib 2002).

Our second and third bison experiments included a total of 15 Folsom points (made by Tony Soares, Ed Mosher and Jake Webster). With a good long flute, the foreshaft hafting could protect most of the point (Figure 3). On the second bison we attempted to haft several Folsom points with thin antler tabs, but these proved too flexible and the hafts and points frequently failed. Using more rigid hafts of chokecherry on the third bison made the fragile Folsom points more durable. We took 12 shots with five Folsom points on the third bison, resulting in four broken points. One point made four trips to the bison and another made five. Two survived the loss of one ear of the base and the other two hit ribs directly and were completely shattered. We see all these types of breakage in archaeological specimens (Figure 4). Folsom points, adequately hafted, are certainly efficient at penetrating bison.



Figure 4. Broken Folsom points.



Figure 5. A point that struck the shoulder with high energy but was unable to penetrate the skin and wool, instead destroying its own haft. Arrow indicating impact locus covered in pitch dust.

adequately hafted, are certainly efficient at penetrating bison.

On the other hand, some points just didn't work for us in this experiment. Points that were not very sharp did not do well, and often their haft failed at impact, even when the point was tough enough to survive. In the worst cases, the points could get driven back, splitting the hardwood, cutting through the sinew, and turning the pitch into a cloud of powder and debris (Figure 5). When points shattered after impacting bone, penetration stopped completely or was shallow in the best cases (Figure 6). This appears to refute the idea that a point would be designed to shatter on impact.

And yet, some prehistoric points were not very well-made. Were they 'good enough,' or did the makers have other objectives in mind, other ways of making a dart work for them? Our range of different point and haft types that we tried in these experiments suggests to us that when hunting smaller, less resistive prey, lower quality points and hafts can still be effective at penetrating through vital organs, but large prey can produce significant challenges that would drive hunters to manufacture effective weapons, especially when it was necessary to penetrate a thick woolen coat. Such weapons rarely survive the test of time, since even stone points were typically used, broke, and resharpened before finally being discarded.



Figure 6. Points that shattered on impact and penetrated between zero and 6 cm. Bottom shows the Folsom point that is first left in Figure 4.

References

Ahler, Stanley A. and Phil R. Geib

2002 Why Flute? Folsom Point Design and Adaptation. *Journal of Archaeological Science* 27:799-820.

Hayden, Brian

o

2022 *Understanding Chipped Stone Tools*. Elliot Werner Publications, Clinton Corners, NY.

WAA EVENT CALENDAR

DEADLINES FOR THE NEWSLETTER

Monday April 1, 2024 for submission for the Spring 2024 Newsletter

Monday July 1, 2024 for submissions for the Summer 2024 Edition of the Newsletter

Tuesday October 1, 2024 for submissions for the Fall 2024 Edition of the Newsletter

Wednesday January 1, 2025 for submissions for the Winter 2025 Edition of the Newsletter

Please Note: In these times of uncertainty (weather events, pandemic, etc.) events may be cancelled or rescheduled. If event changes occur, please keep Deb Andrews informed. Also check the website Event List for cancellations or changes. In addition, contact information for event leaders can be found to verify the event schedule.

NORTH AMERICA

DATE/STATE	EVENT
2024 Jan 20 Sat New York	Indoor Shoot – Sat 20 Jan 2024 10 am to noon or so -WHERE: Jim’s Pro Shop 4885 Route 96, Shortsville New York ISAC and locals. Range Fee \$11. DIRECTIONS – Exit 43 off Thruway and south on 21 to rte 96, 2 miles west (sign will say north) to just past blinking light for city rd 28. The block bldg (4885 Route 96) is on the left. Contact: RSVP to Douglas Bassett (585) 313-7111; dglbassett@gmail.com
2024 Feb 03 Sat New York	Indoor Shoot – Sat 03 Feb 2024 10 am to noon or so -WHERE: Jim’s Pro Shop 4885 Route 96, Shortsville New York ISAC and locals. Range Fee \$11. DIRECTIONS – Exit 43 off Thruway and south on 21 to rte 96, 2 miles west (sign will say north) to just past blinking light for city rd 28. The block bldg (4885 Route 96) is on the left. Contact: RSVP to Douglas Bassett (585) 313-7111; dglbassett@gmail.com
2024 Feb 10 Sat – 2024 Feb 11 Sun Florida	Stone Age & Primitive Arts -WHEN: 2024 Feb 10 Sat – 2024 Feb 11 Sun from –WHERE: , Tallahassee Florida United States -WHO: Cheryll Berg 607-659-3854 contact@thunderbirdatlatl.com (Letchworth-Love Mounds State Park is located between Monticello, Florida and Tallahassee). For further information: Bob and or Cheryll Berg, 607-659-3854 or contact@thunderbirdatlatl.com
2024 Feb 17 Sat New York	Indoor Shoot – Sat 17 Feb 2024 10 am to noon or so -WHERE: Jim’s Pro Shop 4885 Route 96, Shortsville New York ISAC and locals. Range Fee \$11. DIRECTIONS – Exit 43 off Thruway and south on 21 to rte 96, 2 miles west (sign will say north) to just past blinking light for city rd 28. The block bldg (4885 Route 96) is on the left. Contact: RSVP to Douglas Bassett (585) 313-7111; dglbassett@gmail.com
2024 Feb 17 Sat – 2024 Feb 18 Sun Florida	Silver River Knap-In & Prehistoric Arts Festival -WHEN: 2024 Feb 17 Sat – 2024 Feb 18 Sun from – EST -WHERE: , Ocala Florida -WHO: Cheryll Berg 607-659-3854 contact@thunderbirdatlatl.com ISACs and local contests. For further information: Bob and or Cheryll Berg, 607-659-3854 or contact@thunderbirdatlatl.com
2024 Apr 27 Sat – 2024 Apr 28 Sun New York	Daffodil Festival Atlatl Contest -WHEN: 2024 Apr 27 Sat – 2024 Apr 28 Sun from –WHERE: 90 Main Street, Candor New York -WHO: Cheryll Berg 607-659-3854 contact@thunderbirdatlatl.com ISACs and local contests. For further information: Bob and or Cheryll Berg, 607-659-3854 or contact@thunderbirdatlatl.com

CALL FOR NOMINATIONS 2024

Individuals to fill the following positions will be elected in 2024:

President,

Vice President,

One Board of Directors position.

Starting January 1, 2025 both the President and Vice President will serve a two-year term and the Board member will serve a three-year term.

If you wish to nominate one or more individuals, please contact them to see if they would be interested in being nominated. If they are interested, submit their names, contact information, and a brief statement regarding their interests/qualifications to: Debra Andrews, Executive Secretary - deb.andrews@frontier.com. **The deadline for submitting names is May 1, 2024.**

Nominations Committee

International Standard Accuracy Contest (ISAC) Scores

2023 ISAC Results for Men (70 and Above)

PLAC E	TIE PLACE MENT	SCORE	NAME		CITY OF	STATE/ COUNTRY	DATE OF THROW	CONTEST
1		96xxx	Douglas	Bassett	Warsaw	NY	8/27/2023	Eastern Seaboard, Letchworth St Park, NY
2		95x	Ray	Strischek	Athens	OH	6/3/2023	Athens Library, Athens, OH
3		94x	Marlin	Bassett	Warsaw	NY	6/3/2023	Among the Hills, Nunda, NY
4		93	Matthieu	Lacoste	Amou	FRANCE	8/12/2023	Le Mas d'Azil, FRANCE
5	*	91x	Dave	Patterson	Ashland	MO	4/15/2023	Hermann Youth Day, Hermann, MO
6	*	91x	Kevin	Ashley	Estill Springs	TN	10/6/2023	Old Stone Fort, Manchester, TN
7		91	Ryan	Grohsmeyer	Addison	NY	6/3/2023	Among the Hills, Nunda, NY
8		89xxx	Jim	Gnapp	Ladysmith	BC	9/14/2023	Rabbitstick, Rexburg, ID
9		88x	Jordan	Ashley	Winchester	TN	6/2/2023	Old Stone Fort, Manchester, TN
10		88	Jim	Fisher	Grand Island	NY	4/15/2023	Jim's Pro Shop, Shortsville, NY
11		87xx	Christian	Carriere	Montauban	FRANCE	7/23/2023	Arudy, FRANCE
13	*	87x	Claude	Castan	Toulouse	FRANCE	8/13/2023	Le Mas d'Azil, FRANCE
12	*	87x	Carter	Ashley	Estill Springs	TN	6/3/2023	Old Stone Fort, Manchester, TN
14		87	Mike	Glenn	Lucasville	OH	10/27/2023	ROAR - Lake Zaleski, OH
15		87	Fritz	Mischler	Taufellen	SWITZERLAND	7/29/2023	Cazzago Brabbia, ITALY
16		86	Luis Angel	Breton	Valganon	SPAIN	8/13/2023	Le Mas d'Azil, FRANCE
17		86	Ansgar	Lukas	Munich	GERMANY	8/6/2023	Archaeopark Boario, ITALY
18		86	Joachim	Martz	Engen	GERMANY	9/24/2023	Val Senales, ITALY
19		85x	Christophe	Jamon	Arsac	FRANCE	10/21/2023	Brasempuy, FRANCE
20		85	Andy	Majorsky	Derry	PA	6/18/2023	Meadowcroft, Avella, PA
21		84x	Tom	Tobin	Moultonborough	NH	7/28/2023	Moultonborough, NH
22		84	Michael	Frank	Woodbridge	VA	6/18/2023	Meadowcroft, Avella, PA
22		84	Tim	Hall	Indianapolis	IN	8/27/2023	Post Steve's Dam, Pomeroy, OH
24		83x	Greg	Maurer	Vergennes	VT	6/3/2023	Westbrook, NH
25		83	Jurgen	Junkmanns	Erfstadt	GERMANY	9/22/2023	Valganon, SPAIN
26		83	Randy	Whaley	Leon	WV	8/12/2023	Steve's Dam, Pomeroy, OH
27		82	Eric	Botte	Druelle	FRANCE	9/22/2023	Valganon, SPAIN
27		81x	Steve	Barnett	Pomeroy	OH	8/27/2023	Post Steve's Dam, Pomeroy, OH
29		81x	Jacques	Bohere	Tarascon	FRANCE	8/5/2023	La Chapelle aux Saints, FRANCE
30		81	Juan Luis	Navarro Perez	Benahadux	SPAIN	4/22/2023	Benahadux, Spain
31		80x	Ken	Faucher	Dover	NH	7/29/2023	Moultonborough, NH
32		80x	Alain	Lacoste	Toulouse	FRANCE	8/5/2023	La Chapelle aux Saints, FRANCE
33		80	Antonio	Fernandez Aguilera	Benahadux	SPAIN	4/22/2023	Benahadux, Spain
34		80	Charles	Swanson	Knoxville	TN	10/7/2023	Old Stone Fort, Manchester, TN
35		80	James	Turner	Spokane	WA	5/28/2023	Between the Rivers, Valley, WA
36		80	Ismael	Yahemdi	Nice	FRANCE	7/15/2023	Renteria, SPAIN
37		79xx	Lenny	Riemersma	Cascade	WI	9/1/2023	Mattoon Rendezvous, Mattoon, WI
38		79	Mark	Bracken	Sagerstown	PA	9/2/2023	Coshocton, OH
39		79	Cedric	Claustre	Escalquens	FRANCE	10/21/2023	Brasempuy, FRANCE
40		79	Mike	Goot	Colville	WA	10/14/2023	Valley, WA
41		79	Pete	Piraino	Nunda	NY	8/27/2023	Eastern Seaboard, Letchworth St Park, NY
42		78x	David	Schuster	Bobing	GERMANY	9/17/2023	Bad Buchau, GERMANY
43		78	Paul	Coanta Ciprian	Guarnizo	ROMANIA	9/16/2023	Puente Viesgo, SPAIN

PLAC E	TIE PLACE MENT	SCORE	NAME		CITY OF RESIDENCE	STATE/ COUNTRY	DATE OF THROW	CONTEST
44		78	Jerry	Nevins	Jefferson City	MO	3/25/2023	Horse Around Ranch, Truxton, MO
45		78	Angelo	Robledo	Dublin	IRELAND	4/22/2023	Benahadux, Spain
46		78	Jack	Rowe	Sayre	PA	4/21/2023	Earth Day Weekend, Elmira, NY
47		78	Brendan	Wilson	St Louis	MO	4/15/2023	Hermann Youth Day, Hermann, MO
48		77x	Laurent	Bernat	Fleurac	FRANCE	10/22/2023	Brassempuy, FRANCE
49		77x	Greg	Pigneguy	Soulac	FRANCE	10/21/2023	Brassempuy, FRANCE
50		77	Rafael	Guirado Garcia	Benahadux	SPAIN	4/22/2023	Benahadux, Spain
51		77	Steve	Hall	Louisville	KY	6/3/2023	Athens Library, Athens, OH
52		77	Scott	Van Arsdale	Otego	NY	8/24/2023	Eastern Seaboard, Letchworth St Park, NY
53		76	Unknown	Barnes	Florence	MT	9/12/2023	Rabbitstick, Rexburg, ID
54		76	John	Whittaker	Grinnell	IA	9/21/2023	Bois d'Arc, Greenfield, MO
55		76	Gerhard	Wiesler	Puch b Weiz	AUSTRIA	9/17/2023	Bad Buchau, GERMANY
56		75	Mike	Caldwell	Mayfield Hts	OH	9/16/2023	Pawpaw Festival, Albany, OH
57		75	Cyrille	Huc	Seysses	FRANCE	10/22/2023	Brassempuy, FRANCE
58		75	Rodger	Klindt	Dexter	NY	8/27/2023	Eastern Seaboard, Letchworth St Park, NY
59		75	Don	Roberts	Toronto	OH	6/17/2023	Meadowcroft, Avella, PA
60		74x	Gordy	Behrendt	West Bend	WI	4/23/2023	Ojibway Bowhunters, New Berlin, WI
61		73	Charlie	Bracken	Cochranon	PA	9/2/2023	Coshocton, OH
62		73	Fabrice	Brutus	Nantes	FRANCE	8/5/2023	La Chapelle aux Saints, FRANCE
63		72	Juan Jose	Girado Garcia	Benahadux	SPAIN	4/22/2023	Benahadux, Spain
64		72	Johannes	Schoroth	Leverkussen	GERMANY	5/28/2023	Saint Hubert, BELGIUM
65		71	Frank	Lukes	West Lafayette	IN	7/29/2023	Tim Hall's House, Indianapolis, IN
66		71	Kurt	Mischler	Brugg	SWITZERLAND	9/17/2023	Bad Buchau, GERMANY
67		71	Owen	Wilkens	Newport Beach	CA	3/12/2023	Santiago Park, Santa Ana, CA
68		70	Gary	Nolf	Westbrook	NH	6/2/2023	Westbrook, NH

2023 ISAC Results for Women (50 and Above)

PLACE	TIE PLACE MENT	SCORE	NAME		CITY OF	STATE/ COUNTRY	DATE OF THROW	CONTEST
1		79	Martha	Blair	Nunda	NY	7/8/2023	Among the Hills, Nunda, NY
2		78x	Sue	Mercer	Attica	NY	4/29/2023	Daffodil Fest, Candor, NY
3	*	77	Lori	Majorsky	Derry	PA	9/1/2023	Coshocton, OH
4	*	77	Maren	Petersen	Erfstadt	GERMANY	9/22/2023	Valganon, SPAIN
5		76x	Emily	Weaver	Mt Morris	NY	5/19/2023	Among the Hills, Nunda, NY
6	*	76	Laure	Pignaquy	Bayonne	FRANCE	8/5/2023	La Chapelle aux Saints, FRANCE
7	*	76	Vicki	McConnell	Jordan Valley	OR	9/4/2023	WAA Annual Meeting Jordan Valley, OR
8		75	Anita	Lukes	West Lafayette	IN	6/24/2023	Serpent Mound, Peebles, OH
9		74	Priscile	Lacoste	Tarbes	FRANCE	8/12/2023	Le Mas d'Azil, FRANCE
10	*	72	Amandine	Devie	Fagnieres	FRANCE	5/28/2023	Saint Hubert, BELGIUM
11	*	72	Leilani	England	St Louis	MO	3/25/2023	Horse Around Ranch, Truxton, MO
12	*	72	Marlen	Mischler	Taufellen	SWITZERLAND	7/30/2023	Cazzago Brabbia, ITALY
13		71x	Dawn	Wagner	Truxton	MO	11/11/2023	Horse Around Ranch, Truxton, MO
14		70x	France	Fenié	Montauban	FRANCE	8/5/2023	La Chapelle aux Saints, FRANCE
15		69	Ürsula	Rass	Nidau	SWITZERLAND	9/24/2023	Val Senales, ITALY

PLACE	TIE PLACE MENT	SCORE	NAME		CITY OF RESIDENCE	STATE/ COUNTRY	DATE OF THROW	CONTEST
16		66	Margie	Takoch	Wintersville	OH	9/22/2023	Tim Hall's House, Indianapolis, IN
17		66	Maria	Villotti	Dermont	PA	6/17/2023	Meadowcroft, Avella, PA
18		65x	Nisa	Holbrook	Charleston	WV	9/16/2023	Pawpaw Festival, Albany, OH
19		61x	Francoise	Agneray	Montauban	FRANCE	10/22/2023	Brassempuy, FRANCE
20		61	Emilie	Huc-Claustre	Escalavens	FRANCE	8/13/2023	Le Mas d'Azil, FRANCE
21		61	Sue	Piraino	Nunda	NY	7/29/2023	Among the Hills, Nunda, NY
22		60	Melissa	Dildine	Sayre	PA	4/21/2023	Earth Day Weekend, Elmira, NY
23		60	Jennie	Flint	Dalton	NY	6/3/2023	Among the Hills, Nunda, NY
24		59	Debbie	Andrews	Albany	OH	8/12/2023	Steve's Dam, Pomeroy, OH
25		56	Elise	Hertout	Foix	FRANCE	10/21/2023	Brassempuy, FRANCE
26		55x	Coralie	Anglade	Arsac	FRANCE	8/5/2023	La Chapelle aux Saints, FRANCE
27		53x	Isabelle	Meric	Toulouse	FRANCE	8/12/2023	Le Mas d'Azil, FRANCE

2023 ISAC Results for Youth (40 and Above)

PLACE	TIE PLACE MENT	SCORE	NAME		CITY OF RESIDENCE	STATE/ COUNTRY	DATE OF THROW	CONTEST	AGE
1		59x	Tom	Lukas	Munich	GERMANY	9/17/2023	Bad Buchau, GERMANY	12
2		49	Talon	Ashley	Estill Springs	TN	6/2/2023	Old Stone Fort, Manchester, TN	12
3		42	Avery	Kempfer	Mayville	WI	10/22/2023	Dundee, WI	11
4		40	Emma	Lapides	St Louis	MO	9/16/2023	Graham Cave State Park, MO	13

The 2023 ISAC Champions



Tom Lukas, Youth Champion



Martha Blair, Women's Champion



Douglas Bassett, Men's Champion

The 2023 Champions

372 people (39 youth, 91 women and 242 men) made 1,406 entries in the ISAC which is less than last year in all categories except for youth. [Participants represented twelve countries as follows: North America – United States (28 states; those with 10 or more participants were MO-38, NY-32, WI-31, PA-18, OH-16, UT-16 & TN-14) & Canada; Europe – France (59), Spain (33), Belgium (12), Germany (11), Italy, Switzerland, Romania, Austria & Ireland; Asia - India] In the following list of top ten people in each division, each person is followed by their highlights of the year. The number in parentheses is their top-five aggregate (youth 40, women 50, men 70) for those who qualify.

Youth

- 1 - 59X Tom Lukas (age 12) - Germany (threw three times) Second Time World Champion. and second time in the Top 10 of two “Board Year”.
- 2 - 49 Talon Ashley (age 12) - TN (threw four times) **Personal record** and first time in the Top 10 of one “Board Year”.
- 3 - 42 Avery Kempler (age 11) - WI (threw three times) **Personal record** and first time in the Top 10 of one “Board Year”.
- 4 - 40 Emma Lapides (age 13) - MO (only threw twice) **Personal record** and first time in the Top 10 of one “Board Year”.

Women

- 1 - 79 Martha Blair - NY (76.22) First time World Champion. **Personal record** and third time in the Top 10 of four “Board Years”.
- 2 - 78X Sue Mercer - NY (77.28) Eleventh time in the Top 10 of fifteen “Board Years”.
- 3 - 77 Lori Majorsky - PA (67.02) **Twenty-fourth** time in the Top 10 of twenty-five “Board Years”.
- 4 - 77 Maren Petersen - Germany (71.20) Sixth time in the Top 10 of sixteen “Board Year”.
- 5 - 76X Emily Weaver - NY (60.24) **Personal record** and Second time in the Top 10 of four “Board Years”.
- 6 - 76 Laure Pignaqui - France (threw four times) **Personal record** and first time in the Top 10 of two “Board Year”.
- 7 - 76 Vicki McConnell - OR (threw four times) Fourth time in the Top 10 of five “Board Years”.
- 8 - 75 Anita Lukes - IN (68.40) Tenth time in the Top 10 of twenty “Board Years”.
- 9 - 74 Priscille Lacoste – France (only threw twice) Fourth time in the Top 10 of nine “Board Years”.
- 10 - 72 Amandine Devie – France (only threw once) **Personal record** and first time in the Top 10 of two “Board Year”.

Men

- 1 – 96XXX Douglas Bassett - NY (95.22) **Eleven-Time** World Champion. Fifteenth year with a top-five average over 95. Twentieth time in the Top 10 of twenty-two “Board Years”.
- 2 - 95X Ray Strischek - OH (91.86) Twenty-second time in the Top 10 of **twenty-eight** “Board Years”.
- 3 - 94X Marlin Bassett - NY (91.28) Fourth time in the Top 10 of four “Board Years”.
- 4 - 93 Matthieu Lacoste - France (89.70) Third time in the Top 10 of fourteen “Board Years”.
- 5 - 91X Dave Patterson - MO (82.44) **Personal record** and first time in the Top 10 of eight “Board Year”.
- 6 - 91X Kevin Ashley - TN (Threw four times) Eleventh time in the Top 10 of nineteen “Board Years”.
- 7 - 91 Ryan Grohsmeyer - NY (89.34) Tenth time in the Top 10 of seventeen “Board Years”.
- 8 - 89XXX Jim Gnapp - Canada (81.30) **Personal record** and first time in the Top 10 of twelve “Board Year”.
- 9 - 88X Jordan Ashley - TN (Threw four times) Fourth time in Top 10 of nine “Board Years”.
- 10 - 88 Jim Fisher - NY (83.24) Second time in the Top 10 of sixteen “Board Years”.

INTRODUCING THE “JUNIOR” ISAC COMPETITION

By Jerry Nevins

At the 2023 Board meeting on November 18 (via Zoom) the Board approved the piloting of a “Junior ISAC” in 2024 for children 10 years and younger. As you might have encountered, many of the younger kids want to throw and compete, but have a hard time gaining a meaningful score, especially from the 20 meter line. The key difference for the Junior ISAC will be shorter throwing lines (10 and 15 meters). Also, it will not require a minimum of three participants. Junior ISAC scoresheets (See Page 10 of this newsletter — also available on our web site) will be sent along with others to John Whittaker for recording. Proposed rules for the Junior ISAC are as follows:

Guidelines for a Junior International Standard Accuracy Contest

1. The ISAC target shall be used.
2. The throwing distances shall be 10 and 15 meters.
3. The age range for participating shall be 10 years and under.
4. A junior participant shall be allowed to throw alone.
5. Junior participants must choose to throw either junior league or adult (youth) contest, not both on the same day.
6. If a Junior score sheet is not available, the regular score sheet will be used with appropriate notations.
7. All other ISAC rules shall apply.

By using this modified version of the ISAC, we hope to encourage younger throwers (and their parents) to get involved in our sport. The pilot will be discussed at the 2024 annual meeting at Cahokia. It can be decided then if it will become a permanent competition.

Hope to see you all at Cahokia in 2024!

Jerry Nevins

President, World Atlatl Association

**WORLD ATLATL ASSOCIATION
 OFFICIAL JUNIOR SCORE SHEET - AGES 10 & UNDER (EFFECTIVE 01/01/2024)
 INTERNATIONAL STANDARD ACCURACY COMPETITION**

PLEASE PRINT NAME - CITY & STATE	10 METERS					TOTAL 10 M	15 METERS					TOTAL 15 M	GRAND TOTAL
	1	2	3	4	5		1	2	3	4	5		
1.													
2.													
3.													
4.													
5.													

LOCATION _____

DATE _____

WEATHER _____

SCORE: X - 10 - 9 - 8 - 7 - 6 - 0

- | | | | | |
|--------------|-----------|------------------|-------------------|--------------|
| 1. SEX _____ | AGE _____ | EQUIPMENT: _____ | (PRIMITIVE) _____ | (OPEN) _____ |
| 2. SEX _____ | AGE _____ | EQUIPMENT: _____ | (PRIMITIVE) _____ | (OPEN) _____ |
| 3. SEX _____ | AGE _____ | EQUIPMENT: _____ | (PRIMITIVE) _____ | (OPEN) _____ |
| 4. SEX _____ | AGE _____ | EQUIPMENT: _____ | (PRIMITIVE) _____ | (OPEN) _____ |
| 5. SEX _____ | AGE _____ | EQUIPMENT: _____ | (PRIMITIVE) _____ | (OPEN) _____ |



SCORE KEEPER _____

CONFIRMED BY _____

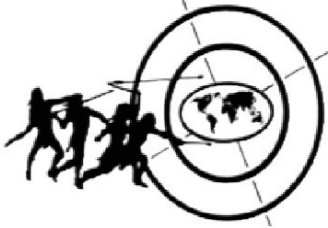
Completed score sheets must be mailed and postmarked no later than 30 days after the contest to:
 John Whitaker, Dept of Anthropology, Grinnell College, Grinnell, IA, 50112, USA or the scores will not be accepted.
 EMAIL: PREFERRED: Clean legible .jpeg or .pdf of scoresheets to whitaker@grinnell.edu

2024 MEMBERSHIP RENEWAL BEGINS

It is time again to renew your WAA Membership for 2024. A membership application is included below if you would like to send a check and the form by mail. If you would like to renew online (using PayPal), you can do so by going to the *worldatlatl.org* website and purchasing a membership through the WAA Store.

--Please note that you may renew at the \$15 level (same price for either individual or family membership), \$30 Supporting membership, or \$60 Contributing membership.

--To facilitate determining eligibility for Youth awards and eligibility for voting in WAA elections, please include the year of birth for you and each family member.



THE WORLD ATLATL ASSOCIATION,

Inc

Membership Application Form

Yearly Dues: \$15 US/Euros — (Individual or

You can also join
and pay online via:

World atlatl.org

NAME* _____

ADDRESS _____

CITY _____

STATE/REGION _____

POSTAL CODE _____ COUNTRY _____

EMAIL _____ @ _____

PHONE _____

Please check:

New Member _____

Birth Year? _____

Send Newsletter by
mail? _____

Would like a User Name
and Password to access
WAA website Member-
Only Area _____

FAMILY MEMBERSHIPS: Please list name, year of birth, e-mail, phone if different from above on the back of this form or another sheet of paper (Birth year used to determine eligibility for Youth awards and voting in elections)

Make check payable to **The World Atlatl Association** and mail with this form to the

World Atlatl Association (WAA) Treasurer:

Emily Balizet, WAA Treasurer, 1007 Post Drive, Latrobe, PA 15650

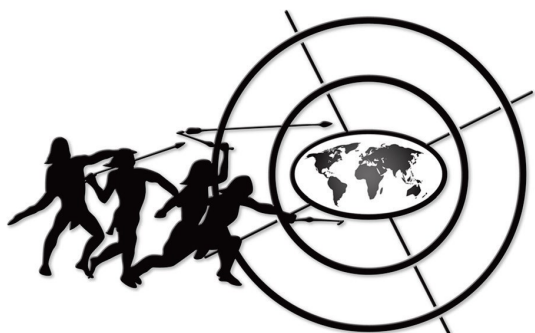
Frank Lukes

3809 Broadview Road

West Lafayette, IN 47906

Phone: (317) 242-9984 (Cell — Leave Message)

Or Email: theatlatl@gmail.com



The WORLD ATLATL ASSOCIATION, Inc.

The date that your membership expires follows your name in the address above.

