



**CAIC**



# 20 | ANNUAL 18 | REPORT

**PROMOTING AVALANCHE SAFETY THROUGHOUT  
THE STATE OF COLORADO SINCE 1973.**



 |  **CAIC** MISSION

The mission of the CAIC is to provide avalanche information, education and promote research for the protection of life, property, and the enhancement of the state's economy.

# LETTER FROM THE COLORADO AVALANCHE INFORMATION CENTER

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The Colorado Avalanche Information Center (CAIC) is a program of the Colorado Department of Natural Resources (DNR). The program is a partnership between the DNR, the Colorado Department of Transportation (CDOT), and the Friends of the CAIC (FoCAIC), a 501(c)(3) group. The mission of the CAIC is to provide avalanche information, education, and promote research for the protection of life, property and the enhancement of the state's economy. This effort began as the Colorado Avalanche Warning Program in 1973 in the United States Forecast Service and moved into the State of Colorado in 1983.

The 2017/2018 avalanche season brought an interesting set of challenges to people working with avalanches and enjoying winter recreation in Colorado. There was a stark north-south gradient in snowfall across the state, some very warm and wet storms, and prolonged dry spells. It was one of the driest winters in the last 40 years in portions of the Central and Southern Mountains. The Northern Mountains fared better, with some areas reaching near, and even slightly above, the annual average snowfall. We saw rain in the early spring as high as 12,000 feet and several prominent dust-on-snow events. The CAIC documented over 2200 avalanches, with 35 incidents where 45 people were caught and 3 people were killed.

The number of people traveling in the mountains of Colorado during the avalanche season continues to increase. Although we don't know the exact rate of this increase, one area in the I-70 corridor with reasonable and reliable user counts saw the number of visitors double between 2006 and 2017. With more people in the mountains there are more people exposed to avalanche hazard, and we are doing more to try to help everyone make informed decisions and stay safe. During the 2017/2018 winter we continued to promote avalanche education at all levels. Along with the Friends of the CAIC, we worked to bring avalanche education into public schools through the Know Before You Go program. We helped the Colorado Mountain College launch a two-year Avalanche Science Program to train future avalanche safety workers. We worked with the Department of Transportation to improve avalanche safety as they implement new technology to reduce the avalanche hazard on the State Transportation System. All of these efforts are possible through our strong partnerships with public and private organizations.



Sincerely,

A handwritten signature in black ink that reads "Ethan Greene". The signature is written in a cursive, flowing style.

**Ethan Greene**  
**Director**

# LETTER FROM THE FRIENDS OF CAIC

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## Dear Friends and Partners,

The 2017/2018 season was one of growth for the Friends of CAIC. This annual report is rich with data that highlights our investments in avalanche safety and education in Colorado. It also showcases two people, CAIC's Lead Avalanche Scientist Spencer Logan and donor Lori Lawrence, both of whom are helping us succeed in our mission.

The Friends of CAIC is a 501(c)(3) non-profit organization that was created to financially support avalanche forecasting and education throughout Colorado. We accomplish this through fundraising and working to bring together the community of backcountry users who rely on the free public safety service of the Colorado Avalanche Information Center.

During the 2017/2018 season, the Friends of CAIC invested over \$348,000 in avalanche forecasting and education here in Colorado. \$75,000 of that went directly to CAIC to support backcountry forecast positions. \$236,000 went into development of the CAIC web and mobile applications, and \$37,000 was invested in education and training. Our donors provided the funding to make these accomplishments possible. Thank you.

The Friends of CAIC's role as a partner in avalanche safety and education in Colorado remains paramount. Avalanche safety is a community effort, and we encourage everyone – individuals, groups, corporations, and businesses invested in public safety – to connect, learn, and help us expand our collective impact on avalanche safety in Colorado.

Over the next five years, Friends of CAIC will work to significantly increase our revenue and, in turn, our financial support of the CAIC and backcountry forecasting operations here in Colorado. Our goals are clear:

1. Fund ten seasonal backcountry forecasting positions.
2. Build and launch web and mobile applications that integrate seamlessly, giving increased user and forecasting functions.
3. Expand Know Before You Go's educational offerings and reach.

The Friends of CAIC will accomplish these goals by partnering with the vast network of backcountry users, corporate partners, and foundations who believe in avalanche safety. Thank you for your past support that has brought us this far. I hope you will join us in building the best avalanche center Colorado has ever seen.



Sincerely,

A handwritten signature in black ink, appearing to read 'Aaron Carlson'.

**Aaron Carlson**  
*Executive Director*  
*Friends of CAIC*



The mission of the Friends of CAIC is to support avalanche forecasting and education throughout the State of Colorado.



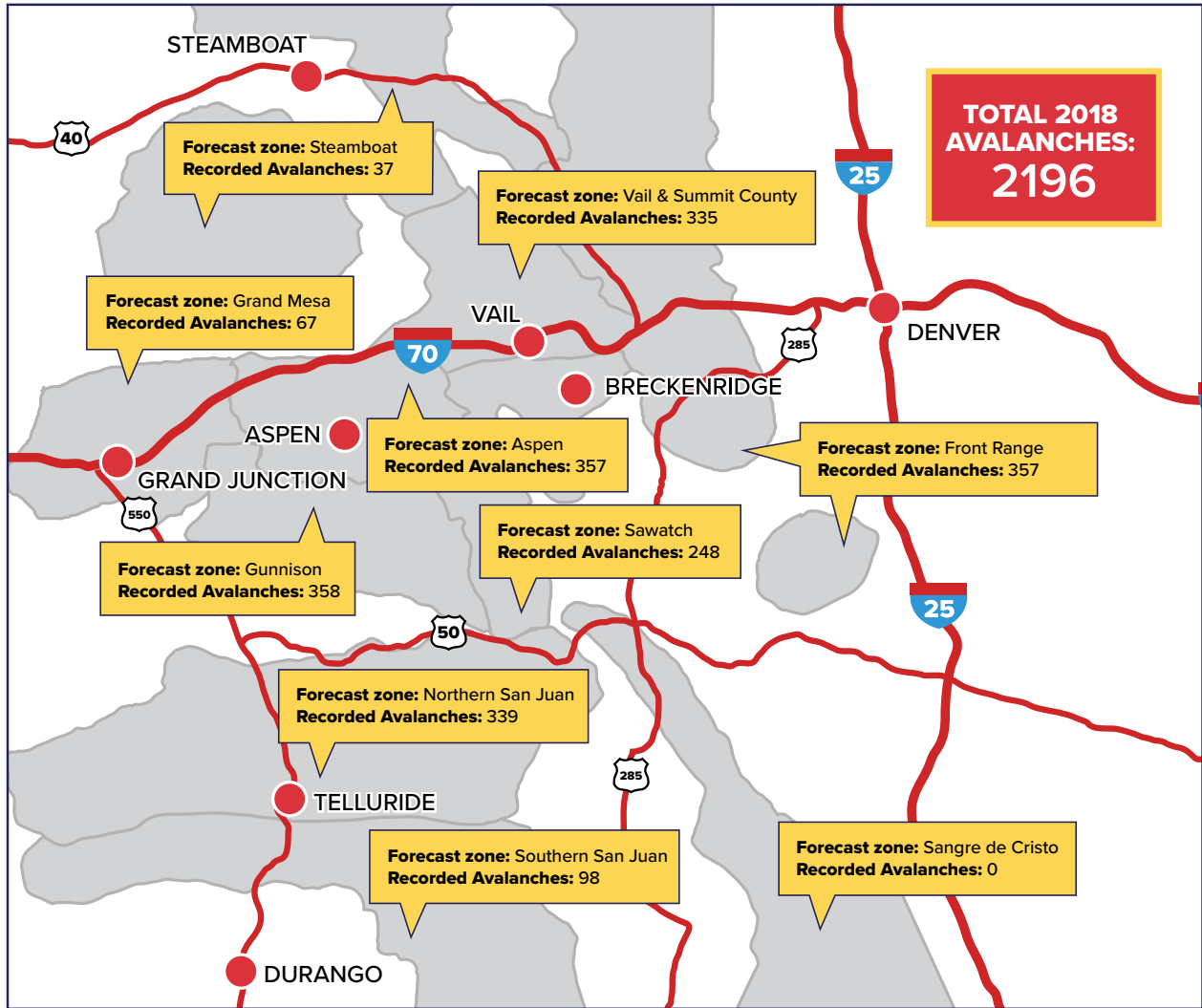
# BY THE NUMBERS



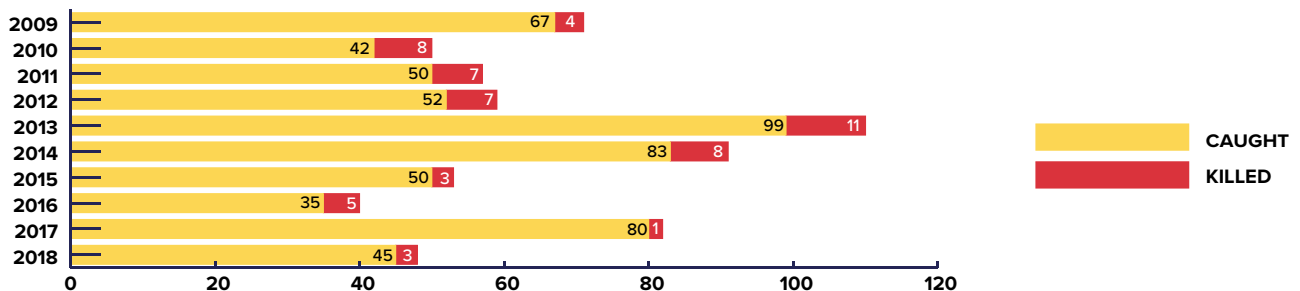
# AVALANCHES & ACCIDENTS

The CAIC recorded data on more than 2200 avalanches, including 45 people caught. Of those caught, 3 were killed. The CAIC published 10 detailed accident reports.

## BY FORECAST ZONE



## PEOPLE CAUGHT IN AVALANCHES



# BY THE NUMBERS



## SNOWFALL PATTERNS

The 2017-2018 total seasonal snowfall was far below average for most of the state. Snowfall in 2018 helped some regions recover from an extremely dry fall in 2017, but a stark north/south gradient remained for the entire snow season. In parts of Colorado it was the driest winter in the last 40 years.

LOCATION	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	TOTAL	% OF AVG
ARAPAHOE BASIN	25	46	35	47	30	52	234	80
BEAR LAKE (RMNP)	33	36	21	45	17	19	170	74
BEAVER CREEK	15	20	42	62	39	53	231	86
BERTHOUD PASS	21	68	44	61	50	54	297	97
BRECKENRIDGE	21	54	49	50	46	71	291	91
COPPER MOUNTAIN	20	36	33	44	30	41	204	74
KEYSTONE (NORTH PEAK)	20	44	31	50	40	42	227	102
LOVELAND BASIN	31	46	39	49	49	72	285	81
STEAMBOAT	19	41	54	65	48	45	271	90
VAIL	14	27	38	49	34	55	216	64
WINTERPARK	34	54	44	64	57	55	308	89
ASPEN HIGHLANDS	16	17	21	59	25	35	173	72
ASPEN MOUNTAIN	15	19	19	54	26	25	158	73
GOTHIC	22	22	30	45	22	30	170	51
MCCLURE PASS	3	15	27	52	13	13	122	50
MONARCH MOUNTAIN SKI AREA	27	16	40	62	20	21	185	65
RED MOUNTAIN PASS	8	10	58	66	26	25	192	65
TELLURIDE	8	10	58	66	26	25	192	77
WOLF CREEK SKI AREA	14	7	45	58	30	8	161	50
MONUMENT PASS	3	7	30	35	18	5	97	48
COAL BANK PASS	11	10	46	57	18	32	173	61
MOLAS PASS	13	8	31	73	22	9	155	65

# BY THE NUMBERS



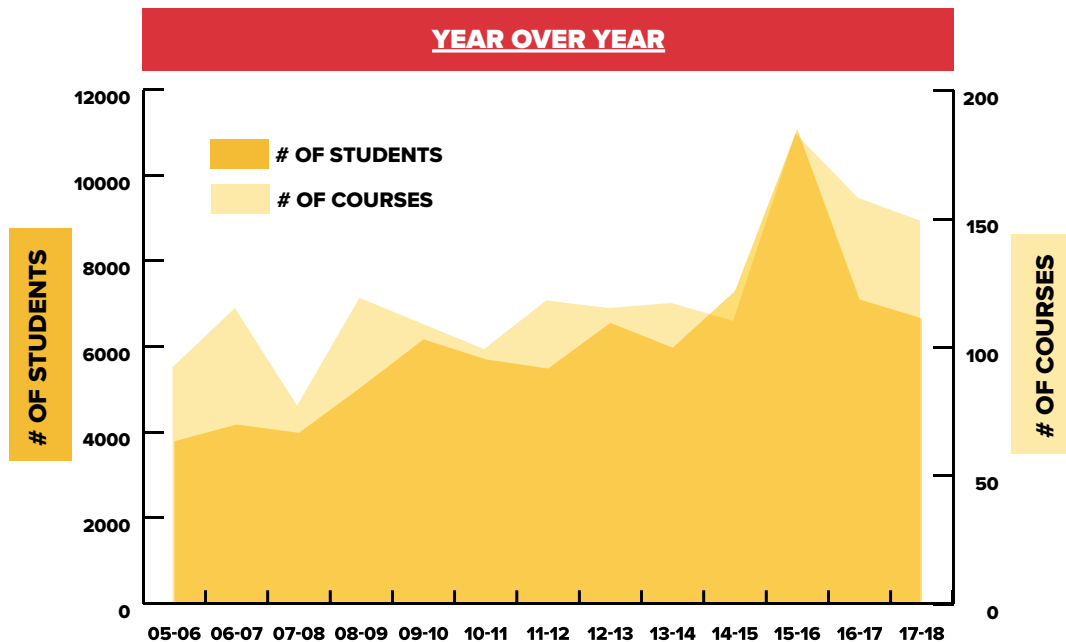
## EDUCATION

**IN 2018**  
ACROSS COLORADO,  
CAIC &  
FRIENDS OF CAIC  
CONDUCTED

**149**  
EDUCATION  
EVENTS

REACHING

**6660**  
STUDENTS



# BY THE NUMBERS



## CONTACTS

CAIC & FRIENDS OF CAIC  
CONDUCTED

**41**

INTERVIEWS  
TO PRESS &  
MEDIA CONTACTS

INCLUDING

COLORADO, NATIONAL,  
& INTERNATIONAL  
NEWS ORGANIZATIONS

**1,340,863**  
WEBSITE PAGE VIEWS

**13,860**  
FACEBOOK FOLLOWERS

**6,488**  
INSTAGRAM FOLLOWERS

**12,745**  
APP DOWNLOADS



**9,224**  
TWITTER FOLLOWERS





# STAFF

## **CAIC STAFF**

**Ethan Greene**  
Director

**Brian Lazar**  
Deputy Director

**Kevin Ellis**  
CAIC Admin

**Rebecca Hodgetts**  
Lead Avalanche Forecaster

**Mark Mueller**  
Lead Avalanche Forecaster

**Spencer Logan**  
Lead Avalanche Scientist

**John Snook**  
Weather Specialist

**Nick Barlow**  
Weather and Avalanche Forecaster

**Mike Cooperstein**  
Weather and Avalanche Forecaster

**Jason Konigsberg**  
Weather and Avalanche Forecaster

**Jeff Davis**  
Avalanche Forecaster

**Mark Gober**  
Avalanche Forecaster

**Brandon Levy**  
Avalanche Forecaster

**Kreston Rohrig**  
Avalanche Forecaster

**Ann Mellick**  
Avalanche Forecaster

**Ron Simenhois**  
Avalanche Forecaster

**Colin Mitchell**  
Avalanche Forecaster

**Blase Reardon**  
Avalanche Forecaster

**Ryan Zarter**  
Avalanche Forecaster

## **FRIENDS OF CAIC STAFF**

**Aaron Carlson**  
Executive Director

**Heather McGonegle**  
Marketing and Events Manager

## **FRIENDS OF CAIC BOARD OF DIRECTORS**

**Bruce Edgerly**

**Alan Henceroth**

**Knox Williams**

**Markian Feduschak**

**Brent Brown**

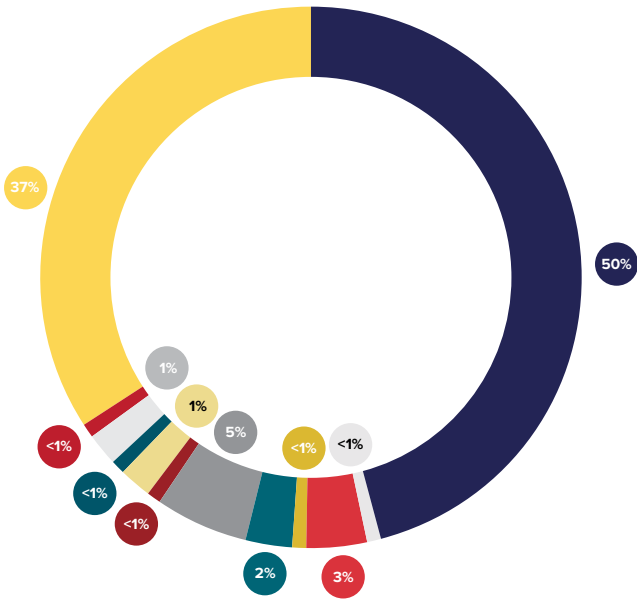
**Rusty Perry**



# CAIC Revenue & Expenditures FY2018

In fiscal year 2018, CAIC had \$1,489,585.28 in expenditures and collected \$1,533,440.42 in revenue. Of the revenue received, \$98,815.08 came from the ski industry, the Friends of CAIC, and individual citizens. The remaining revenue (\$1,439,625.34) came from education programs, administrative functions, and federal, state, and local governments.

## CAIC REVENUE



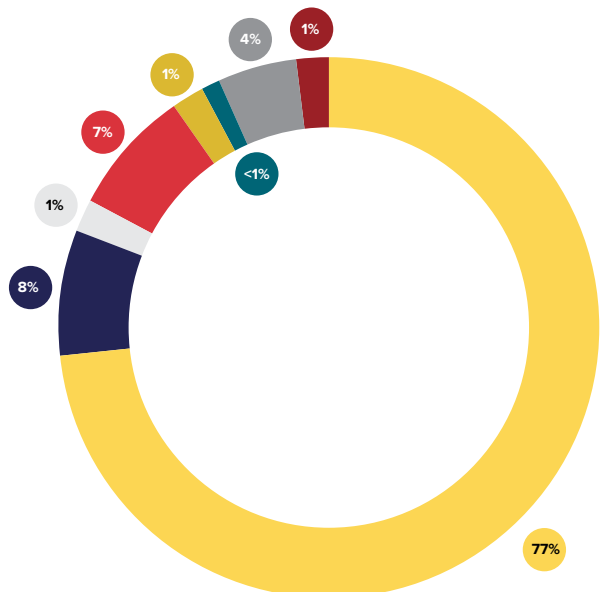
● <b>Severance Tax</b> \$577,368.48	● <b>Friends of the CAIC</b> \$75,500.00
● <b>CDO Intergovernmental Agreement</b> \$764,118.20	● <b>Private Donations</b> \$6,315.08
● <b>Colorado Parks and Wildlife</b> \$2,000.00	● <b>Ski Industry</b> \$12,000.00
● <b>United States Forest Service</b> \$51,320.78	● <b>Interest Income</b> \$3,886.53
● <b>City and County Governments</b> \$2,000.00	● <b>Miscellaneous Revenues</b> \$12,666.59
● <b>Education Services</b> \$26,264.76	● <b>Workers Compensation Reimbursement</b> \$8,810.59

**TOTAL REVENUE**  
**\$1,533,440.42**

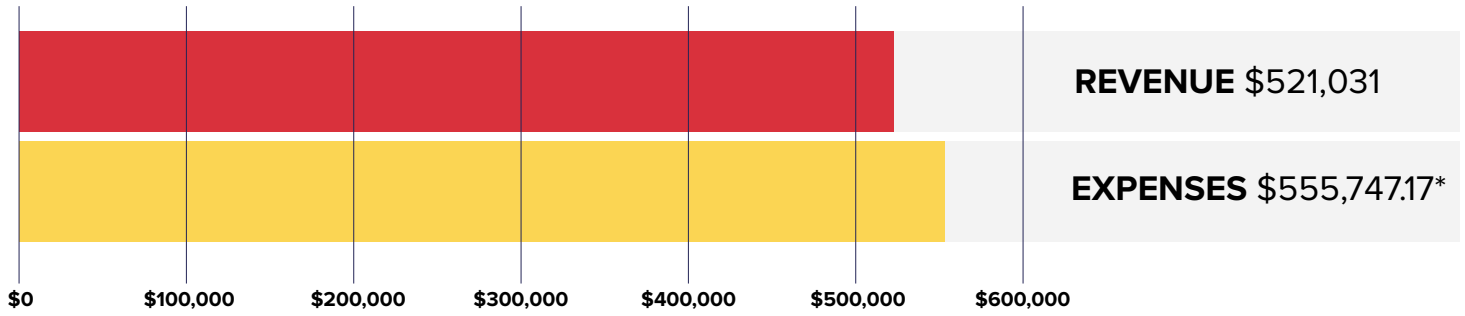
## CAIC EXPENDITURES

● <b>Personnel Services</b> \$1,149,469.40	● <b>Telecommunications and Internet</b> \$15,970.02
● <b>Administration Costs</b> \$115,446.96	● <b>Server Hosting Services</b> \$4,556.28
● <b>Rentals</b> \$13,398.70	● <b>Goods and Services</b> \$63,801.70
● <b>Vehicles</b> \$107,677.41	● <b>Travel</b> \$19,264.81

**TOTAL EXPENDITURES**  
**\$1,489,585.28**



# ☃️💧☀️ Friends of CAIC Expense Breakdown



\*Portion of reserved fund used to fund web development.

# ☃️💧☀️ Friends of CAIC Expense Breakdown by Class





# Friends of CAIC Program Financials



**FORECASTING & OPERATIONS**

**\$75,500**



**TECHNOLOGY**

**\$240,727**



**EDUCATION & AWARENESS**

**\$18,750**



**PROGRAM MANAGEMENT**

**\$49,455**





# DONOR HIGHLIGHT

## Lori Lawrence

*Loyal Supporter of the Friends of CAIC*

After the tragic loss of her brother, David Taylor, in the Utah backcountry, Lori Lawrence has advocated for increased avalanche education and awareness in our community. She is a firm believer in acknowledging one's own intuition and allowing yourself to turn back, because it's the combination of events that often leads to tragic outcomes.

"[I support the Friends of CAIC] to save lives, even if it's just one." The overriding goal is to educate everyone. If you live in the mountains, or travel the roads, you are affected by avalanches." These are some of the primary reasons why Lori is a loyal supporter of the Friends of Colorado Avalanche Information Center (CAIC).

Lori grew up in Minnesota. She moved to Telluride in the summer of 1984 to work in the area and explore her love of skiing. Lori lives in Denver, and focuses on her business and spending time with her two sons, David Taylor (named after her brother) and Jordan.

Because of partners like Lori, the Friends of CAIC is able to provide critical support to the CAIC. Each year, our family of donors come together to support our important work in avalanche forecasting, education and awareness for our community. Thank you Lori and all of our donors who supported us in 2017/2018. We look forward to another great year to come.



# FORECASTER HIGHLIGHT

**Spencer Logan**

*Lead Avalanche Scientist, CAIC*

**IF SKIING IS A MATTER OF LINKING A SERIES OF CONTROLLED FALLS, MY AVALANCHE CAREER HAS BEEN LINKING A SERIES OF FORTUNATE OPPORTUNITIES.**

I learned to ski at Hidden Valley, near Estes Park, when the area had two Poma lifts and two T-bars. My step-grandmother was a ski instructor and tried to refine my technique. Family friends had raced in college, and they tried to help as well. It was really Glen Plake and Scot Schmidt that cemented my skier's identity. My family was living in southern Virginia when movies like *Blizzard of Aahhh's* and *License to Thrill* came out. When we moved back west, I immediately bought Lange ski boots and K2 Extremes and began jump-turning down every ski run I could.

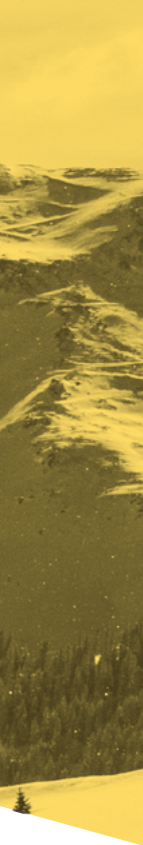
***"I IMMEDIATELY BOUGHT LANGES, K2 EXTREMES, AND BEGAN JUMP TURNING DOWN EVERY SKI RUN I COULD."***

I kept the mohawk for many years, but quickly traded the Extremes for even longer and skinnier skis. I got a pair of Kazama Outback Softs - 210s, I think - and Asolo Snowfields. I had the opportunity to spend a

summer shuffling around glaciers and nearby slopes with the Juneau Icefield Research Program (JIRP), and needed telemark skis.

On the ice, I was exposed to good skiers, science (such as early computer photogrammetry), and avalanches. That summer was the first time I explored the aftermath of avalanches. Growing up, I had a concept of avalanches, knowing that Pallavicini Bowl was an avalanche path and the Seven Sisters occasionally closed the highway. It was very different skiing across the debris fields and the bed surfaces of very large avalanches in Alaska.

I attended the National Avalanche School (NAS) - a five-day classroom immersion into snow and avalanche science - the following winter. The combination of JIRP and NAS gave me a solid foundation of snow science on which to build in parallel as I developed the skills to travel through the mountains. I continued



to build that combination through college at Utah State, managing to get a degree in environmental science while skiing more than 100 days a season in the backcountry. At the time, the Bear River Avalanche Center was run through the university. Over the years I contributed observations, did work study projects, and eventually completed a senior thesis with the BRAIC.

I was around when a forecast position with the BRAIC opened up unexpectedly in 1999 - a fortunate opportunity. It was also being thrown out of the frying pan directly to the wolves. I was humbled,

In 2002, I headed north to Bozeman, Montana, for the crucible of graduate school. The academics were somewhat beneficial, but the real learning came from the community of avalanche professionals and my fellow graduate students.

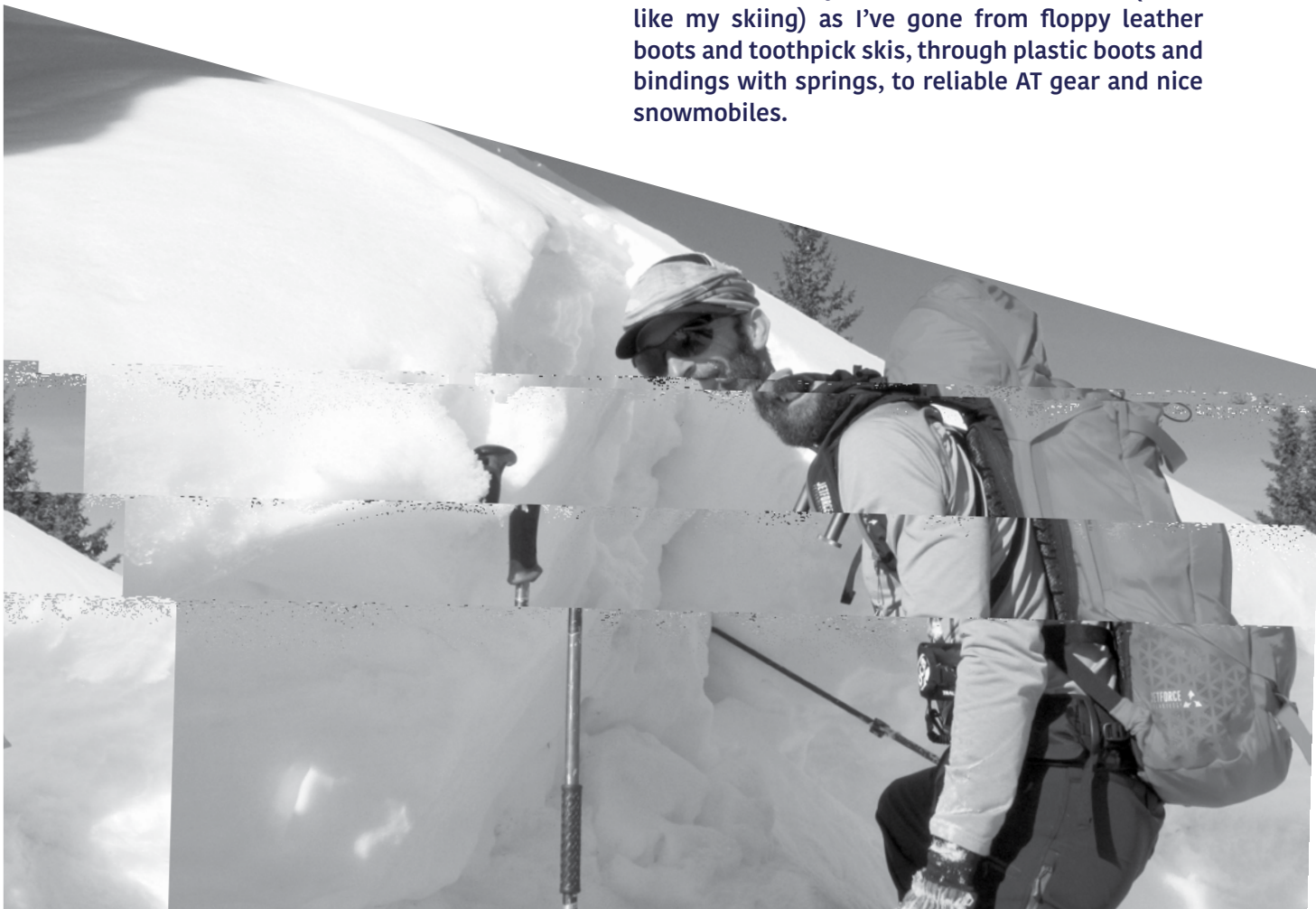
It was my wife's turn for graduate school after I finished my coursework. When she visited CU in 2004, I stopped by the CAIC to introduce myself to Knox. Later that summer Knox called and asked if I was still coming to Colorado, and if so, would I be interested in working for him? I said of course! The conversation was brief and casual, and I had

***“IT WAS ALSO BEING THROWN OUT OF THE FRYING PAN DIRECTLY TO THE WOLVES. I WAS HUMBLLED, SCHOOLED, AND PUSHED TO BE PROFESSIONAL.”***

schooled, and pushed to be a professional. Ethan Greene was working at the Utah Avalanche Center at the time. I spent several days shadowing his forecast shifts. I remember spending the following days researching many things he casually mentioned - a pattern that continues today.

to call him back several days later to confirm that he actually had offered me a job. I would later learn that Knox was infamous for unusual 'non-interviews'.

Over my years with the CAIC I've continued to link fortunate opportunities, moving from seasonal to permanent positions, from junior forecaster to Lead Scientist. My career has smoothed out (much like my skiing) as I've gone from floppy leather boots and toothpick skis, through plastic boots and bindings with springs, to reliable AT gear and nice snowmobiles.





**COLORADO AVALANCHE  
INFORMATION CENTER**

**325 BROADWAY WS1  
BOULDER, CO 80305  
303-499-9650**

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**FRIENDS OF CAIC  
PO BOX 267  
GRAND JUNCTION, CO 81502**

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**[COLORADO.GOV/AVALANCHE](https://colorado.gov/avalanche)**