

# **Alvin and CDF**

**Mel Shochet**  
**University of Chicago**

# Early

- **In many ways, Alvin was the father of CDF.**
  - **Colliding beams dep't started in December, 1976.**
  - **Alvin immediately was involved in both the accelerator & detector.**

Minutes of Colliding Beams Meeting held on April 8, 1977

A.T. reported on his investigation of the bunch structure. It takes about one minute for the bucket structure to go from narrow (1 ns) to wide (5 ns). All buckets do not widen at the same rate, in fact, one bucket did not widen at all! This would indicate a mechanism other than RF noise. These effects seem to be present during acceleration but do not constitute a problem during the 6 second acceleration period. The first portion of each booster bunch seems to lose more protons during the length of the store than the latter portion.

Colliding Beams Department Meeting  
November 4, 1977

Al Tollestrup announced that he would entertain detector development ideas to be conducted in the M5 test beam with some support (and money).

- **Within a year, Alvin was the head of new department.**

# Detector quickly became group's focus

Minutes of the Colliding Detector Facility Department Meeting

January 13, 1978

A. Tollestrup discussed the organization of the group for the next six months. He stressed that we will not be able to do all the physics on the first round and that we would have to establish realizable goals. There are two prototypes to consider:

- a. 1977 Summer Study - Detector Group (The publication of this is presently held up.)
- b. CERN Proposal presented by C. Rubbia last week.

There will be two types of detectors actively pursued:

(1) a calorimeter type with no magnet (headed by P. Limon) and  
(2) a detector with magnet (headed by D. Cline). The boundary conditions for both groups are:

1. cost ceiling of \$4M, and
2. physics goal of W/Z detection.

MINUTES OF COLLIDING DETECTOR FACILITY MEETING

April 28, 1978

A. Tollestrup discussed the upcoming "detector fest".

He feels no one wants to build a non-magnetic detector so the "detector fest" may concentrate on exactly how the detector construction should be sequenced.

- Under Alvin's leadership, CDF became international with the addition of Japanese groups (1979) and Italian groups (1980).

# Personality and politics enter (don't they always?)

## COLLIDING DETECTOR FACILITY MEETING MINUTES

May 12, 1978

A. Tollestrup discussed the (group) internal and Laboratory political situation in light of the recent developments. He feels the "Detector Fest" should remain as non-political as possible

There are 3 groups involved in the colliding beam efforts: (a) Doubler, (b) Cooling, and (c) Detector Groups. If all 3 can be kept together, which will be a difficult task, Fermilab can have an excellent CB facility. The recent political maneuvering has been caused by the possibility of CB collisions earlier than anticipated.

Alvin proposes that all 3 groups (Cooling, Doubler, and CDF) work together to build one detector that all 3 subgroups can use for physics. If the detector is built in a careful, systematic way, it will be the best detector at all stages of possible collisions.

# The detector design comes together

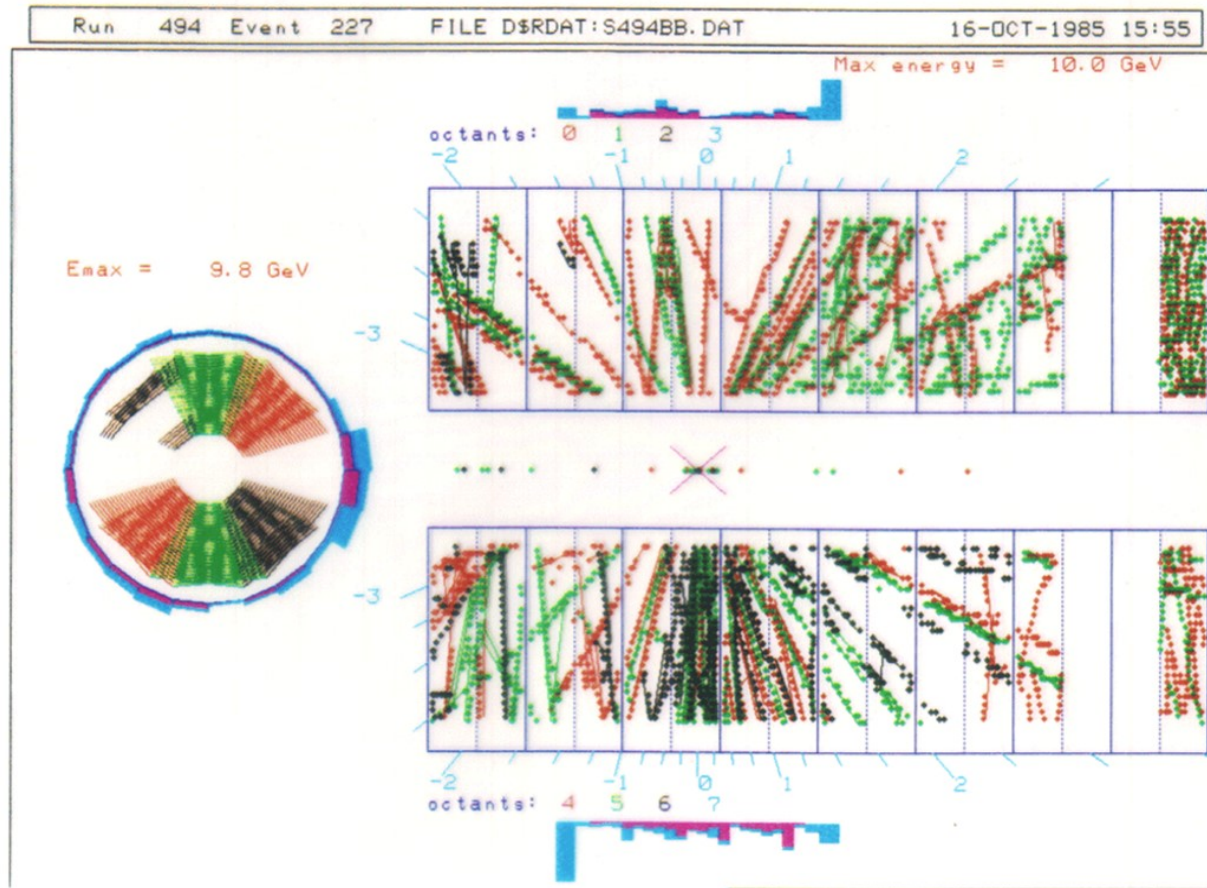
- **May, 1979:** The first full design report of a complete solenoidal detector, not so different from the eventual detector except for the tracking detectors.
- **Roy Schwitters joins as Associate Department head: 10/80.**
- **The formal CDF design report is submitted in August, 1981.**
- **Cost:**
  - **Alvin reports on June, 1980 PAC meeting:** “The estimated cost has escalated to a completely unrealistic level - \$26M. We must cut parts out and set priorities.”
  - **February, 1981**

CDF COSTS AND SUPPORT BY FISCAL YEAR

	<u>FY81</u>	<u>FY82</u>	<u>FY83</u>	<u>FY84</u>	<u>Total</u>
Costs in FY80 \$1,000	1,950	8,460	11,220	9,640	31,270
Inflation factor	1.150 (Δ.15)	1.288 (Δ.12)	1.417 (Δ.10)	1.559 (Δ.10)	
Costs in current \$1,000	<u>2,240</u>	<u>10,900</u>	<u>15,900</u>	<u>15,030</u>	<u>44,070</u>

# DATA!!

- **Engineering run – September, 1985**



- **Alvin was front and center in the control room**

# Top Quark

- Alvin stepped down as CDF Co-Spokesperson in early 1993.
- Bill Carithers & I asked him to become head of our internal top quark review committee.

TOPARENTS REPORT  
AVT 7/15/93

## GENERAL REMARKS:

- A. WE HAVE BEEN OVER THE WHAT TONY WILL SAY, AND STRONGLY ENDORSE THE POSITION HE HAS STAKED OUT FOR CDF. WE SUPPORT THE IDEA THAT EVERYONE USE THIS TALK AND IT'S TRANSPARANCIES AS A SOURCE FOR ANY TALK GIVEN BETWEEN NOW AND PHOTON-LEPTON.
- B. WE DO NOT SUPPORT ANY MENTION OF SPECIFIC MASS VALUES FOR ANY EVENTS FOR THE PRESENT (REGARDLESS OF PROVOCATION!).

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- A. IF WE INCLUDE ALL CHANNELS THERE COULD BE ENOUGH EVENTS FOR A "DISCOVERY". THERE IS A VERY SHORT TIME SCALE FOR THIS. WE NEED TO DEFINE CAREFULLY WHAT WE THINK WE CAN GET WELL DOCUMENTED IN THE TIME THAT IS AVAILABLE. DEPENDING ON OUR GOAL WE WILL NEED TO CONCENTRATE ON SOME OR ALL OF THE FOLLOWING:

1. GET ALL BTAG PROGRAMS UP TO SPEED WITH THE NEW TRACKING. JET PROB, D-PHI, JETVTX.
2. COORDINATE SOFT LEPTON AND BTAG.
3. UNDERSTAND HOW TO USE RE-CONSTRUCTION PROGRAMS. WHAT IS THEIR POWER OF REJECTION? WHAT IS THEIR ACCEPTANCE? ALESSANDRA AND LIZ HAVE PREPARED FILES OF VECBOS W+JET EVENTS AS WELL AS 1000 EVENTS OF TOP TO LEPTON+JETS (MASS=120 AND 140) THEY ARI IN:  
CDF\$
4. GOOD EFFICIENCY CALCULATIONS.
5. 6 JET CHANNEL MAY HAVE SOMETHING TO OFFER.
6. HOW DO WE COMBINE ALL OF THE INFORMATION?

THINK POSITIVE!!!!!!!!!!

Remembering Alvin

## Personal note

- **I served as CDF Co-Spokesperson along with Alvin for 6 years.**
  - **He asked the tough technical questions for both detector and analysis. His goal was to get the best possible out of CDF.**
  - **He was very supportive of the young CDF scientists and made sure they got the recognition they deserved.**
  - **After he stepped down as co-spokesperson, he focused his attention on the Fermilab postdocs and Scientists, helping them and furthering their careers.**
- **I learned a great deal from Alvin, from the probing questions he asked and the gentle teasing he appropriately doled out.**
- **It was an honor to work closely with Alvin, and to have called him a friend.**