

# **DØ Collaboration Meeting February 2003**

## **Progress, News, and Outlook**

**Jerry Blazey**

**Fermi National Accelerator Laboratory, Batavia, Illinois**

**02/12/03**



**Happy Birthday!**



# Did We Meet Our Autumn Goals?

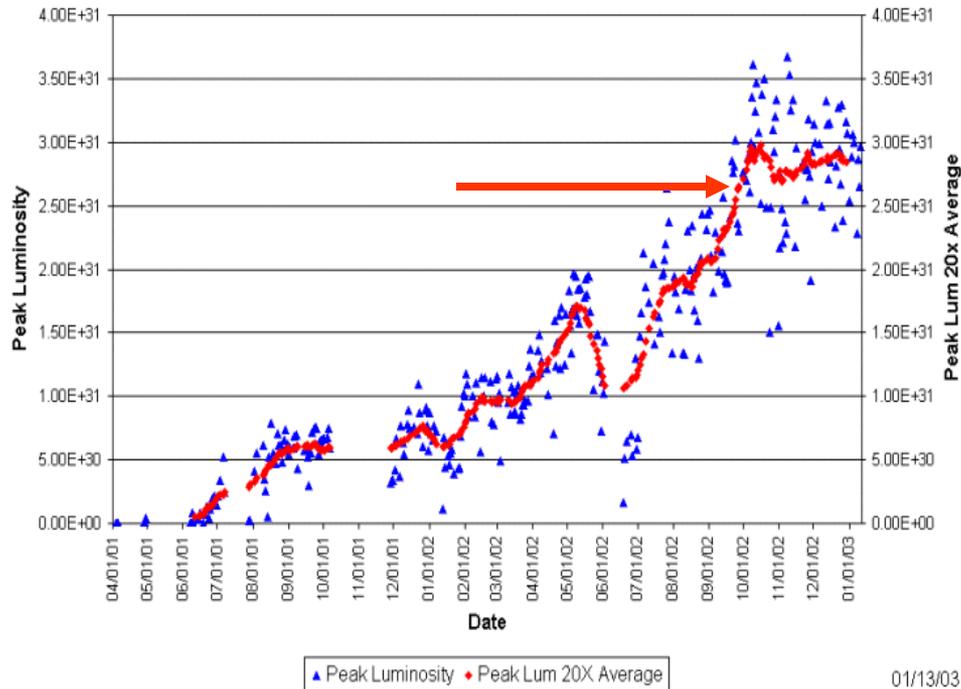
- Collect a dataset of at least  $50\text{pb}^{-1}$  for spring physics results **Yes!**
- L3 and Reco farm expansion on line **Yes!**
- Streaming Available **Limited Progress**
- 75% efficiency **Yes!**
- CTT Available **Available but not certified**
- No pre-scales on high priority physics **Difficult and nearly there.**
- Timely Reconstruction,  $50\text{pb}^{-1}$  with P13 **Yes!**
- Physics and Moriond Approval
  - Rediscover top, measure quark mass
  - W,Z cross sections in e,  $\mu$  channels. Demonstrate  $\tau$ .
  - Extend new phenomena limits
  - W,Z + jets cross sections in e,  $\mu$  channels
  - Jet cross sections and diffraction
  - B-lifetime, B-mesons

**Tremendous  
progress  
as you will  
see this week**

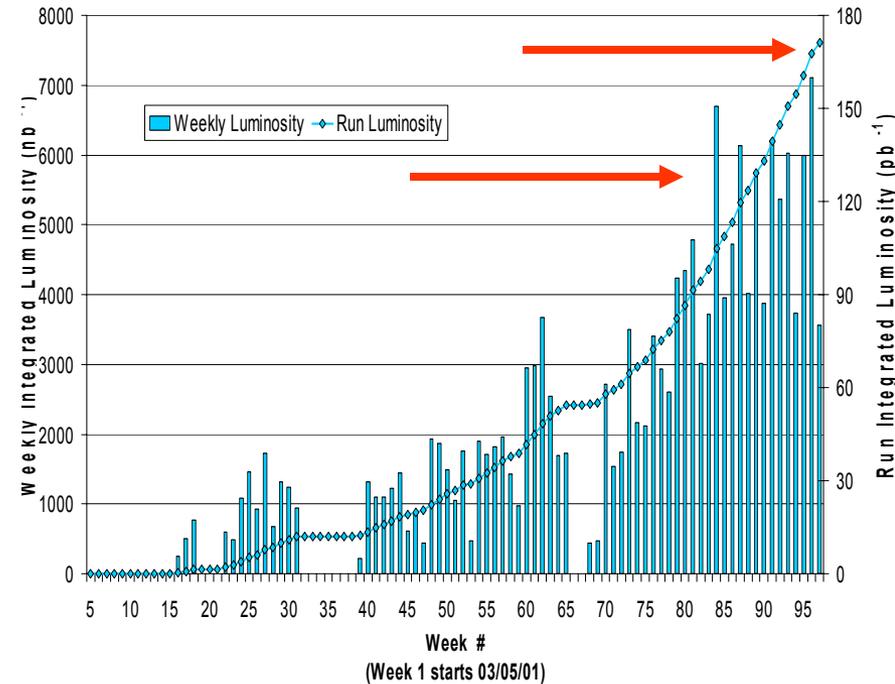


# Tevatron Performance

Collider Run IIA Peak Luminosity



Collider Run II Integrated Luminosity



- Average Peak Instantaneous Luminosity:  $30E30 \text{ cm}^{-2}\text{s}^{-1}$
- Typical Integrated Luminosity:  $\sim 6 \text{ pb}^{-1}/\text{wk}$
- Total Delivered:  $170 \text{ pb}^{-1}$  (3/2001)



# Luminosity & Efficiency Statistics

Luminosity with complete instrumentation\*: **80pb<sup>-1</sup>**

Overall Efficiency (since April 1, 2002):

$$79.8\text{pb}^{-1}/126.7\text{pb}^{-1} = 63.0\%$$

December 2002 Efficiency:

$$18.0\text{pb}^{-1}/22.6\text{pb}^{-1} = 79.6\%$$

January 1-12, 2003 Efficiency:

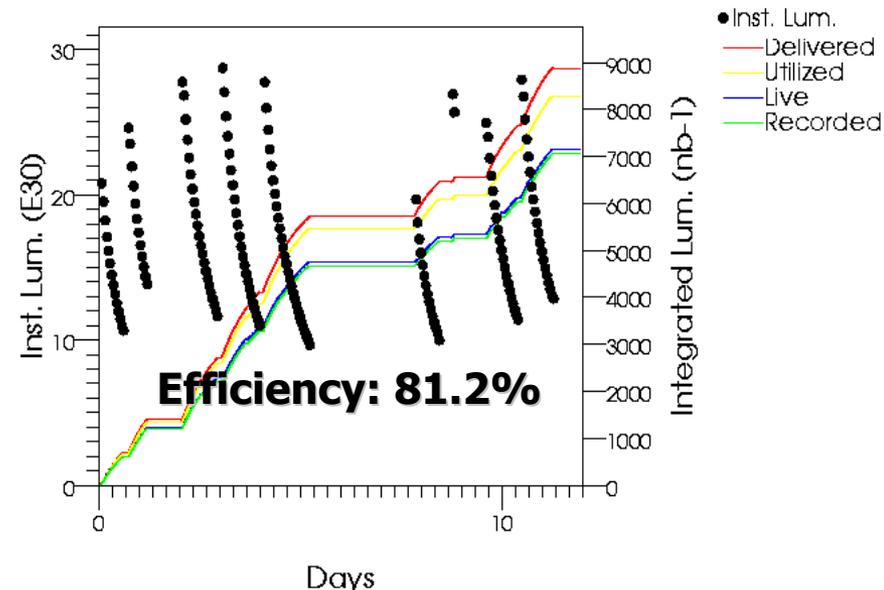
$$7.2\text{pb}^{-1}/8.9\text{pb}^{-1} = 81.2\%$$

Efficiency January 12, 2003: **87%**

Shutdown recovery complete

*Jerry Blazey*

January 2003

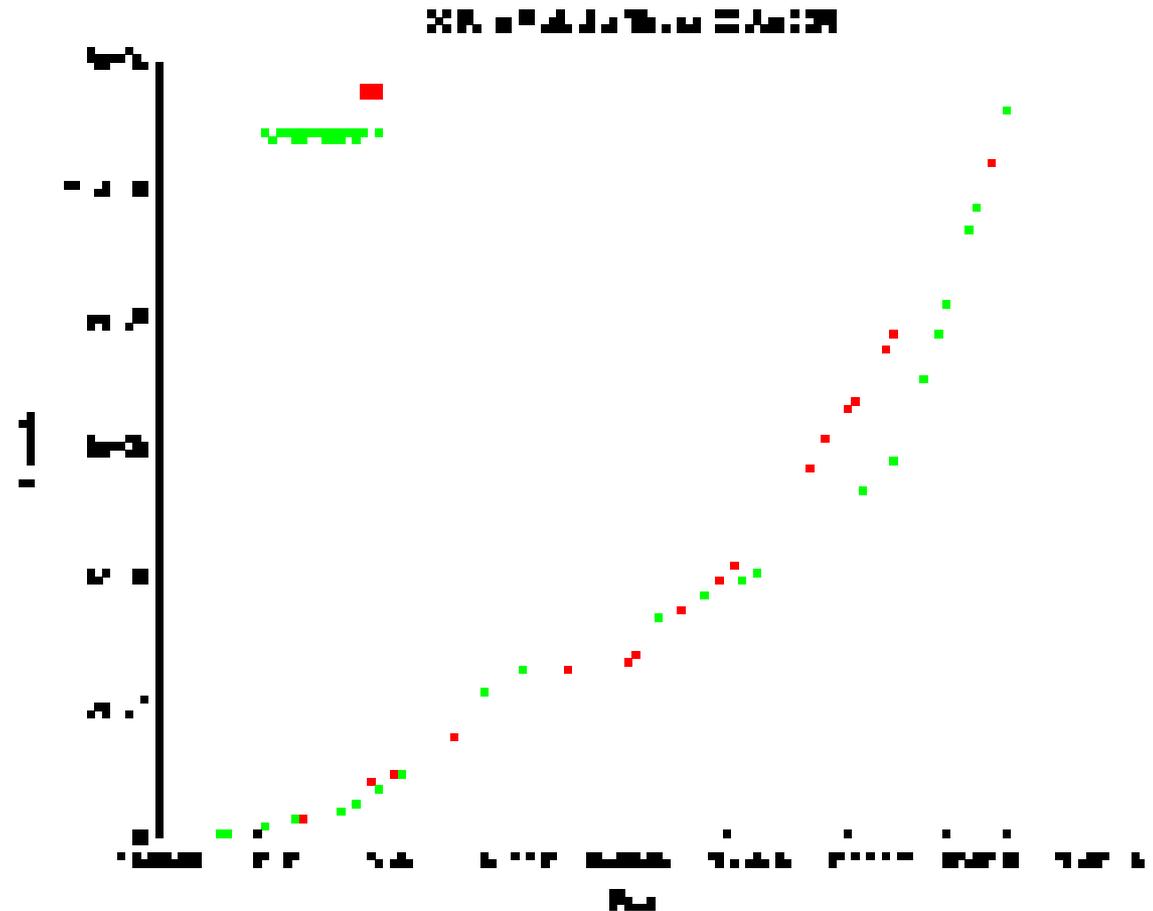


\*Same as CDF (full Run II)

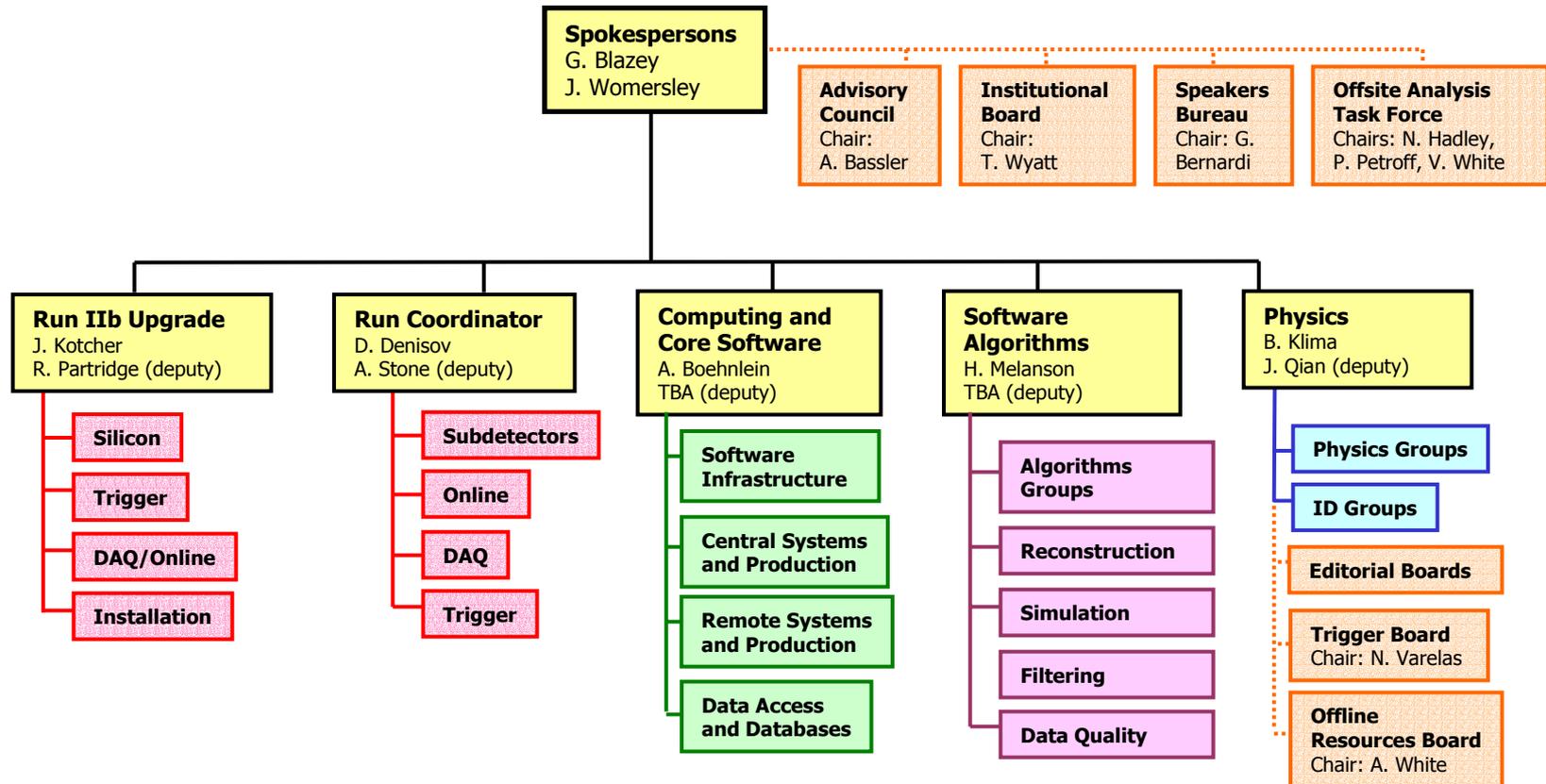


# Event Reconstruction

- Reconstructed data available within 72 hrs.
- **Peak Rate: 3M/day**
- **Average Rate: 2.7M /day**
- **Excess rate has permitted us to reanalyze data.**



# Reorganization



- Harry Melanson to lead new Software Algorithms group.
- Jianming Qian has agreed to serve as Physics Deputy.
- ASAP Assigning deputies to all groups (not necessarily future coordinators)
  - Details still under consideration



# Changes: People in the News

- **Committees:**
  - AC chair: Thanks to Volker Buescher. Welcome Ursula Bassler
  - Offsite Analysis Task Force: Thanks to Sijbrand De Jong. Welcome Kors Bos.
- **Run IIb:**
  - Silicon co-Leader: Thanks Alice Bean for Deputy. Welcome George Ginther.
  - Co-leader Silicon electronics: Welcome. Eckhard von Toerne
  - Budget Officer: Thanks Colleen Yoshikawa. Welcome Arisara Amornvichet
- **Run Operations**
  - SMT Leader: Thanks to Harald Fox. Welcome Breese Quinn.
  - L2 Leader: Thanks to Jim Linnemann. Welcome Bob Hirosky.
  - Online Monitoring: Welcome Bushpa Bhat.
  - Electrical Support: Thanks Rick Hance. Welcome John Anderson.
  - Muon Leader: Thanks Tom Diehl. Welcome Al Ito and Markus Wobisch as Deputy.
  - CFT/CPS/FPS Leader: Thanks to George Ginther. Welcome Fred Borcharding. Welcome Jadzia Warchol CFT Leader



# People in the News

- **Computing and Core Software**
  - MC Leader: Thanks Qizhong Li and Serban Protopopescu. Welcome Sarah Eno and Steve Muanza.
  - CAB and Farms: Thanks Heidi Schellman.
  - Data Bases and Data Handling: Thanks to Chip Brock
- **Software Algorithms**
  - Data Quality: Welcome Tom Diehl.
- **Physics:**
  - QCD Convener: Thanks John Krane. Welcome Markus Wobisch.
  
- **Congratulation to**
  - Herman Haggerty
  - Tom Marshall (soon)
  - Rick Hance
  - Bill Reay

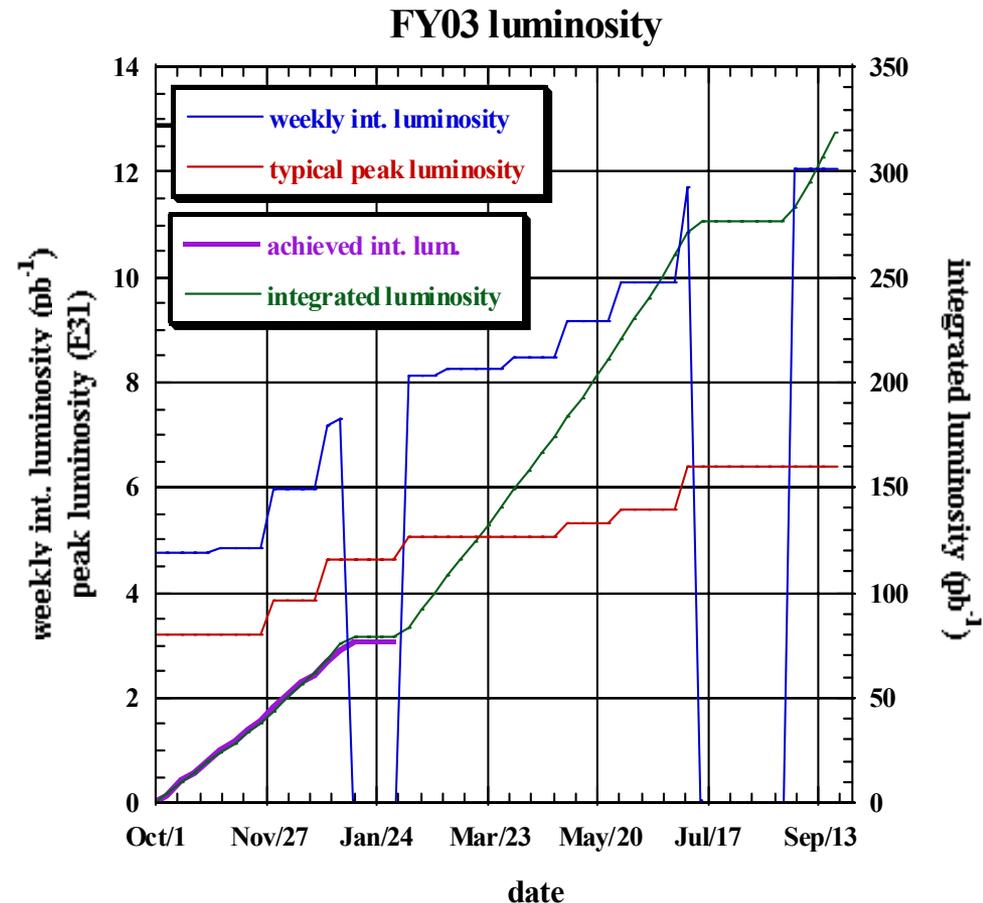
**On their retirements.**

**Our Thanks and  
Best Wishes!**



# FY03 Luminosity Expectations

- Run February to late-July
- Continued running in Fall
- C0 Lambertson replacement  
10% in peak luminosity by 3/1/03
- Accumulator bands 2&3 equalizers  
5% in peak luminosity by 5/1/03
- AP3 beamline  
5% in peak luminosity by 6/1/03
- MI longitudinal dampers  
15% in peak luminosity by 7/1/03
- 6 week shutdown in July-August
  - Recycler vacuum
  - e-cooling civil construction
  - Tevatron collimators
  - NUMI installation work
- Reliability – 1.5%/month in integrated luminosity over 9 months
- Stacking upgrades – 1.5%/month in integrated luminosity over 9 months



# Long Term Accelerator Expectations

- **Beams Division has assembled a project team for the upgrades**
  - **Lead by Jeff Spalding**
  - **Establishing Baseline scope, costs, schedule**
  - **Due June 1<sup>st</sup> to DOE**
- **A few words on the scope**
  - **Strongly considering no further work on 132 ns or recycling**
  - **Essentially the gains are marginal (~10-20%) relative to the technical risk.**
- **No Change on Last Year's Projections: 6 - 11 fb-1 by 2008.**



# P 5

- **Last month we learned that the CDF and D0 Run IIb Upgrades (together with the BTeV and CKM proposals) have been referred by DOE to the **Particle Physics Project Prioritization Panel (P5)**.**
  - **P5 to consider only FY04 and onwards for the Run IIb detector projects**
- **We have contacted Abe Seiden, the chair of P5. We will be making a strong push for the physics of Run II and the need for the upgrade.**
  - **in all official scenarios, the accelerator can deliver more luminosity than the detector can handle without the upgrade.**
  - **There are important physics questions to be addressed.**
  - **The upgrades are necessary to guarantee that we can exploit the full physics potential of the Tevatron.**
- **P5 will visit Fermilab March 26 and 27. have started discussing the format of the presentations with the Directorate.**
- **The Collaboration will benefit from a clear and consistent message as to the value of the review.**
- **We will certainly benefit from P5's endorsement.**
- **Approval to spend money on the upgrade through the end of FY03 has been given by DOE.**



# New Initiatives

- **Higgs Sensitivity Working Group**
  - At the behest of Ray Orbach, Director DOE Office of Science D0 and CDF are collaborating on a re-derivation of the Higgs Sensitivity Plot.
  - Completion by the June-July DOE accelerator review
  - Boaz Klima, chair of the D0 Group.
- **Luminosity Review**
  - Hardware and software
  - Harry Weerts, chair
- **We now have uniform meeting documentation at:** **Try It!**  
<http://www-d0.hef.kun.nl///List.php>  
**Thanks to Frank Filthaut and NIKHEF and the "beta" testers.**
  - **How to create an agenda in CDS:** [http://www-d0.fnal.gov/Run2Physics/wz/d0-private/meetings/create\\_agenda.html](http://www-d0.fnal.gov/Run2Physics/wz/d0-private/meetings/create_agenda.html)
  - **How to post transparencies (and write minutes) for a talk:** [http://www-d0.fnal.gov/Run2Physics/wz/d0-private/meetings/add\\_talk.html](http://www-d0.fnal.gov/Run2Physics/wz/d0-private/meetings/add_talk.html)
- **Tour Area pending consultant studies and FY03(4?) budget.**
- **New Video room also pending FY03(4?) budget.**



# Other News

- **Summer Workshop**
  - **Beaune June 16-20<sup>th</sup>**
  - **Local Organizing Committee in Place**
  - **Will Select Program Committee Soon**
  - **Preliminary Themes: Data Quality, Physics Beyond 2003, Remote Analysis.**
- **Offsite Shifts opportunities increasing**
  - **Global Monitoring**
  - **Expanded SAM shifts**
- **Long Term and Expert Support of Operations**
  - **IB has been presented a proposal**
  - **~75 experts needed**
  - **Scale of commitment: One/institutions/year except largest groups(s).**
  - **Discuss this option and other solutions!**
- **ID Requirements**
  - **New IDs for all users**
  - **New IDs Required for each visa**
  - **Contemplating a formal response**



# Our Outlook

- **We are doing extremely well in logging, reconstruction, and analysis of our data. Congratulations to all!**
- **Short term focus on CTT, L2, FPD integration will prepare us well for increasing luminosities and full program.**
- **We should start thinking towards our long term analysis and physics goals and publication of our results.**
- **There are political hurdles ahead of us for both the collider and the experiment; the production of good physics is our best emissary.**
- **However, we need to keep in mind that continued success requires a balance between operations, analysis, and the upgrade. All three will require serious commitment for us to reach the full potential of D0.**



Finally....

Please come  
and join us as  
we "reward"  
Harry....

# Hendrik Weerts Wroast

## Recognition Dinner

**Thanks for serving as Spokesperson**

**Date:** February 13, 2003, Thursday night

**Time:** 6:30 pm – 10:30 pm

**Location:** Village Barn

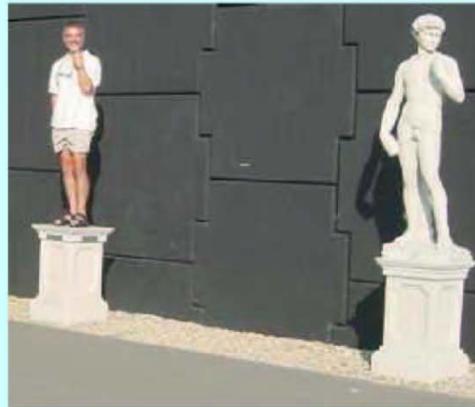
**Food cost:** \$15.00

**Payment Deadline:** Tuesday February 11, 12:00 p.m.

**Contact:** Etta x2312, Sonya x4591, Priscilla x2828,  
Harvey x8303

### Menu:

Spinach salad  
Caesar salad  
Baked chicken pieces  
Roast sirloin of beef  
Baked Mostacholli (vegetarian)  
Au gratin potatoes  
Green beans almandine  
Wild rice  
Relish tray with dip  
Rolls & butter  
Coffee, soft drinks, wine, beer  
Dessert



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**Some Tickets  
Still Available  
... required for  
dinner and drinks!**

