



UW Perspective

Norman Drinkwater, Vice Chancellor
for Research and Graduate Education
Presentation to IceCube M&O

UW Madison as a Leading Research University

- Ranked 6th in 2017 HERD Survey, \$1.2B in research expenditures
- Ranked first in number of PhD's awarded in 2017 (NSF Survey of Earned Doctorates)
- Top 20 rankings for graduate programs in physics, statistics, mathematics, chemistry, earth sciences, computer science, and statistics

What is OVCRGE and how does it Support Research on Campus?

- Oversight and leadership of 16 interdisciplinary research centers
- Responsible for research policy and management of all extramural research awards
- Oversee compliance with all federal research policies
- Oversight for all campus graduate programs
- Strategic investment of \$60M in support of campus research enterprise in 2018

OVCERGE Research Centers

From particles to prairies

Aquatic Sciences Center

Arboretum

Biotechnology Center

Biotron

Laboratory of Cell & Molecular Biology

Institute on Aging

Institute for Molecular Virology

Physical Sciences Lab

Primate Research Center

Space Science & Engineering Center

Stem Cell & Regenerative Medicine
Center

UW Press

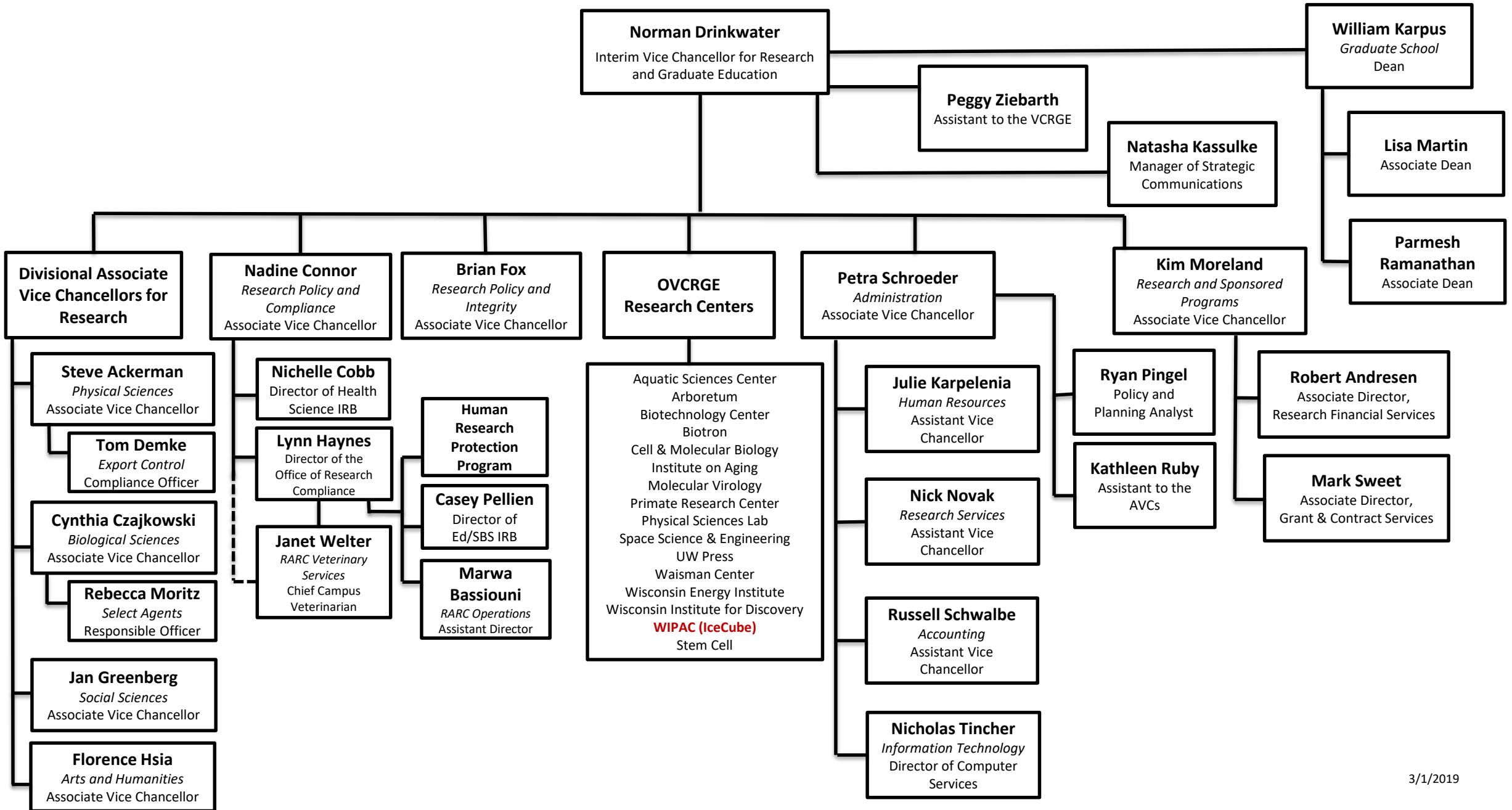
Waisman Center

Wisconsin IceCube Particle
Astrophysics Center

Wisconsin Energy Institute

Wisconsin Institute for Discovery

Office of the Vice Chancellor for Research and Graduate Education (OVCRGE)



University of Wisconsin – Madison

R. Blank, Chancellor
N. Drinkwater, Interim Vice Chancellor for
Research and Graduate Education (VCRGE)

Wisconsin IceCube Particle Astrophysics Center (WIPAC)

K. Hanson, Executive Director
K. Chorlton, HR, Bsns & Admin
S. Bravo Gallart, Communications
D. Comerford, Busnss IT Support

National Science Foundation

IceCube Neutrino Observatory

F. Halzen, Principal Investigator
K. Hanson, Director of Operations
A. Karle, Associate Director for Science
& Instrumentation
J. Madsen, Associate Director for
Education & Outreach

International Oversight and Finance Group

**Science Advisory
Committee**
B. Barish, Caltech, Chair
**Software & Computing
Advisory Panel**
M. Delfino, PIC, Chair
**Education & Outreach
Advisory Panel**

Foreign Funding Agencies

Collaboration Board

Spokesperson & Executive Committee Chair,
D. Grant (MSU)
Publication Com. Chair, M. Ackermann (DESY)
Speakers Com. Chair, J. Kiryluk (SUNY)
Future Upgrades Coordinators,
T. DeYoung (MSU) & M. Kowalski (DESY)

Maintenance & Operations

Detector M&O – J. Kelley, UW Manager
Run Coordination, M. Kauer (UW)
DAQ, D. Glowacki (UW)
Supernova DAQ, S. BenZvi (Rochester)
Processing & Filtering, E. Blaufuss (Maryland)
IceTop Operations, S. Tilav (Delaware)
IceCube Live, M. Frère (UW)

Calibration – S. Blot (DESY) / K. Mase (Chiba)

Data Processing & Simulation Serv – J.C. Diaz-Velez (UW)
Offline Data Production, R. Snihur (UW)
Simulation Production, K. Meagher (UW)

Program Coordination – C. Vakhnina (UW)

Collaboration Simulation Production Centers:

Belgium: IIHE-Brussels; **Canada:** Alberta; **Japan:** Chiba
Germany: DESY, Aachen, Dortmund, Wuppertal, Mainz
US: UW (NPX, GZK, CHTC, OSG), UMD, UDEL, LBNL/NERSC, PSU, Alabama

South Pole Logistics, R&D Support – J. Haugen (UW)

Quality & Safety – M. Zernick (UW)

Computing & Data Management – B. Riedel,
UW Manager
Data Storage Systems & Cybersecurity, S. Barnet (UW)
South Pole System & Test System, R. Auer (UW)
Data Transfer and Archive, P. Meade (UW)
Data Management, J. Bellinger (UW)
Distributed Computing, V. Brik (UW)
Data Processing, A. Sheperd (UW)
Networking and Facilities, S. Barnet (UW)
Production Software, D. Schultz (UW)
Data Archive at DESY, K. Leffhalm (DESY)
Data Archive at LBNL, S. Klein (LBNL)

Software – A. Olivas (Maryland)
IceTray Framework/Development, D. LaDieu (Maryland)
Simulation Software, A. Olivas (Maryland)
Offline Processing Software, C. Kopper (MSU)

Technical & Science Working Groups

Analysis Coordinator –
D. Williams (Alabama)

Analysis Working Groups:
Diffuse
Neutrino Sources
Beyond Standard Model
Cosmic Rays
Oscillation
Supernova

Technical Working Groups:
Real time
Calibration
Systematics & Reconstructn
Systematics Coordinator

**Coordination
Committee Chair,**
P. Desiati (UW)
**Resource
Coordination,**
C. Vakhnina (UW)
TFT Coordination,
A. Hallgren (Uppsala)
**Real-Time Oversight
Committee**
E. Blaufuss (Maryland)

OVCERGE Support for IceCube M&O and Future Facility Enhancements

- Campus investment in M&O project of \$18.5M since 2010.
- Providing internal oversight for the project.
- Appointing the Director of Operations (subject to concurrence by the NSF, and the IceCube Collaboration Board).
- Ensuring that the M&O Program has adequate staff and support.
- Ensuring that an adequate management structure is established for managing the project and monitoring progress.
- Ensuring accurate and timely reporting.
- Establishing subawards with other U.S. collaborating institutions and providing appropriate funding.
- Establishing MOUs between the UW and non-U.S. collaborators defining the non-U.S. collaborators' deliverables.
- Guaranteeing continuity of operations during funding delays.

Lessons Learned from IceCube Construction

- During construction of IceCube, over 80% of the \$239M was allocated directly to and managed by UW-Madison.
- The Graduate School (now OVCRGE) provided support and oversight and helped establish WIPAC as one of its centers to support the large facility.
- Project Director (WIPAC Center Director) directly reported to the Vice Chancellor for Research.
- Close collaboration between WIPAC and Graduate School (now OVCRGE) insured that brief delays in funding did not compromise the project.

Summary Slide

- The OVCRGE of UW-Madison is committed to supporting WIPAC to ensure continued success of the IceCube Neutrino Observatory.
- Consistent and clear communication is essential to ensure future success.
- The exciting IceCube science is a point of pride for the campus
 - VIP briefing before the NSF press conference announcing the multi-messenger observation of the TXS blazar.
 - IceCube featured as UW research success story in public media.
- Look forward to working with NSF on this enterprise.