

DRAFT MINUTES
BOARD ON RESEARCH AND TECHNOLOGY DEVELOPMENT
June 15, 2009

A meeting of the Board on Research and Technology Development (BRTD) was held on June 15, 2009 in Palm Desert, California. The meeting was conducted in conjunction with the ASME Annual Meeting. The following people attended all or part of the meeting:

BRTD MEMBERS

Joe Beaman – University of Texas-Austin (Member-at-Large)
Deborah Bloom – Nalco (Chair, Research & Technology Committee on Water & Steam in Thermal Systems)
F. Roy Fleet – FRF Inc. (Chair, Gas Pipeline Safety Research Committee)
Richard Jacobsen – Idaho State University (Chair, BRTD)
I.S. Jawahir – University of Kentucky (Chair, Research Committee on Sustainable Products and Processes & Vice Chair, BRTD)
Darrell W. Pepper – University of Nevada-Las Vegas (Co-Chair, Research Committee on Water Management Technology)
Randy Turner – Southern Company (Executive Committee Member, Research Committee on Power Plant and Environmental Chemistry)
Charles Velzy – Retired (Chair, Peer Review Committee for Energy & Environment; Past President of ASME)
Charles Waggoner – Mississippi State University (Chair, Research Committee on Energy, Environment, and Waste)

GUESTS

Abiola Ajetunmobi – Bechtel (ASME ECLIPSE Program)
Scott Burr – ASME District D
Said Jahanmir – Miti Heart Corporation (Member-Elect, ASME Board of Governors)
C. Sahay - University of Hartford (Board of Governors)
Eric Smith – Consultant

STAFF

Michael Tinkleman – Director, Research
Norma Johnston – Manager, Research

Item 1 – Agenda - The agenda was approved and is attached as [Appendix A](#).

Item 2 – Minutes of Previous Meeting - The minutes of the November 3, 2008 meeting were approved as written.

Item 3 – Strategic Planning

The BRTD conducted a strategic planning session to identify new CRTD activities stemming from ideas and recommendations which emerged at the ASME Water Technology Management Vision and Roadmap Workshop, the ASME Energy Grand Challenge Vision and Roadmap Workshop, and a steering committee planning meeting for an ASME Sustainable Products and Processes Steering Committee Workshop. For background, also see the PowerPoint presentation from the Director's report (4b).

Among the items discussed were additional best management practices workshop related to industrial water use, a workshop on nonpotable water, an article on the energy water nexus in Mechanical Engineering, new consensus documents from the Research & Technology Committee on Water and Steam in Thermal Systems, a gasification project being considered by the Research Committee on Energy, Environment and Waste, and a Gas Pipeline Safety Research Committee project on elemental sulfur.

A steering committee was consisting of Charlie Waggoner, I.S. Jawahir, and Darrell Pepper was formed to conduct a facilitated session at IMECE between the CRTD Research Committee chairs and K&C Technical Divisions with similar interests to identify potential collaborative projects. It was also suggested that a representative from ASME Marketing & Sales also participate.

Item 4 - Management Reports

4a) Chair's Report – Richard Jacobsen provided an overview on ASME's vision, mission, and core values as well as the three strategic initiatives identified by the Board of Governors for FY 2010: energy grand challenge, globalization, and workforce development. A copy of Dr. Jacobsen's viewgraphs is attached as [Appendix B](#). A copy of the ASME organization chart is attached as [Appendix C](#).

4b) Director's Report – Michael Tinkleman provided an update on CRTD activities (see item 5 for more details on each project). More information from the Director's report may be found in [Appendix D](#).

4c) Financial Report – Norma Johnston reported that the CRTD forecasts ending fiscal year 2009 at its authorized subsidy of \$218.1K but noted that it has been a difficult target to meet since staff time spent on internal initiatives such as the Energy Grand Challenge have limited the time available to support chargeable activities. A copy of the financial presentation is attached as [Appendix E](#). A spreadsheet summarizing the balances in the CRTD custodian accounts is attached as [Appendix F](#).

4d) Committee Reports – No research committee reports were submitted. Staff was requested to send an email to the committee officers requesting that the committees consider new projects and activities and bring a report for discussion at the next CRTD meeting.

4e) Patent Award – The 2009 recipient of the Thomas A. Edison Patent Award Committee is Alex J. Severinsky for the invention of a hyper-drive system, using high voltage power electronics and a turbo charged internal combustion engine, to create a commercially viable hybrid car (patent #5,343,970). The award will be presented during the 2009 International Mechanical Engineering Congress and Exposition.

Roy Fleet will replace Crystal Heshmat on the Edison Patent Award selection committee. Mr. Fleet's term will run from July 2009 to June 2012.

Item 5 – Project Updates

5a) Gas Pipeline Safety – Committee chair, Roy Fleet reported that the handbook entitled Development of an Applications Guide for Determining Yield Strength of In-Service Pipe by Evaluating Hardness has been published. The list price is \$50/Member Price \$40.

5b) DOE/NETL Project Peer Reviews – Michael Tinkleman reported that CRTD conducted two peer reviews for the Department of Energy's National Energy Technology Laboratory during the FY 2009 fiscal year. The two peer reviews conducted covered Hydrogen/Syngas (Fuels) held February 23-27, 2009 and Existing Plants, Emissions, and Capture held April 26-May 1, 2009. CRTD is in discussions with NETL to perform three peer reviews in FY 2010 which will be in areas that ASME has reviewed in the past.

5c) Amine Project – Debbie Bloom provided an update on the research project on "Amine Use in High Pressure Steam Cycles and Boilers" being organized by the Research and Technology Committee on Water & Steam in Thermal Systems. As previously reported, Dr. Digby MacDonald of Pennsylvania State University was hired to perform tests utilizing one amine - Mono-Ethanolamine (MEA) in the preliminary phase of research conducted using the \$20K committed from CRTD units. The committee developed a proposal for the next phase of work but learned that a company has hired Dr. MacDonald to conduct additional testing using different parameters on the same

amine. Since this work is being performed by the university, the results will be published. The committee subsequently decided to place the project on hold until these results are available.

5d) Produced Water Consensus Document – Debbie Bloom provided an update on a new consensus document that the Water Technology Subcommittee of the Research and Technology Committee on Water & Steam in Thermal Systems is preparing on the use in boilers of produced water from oil fields.

5e) Energy, Environment & Waste – Charlie Waggoner reported that the Energy, Environment & Waste Research Committee is looking at a potential new project on managing green house gas emissions from landfills. A Committee strategic planning session on this potential new project was held at the ASME Washington, D.C. office in March 2009, and several sessions were sponsored at the IT3 conference in May 2009.

Item 6 – Old Business

6a) 2009 IMECE Sessions – Dr. Jawahir reported that Ahmad Fakheri and Greg Kowalski are organizing a sustainability track at the 2009 International Mechanical Engineering Congress and Exposition (IMECE). Dr. Jawahir suggested that the research committees consider conducting a session. He also suggested panel session with the program managers from the National Science Foundation. Dr. Jawahir will follow-up on this effort.

6b) BRTD Membership – Richard Jacobsen noted that there are member-at-large positions available on the BRTD and requested the BRTD members forward to him the names of any ASME members who would be an asset to the CRTD's work in developing new projects stemming from the cross sector activities such as the energy grand challenge and water.

Item 7 – New Business

7a) Membership Appointments – The BRTD approved new and reappointments to the Gas Pipeline Safety Research Committee, the Research Committee on Power Plant & Environmental Chemistry, the Research & Technology Committee on Water and Steam in Thermal Systems, and the Research Committee on Water Management Technology. A complete listing of appointments is attached as [Appendix G](#).

Dr. Jacobsen will send a letter to each of the research committees regarding active participation and the need for new members. In the case of some committees, it may be appropriate to move long time members who are now retired to emeritus status.

A suggestion was made to add a member involved in the codes and standards activity to each research committee. A few research committees (such as Gas Pipeline Safety) already have this tie.

Item 8 - Next Meeting

The next meeting of the Board on Research and Technology Development will be scheduled in conjunction with the 2009 ASME International Mechanical Engineering Congress and Exposition in Orlando, FL. The meeting is scheduled for Monday, November 16 at the Disney Swan and Dolphin Hotels.

FINAL AGENDA
BOARD ON RESEARCH AND TECHNOLOGY DEVELOPMENT
Monday, June 15, 2009
10:30 AM – 5:00 PM

Desert Springs JW Marriott Hotel
74855 Country Club Dr.
Palm Desert, CA 92260
Tel: 760-341-2211

- | | | |
|-----------------|---|--|
| 10:30 AM | 1) Welcome, Introductions, and Agenda Approval – ACTION ITEM | Richard Jacobsen |
| 10:40 AM | 2) Review & Approve Minutes of 11/3/08 Mtg. – ACTION ITEM | Jacobsen |
| 10:45 AM | 3) Strategic Planning – Focus: CRTD Cross Sector Activities – Energy, Water, Sustainability
a) ASME Energy Grand Challenge Vision & Roadmap Workshop – March 12-13, 2009
- CRTD project opportunities
b) ASME Water Management Technology Vision & Roadmap Workshop &
ASME Water Management Technology Best Management Practices (BMP) for the
Process Industries Workshop – May 13-14, 2009 - CRTD project opportunities
c) Sustainable Products and Processes Vision Roadmap Workshop – Steering
Committee Workshop – December 16, 2008 - CRTD project opportunities | |
| 11:55 – 1:30 PM | Lunch Break – BRTD Members will be given tickets to Conference Keynote Luncheon – Speaker: Mark Burgess, Chief Engineer, Boeing Phantom Works | |
| 1:40 – 3:00 | 3) Strategic Planning - Continued | |
| 3:00 - 4:00 | 4) Reports
a) Chair's Report
b) Director's Report
c) Financial Report
d) Committee Reports-Regular & Ad-Hoc (Actions Items Only)
e) Thomas Edison Patent Award
f) K&C Update
g) Update TCOB/BRTD Interactions with Government Relations
(Emerging Technologies Committee) | Jacobsen
Michael Tinkleman
Norma Johnston
Chairs
Johnston
Burt Dicht
Tinkleman |
| 4:00 – 4:15 | 5) Project Updates
a) GPSRC Yield Strength Handbook
b) Reviews for DOE/NETL – Hydrogen/Syngas Program and
Existing Plants, Emissions, and Capture Program
c) Amine Project | F. Roy Fleet
Tinkleman
Bloom |
| 4:15 – 4:30 | 6) Old Business
a) IMECE Sessions 2009
b) BRTD Membership (Identify candidates for at-large positions) | I.S. Jawahir
Jacobsen |
| 4:30 – 4:45 | 7) New Business
a) Approval of CRTD Committee Membership
Appointments – ACTION ITEM
b) Other | Members |
| 4:55PM | 8) Next Meeting – Tentative Scheduled - Monday, November 16, 2009
ASME International Mechanical Engineering Congress & Exposition – Orlando, FL | |
| 5:00PM | Adjourn | |

Chair's Presentation

Board on Research & Technology Development

Dick Jacobsen, Ph.D.

ASME Annual Meeting

June 16, 2009

Palm Desert, CA

Topic Areas

- ASME FY'10 Strategies – Update
- BOG Retreat – July 2009
- CRTD Key Cross – Sector Activities
 - Energy
 - Water
 - Sustainability
- New Research Committee Projects

ASME Strategic Plan Overview

Mission & Vision: What we want to be and why we exist

Core Values: What we believe in and how we will behave

Strategy: Our game plan for achieving the vision and mission
Strategic Priority Statements tell the story of our strategy.

Balanced Scorecard: How we execute and monitor the strategy

The BSC includes:

- Strategy Map with operational objectives and definitions
- Scorecard with measures and targets

ASME Vision and Mission

(approved by the BOG April 23, 2009)

- **Vision**

ASME will be the essential resource for mechanical engineers and other technical professionals throughout the world for solutions that benefit humankind.

- **Mission**

To serve our diverse global communities by advancing, disseminating and applying engineering knowledge for improving the quality of life; and communicating the excitement of engineering.

ASME Core Values

ASME Core Values

- Embrace integrity and ethical conduct
- Embrace diversity and respect the dignity and culture of all people
- Nurture and treasure the environment and our natural and man-made resources
- Facilitate the development, dissemination and application of engineering knowledge
- Promote the benefits of continuing education and of engineering education
- Respect and document engineering history while continually embracing change
- Promote the technical and societal contribution of engineers

ASME Strategic Priorities FY2010

- Energy Grand Challenge
- Globalization
- Engineering Workforce Development

Energy Grand Challenge

Strategy Statement:

To be a leading force for the advocacy and development of a balanced U.S. energy policy and support development of balanced energy policies in other areas of the world where ASME has influence.

Energy Grand Challenge: Strategy Elements

Discussion:

- Lead the engineering community through advocacy and development of a balanced U.S. energy policy - complete by 2010. Support development of balanced energy policies in other areas of the world where ASME has influence.
- Be THE cutting-edge resource by aggregating, integrating and disseminating information and education on energy technologies and fuel sources.
- Leverage ASME's reputation and ability to provide a credible neutral voice, standards, technology transfer, information management, knowledgeable and experienced membership across all energy technologies and fuel sources, collaborator, education, government advocacy

Globalization

Strategy Statement:

To be recognized as the world leader in mechanical engineering and multidisciplinary technology.

Engineering Workforce Development

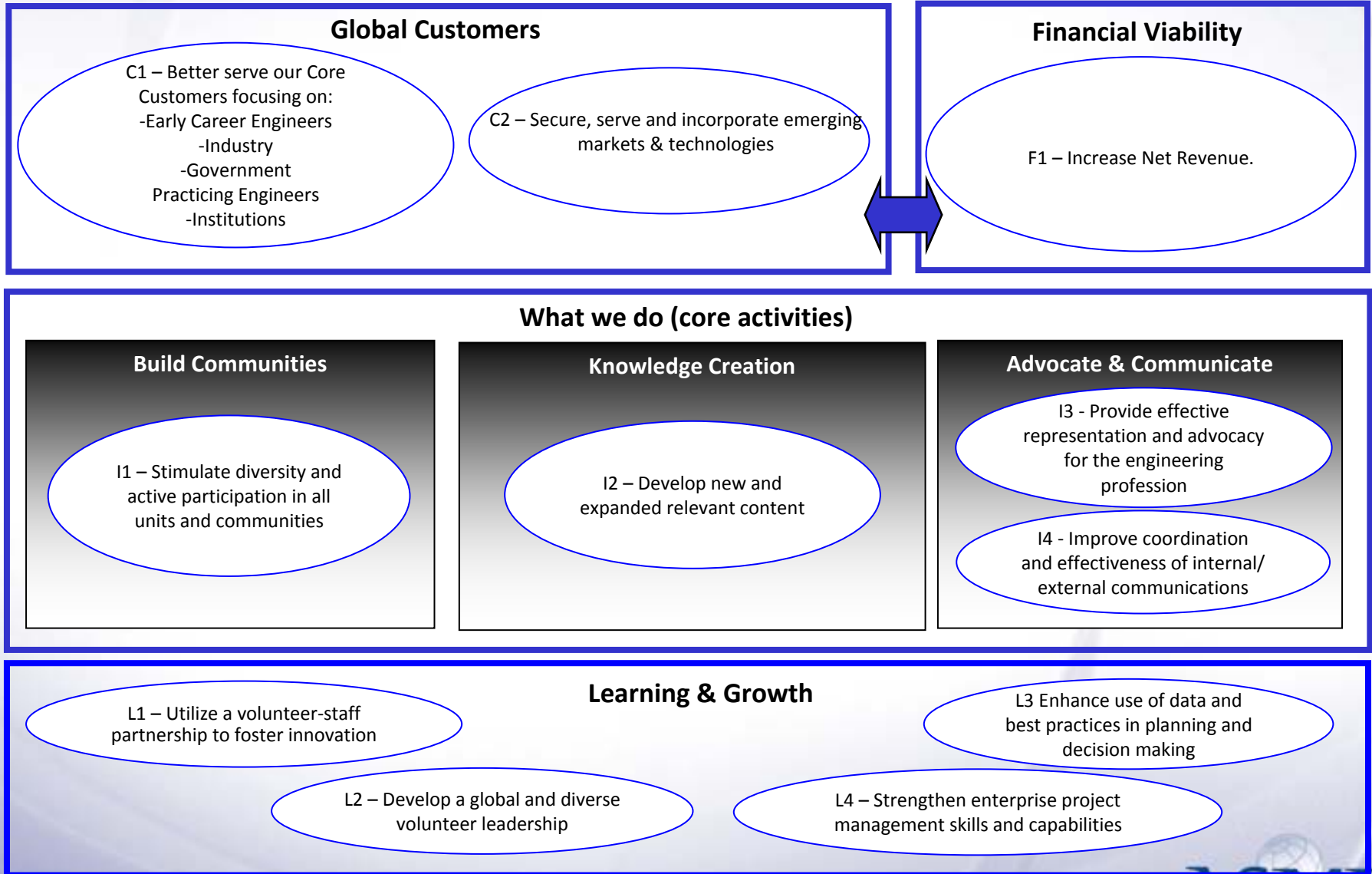
Strategy Statement:

To expand the capacity and effectiveness of the engineering workforce by:

- Actively promoting inter-engineering society collaboration to increase public awareness of the engineering profession - focusing on primary and secondary levels;
- Increasing the value of ASME student and early career participation through radical changes to their ASME experiences by use of project-oriented education and practices; and
- Offering professional development programs to prepare a global engineering workforce to meet the challenges of tomorrow.

FY 10 Enterprise Strategy Map

Approved by BOG 9.25.08

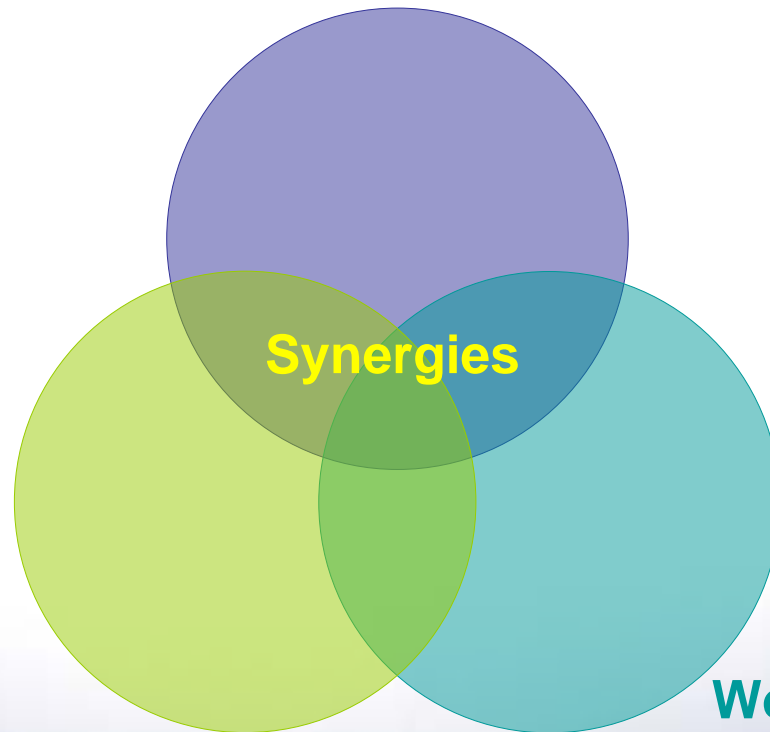


Strategy Execution Teams

- Energy Grand Challenge
 - Michael Tinkleman, Team Leader
- Globalization
 - Michael Michaud, Team Leader
- Engineering Workforce Development
 - Dave Soukup, Team Leader

Strategy Execution Teams

Energy



Globalization

Workforce Development

BOG Retreat – 7/2009

“Focus on Strategic Refinement & Execution”

- Global Trends & Issues Impacting Engineering & ASME – Environmental Scan
- Review our Statements on Strategic Intent
 - Energy Grand Challenge, Globalization & Workforce Development
- Develop Objectives & Measures for the Statements on Strategic Intent
- Other Issues the BOG would like to address in the coming year.

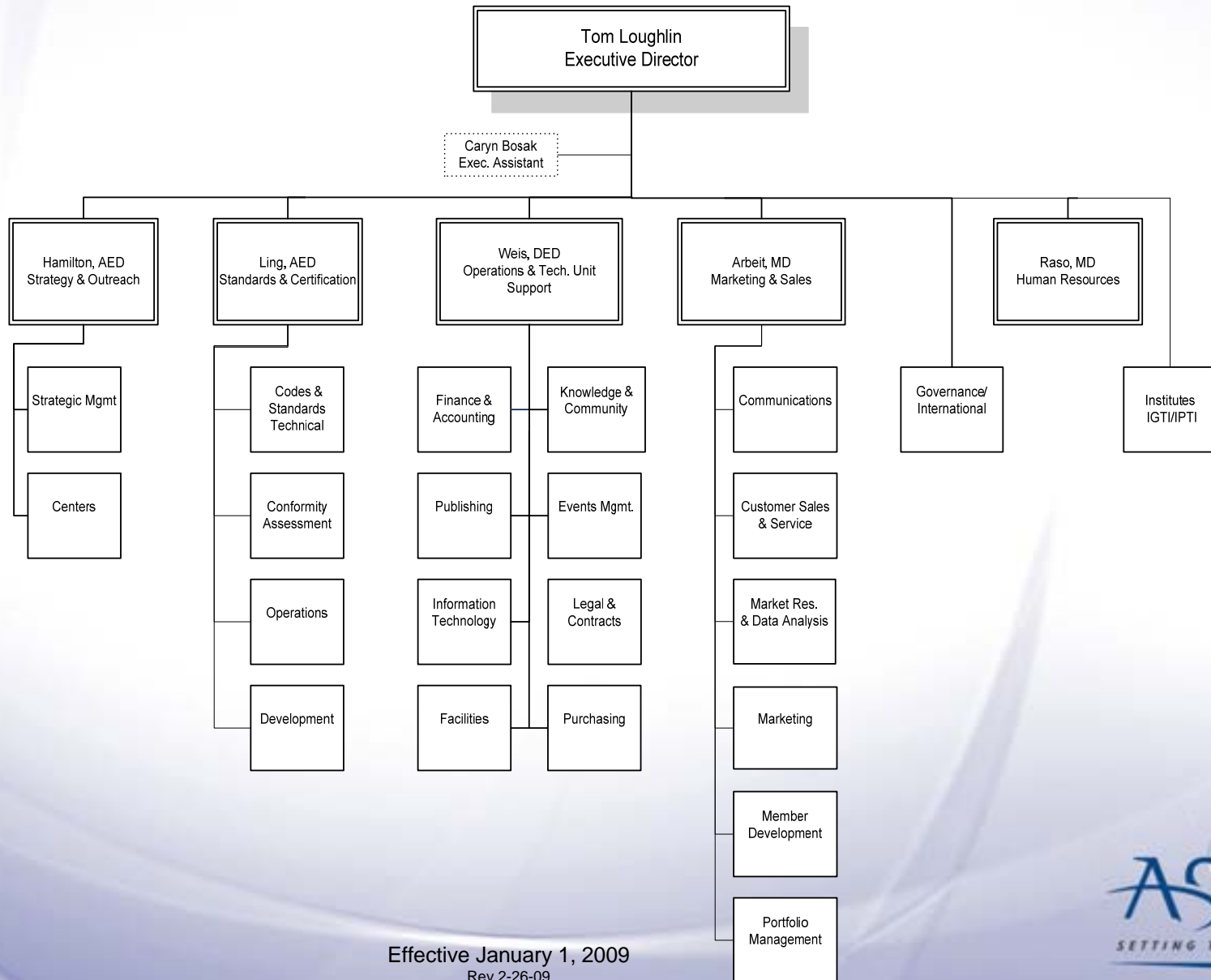
CRTD Key Cross – Sector Activities

- Energy Grand Challenge
 - Energy Grand Challenge Vision Roadmap Workshop held 3/12-13/2009 in Washington, D.C.
- Water Management Technology
 - Water Management Technology Best Management Practices – Process Industries
 - held 5/13-14/2009.
- Sustainability
 - Sustainable Products & Processes Steering Committee Workshop held 10/16/2008.

New CRTD Research Committee Projects

- Energy Environment & Waste
 - Strategic Planning Meeting – 3/2009
- Gas Pipeline Safety Research Committee
 - Committee Discussions on: -
 - Sulfur Deposition
 - Fitness for Purpose Toolbox
- Other Research Committee New Project Discussions Needed – “Next Steps”
- Water Management Technology
- Energy Grand Challenge

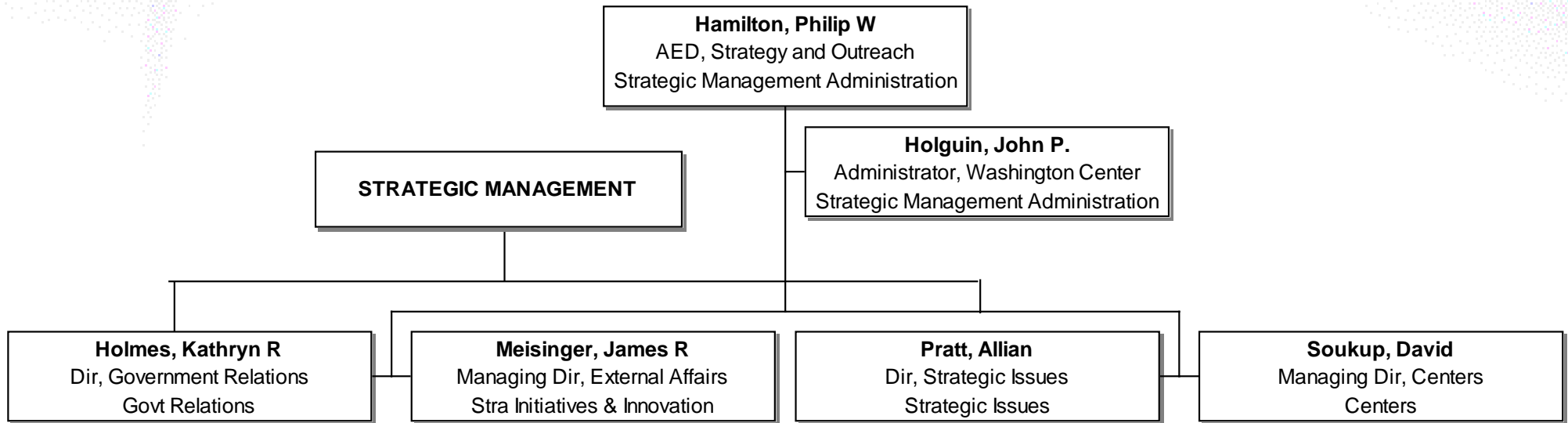
ASME Staff Organization Chart



Effective January 1, 2009

Rev 2-26-09

STRATEGY & OUTREACH



STRATEGIC MANAGEMENT

Holmes, Kathryn R
Dir, Government Relations
Govt Relations

Smith, Rasheedah
Administrative Assistant
Govt Relations

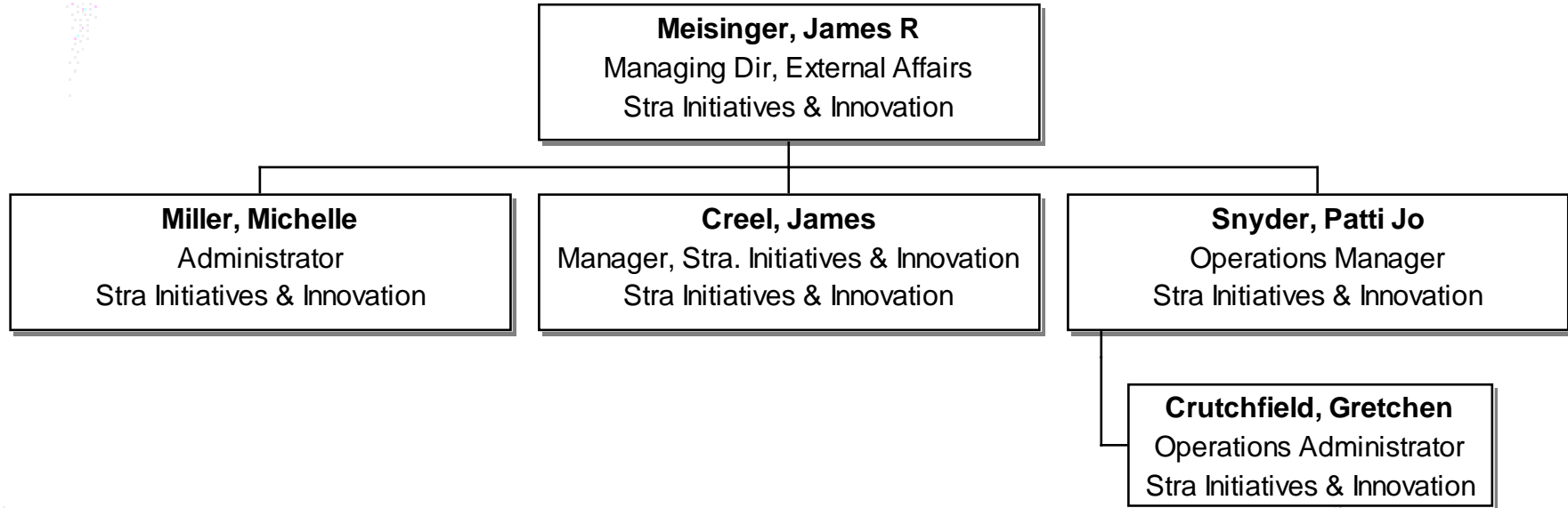
Carl, Melissa R.
Manager, Government Relations
Govt Relations

Quinn, Anthony R.
Sr. Government Relations Representative
Govt Relations

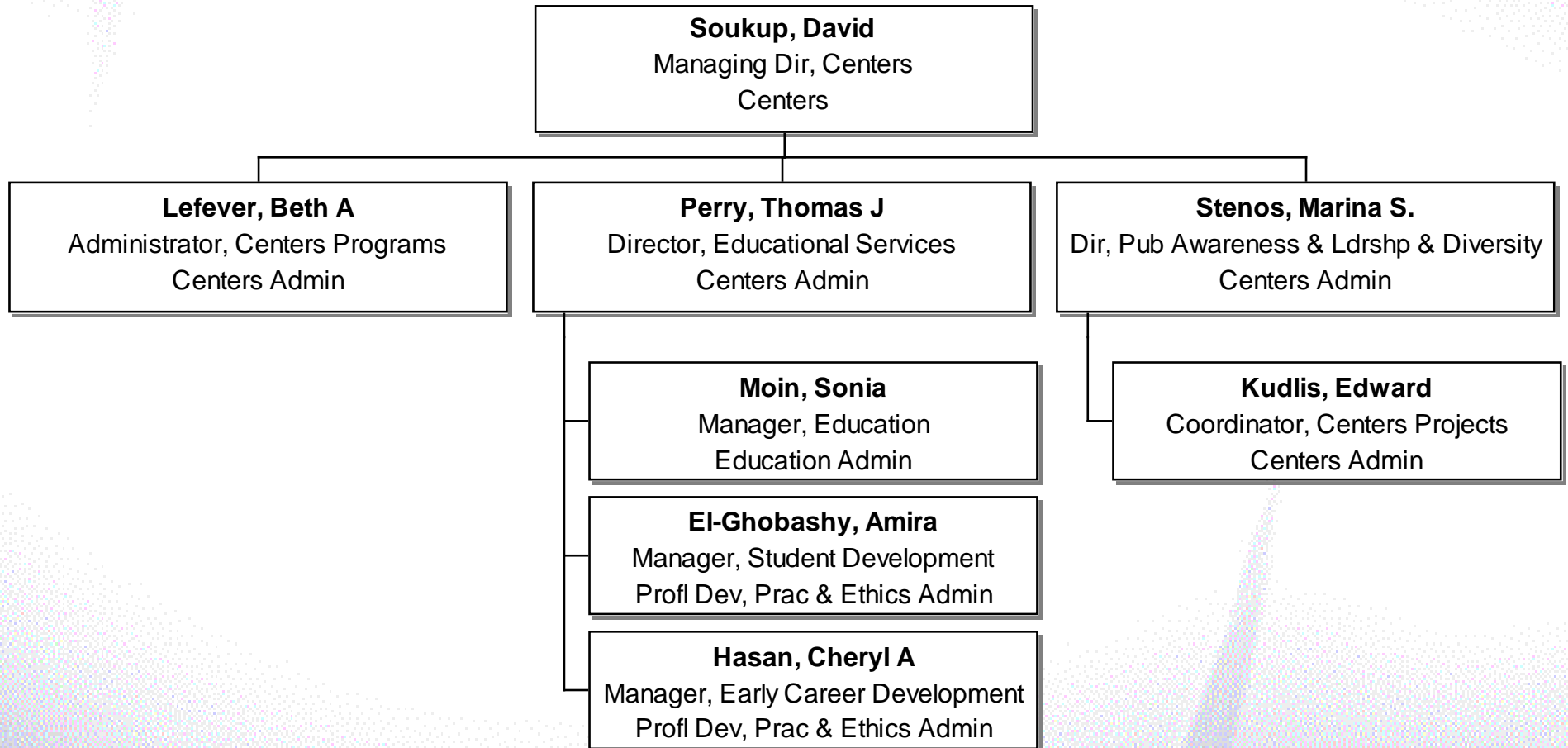
Rains, Robert
Public Policy Specialist
Govt Relations



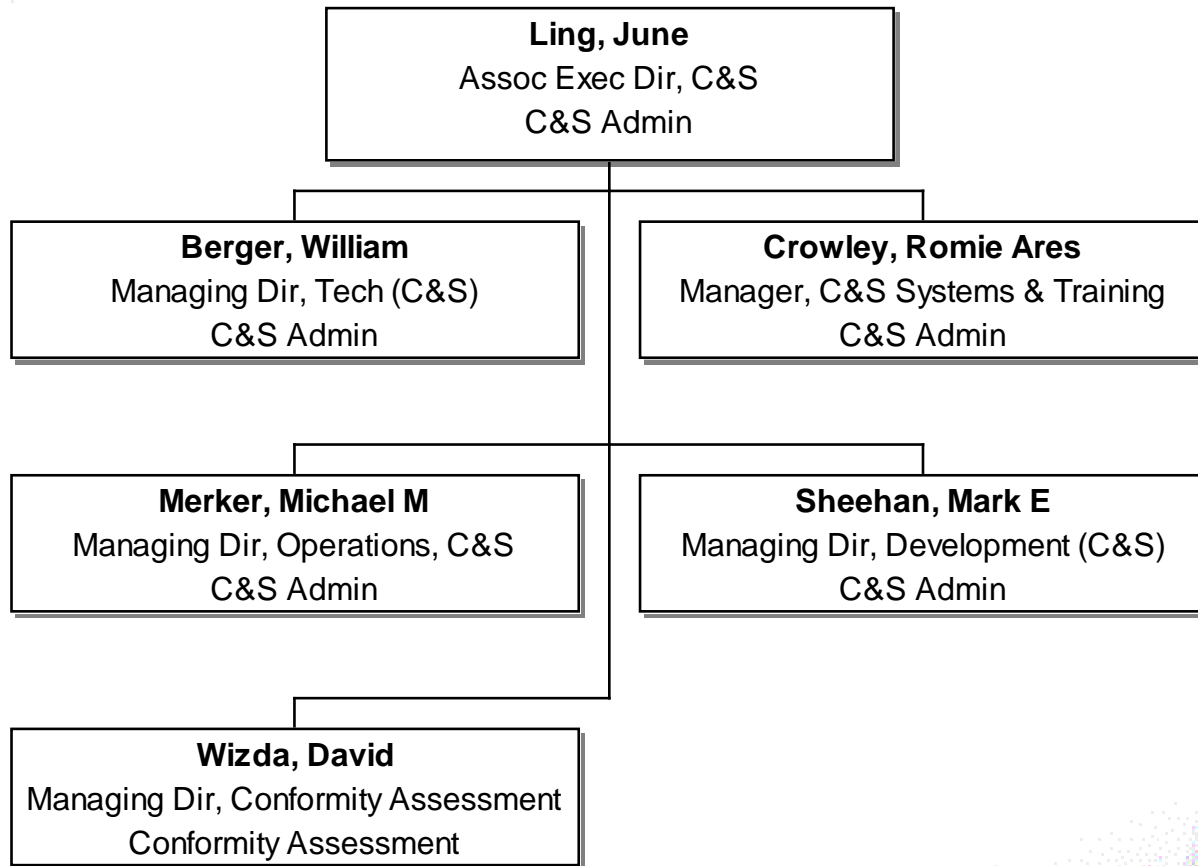
STRATEGIC MANAGEMENT



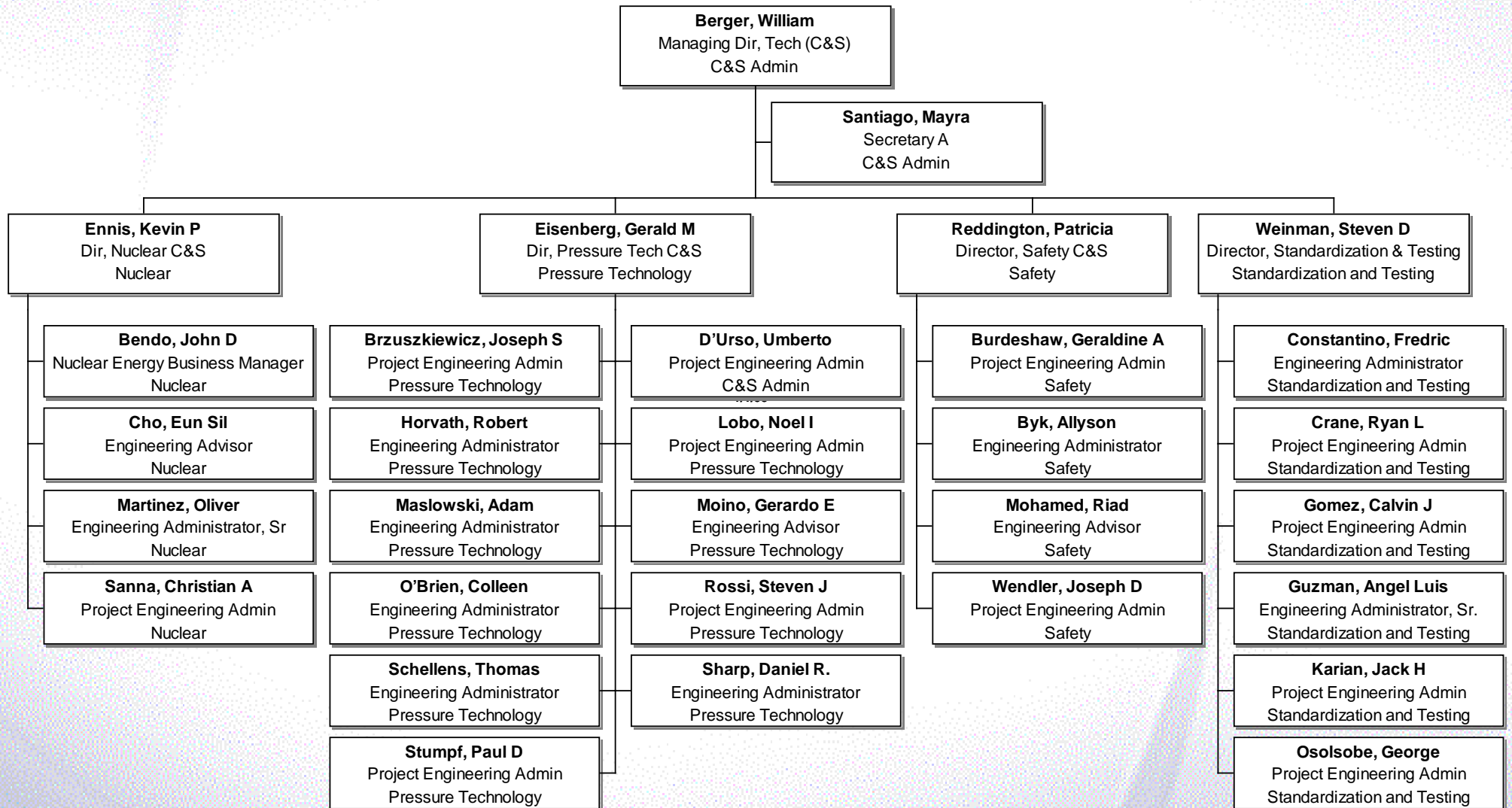
CENTERS



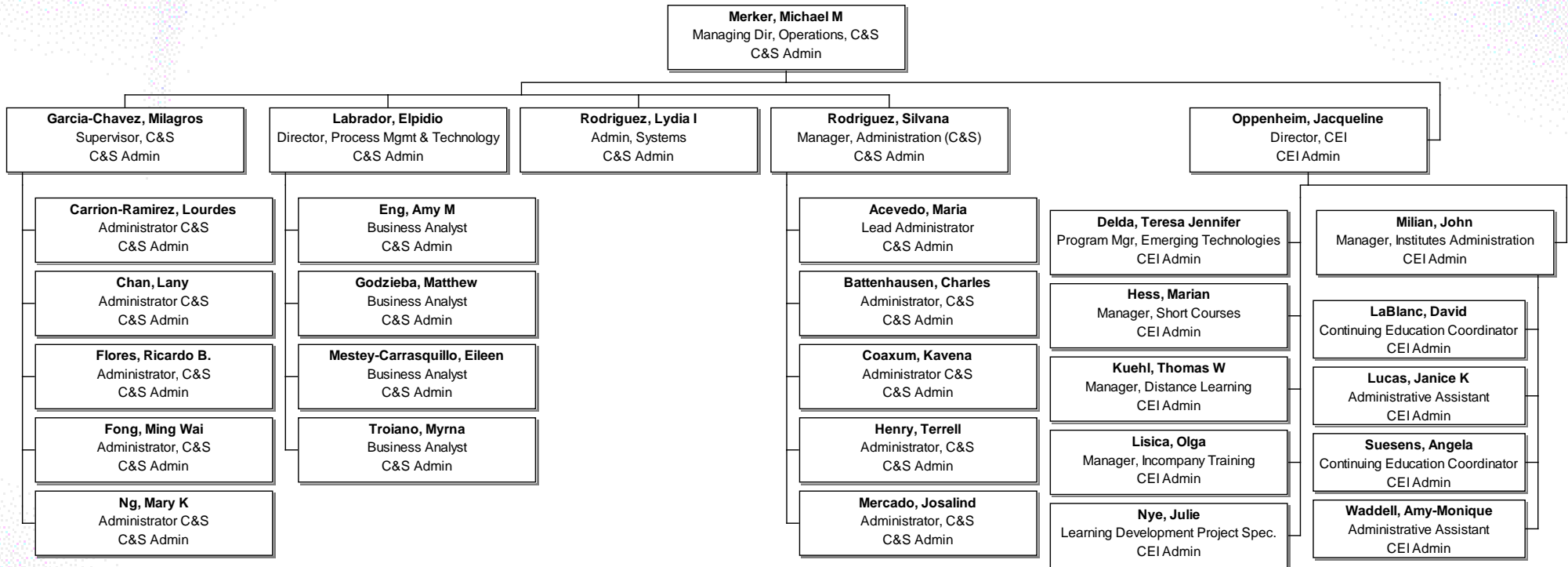
STANDARDS & CERTIFICATION



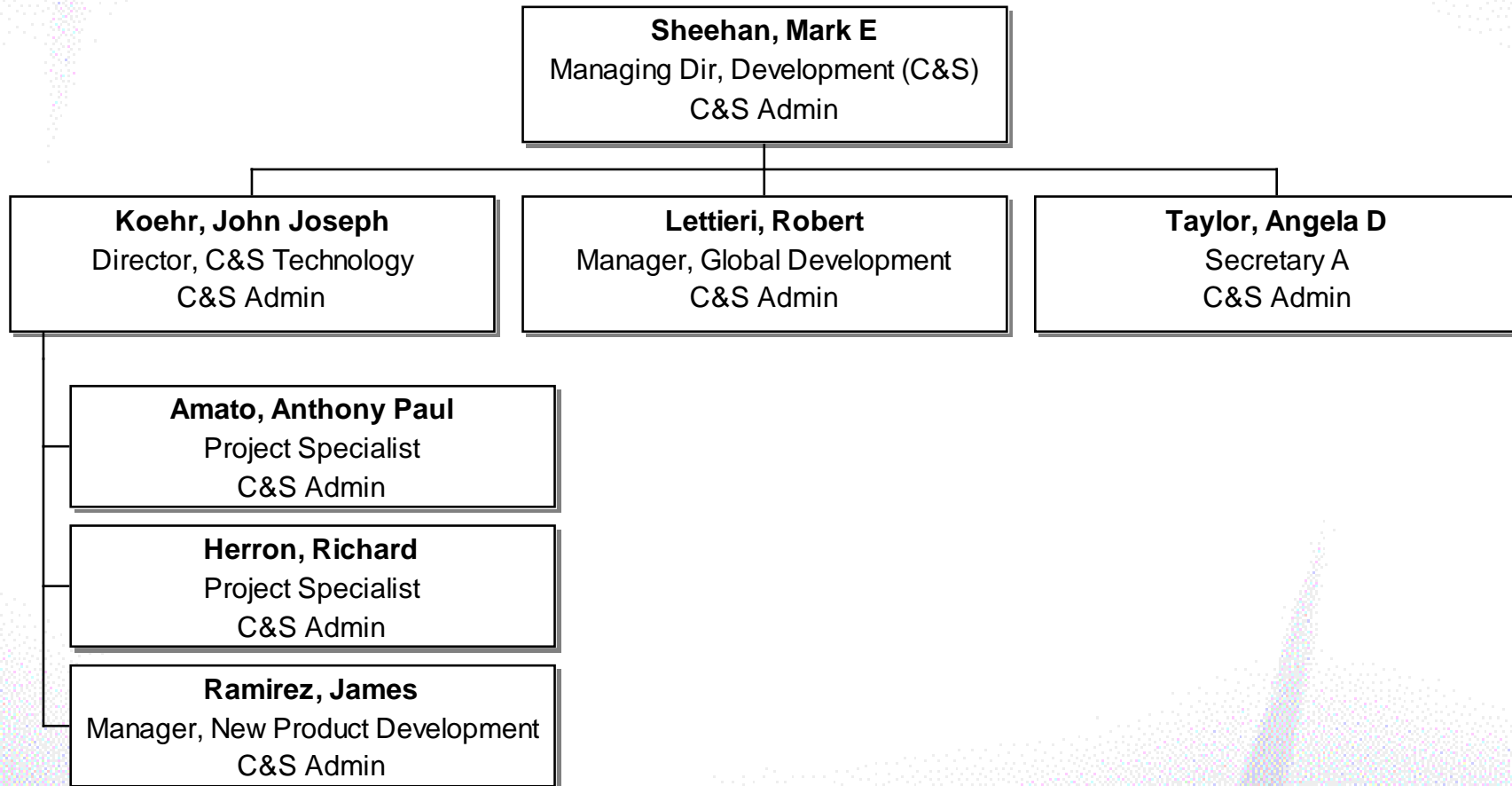
STANDARDS & CERTIFICATION



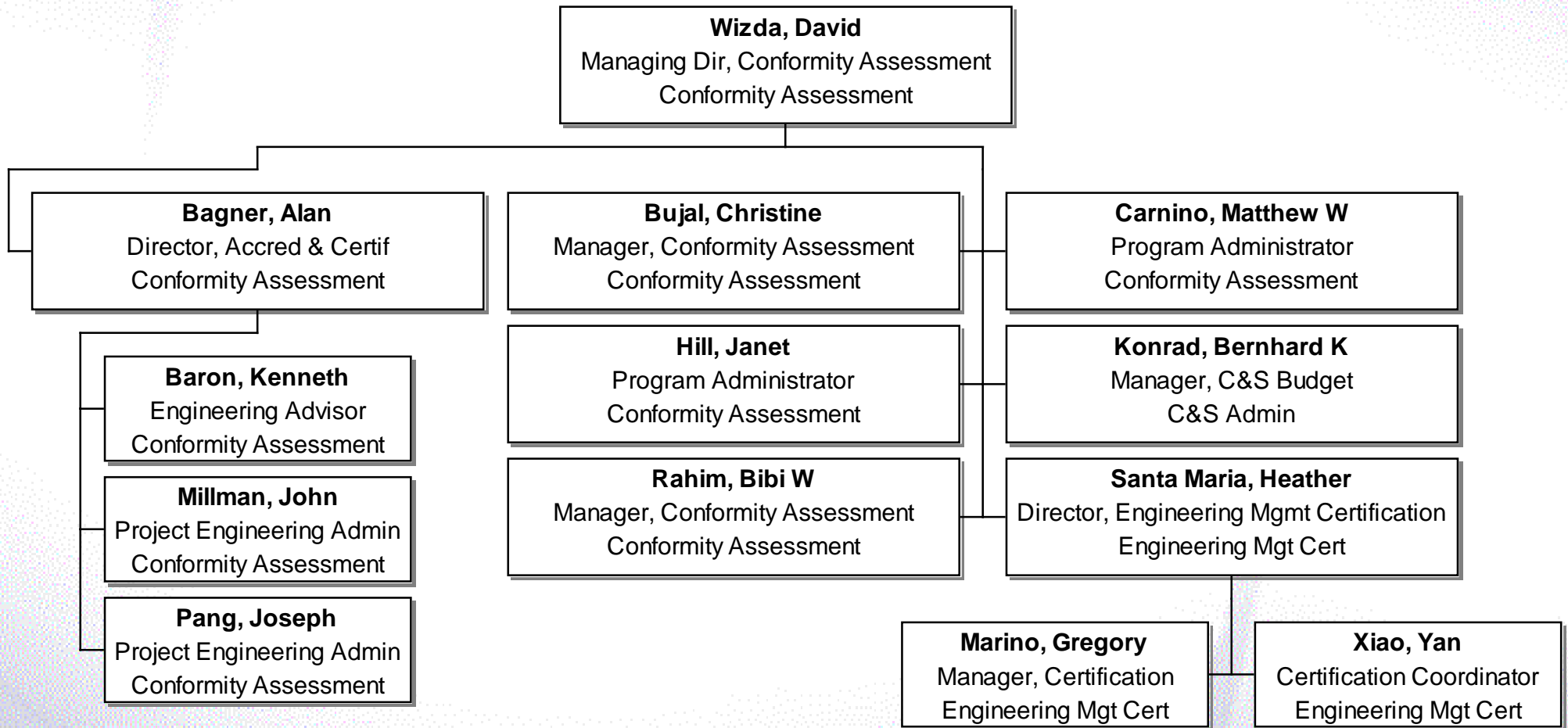
STANDARDS & CERTIFICATION



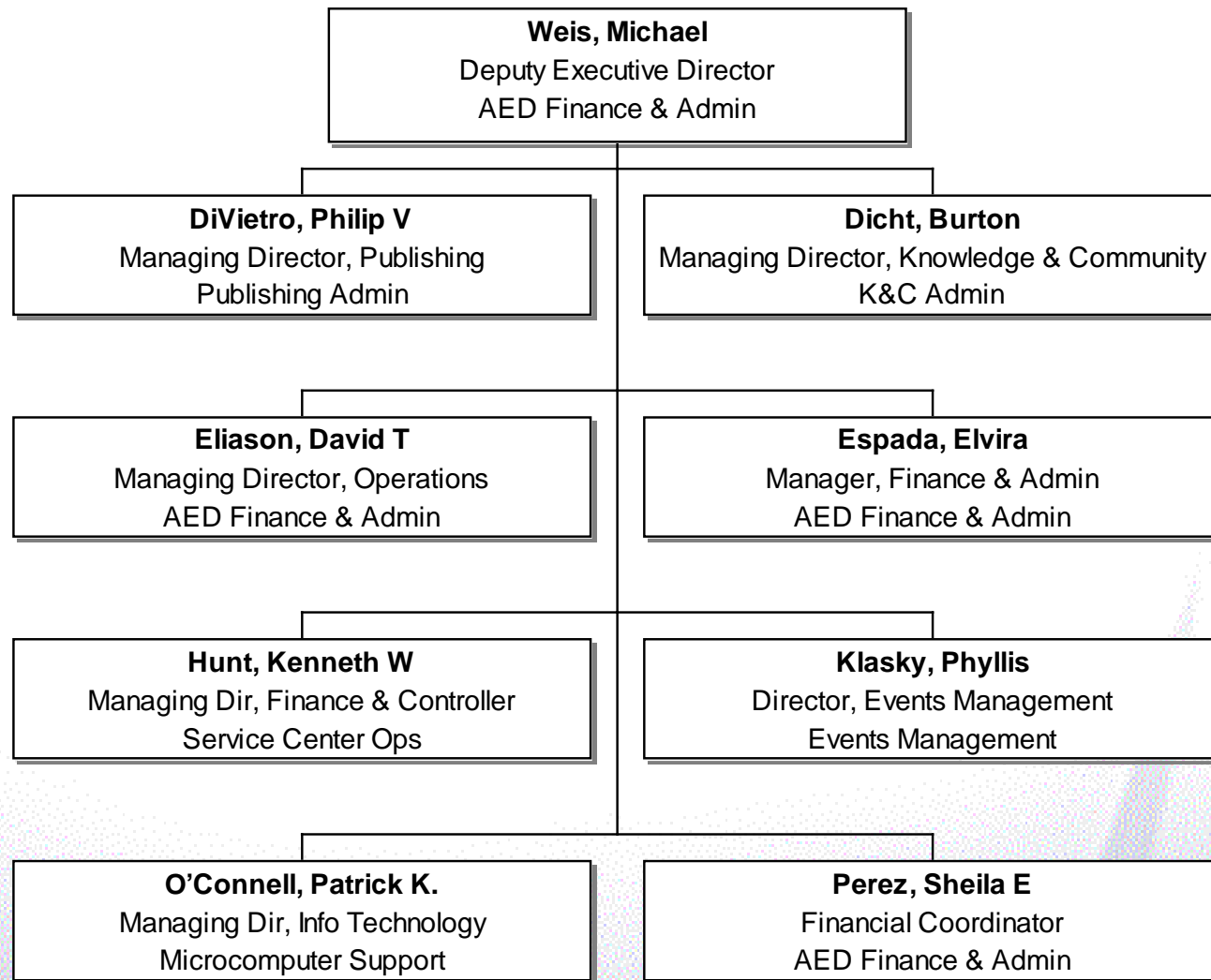
STANDARDS & CERTIFICATION



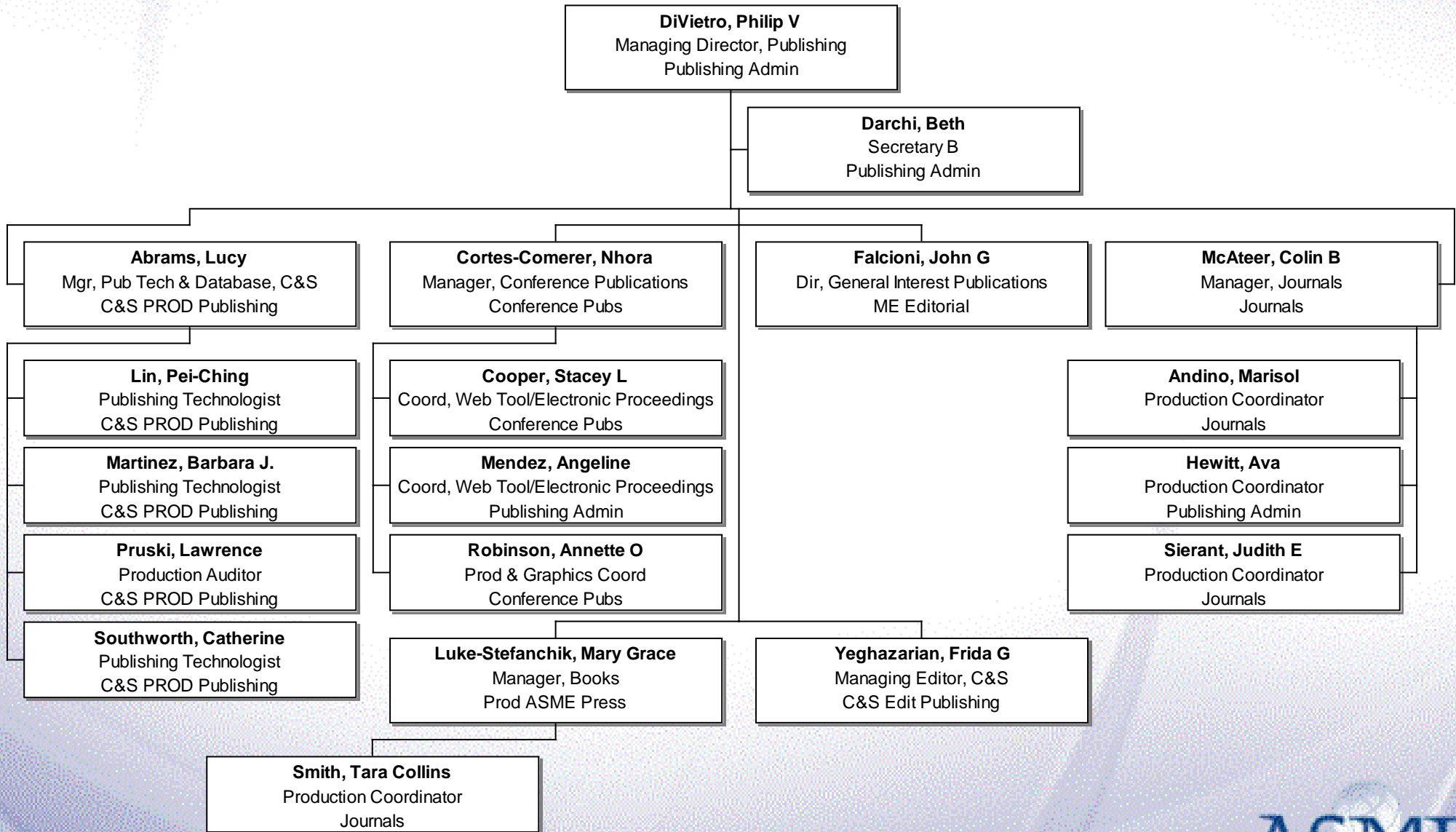
STANDARDS & CERTIFICATION



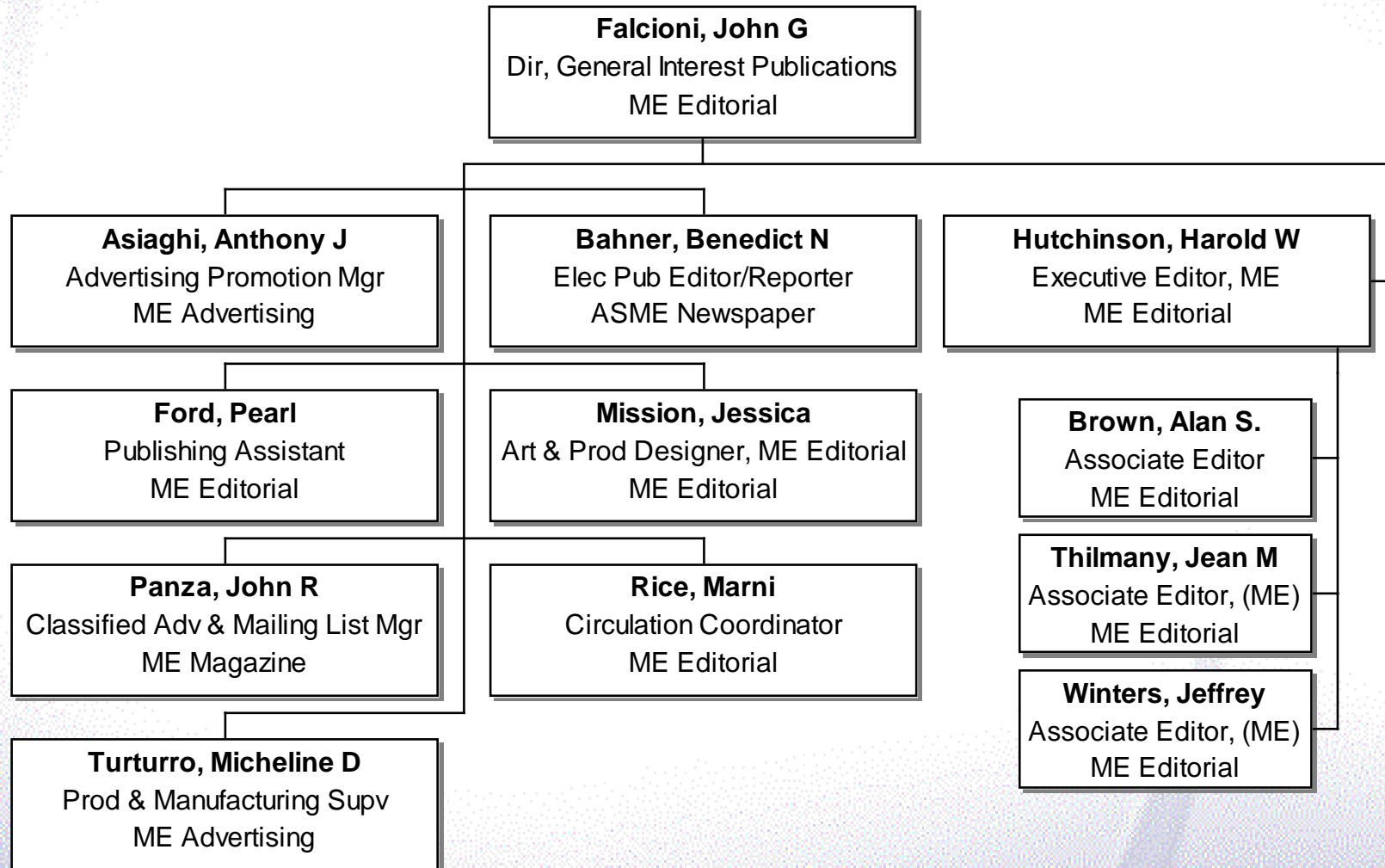
OPERATIONS & TECHNICAL UNIT SUPPORT



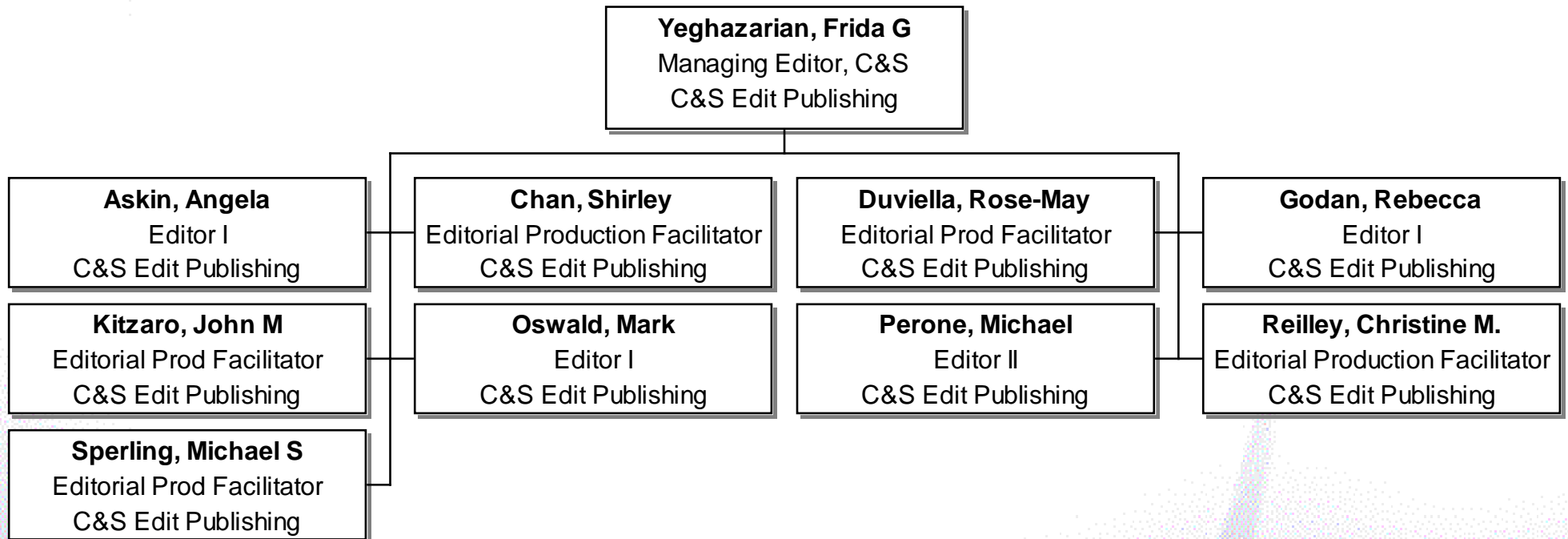
PUBLISHING



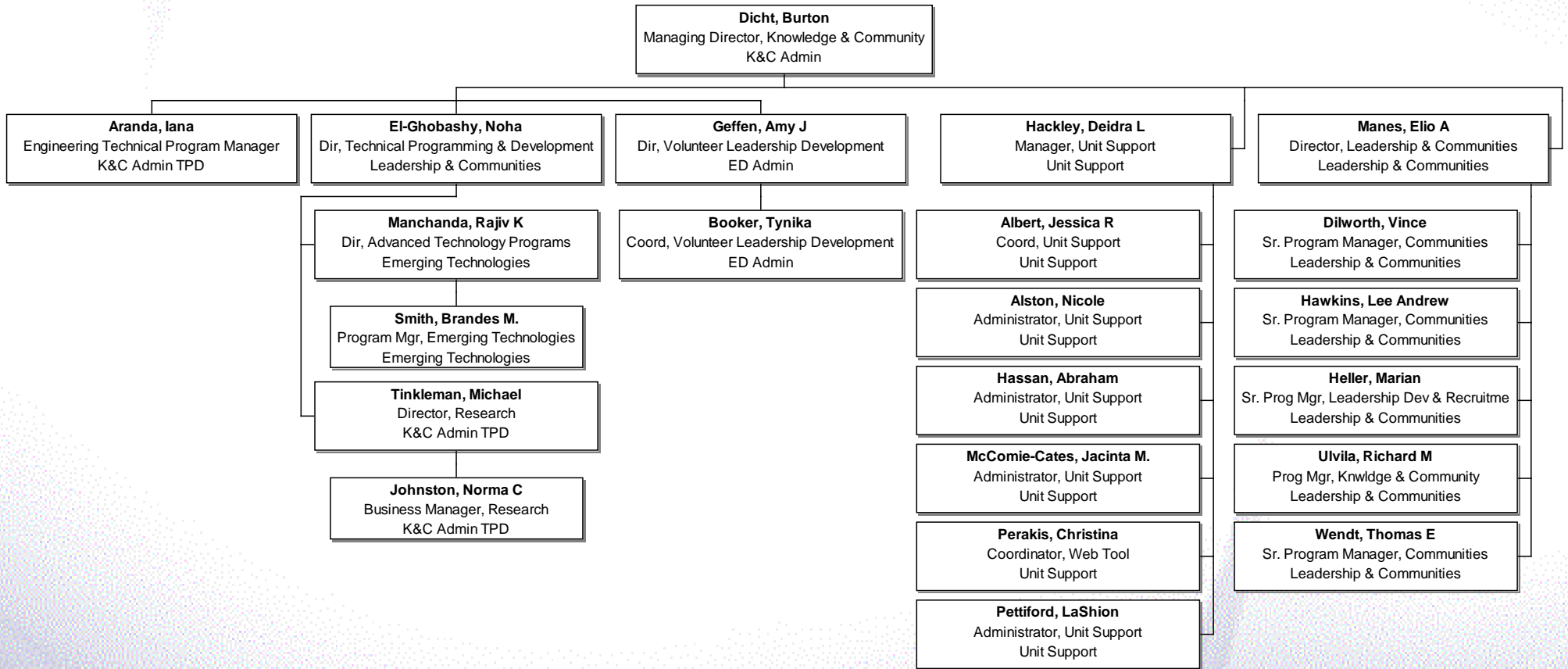
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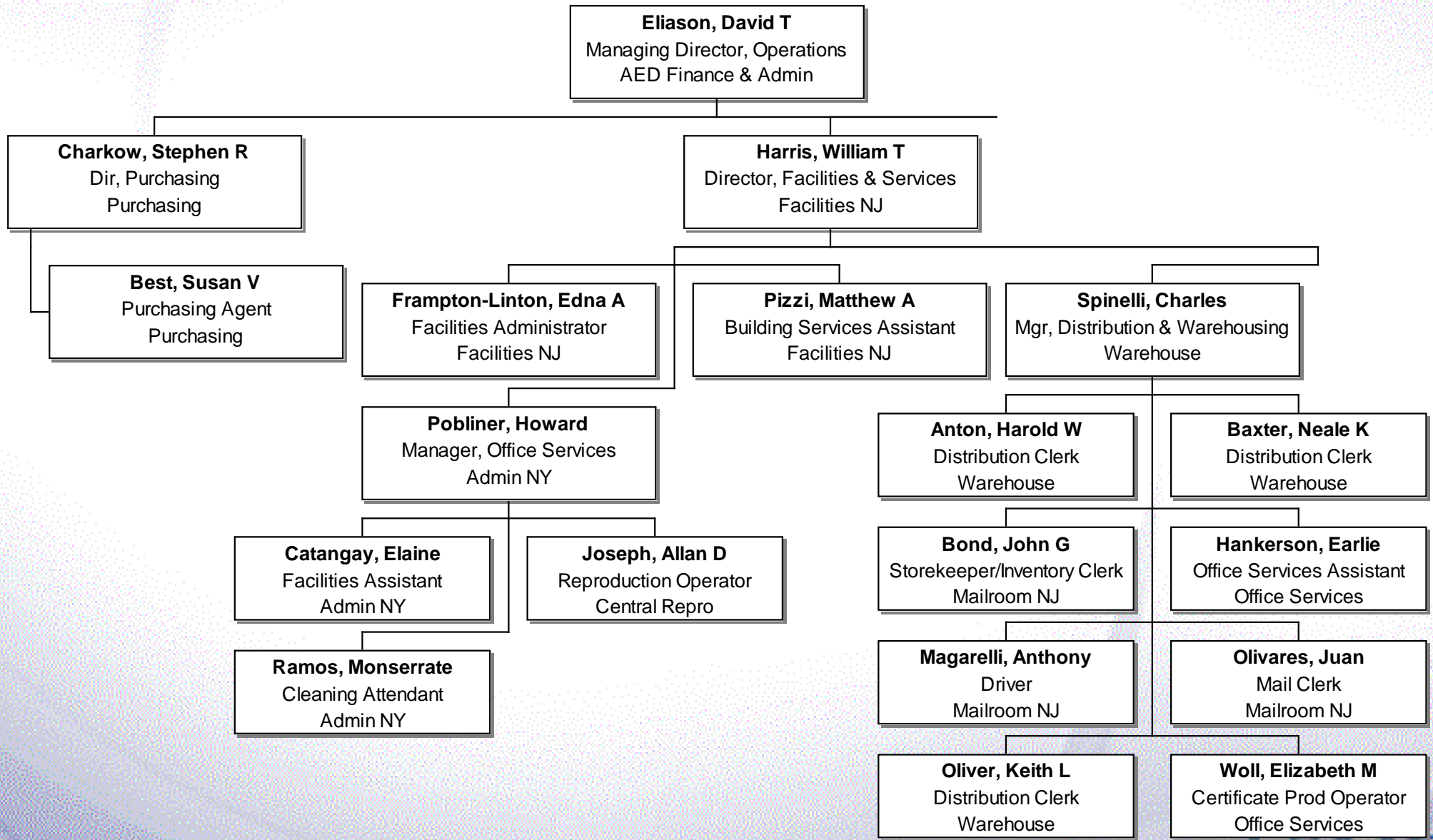
PUBLISHING



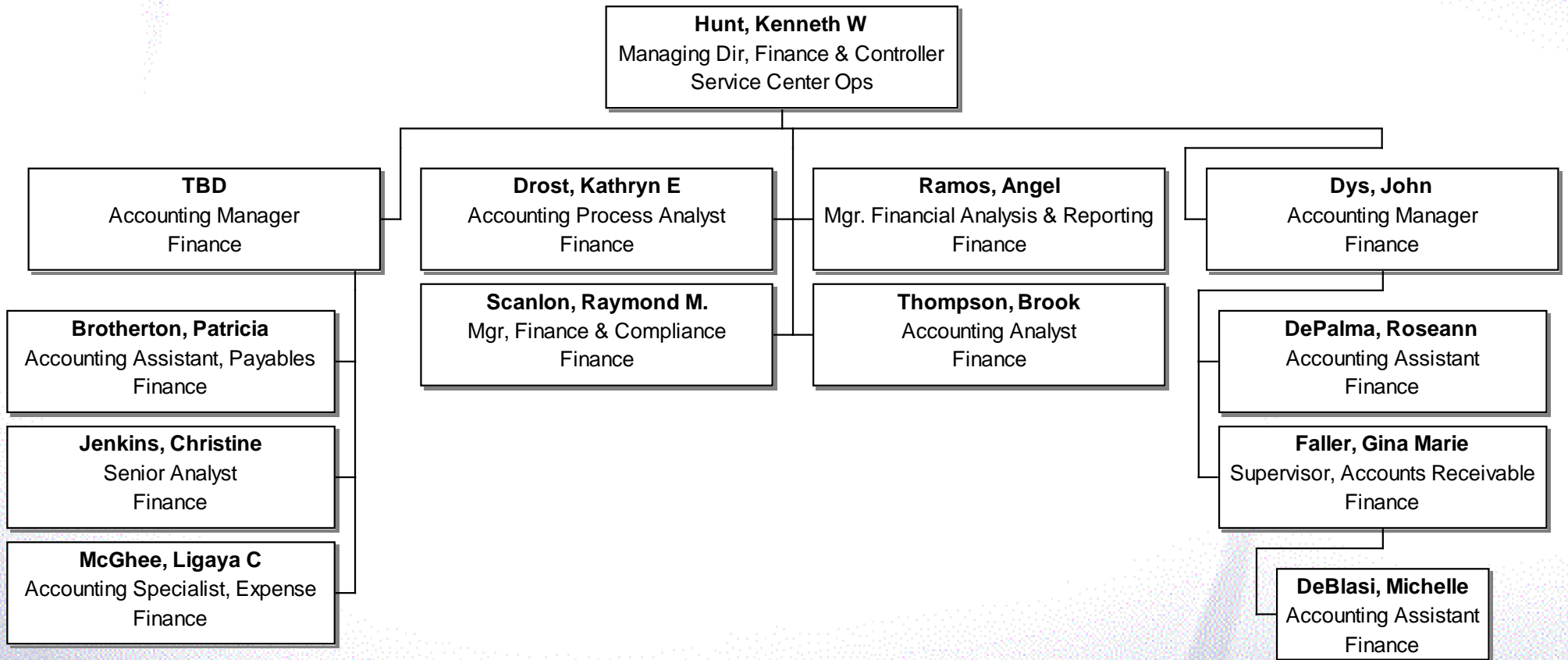
KNOWLEDGE & COMMUNITY



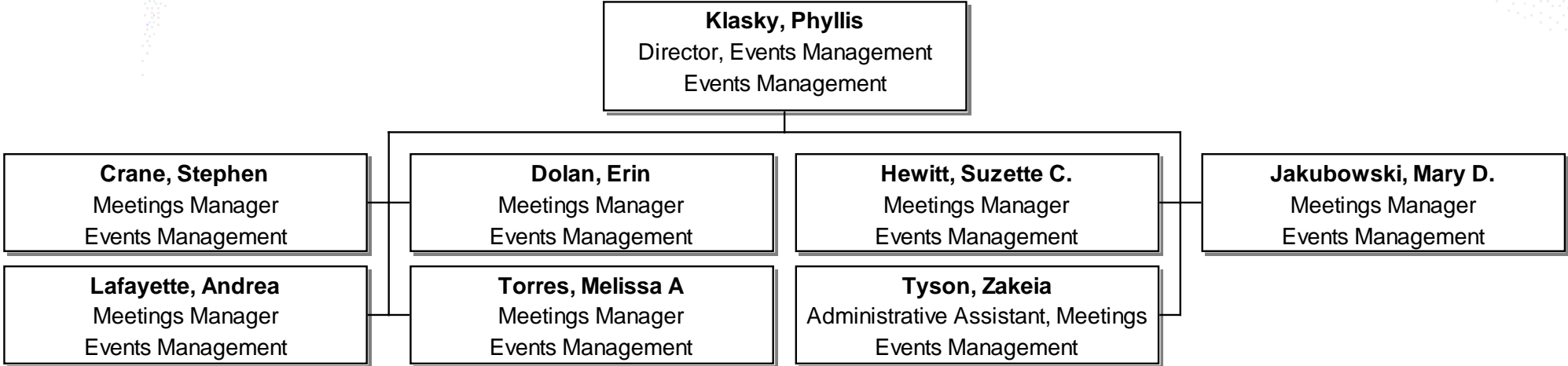
FACILITIES



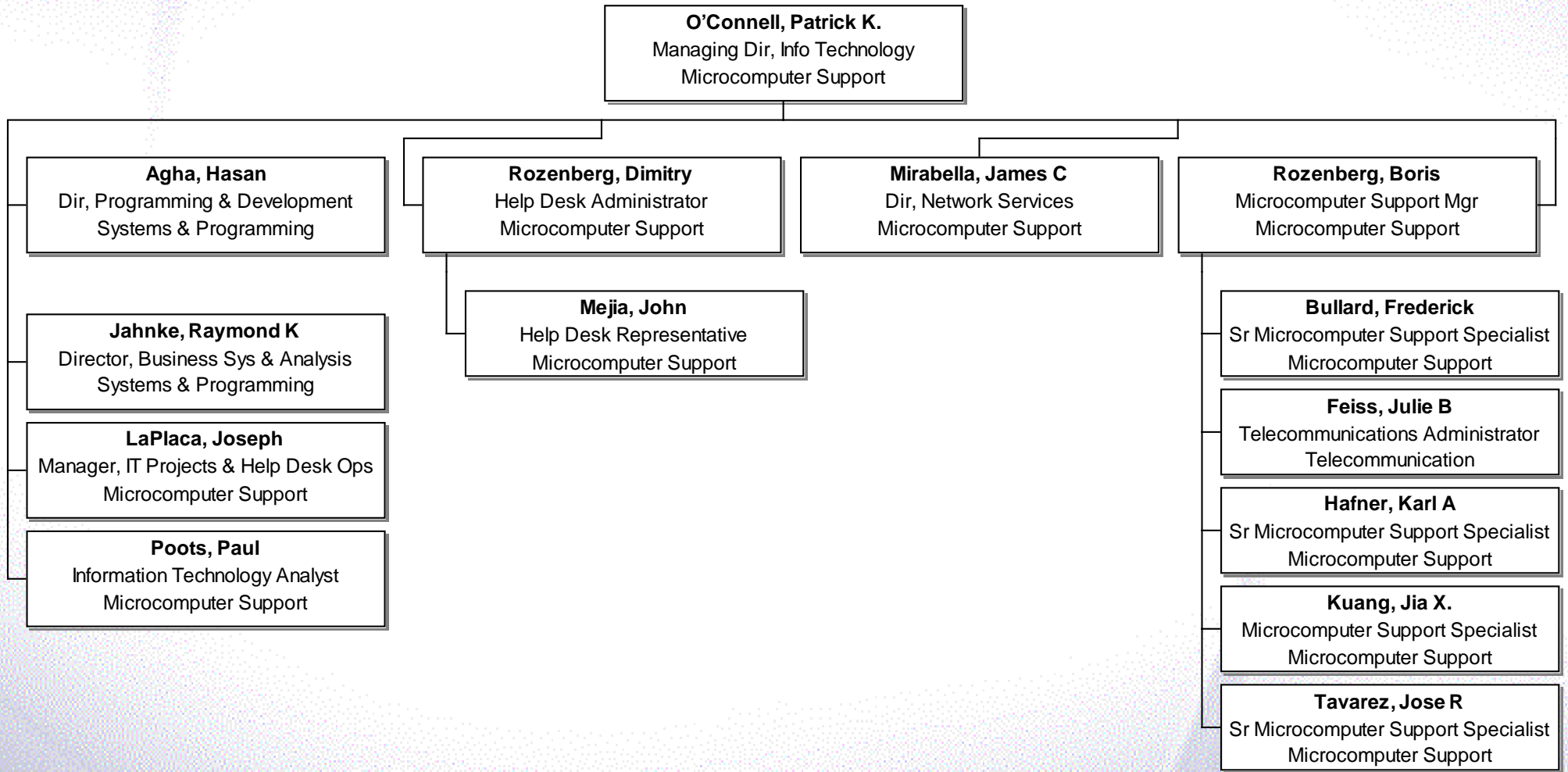
FINANCE & ACCOUNTING



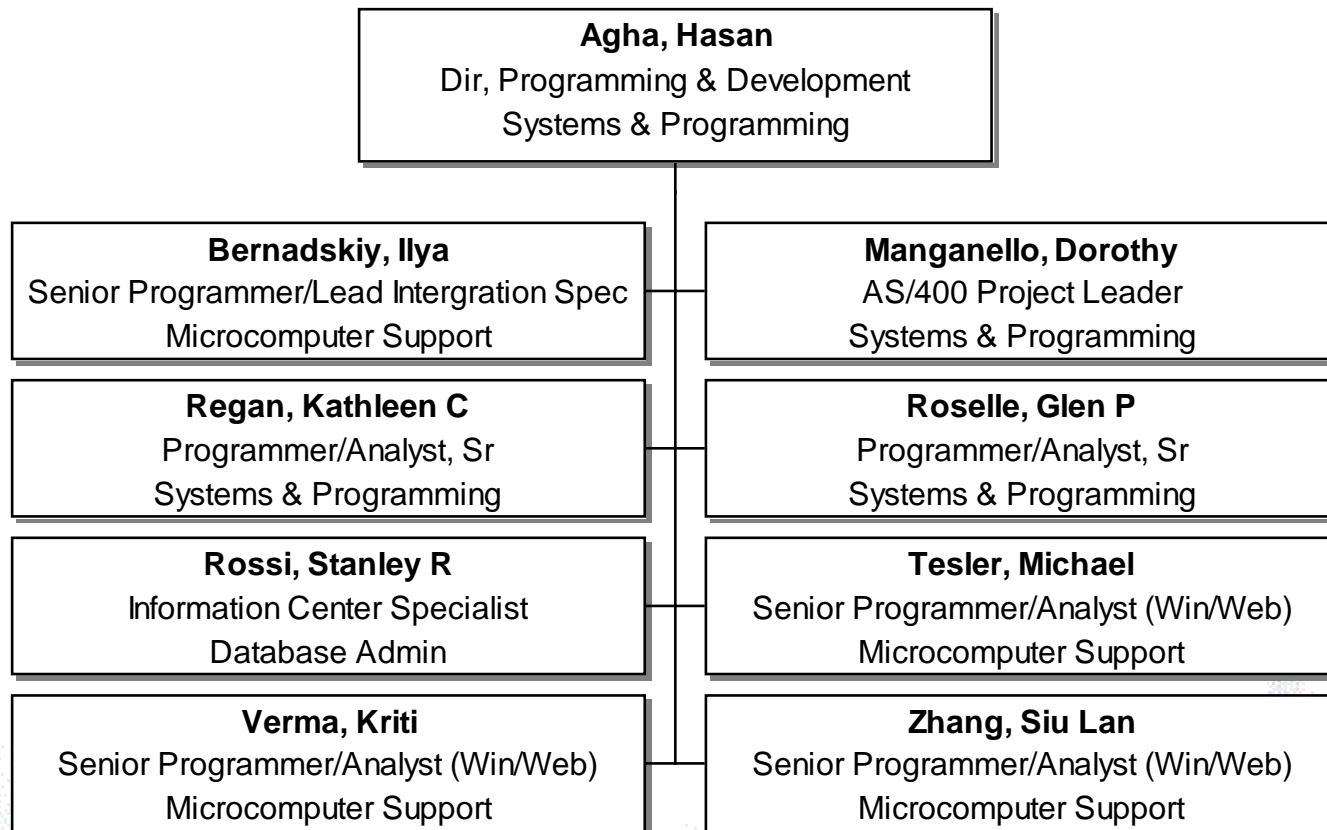
MEETINGS



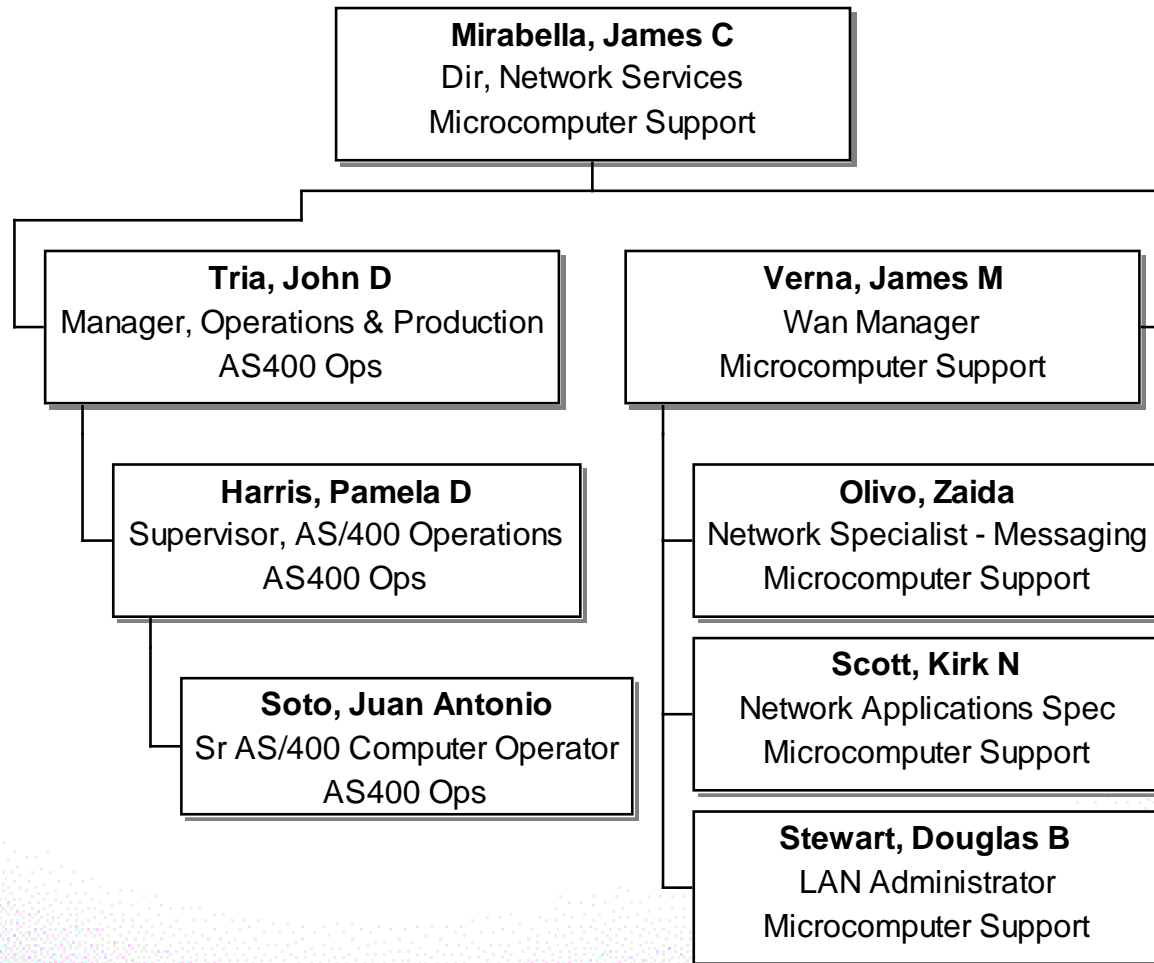
INFORMATION TECHNOLOGY



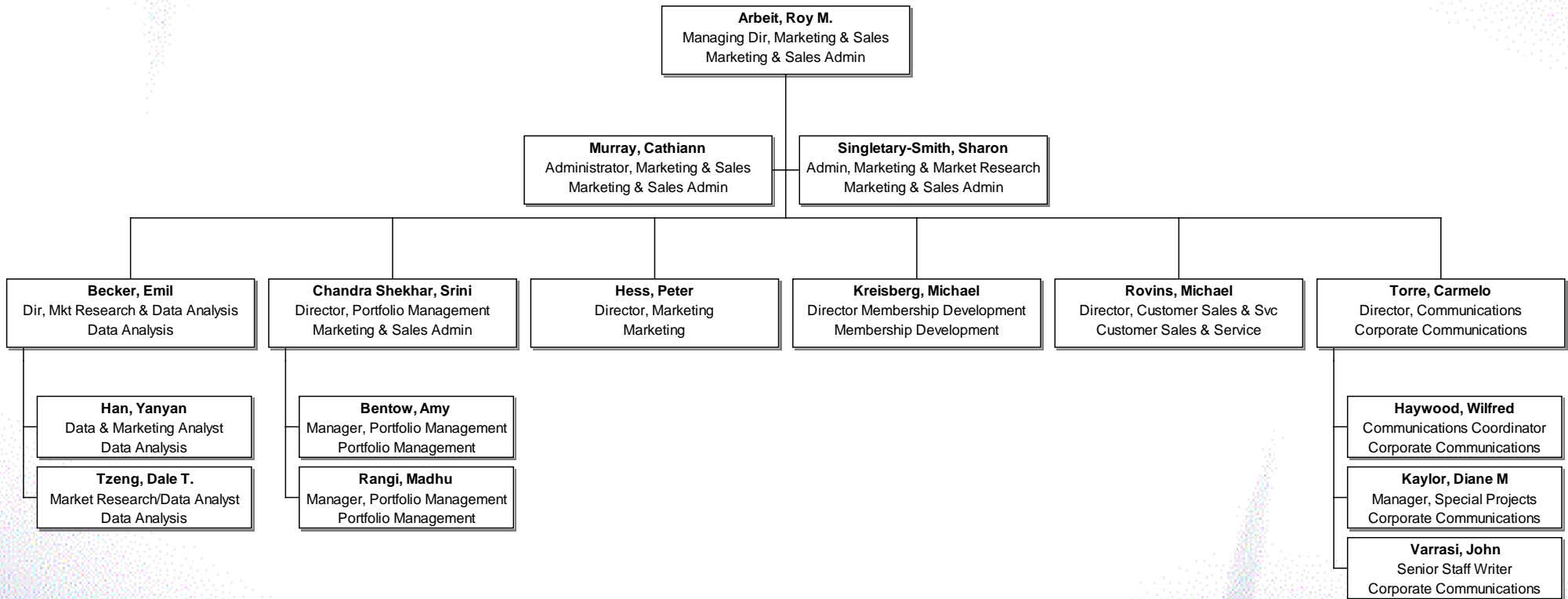
INFORMATION TECHNOLOGY



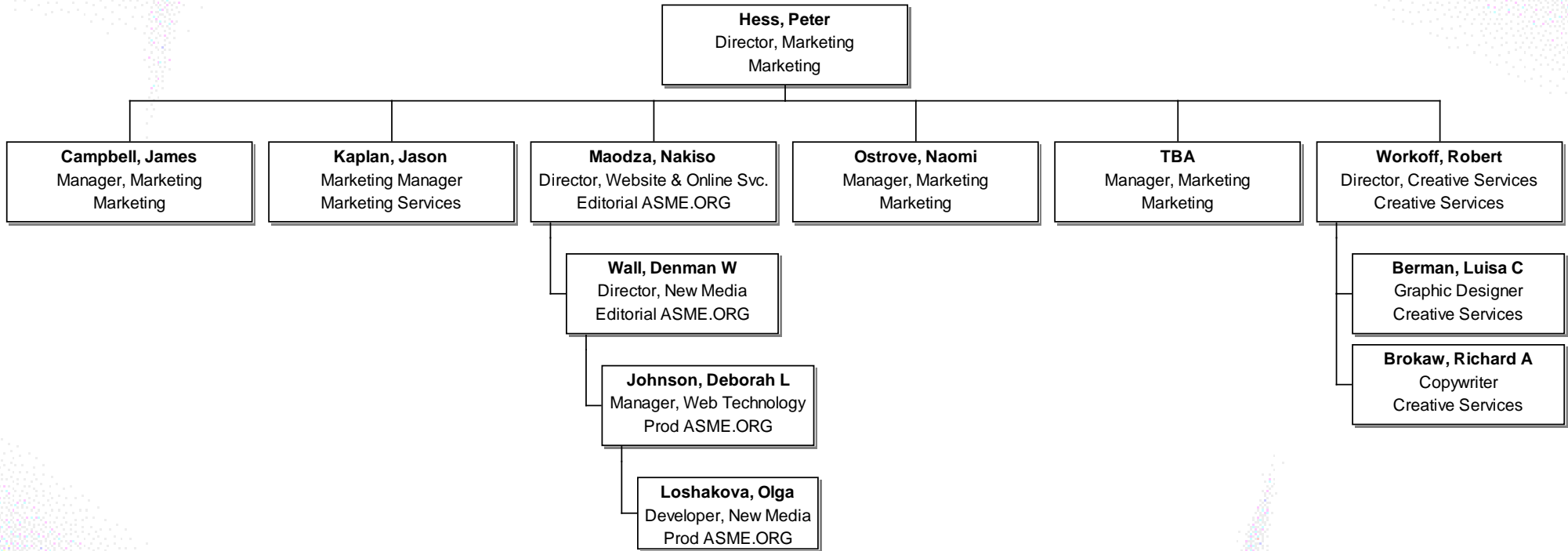
INFORMATION TECHNOLOGY



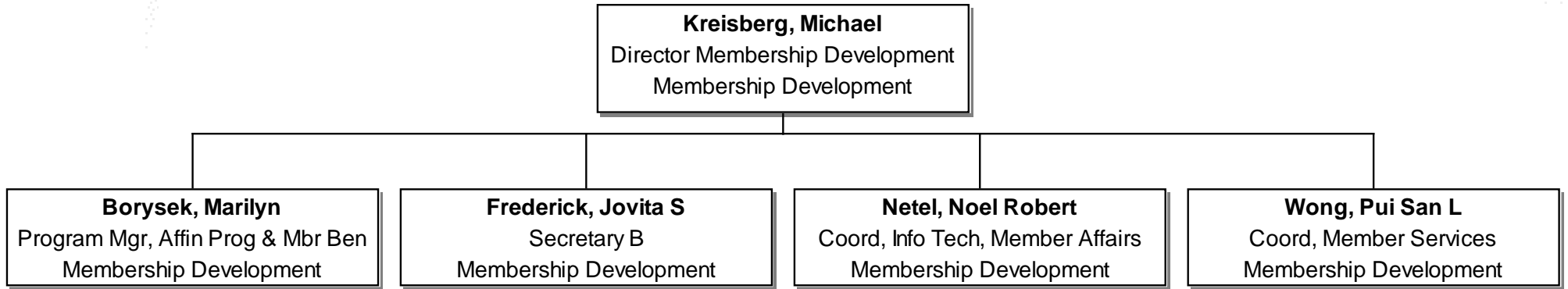
MARKETING & SALES



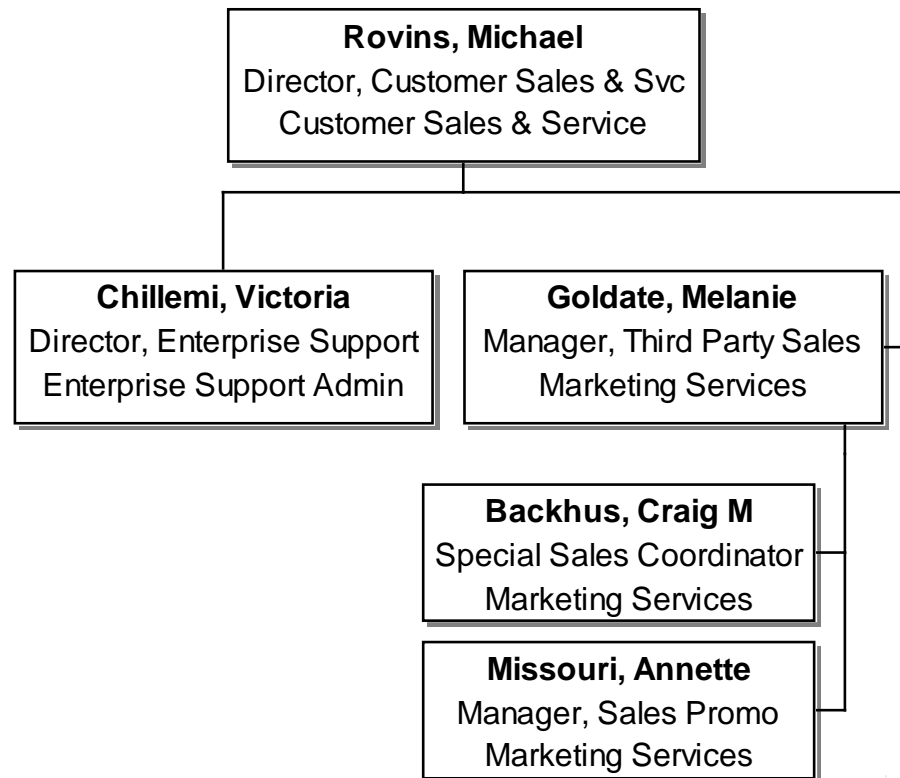
MARKETING & SALES



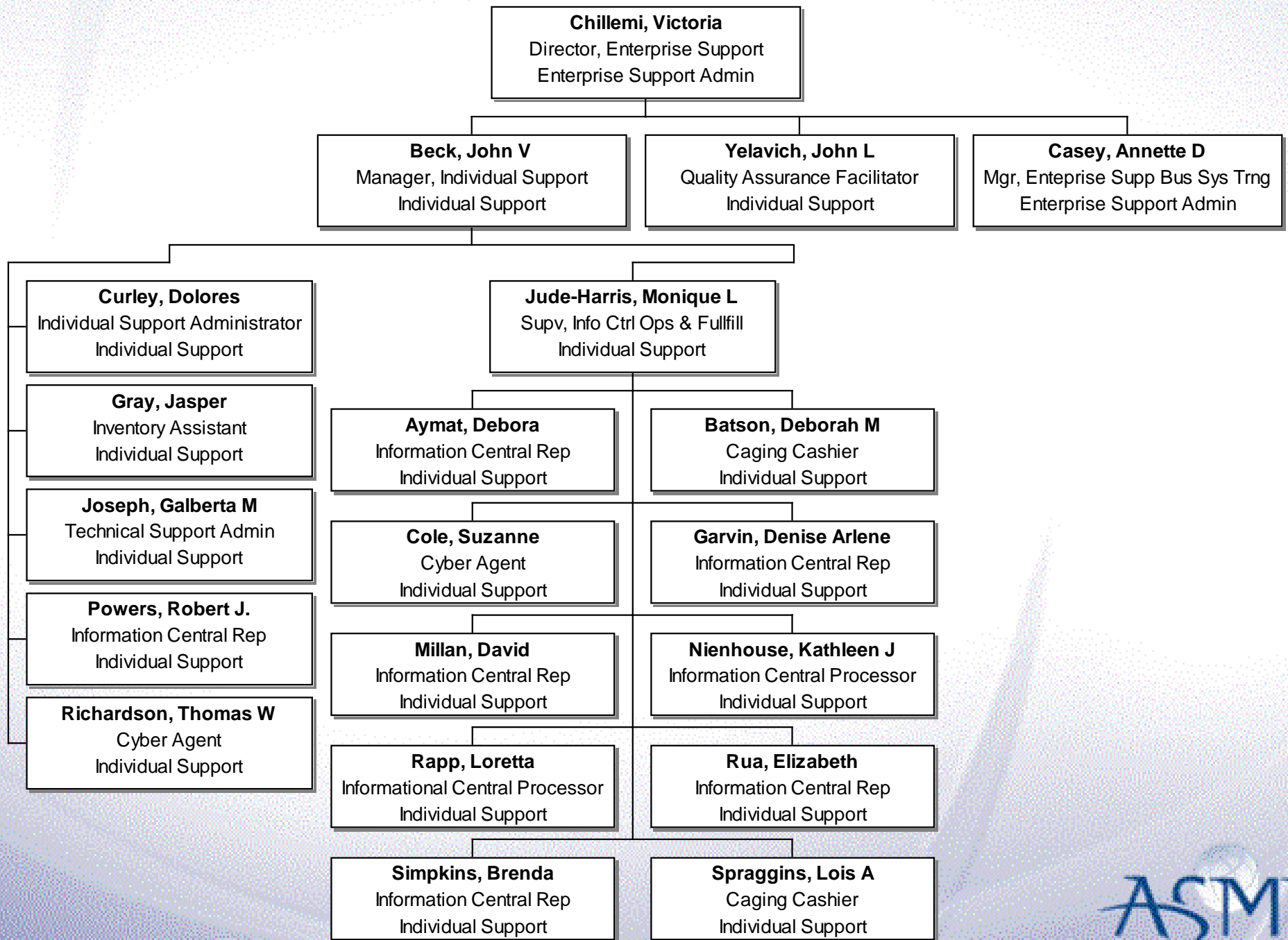
MARKETING & SALES



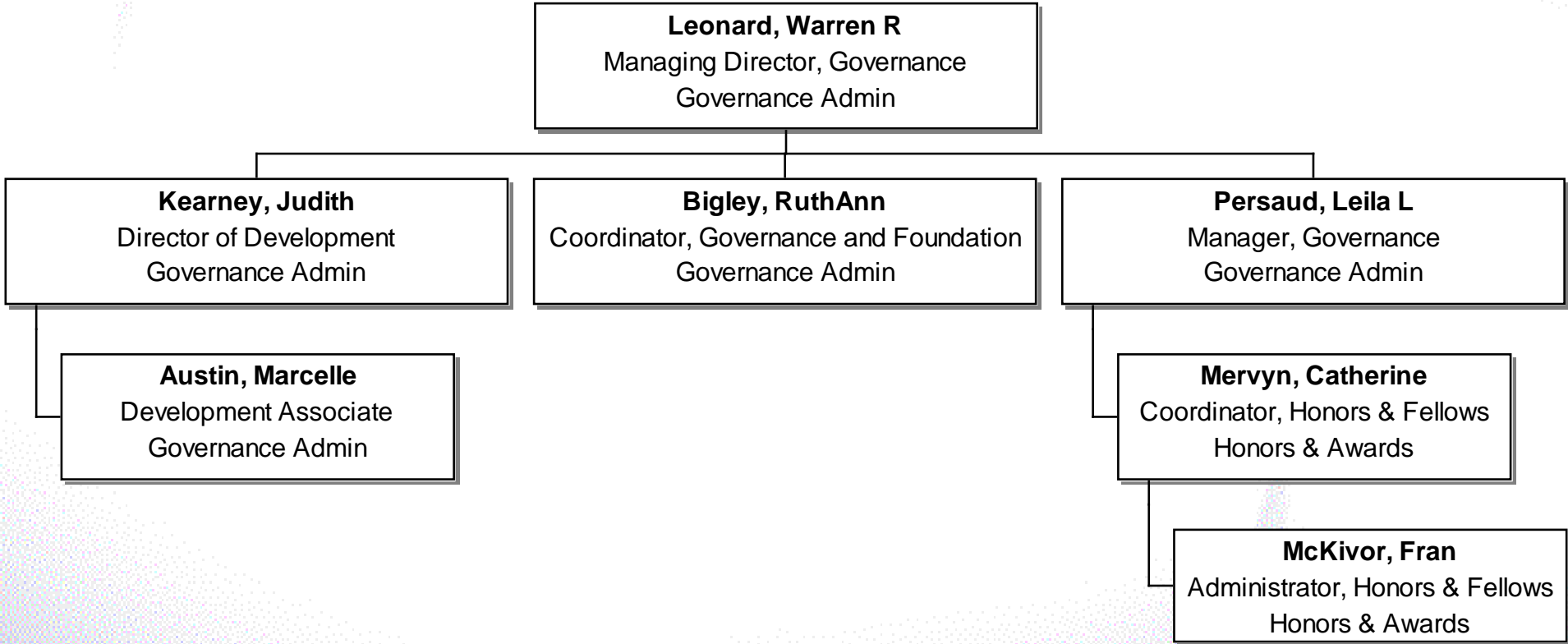
MARKETING & SALES



MARKETING & SALES



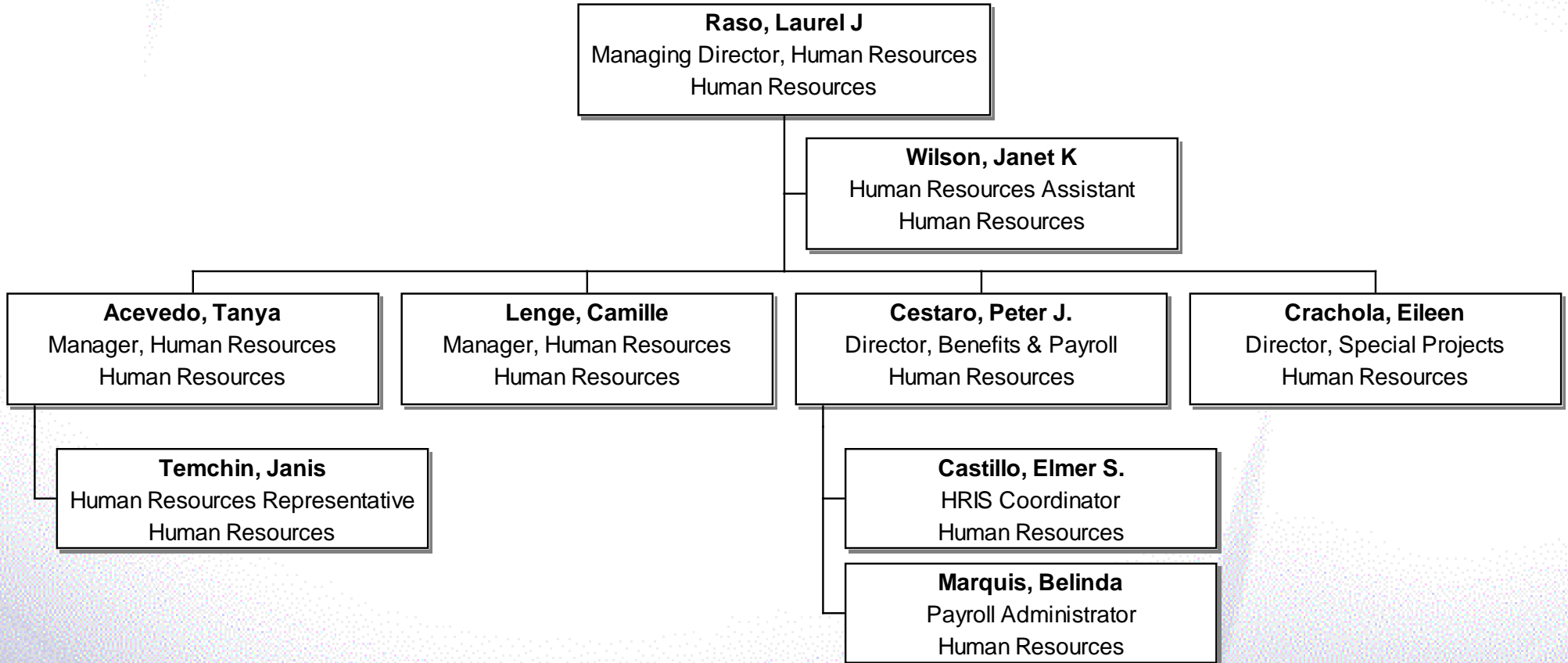
GOVERNANCE



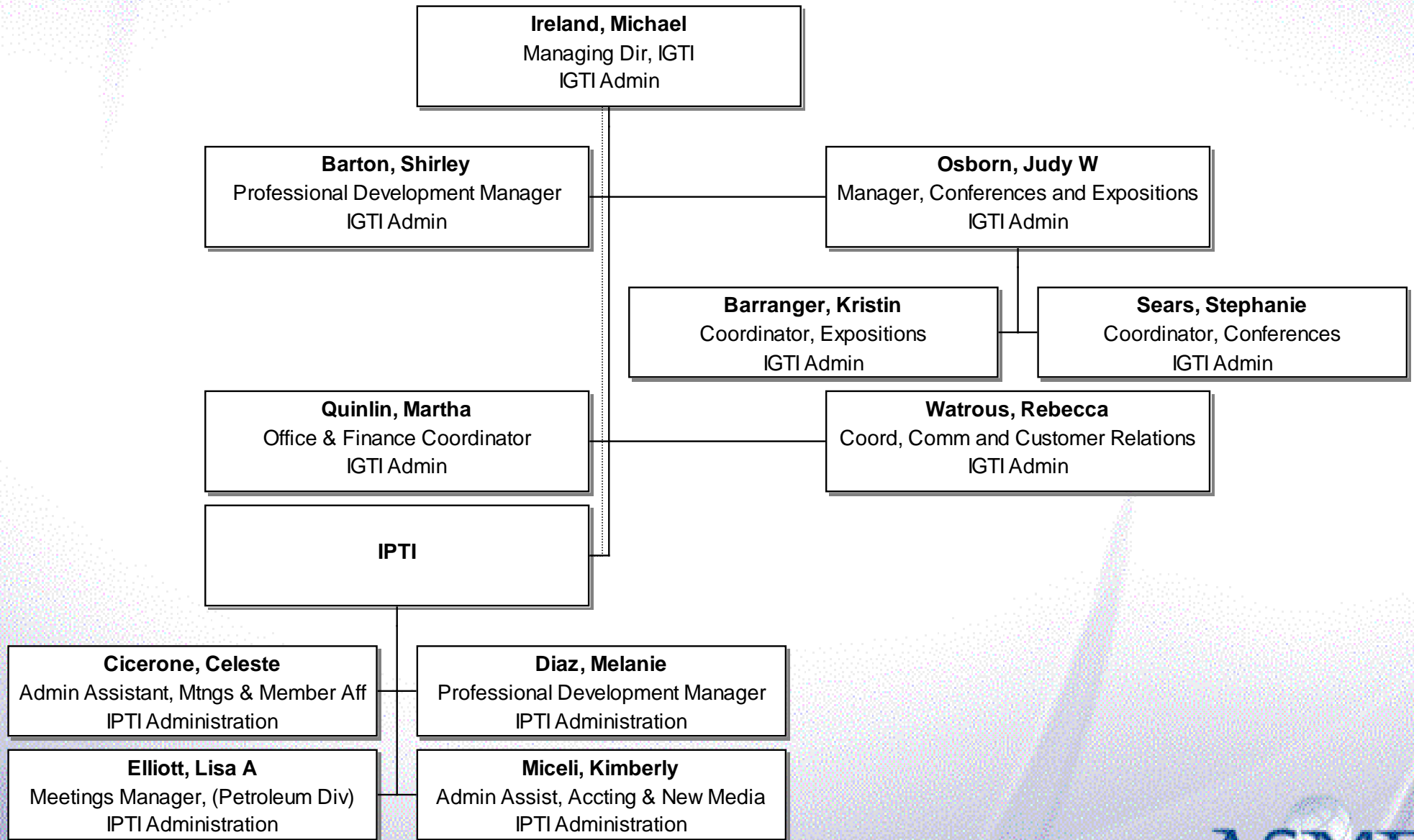
INTERNATIONAL



HUMAN RESOURCES



INSTITUTES IGTI/IPTI



Board on Research and Technology Development

Director's Report

Michael Tinkleman, PhD

**Director, Center for Research & Technology
Development (CRTD)**

BRTD Meeting – ASME Annual Meeting

June 15, 2009

Palm Desert, CA

Director's Report CRTD / Key Activities

- **CRTD Key Cross – Sector Activities**
 - **Energy**
 - **Water**
 - **Sustainability**
- **DOE / NETL Peer Reviews**
- **PPEC**
- **Yield Strength Application Guide**
 - **Published – 6/2009**

Director's Report

CRTD / Key Activities

- **DOE / NETL Peer Reviews**
 - **Two Peer Reviews Conducted in FY'09**
 - **Hydrogen & Syngas – February 2009**
 - **Existing Plants, Emissions & Capture**
 - **April 2009**
 - **Recent Peer Reviews “Meeting Summary & Recommendations” Volumes on NETL web site**
<http://www.netl.doe.gov/technologies/coal-power/peer-review/index.html>
 - **Three Peer Reviews being discussed for FY'10**

Director's Report

CRTD / Key Activities

- **Power Plant & Environmental Chemistry (PPEC)**
 - **Two 2 1/2 Day Workshops**
 - **Over 60 attendees at each**
- **Yield Strength Application Guide**
 - **Published – 6/2009**
- **Amine Project**
- **Sustainability**
 - **CRTD Sustainable Products & Processes Research Committee**
 - **Sustainable Products & Processes Steering Committee Workshop - 10/16/2008**
 - **Sustainability Working Group**

ASME Water Management Technology Vision / Roadmap Workshop

- ASME Water Management Technology Vision – Roadmap Workshop
 - Held 5/9-10/2007 at National Academy of Sciences – 40+ participants
 - Goal – “Define ASME Role in Water Management Technology”
 - Vision – *“By 2012, ASME will be recognized as a key resource in the development & integration of water management technology solutions that enable the sustainable use & reuse of water”*
 - 25% of ASME members are dependent on water availability to process or deliver their primary products and services

ASME Water Management Technology Best Management Practices Process Industries Workshop

Held May 13-14,2009, Washington, D.C.

- **Workshop Objectives**
- **Capture current Industry Water Management Technology Best Management Practices (BMPs)**
- **Explore innovative technologies, tools & approaches to minimize Industrial water consumption**
- **Explore potential ASME roles in addressing the Water Management Technology BMP area**
 - **Consider the development of an ASME Water Management Technology BMP framework**
- **Identify future Industry sectors for a similar BMP Workshop**
- **Identify partnering opportunities with other organizations**

Director's Report

CRTD / Key Activities

ASME Energy Grand Challenge

An ASME Strategic Initiative

Responding to BOG FY'10 Energy Grand Challenge Strategic Statement (9/2008 BOG Meeting)

Strategy Statement:

- To be a leading force for the advocacy and development of a balanced U.S. energy policy and support development of balanced energy policies in other areas of the world where ASME has influence.

Key Strategy Elements:

- Raising ASME energy profile
- Coordinating & Partnering in Advocacy

ASME Energy Grand Challenge

First Steps

- Cross-Sector Energy Blue Ribbon Committee formed – late 11/2008
 - 2 volunteers each sector
- Serves as core of Steering Committee for the EGC Vision and Roadmap Workshop along with
 - key ASME staff, and
 - Energetics Inc. (workshop facilitator)
 - Richard Laudenat – Sr. VP, K&C is the chair.
- EGC Steering Committee Workshop held 12/17/08 – Vision Developed:-

“ASME will be recognized as a key resource in the development, evaluation, and integration of energy technologies needed to address global energy grand challenges”

ASME Energy Grand Challenge Blue Ribbon Panel Members

- Centers
 - Andrew Taylor, Entergy
- Codes & Standards
 - Bernard E. Hrubala, TUV Rheinland of North America
 - Samuel J. Korellis, EPRI
- Institutes
 - Dilip Ballal, University of Dayton
 - E. J. Seiders, Willbros Engineers
- Knowledge & Community
 - Joe Beaman, The University of Texas at Austin
 - Richard Laudenat, Sr. VP K&C, Chair
- Strategic Management
 - Daniel C. Deckler, The University of Akron Wayne College
 - Julio C. Guerrero, Schlumberger-Doll Research

ASME Energy Grand Challenge

Key Staff

- Shekhar Chandrashekhar - Director, Portfolio Management
- Burt Dicht - Managing Director, K&C
- Kathryn Holmes - Director, Government Relations
- Mike Ireland - Managing Director, IGTI
- John Koehr - Director, C&S Technology
- Sonia Moin - Manager, Education
- Michael Tinkleman - Director, Research
- Mel Torre - Director, Communications

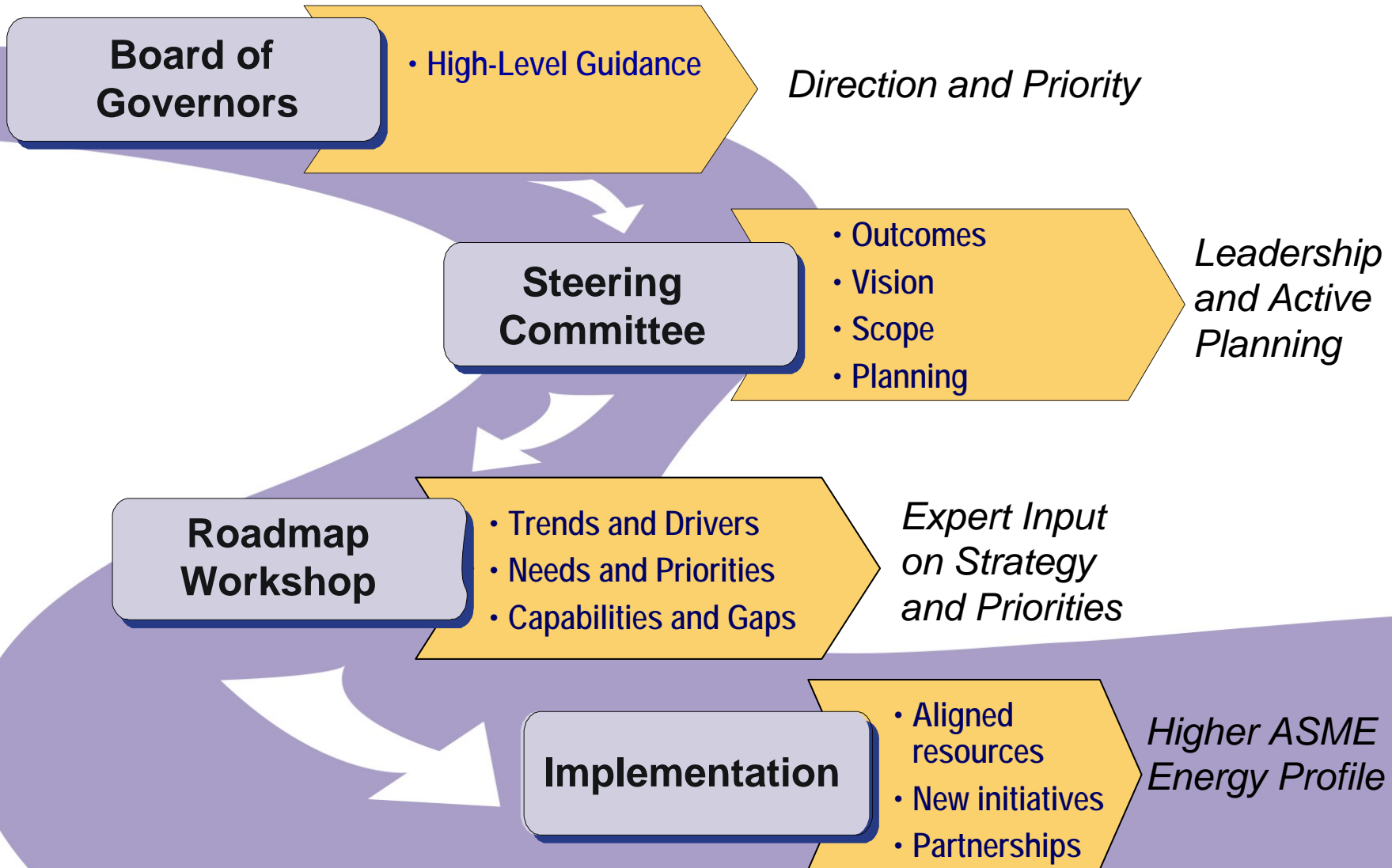
ASME Energy Grand Challenge Vision & Roadmap Workshop - Held March 12-13/2009 Washington, D.C.

- Welcoming Letter from Senator Bingaman, Chair, Senate Energy & Natural Resources Committee

“I do not believe that anyone would disagree that our nation is currently at an energy crossroad, and the decisions and actions we make now could affect our nation for generations. ...it is critical that engineers...be afforded a role in the development of an energy policy. I offer my full endorsement of this activity...”

- 65 Attendees
 - Half ASME staff & volunteers
 - Other half from industry, government & academia
 - Workshop facilitated by Energetics, Inc

Overview of ASME Energy Grand Challenge Roadmap Process



ASME Energy Grand Challenge Vision and Roadmap Workshop - Goals

- **Goals of Workshop:-**

- Understand the key energy activities of other organizations
- Matching the capabilities and resources ASME has with the Grand Energy Challenges facing the nation and the world.
- Identifying ways that the Society can make meaningful contributions to addressing these challenges
- These could include new partnerships, services, and products
- Develop preliminary action plans for most promising priority areas

ASME Energy Grand Challenge Vision and Roadmap

Summary Results



March 12-13, 2009
Grand Hyatt Hotel
Washington, DC

Sponsored by:



Prepared by:



ASME EGC Roadmap Workshop Results

Key Trends Shaping Energy's Future

- **Climate Change**
- **Energy policy developments**
- **Increasing focus on energy security, reliability, and resilience**
- **Financial and economic issues**
- **Aging energy infrastructure**
- **Shifting workforce demographics**

ASME EGC Roadmap Workshop Results

Key Messages from Breakout Groups

- Great opportunity for ASME to catalyze the engineering profession
 - To be part of the energy revolution to sustain the planet
- Energy is not just an engineering problem, it's a complex technical, societal, and political problem
 - It requires a diversity of ideas and people to address
- Build on existing ASME credibility
- Engage and seek active participation from across membership and non-members –
 - need champions, partners & broad ownership

ASME EGC Roadmap Workshop Results

Major EGC Workshop Themes

- Public Policy
- Technology
- Workforce Development
- Key Enablers
 - Communications – includes web
 - Strategic Partnerships

ASME EGC Roadmap Workshop Results

Preliminary Focus Areas

- Provide a Rational, Informed Voice for Political Engagement
- Develop New Generation of Workforce
- Increase ASME's profile in renewable and emerging technologies
- Build on existing ASME credibility & expertise in Nuclear
- Increase ASME's profile in the Energy-Water Nexus

ASME EGC Roadmap Workshop Results

Preliminary Focus Areas

- Strengthen ASME Energy web presence
 - Better organize ASME Energy content on ASME.org – Energy.org?
 - Develop Energy Wiki
- Incorporate Energy & Energy Efficiency in ASME Student Design Competitions
- Develop tools and methodologies for integrated life-cycle analysis for energy systems

ASME EGC Roadmap Workshop Results

Next Steps

- Prepare draft ASME Energy Grand Challenge Vision and Roadmap (6/2009)
 - 30-40 page report that summarizes the key conclusions of the workshop and
 - Provides an action plan to guide ASME's role in energy over the next 1-5 years.
- Circulate draft Roadmap for comment among workshop participants & finalize (8/2009)
- Implementation Plans / Key Activities
 - Develop preliminary EGC implementation plans for most promising priority areas.
 - New partnerships, services and products
 - Develop EGC Strategy Execution Plan
 - Prepare for BOG Retreat – 7/2009
- Funding & Resource Allocation – TBD
 - FY'11 Budget cycle

ASME Energy Public Policy Activities

Successfully Executed

- National Energy Policy Goals Proclamation
 - Endorsed by 21 Engineering Societies; Sent to Administration & Congress
- Energy Policy Alliance
 - Initiated
- ASME General Position Statement on Climate Change
 - Technology Policy recommendations and Goals For Reducing Carbon Dioxide Emissions for the Energy Sector (Approved by BOG)
- Engineering Public Policy Symposium
 - 31 Engineering Cosponsors
- Congressional R&D Caucus Briefing on “Modernizing the Electric Grid: A ‘Smart’ Way to Use Energy”
- Partnership with IEEE-USA, NSF & Discovery - Ongoing

ASME Energy Grand Challenge

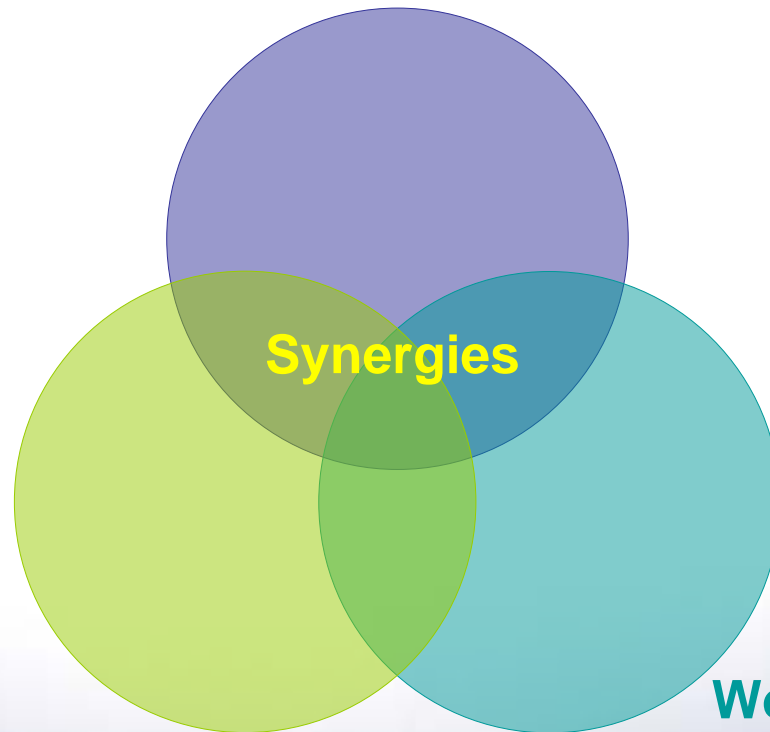
Strategy Execution Team (SET)

Charter / Members

- Purpose: To provide staff leadership for execution on ASME enterprise strategic objective on “Energy Grand Challenge”
- Members
 - Shekhar Chandrashekhar - Director, Portfolio Management
 - Burt Dicht - Managing Director, K&C
 - Kathryn Holmes - Director, Government Relations
 - Mike Ireland - Managing Director, IGTI
 - John Koehr - Director, C&S Technology
 - Sonia Moin - Manager, Education
 - Michael Tinkleman - Director, Research, Team Leader
 - Executive Sponsor: Phil Hamilton

ASME Strategy Execution Teams

Energy



Globalization

Workforce Development

ASME Energy Grand Challenge BOG Retreat – 7/2009

- *“Focus on Strategic Refinement & Execution”*
- **Review our Statements on Strategic Intent**
 - **Energy Grand Challenge,**
 - **Globalization &**
 - **Workforce Development**
- **Develop Objectives & Measures for the Statements on Strategic Intent**
- **Global Trends & Issues Impacting Engineering & ASME**
 - **Environmental Scan**
- **Other Issues the BOG would like to address in the coming year.**



ASME

SETTING THE STANDARD

Financial Presentation

Board on Research & Technology Development

Norma Johnston
Manager, Research
June 15, 2009

CRTD FY 09 – FY 11

Definitions:

- Operating Costs: Expenses to support the operation of the research department (staff salaries and associated indirect costs).
- Allocation: Funding authorized by the Board of Governors to support ASME programs. (Subsidy)
- “Income”: Charge backs for CRTD staff time including associated fringe benefits and indirect costs worked on externally- funded research projects + indirect costs applied to subcontractor expenses.

CRTD Costs – FY 09-11

Fiscal Year	Operating Costs	Allocation	"Income" Needed to Meet Budget
FY 09 Budget <u>Includes ASME Corporate G&A and Direct Services \$94K</u>	\$447.7K	\$218.1K	\$229.6K
FY 09 Forecast (Year End)	\$455.9K	\$218.1K	\$237.9K
FY 10 Budget <u>ASME Corporate G&A and Direct Services \$88.7K</u>	\$456.7K	\$221.7K	\$235.0K
FY 11 Budget <u>ASME Corporate G&A and Direct Services \$92.2K</u>	\$475.1K	\$234.4K	\$240.7K

CRTD Sources of Income FY 09

Forecast Estimate

PPEC	\$ 33,500	14%
Yield Strength Application Guide	\$ 3,600	1%
Carbon Sequestration Peer Review	\$6,100	3%
Fuel Cell Peer Review	\$ 9,300	4%
Hydrogen Syngas Peer Review	\$ 92,000	39%
Existing Plants Peer Review	\$ 49,000	20%
Water BMP Workshop/Process Ind	\$35,300	15%
Sustainable Products Roadmap Wkshp	\$ 9,400	4%
Subtotal	\$ 237,900	100%

Operating Expenses FY 08 (year ending 6/30/08)

Fiscal Year	Operating Costs	Approved Allocation	"Income"
FY 08 Budget <u>Includes \$82K for ASME Corporate G&A and Direct Services</u>	\$421,265	\$202,265	\$219,000
FY 08 Actual	\$441,021	\$194,626	\$246,395

CRTD Sources of Income FY 08

Yield Strength Application Guide	\$ 11,000	5%
PPEC	\$ 34,350	14%
CO2 Peer Review	\$ 57,100	23%
APS Peer Review	\$ 60,300	24%
Fuel Cell Peer Review	\$ 70,500	29%
Peer Review – CO2 Geo Storage Rpt	\$6,250	3%
Project Profit (carry-over)	\$5,600	2%
Misc. Publication Sales	\$1,300	0%
Subtotal	\$ 246,400	100%
TOTAL NEEDED TO MEET BUDGET	\$ 238,700	

Historical Operating Expenses FY 07

(First year CRTD required to increase income by \$85K. Increased income requirement continues for all future fiscal year budgets.)

Fiscal Year	Operating Costs	Approved Allocation	"Income"
FY 07 Budget	\$320,615	\$114,649	\$205,966
FY 07 Actual	\$310,556	\$105,352	\$205,204

Historical CRTD Sources of Income FY 07

DHS Sector Specific Contract – Phase 3	\$ 40,900	20%
CO2 Peer Review	\$ 44,000	21%
PPEC	\$ 34,350	17%
DOE ITP Program Review	\$ 27,950	14%
Water Vision Workshop	\$ 34,400	17%
APS Peer Review	\$ 23,400	11%
Misc. Book Sales/Other	\$ 200	0%
TOTAL	\$205,200	100%

Historical Operating Expenses FY 06

Fiscal Year	Operating Costs	Approved Allocation	"Income"
FY 06 Budget	\$331,250	\$209,975	\$121,325
FY 06 Actual	\$301,447	\$182,818	\$118,619

Historical CRTD Sources of Income FY 06

DHS Sector Specific Contract	\$ 31,050	26%
CO2 Project Review	\$ 48,650	41%
PPEC	\$ 31,850	27%
LRFD	\$ 6,620	6%
Misc. Book Sales/Other	\$ 450	0%
TOTAL	\$118,620	100%

Historical Operating Expenses FY 05

Fiscal Year	Operating Costs	Approved Allocation	"Income"
FY 05 Budget	\$322,935	\$214,210	\$108,725
FY 05 Actual	\$280,447	\$147,412	\$133,036

Historical CRTD Sources of Income FY 05

DHS Sector Specific Contract	\$ 79,785	54.2%
Nat'l Homeland Security Forum	\$ 1,600	1.1%
CAPI/RAMCAP Grant (DHS)	\$ 7,670	5.2%
CO2 Project Review	\$ 10,412	7.1%
PPEC	\$ 25,050	16.9%
LRFD	\$ 22,560	15.3%
Misc. Book Sales	\$ 335	0.2%
TOTAL	\$147,412	100%

Historical Operating Expenses FY 04

Fiscal Year	Operating Costs	Approved Allocation	"Income"
FY 04 Budget	\$336,950	\$235,275	\$101,675
FY 04 Actual	\$311,207	\$189,444	\$121,763

Historical CRTD Sources of Income FY 04

CAPI/RAMCAP Grant (DHS)	\$ 53,860	44.2%
CO2 Project Review	\$ 48,459	39.8%
PPEC	\$ 18,983	15.6%
Gas Pipeline Repair Video	\$ 194	0.2%
Misc. Book Sales	\$ 267	0.2%
TOTAL	\$121,763	100%

Summary of CRTD Dept. Costs

****CRTD "Income" required to increase by 1/3. Increased income requirement continues for all future fiscal years.**

In thousands	FY 04	FY 05	FY 06	FY 07**	FY08	FY 09	FY 10	FY 11
Budgeted Expense	\$337.0	\$322.9	\$331.3	\$320.6	\$421.3	\$447.7	\$456.7	\$475.1
Income Required	\$101.7	\$108.7	\$121.3	\$206.0	\$219.0	\$229.6	\$235.0	\$240.7
Allocation Authorized	\$235.3	\$214.2	\$210.0	\$114.6	\$202.3	\$218.1	\$221.7	\$234.4
Actual Expenses	\$311.2	\$280.4	\$301.4	\$310.6	\$441.0	F'cast \$455.9		
Actual Income	\$121.8	\$133.0	\$118.6	\$205.2	\$246.4	\$237.9		
Actual Allocation	\$189.4	\$147.4	\$182.8	\$105.4	\$194.6	\$218.1		
Better than Budgeted	\$45.9	\$66.8	\$27.2	\$9.2	\$7.7	\$0		



SETTING THE STANDARD

6/04/09

CRTD FINANCIAL REPORT -- DATA THRU 5/31/09

RESEARCH COMMITTEE CUSTODIAN ACCOUNTS:

Account #	Name of Committee	Balance at end of FY 08	Income*** in FY 09	Interest/Cap. Gains in FY 09	Expenses in FY 09	Balance as of 9/30/08
404-36-5022	Water in Thermal Power Systems	\$41,830	\$0	(\$9,569)	\$0	\$32,261
404-36-5023	BRTD Res. Investment Reserve	\$35,406	\$0	(\$8,462)	\$1,802	\$25,142
404-36-5025	Corrosion and Deposits	\$13,785	\$0	(\$3,154)	\$0	\$10,632
404-36-5026	Properties of Steam Subcmte.	\$24,503	\$1,635	(\$5,590)	\$0	\$20,548
404-36-5027	Energy, Environment & Waste	\$84,081	\$0	(\$19,237)	\$230	\$64,614
404-36-5028	Gas Pipeline Safety	\$12,727	\$234	(\$2,948)	\$614	\$9,398
404-36-5029	Hazardous Waste Incineration Subcmte.	\$60,342	\$0	(\$13,804)	\$0	\$46,538
404-36-5032	Risk Technology	\$41,731	\$207	(\$9,544)	\$0	\$32,393
	TOTALS	\$314,404	\$2,076	(\$72,308)	\$2,646	\$241,526

***For the purpose of this report, income includes money earned from the Fee for Advanced Research from externally funded research projects, royalties, and any unspent/residual project funds on fixed price contracts. These are shown on ASME's official statements as a credit to expenses.

RESEARCH COMMITTEE GENERAL LEDGER ACCOUNTS:

		Total Income as of 5/31/09	Total Expense as of 5/31/09	Balance as of 5/31/09
101-09-1006	Yield Strength - Phase 2 written commitments \$107,597	\$102,711	\$86,774	\$15,937
101-09-1008	Power Plant & Environmental Chemistry (cumulative since April 1997)	\$746,193	\$696,380	\$49,813

CRTD COMMITTEE APPOINTMENTS				Attachment 7a
June 15, 2009				
GAS PIPELINE SAFETY				
<u>Name</u>	<u>Company</u>	<u>Status</u>	<u>Term Begins</u>	<u>Term Expires</u>
Huriaux, Richard	Consultant (Retired - DOT/OPS)	Reappt	7/1/2009	06/30/2013
Committee Statistics				
GPSRC - 12 members				
From:	Years on Committee			
Industry - 33% (4)	0-2 years - 25% (3)			
Govt (Retired) - 17% (2)	3-7 years - 9% (1)			
Academia - 0	8-12 years - 33% (4)			
Consultants - 50% (6)	More than 12 years - 33% (4)			
POWER PLANT & ENVIRONMENTAL CHEMISTRY				
<u>Name</u>	<u>Company</u>	<u>Status</u>	<u>Term Begins</u>	<u>Term Expires</u>
Chacon, Roger	El Paso Electric	New	7/1/2009	06/30/2011
Rudisaile, John	Nebraska Public Power District	New	7/1/2009	06/30/2011
Committee Statistics				
PPEC - 115 members (including new members)				
From:	Years on Committee			
Industry - 86% (99)	0-2 years - 17% (20)			
Govt - 3% (3)	3-7 years - 37% (42)			
Academia - 0	8-12 years - 46% (53)			
Consultants - 11% (13)	More than 12 years - 0			
WATER & STEAM IN THERMAL SYSTEMS				
<u>Name</u>	<u>Company</u>	<u>Status</u>	<u>Term Begins</u>	<u>Term Expires</u>
Willett, Merrill	Univ. of Michigan UPE Power Plant	New	7/1/2009	06/30/2011
Bartholomew, Robert	Sheppard T. Powell Associates	Reappt	7/1/2009	06/30/2013
Committee Statistics				
WSTS - 25 members				
From:	Years on Committee			
Industry - 52% (13)	0-2 years - 28% (7)			
Govt - 16% (4)	3-7 years - 12% (3)			
Academia - 8% (2)	8-12 years - 16% (4)			
Consultants - 24% (6)	More than 12 years - 44% (11)			

WATER MANAGEMENT TECHNOLOGY				
Name	Company	Status	Term Begins	Term Expires
Chaudhry, Shahid	California Energy Commission	New	7/1/2009	06/30/2011
Hanson, Jeffrey	Texas Instruments	New	7/1/2009	06/30/2011
Johnston, Carey	US EPA	New	7/1/2009	06/30/2011
Committee Statistics				
Water Mgmt - 3 members				
From:	Years on Committee			
Industry - 0% (0)	0-2 years - 100% (3)			
Govt - 33% (1)				
Academia - 67% (2)				
Consultants - 0% (0)				