



IR Newcomers PDO

MidAIR Conference
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Kansas City, Missouri USA



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Presenters

- Joe DeHart
Executive Director of Institutional Effectiveness and Assistant to the President
Des Moines Area Community College
- Larry Westermeyer
Director of Institutional Research University of Missouri – St. Louis




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Agenda

- Morning
 - Introductions
 - What is IR?
 - IR Models
 - Common functions
 - Impact of institutional culture
 - Relationships with other campus offices
 - Project management
 - Ethics



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Agenda




- Afternoon
 - Common reports
 - National data
 - Technical skills
 - Reporting
 - Business Intelligence
 - Resources
 - Advice
 - Wrap up




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Housekeeping




- Informal
- Interactive
- Ask questions as we go
- Breaks
- Lunch
- Evaluations




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Introductions




- Tell us
 - Your name
 - Title
 - Institution
 - Length of time in IR
 - Size and composition of office
 - Three things you want to take away from this session today




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What is IR?




"Institutional research involves the collection of data or the making of studies useful or necessary in (a) understanding and interpreting the institution; (b) making intelligent decisions about current operations or plans for the future; (c) improving the efficiency and effectiveness of the institution"
– Dressel (1966)




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What is IR?




". . . institutional research is a variegated form of organizational self-study designed to help colleges and universities gather an expanding range of information about their own internal operations and the effectiveness with which they are using their resources." – Rourke and Brooks (1966)




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What is IR?




"...institutional research consists of data collection, analyses, reporting, and related staff work designed to facilitate operations and decision-making within institutions of higher education." – Saupe and Montgomery (1970)




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What is IR?

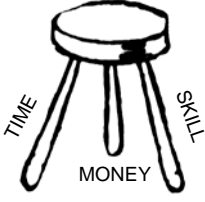
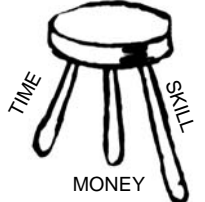


- “Conscience” of the institution.
- The guardian of “truth”.
- No one definition fits all institutions.



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IR Axes

“Very seldom can you sit squarely on all three legs”

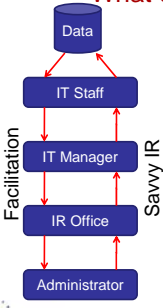



Balance is critical!

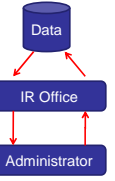

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IR Models - Where are you now? What do you aspire to?

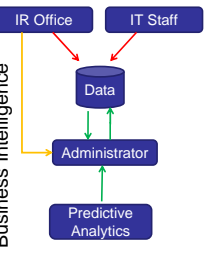
Facilitation



Savvy IR




Business Intelligence



▲ Increased Time and Errors

▲ Time and Error Neutral


▲ Advising/ Training Issue


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IR Models: Skills

Technical ability is moving out of IT and into IR!

Skill	Novice	Expert
Technical	Office, EXCEL, etc	Java, C+, etc
Data Knowledge	SIS user, faculty, etc.	DBA





It is important to invest in skills because it adds stability to your stool

Common Functions

- Reporting
- Surveys
- Data collection and aggregation
- Analytical studies
- Data warehousing
- Assessment

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Common Functions

- Reporting
 - Internal operations and management
 - System
 - Governing boards
 - State government
 - Accreditation
 - Federal government





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Common Functions




- Surveys
 - Development
 - Administration
 - Analysis
 - Completion




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Common Functions




- Data collection and aggregation
 - Existing sources
 - From surveys
 - Across functional areas




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Common Functions




- Analytical studies
 - Application flow/yield
 - Enrollment projections
 - Retention/attrition/graduation
 - Faculty workload
 - Salary equity
 - Turnover
 - Retirement projections




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Common Functions




- Data warehousing
 - Why?
 - Can mask changes in underlying systems
 - Easier to use data structures
 - Generally reduces development time
 - Accessible by many reporting tools
 - Facilitates cross-function reporting




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Common Functions




- Data warehousing
 - Daily “production” data
 - Useful for ad hoc reports
 - Census point data
 - Source for compliance and other recurring reports
 - Allows reproduction and deeper analysis at lower organizational levels




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Common Functions




- Data warehousing
 - Requires significant investments
 - System design
 - Developing agreed-upon definitions




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Common Functions



- Assessment
 - Cyclical process
 - Identify goals
 - Define measurable objectives
 - Select appropriate measures
 - Select approaches
 - Communicate findings
 - Make changes
 - Assist other units



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Institutional Culture




- The nature, values, and self-view of the institution impacts the functioning of IR
- Some factors:
 - Control
 - Sector
 - Highest degree offered
 - Institutional values
 - Internal politics




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Institutional Culture



- Why is this important?
 - Openness of information sharing internally
 - Amount of information shared externally
 - Focus on teaching, research, service or a combination
 - Actual or perceived ownership of data
 - Politics of data
 - Where IR reports impacts how it is viewed




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Break




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Relationships with Others

- Open and honest
 - Strive to be above politics
 - Serve the best interests of the college
- Accessible and cooperative
 - “WOW!” factor
- Heart of service
 - If you don’t generate revenue directly, appreciate and add value to those who do!
- Do the work, give others the credit
 - Committees and teams




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Relationships with Others

- Build trust and credibility
 - Errors are not well tolerated
- Know and share when you have a dog in the fight
- Help people with their thinking
- Respect others deadlines and help them understand yours
- Don’t be the shovel in the shed



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Relationships with Others

Especially tricky relationships


- President and Cabinet (Kill the messenger)
- Board (Brevity vs. details)
- Marketing & Media (You want to say what?)
- Faculty (Unions)
- “Like to knows”
- IT Department (Earn your stripes)



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Project Management


- Phases
 - Receive the work
 - Plan
 - Execute
 - Check
 - Present
 - Document



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Project Management

- Receive the work
 - Question to be answered
 - Type of data needed
 - Selection criteria
 - Transformations and summarizations
 - Level of detail to report
 - Output format
 - Due date




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Project Management




- Plan
 - What needs to be done
 - How will it be done
 - How it will be presented
 - What resources are needed




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Project Management




- Execute
 - Use the plan
 - Modify if not working




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Project Management




- Check
 - Record counts
 - Changes in counts
 - Reports generated by others
 - Change level of aggregation
 - Trend analysis
 - Ask others




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Project Management




- Present
 - Focus on audience needs
 - Anticipate questions
 - Practice
 - Review with others
 - Be aware of pitfalls




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Project Management



- Document
 - Keep notes concerning what, why, and how
 - Assumptions
 - Location of external sources
 - Consider hardcopy and electronic copies




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Ethics


"The power to do good, is also the power to do harm" Milton Friedman

Source of Guidance:

- Core values
 - What if it was in the paper?
 - What would your mother say?
- AIR statement of ethics
 - <http://www.airweb.org/?page=140>
 - Competence, practice, confidentiality, relationships
- Institutional standards
- Confidentiality & Human subjects protocols




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Ethics

In a nutshell....


- Be honest
- Be honest about your abilities
- Be fair
- Be firm
- Be consistent

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Lunch

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Unanswered Questions


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Common Reports




- Federal
- State
- System
- Campus
- Departments
- External surveys




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Common Reports




- Federal
 - IPEDS
 - Institutional Characteristics (IC)
 - Degree Completions (C)
 - Twelve-Month Enrollment (E12)
 - Fall Enrollment (EF)
 - Finance (F)
 - Graduation Rates (GRS)
 - Human Resources (HR)
 - Student Financial Aid (SFA)




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Common Reports




- Federal
 - Other NCES
 - Library Statistics Program
 - National Post-Secondary Student Aid Study
 - National Study of Post-Secondary Faculty
 - Post-Secondary Education Quick Information System
 - NSF
 - Science and engineering degrees and research expenditures



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Common Reports


- State
 - Varies by state
 - AR <http://www.arkansashighered.com/>
 - IA <http://www2.state.ia.us/regents/>
 - KS <http://www.kansasregents.org/>
 - MO <http://www.mdhe.mo.gov/>
 - NE <http://www.ccpe.state.ne.us/>
 - OK <http://www.okhighered.org/>
 - Tends to parallel IPEDS



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Common Reports


- System
 - Will vary by system
 - Tend to address system-specific concerns



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Common Reports

- Campus
 - Enrollment
 - Demographic characteristics
 - Application flow
 - Faculty and staff by organizational units
 - Faculty teaching load
 - Retention and graduation rates




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Common Reports



- Departments
 - Parallel campus reports
 - Answer unit-specific questions



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Common Reports




- External surveys – two-year institutions
 - National Community College Benchmark Study
 - Kansas Study – Instructional Costs and Productivity
 - Community College Survey of Student Engagement
 - Community College Faculty Survey of Student Engagement




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Common Reports



- External surveys – four-year institutions
 - Consumer-oriented
 - US News Best Colleges
 - College Board
 - Princeton Review
 - Voluntary System of Accountability
 - Common Data Set



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Common Reports




- External surveys – four-year institutions
 - Institutionally-oriented
 - National Survey of Student Engagement
 - Faculty Survey of Student Engagement
 - National Study of Instructional Costs and Productivity
 - College and University Personnel Administrators salary surveys
 - Cooperative Institutional Research Program Freshman Survey




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National Data Sets




- Federal
 - IPEDS
 - Library Statistics Program
 - National Post-Secondary Student Aid Study
 - National Study of Post-Secondary Faculty
 - Beginning Post-Secondary Students
 - Baccalaureate and Beyond




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National Data Sets




- Federal
 - NSF Survey of Earned Doctorates
 - NSF Survey of Federal Funds for Research and Development
 - NSF Survey of Federal S&E Support to Universities, Colleges, and Nonprofit Institutions




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National Data Sets




- Federal
 - NSF Survey of R&D Expenditures at Universities and Colleges
 - NSF Survey of Science and Engineering Research Facilities
 - NSF-NIH Survey of Graduate Students & Post Doctorates in S&E
 - Scientists and Engineers Statistical Data System


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National Data Sets



- Non-Governmental
 - State Higher Education Executive Officers
 - State Quick Facts
 - Links to many other policy-related sites
 - Grapevine
 - State tax support for higher education statistics
 - National Center for Public Policy and Higher Education


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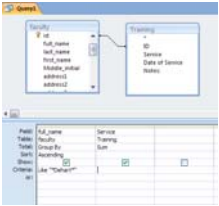
Technical Skills


Data Query:

- Point-and-Click:
 - MS Access
 - Crystal reports
- SQL (Structured Query Language)
 - Universal across databases


```

proc sql;
create table temp1 as select full_name, count(sections)
as sections_taught
from instructors, courses
where inst_crseids_crn
group by full_name
order by full_name;
quit;
```






Technical Skills



Statistics:


- **Basic:** mean, median, quartiles, standard deviation, normal distribution, ogive
- **Comparison:** correlation, Chi-square, t-test
- **Inferential:** ANOVA, regression, etc.

90/10 rule:
 Don't spend 90% of your time learning something that you only use 10% of the time. Find good resources.



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Technical Skills




Statistics Packages

- Excel
- SPSS
- SAS Enterprise Guide
- Others


Which ever you choose, invest time in learning

Stats and stats packages are often the easy part, getting the data is often more difficult




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Technical Skills




Other needed skills:

- Web
 - Sharepoint designer
 - Dreamweaver or other Point-and-click editor
- Office
 - Excel: charts, graphs and pretty tables
 - Don't confuse spreadsheets with databases
 - PowerPoint a must
- Screen capture and GIS




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Technical Skills




- Surveys and Survey Design
 - Don't overuse, often intuitively sound good but results are often disappointing or misleading
 - Represent all options
 - Stick with the same survey for awhile (ACT, CCSSE, NSSE, etc)
 - SurveyMonkey at al.




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Technical Skills




- Assessment of student learning
 - Faculty driven (more difficult, but better)
 - Strategies vary with subjects
 - Standardized tests are good, but not complete
 - Focus on improving learning and teaching
 - Don't get bogged down in statistical significance, assessment needs to be practical, reasonable and evidentiary.




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Technical Skills




Program Evaluation

- Provide all the data possible
 - Let the program worry about what the data means, not what the data is
- 5 years of data identifies trends
- Include assessment plans
- 3-5 year goals at best
- Criteria for a program to exist
- Adding new programs, dropping programs




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Break



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Reporting


Often the biggest part of what we do.
Three types:

1. Structured (meeting file specifications)
2. Reporting aggregate fields (IPEDS)
3. Research or ad-hoc reports

Most reports are never done only once. Document the sources, caveats, limitations, timing, etc so you can repeat it and/or explain it in 6 months




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Reporting

Structured files:

- Delimited files
 - Fields in the right order
 - Check in Excel
- Fixed length files (i.e.- Student Clearinghouse)
 - Right order, right length, start and stop
 - Name 1-30, term 31-36, birthdate mmdyy 40-45
 - Find the right tool



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Reporting – Research and Ad hoc

What is the STATE of your reports?

Simple

- Answer the question first, then add **necessary** detail
- A chart is worth a thousand data tables
- A page or two, or an executive summary

Targeted

- Answer the question, not the request if possible
- Help people with their thinking
- Leave the door open for follow up
- PowerPoint, Web, paper, brochure, etc.



Accurate

Timely

- The best report does not good after the decision
- Adjust content to deadline and be open about it

Effective

- If this is not what you expected, let me know

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Reporting

Do:

- Footnotes, sources, dates, etc.
- Classy charts and graphs
- Trend data when possible
- For complex issues, write around the data
- Academic writing when necessary
- Bullet points
- Opinions based on the data, not agendas
- Leverage your work, make it accessible
- Let it get cold, come back to it

Do Not:

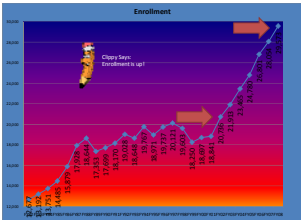
- Clip Art= Clown
- Trashy Charts and graphs= Clown
- Mismatch purpose with time
- Push your own agenda
- Over-animate your PPT
- Provide too much detail
- Get your President in hot water
- Violate FERPA
- Forget the literature
- Forget to communicate with marketing

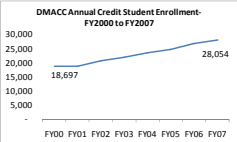





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Reporting

Good Chart, Bad chart






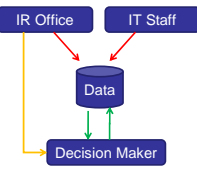



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Business Intelligence




Improves the STATE of your data:



```


graph TD
    IR[IR Office] --> Data[Data]
    IT[IT Staff] --> Data
    Data --> DM[Decision Maker]
    DM --> Data
            
```

- Automation
- 24/7
- Institutional Reporting
- Personalized data
- Data access
- Culture of Inquiry
- De-siloization
- Extend IR reach



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Why do you need to consider BI?



1. Student Information Systems (SIS) are transactional data, not reporting data


Example: SCT Banner

 - 2,800 tables holding 300 GB of data
 - Naming: SFRSTCR and SFRSTCR_RSTS_CODE
 - Do you know your PIDM?'
2. BI hides the complexity of your SIS
3. BI unifies disparate systems
4. Your IR staff can't be in their offices enough!



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Business Intelligence




Institutional Reporting

Dashboard/
Scorecard


Personalized
User Information

Direct
Access to
Data




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Business Intelligence




Institutional Reporting

- Parameters
- Drill-down
- Flexibility
- Access controlled/integrated security
- Centrally created and controlled
- Aimed at business of college (all see the same picture)



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Business Intelligence




Direct Access to Data

Available:

- Wait lists, Census Data (Fall, Spring, Summer, Annual/>=2000), Current Term Courses and Students, Student Concentration Data, Recruits, Historical Point-in-Time Enrollment Data, Persistence, Retention


Features:

- User cannot create an inaccurate report
- Build once, save to use again (personal or shared)
- Automatically updates, accesses fresh data
- Leverage you data warehouse
- Charts and graphs
- Output: Web, PDF, Excel
- Table and field level security
- Excellent flexibility (recruits)



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Business Intelligence








Personalized Info

- Class Lists
- Course Retention
- Grade Distribution
- TI Units
- Coming Soon! Assessment of Student Learning


Dashboards/Scorecards

- Portal Key Performance Indicators (KPIs)


Credit Headcount	Credit Hours	Non-Credit Headcount	Non-Credit Contact Hrs
Updated: 10/14/2008 Next Update: 10/17/2008  1.7% (19318)	Updated: 10/14/2008 Next Update: 10/17/2008  3.4% (16557)	Updated: 10/14/2008 Next Update: 10/17/2008  -12.4% (12124)	Updated: 10/14/2008 Next Update: 10/17/2008  -30.4% (615816)



Resources




- Professional
 - AIR
 - MidAIR
 - Other organizations
 - Networking
- Vendors
 - Education
 - Use as consultants




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Resources




- Internal
 - Information Technology
 - Library
 - Academic courses
 - Continuing education/extension
 - Faculty
 - Other staff




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Advice




- Actively listen to clients
- Ask questions
- Check your work
- Keep your boss informed
- Give your boss bad news before client
- Hone existing skills
- Develop new skills




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Advice




- Do not fear failure
- Learn from your mistakes
- Be objective
- Beware of emotional involvement
- Be able to explain what you did and why
- Trust your instincts
- If you mess up, 'fess up




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Advice




- Know when to keep your mouth shut
- Maintain confidentiality
- Be honest with yourself and others
- Develop and publicize standard definitions
- Develop and publicize standard data
- Use frozen files for recurring reports
- Leverage previous efforts with templates




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Advice



- Share what you have done or learned at conferences
- It takes time to build credibility
- It takes an instant to lose credibility
- Ask clients what they think of your work
- Establish, maintain and use favorites
- Think about how to remember passwords




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Wrap Up

Any remaining questions
Please complete the evaluation



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Contact Information

- Joe DeHart (515) 964-6279
Des Moines Area Community College
jcdehart@dmacc.edu


- Larry Westermeyer (314) 516-4010
University of Missouri – St. Louis
westermeyerl@umsl.edu



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Thank You



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Handy Web Sites for Institutional Research

Topic	URL
Arkansas Department of Higher Education	http://www.arkansashighered.com/
Association for Institutional Research	http://airweb.org/
Association of Governing Boards of Universities and Colleges	http://www.agb.org/
Board of Regents State of Iowa	http://www2.state.ia.us/regents/
Carnegie Classifications	http://www.carnegiefoundation.org/classifications/index.asp
Census 2000 EEO Data Tool	http://www.census.gov/eo2000/index.html
Chronicle of Higher Education	http://chronicle.com/
Circular Area Profiling System	http://mc2dc2.missouri.edu/websas/caps.html
Classification of Instructional Programs	http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2002165
Common Data Set	http://www.commondataset.org/
Digest of Education Statistics	http://nces.ed.gov/programs/digest/
Economic Diversity of Colleges	http://www.economicdiversity.org/
Equity in Athletics Data	http://ope.ed.gov/athletics/
Grapevine	http://www.grapevine.ilstu.edu/
Inter-University Consortium for Political and Social Research (login required)	http://www.icpsr.umich.edu/ticketlogin
IPEDS	http://www.nces.ed.gov/ipeds/
IPEDS College Navigator	http://nces.ed.gov/collegenavigator/
IPEDS Peer Analysis System	http://www.nces.ed.gov/ipedspas/
MidAIR	http://www.mid-air.org/
Midwestern Higher Education Compact	http://www.mhec.org/
Missouri Department of Higher Education	http://www.mdhe.mo.gov/
National Center for Public Policy and Higher Education	http://www.highereducation.org/
National Postsecondary Education Datasets	http://higher.org/answers/
National Student Clearinghouse	http://www.nslc.org/
NCES	http://www.nces.ed.gov/
NCES Academic Library Comparison Tool	http://nces.ed.gov/surveys/libraries/compare/index.asp?LibraryType=Academic
NCES Library Statistics	http://nces.ed.gov/surveys/libraries/aca_data.asp
NCES School District Demographic Data System	http://nces.ed.gov/surveys/sdds/disclaimer.asp?t=sdas/index.asp
Nebraska's Coordinating Commission for Postsecondary Education	http://www.ccpe.state.ne.us/
NSF Databases	http://www.nsf.gov/statistics/database.cfm
Oklahoma State Regents for Higher Education	http://www.okhighered.org/
State Higher Education Executive Officers (SHEEO)	http://www.sheeo.org/
The Kansas Board of Regents	http://www.kansasregents.org/
US Census Bureau	http://www.census.gov/
Voluntary System of Accountability	http://www.voluntarysystem.org/index.cfm