1. **Call to Order**  
   Carlo Segre called the subcommittee meeting to order.

2. **Appointment of Minutes Secretary**  
   Denise Flaherty was appointed as the Minutes Secretary.

3. **Approval of Minutes for March 2009**  
   No objections were made of the 2009 Minutes, and so the minutes were passed.

4. **Review of Mission Statement**  
   C. Segre projected the Mission Statement to the subcommittee as a reminder of their duties and responsibilities.

5. **ICDD Staff Reports**  
   A. **New Education Portal**  
      M. Kottenhahn, ICDD Web Master, gave a PowerPoint presentation on the ICDD.COM Knowledge Center. An overview of the ICDD web site, the number of hits, monthly activity and language options were all highlighted during the presentation, as well as details of academic services. For complete information, please see page 3 for M. Kottenhahn’s PowerPoint presentation.
   
   B. **Report from Conference Services**  
      T. Maguire presented reports and PowerPoint presentations on the Clinics and Conferences organized by ICDD through the Conference Services Department. Activities highlighted included the 2009 XRD & XRF Clinics; the 2009 Denver X-ray Conference, 2009 & 2010 Pharmaceutical Powder X-ray Diffraction Symposia, and the 2009 specialized workshops: Specimen Preparation XRF and Rietveld Refinement & Indexing. Specimen Preparation XRF was cancelled due to low registration. Reports included details on attendance, staff, tuition waivers, grants, exhibits, awards, and also an announcement of the 2010 dates for each event. The presentation also detailed the many meetings that ICDD supported financially. Please see page 29 for specific information (part of T. Maguire’s PowerPoint presentation).

6. **Board of Directors’ Liaison Report**  
   J. Kaduk gave a report to the subcommittee regarding activities of the ICDD Board of Directors. J. Kaduk stated that the BoD is developing a strategic plan, that education will be a major push in the next three years, and that the BoD will be looking towards the Education Subcommittee for input.

   J. Kaduk then discussed Board activities such as demonstrations of the database and stated that students at the ICDD clinics now have access to the database for hands-on problem solving. J. Kaduk also mentioned that the BoD is still involved in many discussions regarding the LPF (Linus Pauling File) and PDF-4 Organics.

7. **New Business**  
   A. **ICDD Academic Site License Policy**  
      J. Kaduk recommended that once a PDF is on a campus with a diffractometer, one could add to that, or convert to an academic site license - a web product that you
would add to your license. An original fee would be paid and then updates. J. Kaduk suggested ICDD not limit the site definition - give everyone on campus access to the database, instead of only being available to a specific lab. Therefore, if the diffractometer is in the Chemistry Dept., everyone at the university would have access. J. Kaduk proposed a user name password as opposed to dongles, such as Cambridge Crystallographic Data Centre practices. He stated that the goal is to meet academic needs at a reasonable price.

T. Blanton questioned if satellite campuses would also have access, or are they considered a new site? J. Kaduk responded that the issue of satellite campuses is up for discussion.

F. Wireko asked about companies, as opposed to universities? J. Kaduk responded that the focus, for now, is on helping academics, but would like to see a future discussion on doing the same thing for companies.

J. Kaduk stated that he would be presenting the topic to the BoD as part of a Board Task Group, and that he would like the support of the Education Subcommittee. C. Segre suggested that if the subcommittee wants to support the proposal, then it should be made an official motion from the Education Subcommittee to the ICDD BoD.

**MOTION**: There was a motion presented and passed by the Education Subcommittee regarding new modes of academic licensing for WebPDF-4+.

Jim Kaduk made the motion.
Frank Rotella seconded the motion.
Favor: 10 Opposed: 0

**ICDD Executive Directors’ Note**: The exact motion and its wording were removed from these minutes as it specified pricing and product delivery mechanisms that do not currently exist. As suggested in the above discussion, the motion was forwarded to the board and logged into the board minutes, with the purpose of having the proposal reviewed by the appropriate subcommittees. The appropriate subcommittees are the Marketing and the Budget and Strategy Review Subcommittees both of which report to the Finance Committee. These subcommittees have members that evaluate business opportunities and pricing mechanisms and are responsible for making pricing and strategic recommendations to the Board.

B. Update on ICDD Website Tutorials
C. Segre gave an update to the subcommittee on the process of placing tutorials on the ICDD web site. He stated that the project needs to have a review process, however, only one person volunteered. J. Kaduk suggested that to do a good job at expanding the education activities, another ICDD staff member should be added – there is too much work involved for volunteers.

Time ran out, and there was no other New Business to be discussed.

8. Adjournment
C. Segre adjourned the meeting.
The ICDD.com Knowledge Center

M. Kottenhahn
Education Subcommittee
2010 ICDD Spring Meetings
Acknowledgements

YOU: The ICDD Members

The ICDD Staff
Snapshot – Month of Feb 2010

Directory Hits
- Documents: 8,012
- Directory Hits: 3,653
- Second level: 3,255
- News: 1,371
- Minutes: 1,812
- PDJ: 3,255
- PDJ: 1,126

Frequently Visited Pages:
- ISO 9001:2008 Certification
- 2009-2010 Sales Catalog (PDF)
- Events Calendar
- Advances in X-ray Analysis
- 2007 Public Report (PDF)
- Powder Diffraction Journal
- Grant-in-Aid Program
- ICDD Awards
- ICDD Product Tutorials
- PPXRD-9

Past PDJ: 2,101
Minutes: 1,158
News: 544
Upcoming Events:
- ICDD Spring Meetings 15-19 March 2010
- Practical X-ray Fluorescence Clinic 3-7 May 2010 - Register
- Fundamentals of X-ray Powder Diffraction Clinic 7-11 June 2010 - Register
- Advanced Methods in X-ray Powder Diffraction Clinic 14-18 June 2010 - Register
- Come learn with us!
- See other Education Opportunities

Knowledge Center
- Academic Services
- A portal to grants, scholarships, tuition waivers, product discounts, awards, financial support of global meetings, and more.
<table>
<thead>
<tr>
<th>Site</th>
<th>Visits</th>
<th>Page Views</th>
<th>Document Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICDD.com</td>
<td>33,243</td>
<td>70,798</td>
<td>2,151 (pdf, txt, doc)</td>
</tr>
<tr>
<td>DXCICDD.com</td>
<td>7,900</td>
<td>10,394</td>
<td>2,207 (pdf, txt, doc)</td>
</tr>
<tr>
<td>Scitation- Powder Diff.</td>
<td>7,073</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Top cities visiting icdd.com**

Beijing  
Seattle  
Abidjan  
New York  
Washington  
Bangkok  
Amsterdam  
Frankfurt  
Bombay  
Madrid  
London  
Moscow  
New Delhi  
Kiev  
Singapore  
Tokyo
<table>
<thead>
<tr>
<th>Language</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese</td>
<td>7,791</td>
</tr>
<tr>
<td>French</td>
<td>4,203</td>
</tr>
<tr>
<td>German</td>
<td>4,265</td>
</tr>
<tr>
<td>Italian</td>
<td>3,368</td>
</tr>
<tr>
<td>Japanese</td>
<td>5,963</td>
</tr>
<tr>
<td>Portuguese</td>
<td>3,391</td>
</tr>
<tr>
<td>Russian</td>
<td>4,632</td>
</tr>
<tr>
<td>Spanish</td>
<td>4,530</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>38,143</strong></td>
</tr>
</tbody>
</table>
Web Visit Increases 1/07-1/10

ICDD

DXC
ICDD.COM strives to meet the information and communication needs of ICDD members, customers, scholars, professionals, grant-in-aid participants, developers, and students.

Recently, ICDD has focused on creating an easy, time-saving, and informative web portal to open up opportunities for dialogue and information:

The ICDD Knowledge Center - http://www.icdd.com/knowledge/
ACADEMIC SERVICES:

- Awards
- Database Discounts
- Scholarships
- Academic Pricing
- Classroom Help
- Grant-in-Aid
- Users Meetings
- Tuition Waivers
- Support for Conferences and Meetings
# Awards

## ICDD Awards:

<table>
<thead>
<tr>
<th>Award</th>
<th>For</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>McMurdie</td>
<td>Improving the PDF®</td>
<td>Biennial 2006, 2008, 2010, etc.</td>
</tr>
<tr>
<td>Ludo Frevel Scholarship</td>
<td>Crystallography Students</td>
<td>Annual</td>
</tr>
<tr>
<td>Fellow</td>
<td>Members</td>
<td>as appropriate</td>
</tr>
<tr>
<td>Distinguished Fellow</td>
<td>Fellows</td>
<td>Annual</td>
</tr>
</tbody>
</table>

## Denver X-ray Conference Awards:

<table>
<thead>
<tr>
<th>Award</th>
<th>For</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jenkins</td>
<td>Scientists who exhibit lifetime achievement in the advancement of the use of X-rays in materials analysis</td>
<td>Biennial 2003, 2005, 2007 etc.</td>
</tr>
<tr>
<td>Birks</td>
<td>X-ray Fluorescence Spectrometry</td>
<td>Biennial 2004, 2006, 2008 etc.</td>
</tr>
<tr>
<td>Jerome B. Cohen</td>
<td>Students</td>
<td>Annual</td>
</tr>
</tbody>
</table>
To encourage promising graduate students to pursue crystallographically-oriented research, the International Centre for Diffraction Data (ICDD) has established a Crystallography Scholarship Fund, now known as the Ludo Frevel Crystallography Scholarship Fund.

Since the scholarship's inception in 1991, $224,750 has been awarded to aspiring crystallographers. Applications for the year 2010 awards must be received by ICDD no later than 30 October 2009. Currently, 10 scholarships for $2,500 are awarded annually.
Grant-in-Aid

• The ICDD supports a well-developed program of grants to researchers around the world to provide high-quality data for refined search techniques. Each year, the ICDD extends financial support to qualified investigators, in the form of grants-in-aid awarded on a competing proposal basis, for the preparation of reference X-ray powder diffraction data.

• Approximately $350,000 is granted annually to 50-60 recipients, with awards ranging from $1,000 for starter grants, to $30,000 for expert grants. Since the program's inception in 1986, millions of dollars in grants have been awarded.
Tuition Waivers

• The Dr. Eugene P. Bertin, Dr. Ron Jenkins, and Dr. Deane K. Smith tuition waivers were established to promote the education of the scientific community, particularly the academic sector, in X-ray materials analysis. Faculty members and graduate students are encouraged to apply.

• If you are currently developing a program in X-ray powder diffraction (XRD), or X-ray fluorescence spectrometry (XRF), or are interested in incorporating either topic into an established course, a tuition waiver can provide you the opportunity to learn the principles and practices of these disciplines from some of the experts in the field.
Support for Conferences and Meetings

• Applications are reviewed on a competitive basis. Those that align with ICDD's mission of advancing materials characterization methods within the X-ray community are more likely to be supported.

• The ICDD grants support funding to ~10 global events every year, grants are typically $1,000-$5,000 USDs with the amount commensurate with the size of the meeting and the program alignment with advanced materials characterization.
Learn how to get the most from your PDF-4+ database from the database experts.

Join ICDD at our free Powder Diffraction workshop during the

2010 BCA Spring Meeting in Coventry, United Kingdom
13th April 2010

University of Warwick • 13:00–15:00 and 15:30–17:15
Workshop registration is via the Conference website

Recent Users Meetings

August Users Meeting
Denver X-ray Conference
26 August 2009 at DXC
Colorado Springs, Colorado
Attendees: 10
Instructors: Justin Blanton, Cyrus Crowder, Tim Fawcett

September Users Meeting XXI
Conf on Applied Crystallography
25-25 September 2009
Zakopane, Poland
Attendees: 15
Instructors: Cyrus Crowder, Matteo Leoni, Paolo Scardi
Academic Pricing & Classroom Help

• An academic price is awarded to degree-granting (Assoc., B.S., M.S., Ph.D.) institutions. Institutions may be required to submit documentation verifying eligibility. **Database Discounts and more!** Please consult our product catalogue.

• **Educational Resource Package** product is designed to be used individually or in combinations as an effective teaching tool for powder diffraction pattern identification. The three-volume softcover set includes Using the Powder Diffraction File, the Education Databook and the Educational Indexes.

• The ICDD is also willing to work with educators to develop classroom instruction and provide databases for instructional purposes.
Research Tools

- PDJ
  - Powder Diffraction Journal

- AXA
  - Advances in X-ray Analysis

- DXC
  - Denver X-ray Conference

- PPXRD
  - Pharmaceutical Powder X-ray Diffraction Symposium

- ICDD Annual Spring Meeting

- Tutorials
  - Powder Diffraction File Products
Dear researchers:

In compliance with our mission, ICDD promotes technical exchanges by sponsoring publications, conferences, symposia, workshops and clinics around the world. This has resulted in thousand of files being posted on our website, the associated website of the Denver X-ray Conference, and those of our publishing partners for *Powder Diffraction*, AIP.

This webpage is a one-step portal to on-line collections of articles and abstracts. For these collections, we have searches to facilitate research and content exploration.

The content of these sites is copyright protected, download capability is provided for your personal use and not for sale or distribution.
• Dxicdd.com, contains programs and abstracts for the Denver X-ray Conference from 1997 to 2008. In general there are ~200 abstracts submitted on an annual basis and 50-100 of these are published into full papers for AXA. This area allows download and viewing of all abstracts, while the AXA site provides access to the published articles.
AXA – Advances in X-ray Analysis

The annual proceedings of the Denver X-ray Conference (DXC). AXA Volumes 40-50 (DXC 1996-2006), containing nearly 700 articles, can be keyword searched with free full article download.

XRD - Most Frequent Downloads
- X-ray Diffraction Analysis in the Forensic Science: The Last Resort in Many Criminal Cases
- Microstructure of Clay-Polymer Composites
- Lattice Parameters of Gallium Nitride at High Temperatures and Resulting Epitaxial Misfits with Alumina and Silicon Carbide Substrates

XRF - Most Frequent Downloads
- Fundamental Parameter Methods in XRF Spectroscopy
- ED-XRF Spectrum Evaluation and Quantitative Analysis Using Multivariate and Nonlinear Techniques
- Approaching a Universal Sample Preparation Method for XRF Analysis of Powder Materials

X-ray Methods - Most Frequent Downloads
- Mineral Classification in the Mineral Powder Diffraction File
- Profile Fitting and Diffraction Line Broadening Analysis
- Thin Film Density Determination by Multiple Radiation Energy Dispersive X-ray Reflectivity
Powder Diffraction Journal

• The abstracts and Table of Contents of *Powder Diffraction* from 2001-Present are available on-line through *Scitation*.

• A subscription is required for full articles.

• A table of contents for all volumes 1986-current can be searched through the ICDD website.

• Print copies of older articles are available for purchase.
PPXRD
Pharmaceutical Powder X-ray Diffraction Symposium

• The abstracts of the Pharmaceutical Powder X-ray Diffraction Symposia are available for view and download. This ICDD site holds the abstract contents for all PPXRD symposia from 1999 to the present time

• Just posted – PPXRD-8 Workshop Presentations are now available for free download.
15 Tutorials for navigating the database

WebPDF-4+ New

10 application tutorials

3 tutorials targeted to PDF-4/Organics

2 tutorials targeted for Electron Diffraction

Guest Tutorials

Trace Phase Analysis from Dr. Jim Kaduk

Crystallite Size Analysis from Dr. Paolo Scardi and Dr. Matteo Leoni
Starting in 2002, the ICDD initiated a new format for its annual spring meeting which included a topical plenary session followed by an international members poster session. View abstracts for all posters and select plenaries, from 2002 to the present.
X-ray Clinics

2009 in Review
2009 ICDD CLINICS

X-ray Fluorescence Spectrometry Clinic
Practical XRF, 18-22 May

X-ray Powder Diffraction Clinic
Session I - Fundamentals, 8-12 June
Session II - Advanced Methods, 15-19 June
2009 CLINIC ATTENDEES

XRF: 20
- 1 Tuition Waiver
- 2 Manufacturers’ Discounts (Bruker AXS)

XRD
Session I: 13
- 2 Tuition Waivers
- 1 Manufacturers’ Discount (Rigaku)
- 3 Two-week Discounts

Session II: 9
- 2 Tuition Waivers
- 0 Manufacturers’ Discount
- 3 Two-week Discounts
Eugene Bertin, Ron Jenkins & Deane K. Smith
Tuition Waivers

XRF
Jesse Spencer
Valdosta State University, GA

XRD
Sijia Zhu
University of Texas, San Antonio, TX

XRD-1
Steve Shaver
Sewanee: University of the South, TN

XRD-2

XRD 1&2
Roger Sommer
DePaul University, Chicago, IL
XRF Faculty

- John Anzelmo, Anzelmo and Associates, Inc.
- Larry Arias, Bruker AXS, Inc.
- Richard Bostwick, SPEX SamplePrep, LLC
- Dave Coler, PANalytical
- Larry Creasy, Emeritus, TIMET
- Tim Fawcett, ICDD
- Kimberly Halkiotis, PANalytical
- Theresa Howe, Bruker AXS, Inc.
- Al Martin, Rigaku MSC, Inc.
- Michael Rider, Bruker AXS, Inc.
- Mary Ann Zaitz, IBM Microelectronics
XRD Faculty

- Thomas Blanton, *Eastman Kodak Company*
- Holger Cordes, *Bruker AXS*
- Lori Fields, *Rigaku MSC, Inc.*
- C.M. Foris, *ForChem Consultant*
- Sue Quick, *The Pennsylvania State University*
- Mark Rodriguez, *Sandia National Laboratory*
- Earle Ryba, *The Pennsylvania State University*
XRD Faculty
ICDD Staff Instructors

- Justin Blanton
- Cyrus Crowder
- Timothy Fawcett
- Suri Kabekkodu
- W. Frank McClune
- Fangling Needham
- Joel Reid
- Charles Weth
Manufacturer Participation

XRF
- Bruker S1 Turbo (Hand Held)
- Bruker S4 Explorer (WDS)
- Bruker S2 Picofox (TXRF)
- PANalytical Epsilon 5 (EDS)

XRD I
- Bruker D2 Phaser
- Rigaku Miniflex
ICDD 2010 Clinics!

Practical X-ray Fluorescence
3-7 May

Fundamentals of X-ray Powder Diffractometry
7-11 June

Advanced Methods in X-ray Powder Diffractometry
14-18 June
58th Annual Denver X-ray Conference
Crowne Plaza, Colorado Springs
July 27-31, 2009
286 Registrations:
- 34% from outside of the U.S.A.
- represented 27 different countries

51 Exhibit Booths Sold
- 180+ exhibit staff
- representatives from 40 companies
Awards

Jenkins Award Recipient

Timothy G. Fawcett
Awards

Barrett Award Recipient

Robert Von Dreele
Argonne National Laboratory, IL

Jerome B. Cohen Student Award
No recipient named
Future Denver X-ray Conferences

2010

– August 2-6
– Marriott, Denver Tech Center, Colorado

Have an idea for a workshop or session?
– send to dxcicdd@icdd.com for consideration by the Organizing Committee
Attendees: 58 representing 16 countries
- 21 attended workshop
- 58 attended symposium + workshop
- 8 student registrations

Exhibits: 9 companies, 10 exhibits

No sponsorships
Attendance

- Attendees: 31 representing 7 countries
  - Workshop: 22
  - Symposium + workshop: 31
- Exhibits: 8 exhibits; 7 companies
- No sponsorships
Location to be decided! (outside of the USA)
PPXRD Organizing Committee

- Cyrus Crowder, Chairman, ICDD, PA
- Detlef Beckers, PANalytical, The Netherlands
- Julien Giovannini, AstraZeneca, Sweden
- Arnt Kern, Bruker-AXS GmbH, Germany
- Fangling Needham, ICDD, PA
- Kenneth Shankland, Rutherford Appleton Laboratory, U.K.
- Greg Stephenson, Eli Lilly, IN
- Raj Suryanarayanan, University of Minnesota, MN
- Hideo Toraya, Rigaku Americas, Tokyo, Japan
- Peter Varlashkin, GlaxoSmithKline, NC
- Shawn Yin, Bristol-Myers Squibb, NJ
Specialized Workshops

2009 in Review
Specialized Workshops

Specimen Preparation for XRF
- Scheduled for October 13-15, ICDD Headquarters
- CANCELED due to insufficient registrations

Rietveld Refinement and Indexing Workshop
- Basic: October 19-20 Registrations: 18
- Advanced: October 21-23 Registrations: 15
- Two tuition waivers awarded for both sessions
Instructors

- Cyrus Crowder
- John Faber
- Amy Gindhart
- Suri Kabekkodu
- Jim Kaduk
- Fangling Needham
- Joel Reid
<table>
<thead>
<tr>
<th>Name</th>
<th>Date &amp; Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>German Mineralogical Association Annual Meeting</td>
<td>13-17 September 2009 Halle/Saale, Germany</td>
</tr>
<tr>
<td>Micro et Nano: Scientiae Mare Magnum</td>
<td>14-20 June 2009 Castellaneta Marina (TA), Italy</td>
</tr>
<tr>
<td>10th National Conference on X-ray Diffraction and ICDD Workshop</td>
<td>11-18 October 2009 Shanghai, Peoples Republic of China</td>
</tr>
<tr>
<td>3rd Argentinean Conference in Archaeometry and 2nd National Meeting in Cultural Heritage</td>
<td>22-25 September 2009 Cabo Frio, Rio de Janeiro, Brazil</td>
</tr>
<tr>
<td>2010 American Crystallographic Association Summer Course on Small Molecule Crystallography</td>
<td>21-30 June 2010 Indiana University of PA</td>
</tr>
<tr>
<td>PacificChem 2010 - Symposium</td>
<td>15-20 December 2010 Honolulu, Hawaii</td>
</tr>
<tr>
<td>XI International Conference on Crystal Chemistry of Intermetallic Compounds</td>
<td>30 May - 2 June 2010 Lviv, Ukraine</td>
</tr>
<tr>
<td>AXAA - Australian X-ray Analysis Association</td>
<td>6-11 February 2011 Star City, Sydney, Australia</td>
</tr>
<tr>
<td>BCA - British Crystallographic Association</td>
<td>12-15 April 2010 Warwick University, Coventry, UK</td>
</tr>
<tr>
<td>Diffraction at the Nanoscale: Nanocrystals, Defective &amp; Amorphous Materials</td>
<td>24-30 May 2010 Villigen, Switzerland</td>
</tr>
</tbody>
</table>
Workshops and Seminars

International Crystallography School "High Pressure Crystallography: From Novel Experimental Approaches to Applications in Cutting-Edge Technologies"
Erice, Italy (ICDD sponsored)
June 4–14, 2009

Micro et Nano: Scientiae Mare Magnum
Castellaneta Marina, Italy (ICDD sponsored)
June 14–20, 2009; Matteo Leoni

ACA Summer Course
Indiana, PA (PDF-4+ demonstration database)
June 22 –July 1, 2009; Dr. Charles H. Lake

DXC 2009
Colorado Springs, Colorado
July 26, 2009; PDF-4+ Users Meeting by ICDD Staff

German Mineralogical Association Annual Meeting
Halle/Saale, Germany (ICDD sponsored)
September 13–17, 2009; Prof. Herbert Poellmann

XXI Conference on Applied Crystallography
Zakopane, Poland
September 21–27, 2009
PDF-4+ Users Meeting; Cyrus Crowder, Paolo Scardi and Matteo Leoni
Workshops and Seminars Around the Globe

3rd Argentinean Conf in Archaeometry & 2nd National Meeting
Cordoba, Argentina (ICDD sponsored)
September 22–25, 2009

10th National Conference on X-ray Diffraction
Shanghai, People's Republic of China
October 11–18, 2009
ICDD Workshop
Tim Fawcett, Fangling Needham, and Xiaolong Chen

Powder Diffraction Workshop
Escuela Politecnica Nacional,
Quito, Ecuador
Miguel and Graciela Delgado

National Crystallochemistry Conference
Kazan, Russia
November 30–December 7, 2009
ICDD Workshop
Tom Blanton, Evgeny Antipov and Roman Shpanchenko