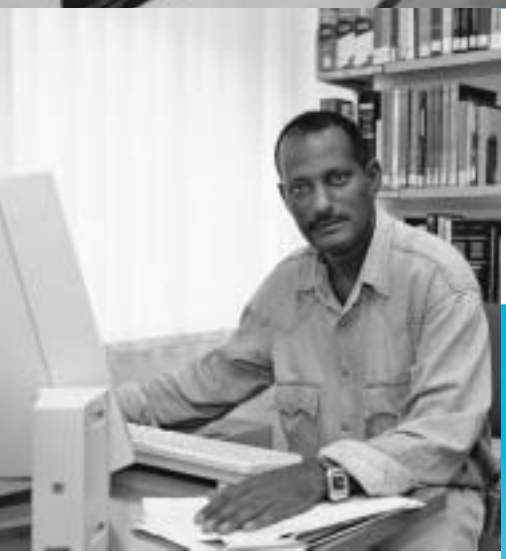


NEWS from ICTP

the
abdus salam
international centre for theoretical physics

AUTUMN
2001

#98

An agreement between ICTP/TWAS and several major scientific publishers promises to provide ready access to current scientific literature to researchers from the developing world.

ICTP's eJournals Delivery Service

"Why don't you do it?" Paul Ginsparg, creator of the Los Alamos preprint series "arXIv," which has revolutionized the way physicists exchange information, posed this question to Hilda Cerdeira, head of the ICTP/ Third World Academy of Sciences (TWAS) Donations Programme, at a 'breakout' session of the International Council for Science/United Nations Educational, Scientific and Cultural Organization (ICSU/UNESCO) Conference on Electronic Publishing in Science, held on a gray wintry day in Paris, in February 2001.

Well, eight months later, 'it' is now 'done.' Thanks to a series of agreements with Academic Press, the American Physical Society, the Institute of Physics Publishing and World Scientific Publishing Co., ICTP has launched a free "eJournals Delivery Service" (eJDS) that allows scientists from the developing world, and especially from the least developed countries, to access articles found in some 200 scientific journals in physics, chemistry, biology, mathematics and computer science. The publications include *Advances in Mathematics, Analytical Biochemistry, Annals of Physics* and *Physical Reviews*.

The programme takes advantage of another ICTP innovation—the Centre's www4mail software package (see *News from ICTP*, Winter 2001)—to ensure that developing world scientists with limited economic resources and/or low bandwidth internet facilities are able to download and print journal material from their computers by simply relaying the texts of articles to their e-mail addresses. eJDS is reliable, timely, easy-to-use and free.

While the service will be managed by the ICTP/TWAS Donations Programme, the initiative represents a joint venture with the ICTP Scientific Computing Section and Library, which have provided valuable technical and administrative support.

Scientists who are interested in gaining access to eJDS must fill out an application form that is available through ICTP (see concluding paragraph). Publishers, which have made the service possible by signing extended off-site licensing agreements with the Centre, have established a set of criteria for those who will be entitled to use the service. In addition, they have set limits to the number of articles per journal that can be accessed each day (three), month (12) and year (100).

The arrangement represents a delicate balance between the publishers' need to generate adequate revenue flows through paid subscriptions and their desire to make information—the lifeblood of the global scientific community—easily available to all scientists. Under the agreement, everyone wins. Developing world scientists will now have access to a much wider range of current scientific information and findings than ever before. The publishers will be able to reach researchers who would otherwise not have either the technical or financial means to read articles in their journals in a timely fashion. And ICTP will broaden its vital role as an important 'home away from home' for scientists from the South—this time by taking advantage both of new information technologies and a growing willingness on the part of the scientific community to forge public/private partnerships for the advancement of scientific knowledge.□

For additional information about the ICTP/TWAS Donations Programme's eJournals Delivery Service, contact eJDS, ICTP/TWAS Donations Programme, ICTP, Strada Costiera 11, 34014 Trieste, Italy, phone: + 39 040 2240 636; fax: + 39 040 2240 633; or email: ejds–info@ictp.trieste.it, leaving the subject blank.

Walter Erdelen
Assistant Director General for Natural Sciences
United Nations Educational, Scientific and Cultural Organization (UNESCO), Paris, France

COMMENTARY

UNESCO's new head of science talks about the wide-ranging activities of UNESCO's Natural Sciences Sector and the central role basic science plays in the sector's mandate.

Science at UNESCO

The United Nations Educational, Scientific and Cultural Organization (UNESCO) Natural Sciences Sector, ICTP's most direct link to UNESCO, works with partners worldwide to promote science and technology.

The Natural Sciences Sector seeks to advance its broad mandate through a variety of programmes, including the:

- Intergovernmental Oceanographic Commission (IOC).
- Man and Biosphere (MAB) Programme.
- International Geological Correlation Programme (IGCP).
- International Hydrological Programme (IHP).
- Environment and Development in Coastal Regions and in Small Islands (CSI) Platform.

Walter Erdelen

In addition, the sector promotes efforts in renewable energies, particularly solar energy, through its participation in the World Solar Programme 1996-2005, and helps to forge university-industry-science partnerships through the UNISPAR programme. UNESCO's Natural Sciences Sector also recognises scientific and technological achievement through its sponsorship of a host of prizes and awards. And the sector participates in a variety of programmes designed to explore specific science policy issues ranging from scientific ethics to strategies for combatting AIDS and malaria.

Our broad portfolio of activities shares a common set of strategies and goals to:

- Advance scientific research and the transfer of technology through partnerships with local, regional, national and international institutions.
- Build scientific and technical capacities in a variety of fields of importance to the social and economic well-being of our member states.
- Focus particular attention on the needs of the developing world.

The relationship between the Natural Sciences Sector and ICTP is defined by the sector's overarching strategies and goals. While the sector and the member states that we serve are interested in the application of science and technology to solve real-world problems, we recognise that training and research in the basic sciences provide the 'critical' thinking and technical skills necessary for devising sustainable science-based development strategies. In short, we believe that each nation's ability to develop the basic sciences—and to nurture a critical mass of physicists, chemists and biologists—is a key aspect of capacity building and should not be ignored even among nations with pressing economic and social needs.

When I visited ICTP last July for the first time since becoming assistant director general for the Natural Sciences Sector, I had already been informed about the Centre's internationally acclaimed role as a training centre for scientists from the developing world. What impressed me during my brief visit to Trieste was not only the lively educational environment that pervaded the ICTP campus but the commitment of ICTP's scientific staff to research excellence—not just in the Centre's traditional fields of high energy physics, condensed matter physics and mathematics, but in such related fields as physics of weather and climate, seismology, and the modelling and simulation of complex realities, all of which have been launched and expanded in recent years.

Both the training and research aspects of ICTP fit well with the Natural Sciences Sector's efforts to promote education in the basic sciences and to contribute to strategies for science-based sustainable development, especially in the developing world. The work of ICTP speaks to our sector's—indeed all of UNESCO's—special interest in the least developed countries, particularly countries in sub-Saharan Africa.

My staff and I look forward to working closely with ICTP's staff in forging a stronger partnership that highlights the important role that basic science plays in UNESCO's overall mandate. I believe that the Centre has a great deal to contribute to UNESCO's Natural Sciences Sector by offering new ways of thinking about old, intractable problems dealing with the relationship of science to society.

I hope to invite ICTP senior staff to Paris to share their thoughts with us in the near future. This is all part of a larger strategy within the sector to strengthen and renew the sense of belonging and exchange within our own family of institutions.□

For more detailed information about UNESCO's Natural Sciences Sector, please visit its website at www.unesco.org/science/ or email w.erdelen@unesco.org.

The American University of Beirut's Center for Advanced Mathematical Sciences (CAMS), launched in 1999, hopes to evolve into an international centre of excellence for mathematical studies.

Math for Peace

Founded in 1866, the American University of Beirut (AUB) enjoys a venerable history. The oldest and largest US-chartered university in the Middle East, AUB has served as both a regional and international centre of higher education for 135 years. In fact, 19 AUB alumni attended the UN founding conference in San Francisco, California (USA), in 1945, and three AUB alumni were signatories of the UN Charter—no other institution can lay claim to having so many graduates play such a prominent role in the creation of the United Nations.

AUB's status as one of the premier universities in the Middle East was shattered by the Lebanese civil war that began in 1970 and continued for more than 20 years. As Khalil Bitar, current dean of the faculty of arts and sciences, describes it, "the fighting devastated the city, frightening both faculty and students and eventually causing many to leave. Those who had come from abroad were the first to flee, but over time even faculty and students from the Middle East and Lebanon itself decided that this was not an environment conducive to teaching and learning. The university never closed its doors—never succumbed to the violence and chaos—but it is fair to say that it did little more than survive for some two decades."

A fragile peace returned to Beirut in 1991 but it would take almost another 10 years before AUB would finally emerge from the deep shadows cast by the war. Beginning in the late 1990s, AUB officials began to discuss strategies for rebuilding the university into one of the premier educational institutions in the region. Such discussions prompted Bitar to return after a 20-year absence.

Scientist Ali Chamseddine, another Lebanese national who had been abroad in Europe, also decided to come home. "It was not an easy decision," Chamseddine explains. "I had tried to return to Lebanon on two previous occasions during the 1970s and 1980s, misreading a temporary lull in violence for a permanent end to the civil war. Each time I was forced to pick up my family and leave after a brief period. My three boys had essentially been raised in Europe and, after having lived in Switzerland from 1986 to 1998, I had given up all hope of returning home. The last thing I wanted to do was to bring my family to Lebanon again only to be forced to take refuge abroad for a third time due to a resumption in hostilities."

What prompted Chamseddine to give peace in Lebanon yet another chance was AUB's decision to launch a Center for Advanced Mathematical Sciences (CAMS) as one of the cornerstones of its rebuilding efforts. Chamseddine was offered the post of CAMS' director.

The purpose of CAMS, according to its official mission statement, is "to promote research and graduate studies in mathematics and to serve as a focal point for collaboration among mathematicians and scientists in Lebanon and throughout the region."

But CAMS' ambitions are much larger than this: Ultimately it hopes to become a world-class centre for mathematical research and training on par with the best institutes found in both North and South—places such as New York University's Courant Institute of Mathematical Sciences (USA); the University of Cambridge's Isaac Newton Institute for Mathematical Sciences (UK); and the Institute of Pure and Applied Mathematics (Brazil).

To advance this lofty goal, Bitar and Chamseddine recently visited Trieste for a meeting to discuss options for a Millennium Science Initiative for the Middle East. The event, hosted by ICTP, was led by Phillip A. Griffiths, chair of the Science Institutes Group (SIG) and director of the Institute for Advanced Study, Princeton (USA), who has played an instrumental role in the development of MSI. In addition to administrators and faculty from AUB, representatives from Iran, Tunisia and Turkey were in attendance as well.

Chamseddine's personal affiliation with ICTP runs deep. The Centre's founding director Abdus Salam not only served as his Ph.D. advisor during the early 1970s at Imperial College (UK), where he earned his degree, but following his graduation Chamseddine was awarded an ICTP post doc in Trieste from 1976-1977.

ICTP's ties to CAMS, however, extend beyond Chamseddine's close ties to both institutions. As Nicola Khuri, physics professor at Rockefeller University and member of CAMS' International Advisory Board, explained at the workshop: "ICTP was really a founding sponsor of CAMS. At a critical moment in our discussions with AUB trustees involving our

proposal to launch CAMS, ICTP provided US$30,000 in seed money to bolster our efforts. The check was accompanied by a strong letter of support signed by ICTP director Miguel Virasoro."

"The money," notes Khuri, "was not nearly as significant as the affirmation that ICTP's deeds and words gave to our cause. Ten times the funding from a foundation in the United States would not have had as much impact."

Two years later CAMS is prospering and hoping for even better things in the future. In addition to Chamseddine, a distinguished physicist in the fields of supergravity and supersymmetry, its permanent staff of senior fellows consists of Kamal Khuri-Makdisi, a number theorist educated at Princeton University (USA); Wafic Sabra, a string theorist educated at the University of London (UK); and Jihad Touma, an applied mathematician specialising in non-linear dynamics and chaos, who earned his doctorate from the Massachusetts Institute of Technology (USA).

Although an international advisory board helps shape CAMS' scientific agenda, the Centre is nevertheless an integral part of AUB. In fact, each senior fellow holds a joint appointment as a faculty member either in AUB's physics or mathematics department and is required to teach courses and advise students.

"Those of us calling for the Centre's creation," explains Bitar, "partly justified its potential value by asserting that CAMS' presence would help attract first-rate faculty members to AUB—no easy task in the aftermath of the civil war."

The Center's excellent facilities (it occupies half of a floor in a new building on AUB's campus), combined with senior staff contracts that reduce the teaching load to permit more time for research, has helped advance that goal. In fact, CAMS' success has convinced AUB officials to replicate the model in other fields: A CAMS-like Institute of Financial Economics is scheduled to open on the university campus this fall.

CAMS' inaugural conference, "Mathematical Sciences after the Year 2000," took place between 11-15 January 1999. Some 150 scientists, including Fields Medallist and CAMS advisory member Sir Michael Atiyah, University of Edinburgh (UK), and Nobel Laureate Murray Gell-Mann, Santa Fe Institute (USA), participated in the event, which received excellent reviews from mathematicians and physicists and wide media coverage in the Middle East. Since then, the Center has organised a series of lectures, seminars, workshops and courses to explore, for example, state-of-the-art research in noncommutative geometry and string theory. It has also launched a visiting scholar and associate programme to encourage researchers to come to CAMS for periods ranging from a few weeks to two years. Some 70 researchers, largely from the Middle East, have taken advantage of this initiative.

"With an annual budget of US$200,000," says Chamseddine, "our range of activities remains modest. However, the high quality of our research and training activity, as well as the installation of a computer system that is the most powerful in the region, bodes well for the future."

"With continued support from organisations like ICTP and possible ties to such efforts as the Millennium Science Initiative, CAMS has the potential to grow into a regional and perhaps even international centre of excellence in mathematical sciences. That, at least, is our dream. It's a dream that has lured me and my colleagues back to Lebanon, hopefully this time to stay."□

For additional information about the Center for Advanced Mathematical Sciences, please contact: CAMS, College Hall, Room 425, American University of Beirut, PO Box 11-0236, Beirut, Lebanon; tel: +961 1 374444 or 374374, ext. 4390; fax: +961 1 365087; or email: cms1@aub.edu.lb. Also visit the website at www.cams.aub.edu.lb.

THE MILLENNIUM SCIENCE INITIATIVE

Officials from the American University of Beirut, who visited ICTP on 28-29 June, formed part of a larger group of mathematicians and scientists invited to attend a meeting coordinated by the Science Institutes Group (SIG) focussing on the possibility of launching a Millennium Science Initiative (MSI) in the Middle East. The purpose of MSI, launched in 1998 with the help of the World Bank, is to create and nurture world-class science and scientific talent in the developing world. MSI efforts are currently in various stages of development and/or implementation in South America, Asia and Africa. This marked the second meeting of the MSI held in Trieste. In May 2000, SGI representatives were here to examine the prospects for fostering such an initiative in Africa.

For additional information about MSI, please contact Arlen Hastings, Science Institutes Group/Institute for Advanced Study, Princeton, NJ (USA); phone: +1 609 734 8202; fax +1 609 683 7605; or e-mail: sig@ias.edu. Also visit the MSI website at www.msi-sig.org.

ICTP'S TRIL programme teams with Italian universities and research centres to help scientists from the developing world gain valuable research skills. Cuba is a case in point.

Gulfs, Bays and Science

One region lies within the Mediterranean basin; the other within the Caribbean. European settlement in the former dates back more than 5000 years; in the latter just 500.

Yet for all these vast differences in location and history, the Gulf of La Spezia in northwest Italy and the Bay of Cienfuegos in south-central Cuba are both coastal ecosystems—places where the sea relentlessly washes onto the land to create a common set of 'eco-opportunities' and 'eco-challenges.'

This shared ecology is precisely what has made the agreement between the Italian Commission for New Technologies, Energy and the Environment's Marine Environment Research Centre (ENEA-MERC) and ICTP's Training and Research in Italian Laboratories (TRIL) programme so productive. It has enabled Carlos Alonso Hernández, director, Environmental Research Centre, Cienfuegos, Cuba, to sharpen the considerable analytical skills he acquired while earning a degree in physics at *Instituto Superior de Ciencias y Tecnologías Nucleares*, Havana, Cuba, in 1988, and then to apply these skills to real-world environmental problems related to sedimentation and marine pollution in the Bay of Cienfuegos.

Carlos Alonso Hernández

"Before ICTP gave me an opportunity to work at ENEA-MERC, I did not have access to the modelling tools that I needed to transform my academic knowledge into practical problem-solving strategies," notes Alonso Hernández. "Now, with the environmental data and trends that have been uncovered by our research, regional policy makers in Cuba can base their decisions on much more reliable scientific information and analyses."

"Cienfuegos' economy has always been resource-based," explains Alonso Hernández. "In the past, this meant a great deal of reliance on fishing, agriculture and maritime transport, three economic sectors that remain central to the region's well-being today." But a fourth economic force—tourism—has recently come into play. In fact, as Alonso Hernández notes, "the increasing number of Canadian and European vacationers coming to the Bay of Cienfuegos to enjoy our beautiful beaches, inviting climate and low prices has made international tourism the region's largest source of revenue." As a result, the ecosystem's health is not just an environmental issue but an economic issue as well.

With the help of his colleagues at ENEA-MERC in La Spezia, Alonso Hernández and his Cuban research team have developed a detailed profile of an ecological trend that local residents and government officials sensed already existed: a rapid buildup of sedimentation in the bay. Indeed Alonso Hernández's investigation indicated that the amount of sediment in the Bay of Cienfuegos has doubled over the past 50 years, causing a decrease in the fish population, a loss of biodiversity, and disruptions in boating and maritime transport.

"If the current rate of sedimentation continues," Alonso Hernández notes, "both the bay's physical appearance and water quality will deteriorate, having an adverse impact on three staples of the region's economy: tourism, transport and fishing."

Through such analytical instruments and techniques as X-ray diffraction and radionuclide measurements, supplied by ENEA-MERC, Alonso Hernández also determined that much of the sediment being channelled into the bay has come from northern rivers. These rivers wind through an area that has experienced widespread deforestation over the past 20 years largely due to the clearing of land for agricultural development and housing.

"Our research shows that rapid changes in land use were responsible for the problem," he notes. The findings of Alonso Hernández and his colleague Misael Diaz, who has also conducted research at ENEA-MERC, earned them a prize from the Cuban government at the Ninth National Cuban Exposition, "Forging the Future," held earlier this year in Havana. More importantly, their findings have left a mark on regional land-use plans that now call for a curtailment of agricultural development and the creation of a systematic programme for reforestation.

Alonso Hernández's journey from an academic researcher to centre director began in 1997 after he met Roberta Delfanti, research scientist, ENEA-MERC, at a conference in Greece. As Delfanti remembers it, "Carlos told me about both his research interests and the kind of training and equipment that he would need to do a better job. I suggested that he get in touch with officials from ICTP who might be able to help him."

Alonso Hernández quickly decided to apply to ICTP's TRIL programme and was accepted as a fellow in 1998. The TRIL programme places promising young researchers from developing countries in Italian laboratories for one-year

appointments to pursue applied research projects that are helpful both to them and the institutions in which they work. Since its inception in 1983, some 875 researchers from 70 countries in the South have been appointed fellows. More than 300 Italian institutions—among them, leading universities and research centres—have participated in the programme.

"Carlos' work at ENEA-MERC," says Carlo Papucci, research scientist at the Marine Centre who has been Carlos' advisor during his visits to Italy, "has influenced environmental and land-use policies in his home country. Staff at the centre in La Spezia are proud of the contribution that we have made to these overall research efforts."

"But it's also important to note that we have benefited from Carlos' presence as well. His focus on the ecological challenges facing the Bay of Cienfuegos has enabled us to apply our models and broad analytical strategies to a far-away ecosystem that shares many characteristics with the gulf just outside our offices here in Italy. That, in turn, has given us new purpose and focus, which has not only reinvigorated our research programme but also extended the reach of our knowledge into a global setting where most ecological problems reside."

"Carlos' experience offers an excellent case study exemplifying the overall goals that TRIL hopes to fulfill," adds Giuseppe Furlan, professor of theoretical physics at the University of Trieste, who has been the head of the TRIL programme since its inception and a collaborator with ICTP since 1964.

"The programme is designed to help researchers from the developing world enhance their skills and advance their careers while providing Italian research laboratories with well-trained personnel who lend a hand in pushing the institution's agenda ahead. TRIL's success can be measured not just in the increasing number of developing world and Italian researchers who have worked together, but in the concrete contributions that they have made to addressing a host of scientific and technological issues related to physics, chemistry, environment, optics and other fields that are covered under the programme."

Both Alonso Hernández and Papucci hope that their collaboration will continue—and, in fact, broaden—in the future. Alonso Hernández returned home to Cuba this August, but he has recently been appointed as TRIL Associate. The TRIL Associates programme, which promotes long-term interaction between Italian universities and research institutes and those in the developing world through funding mechanisms that allow researchers like Alonso Hernández to return to their host Italian institutions three times over a six-year period.

As an Associate, Alonso Hernández anticipates coming back to ENEA-MERC sometime in 2002. Meanwhile, he and Papucci have submitted a proposal to ICTP and the International Atomic Energy Agency (IAEA) to hold a workshop on the modelling of marine processes that they hope will attract scientists from across the Caribbean.

Carlo Papucci and Carlos Alonso Hernández

"Our goal," says Alonso Hernández, "is to enable scientists throughout the region to learn about the analytical tools that have proven so useful in our work. Countries in the Caribbean depend largely on tourism, fishing and maritime transport for their economic well-being. With proper training and access to the right instruments and equipment, scientists could play a key role in helping to boost the Caribbean's economy in ways that preserve and protect the long-term health of the region's rich and attractive environment."□

THE NEW TRIL ASSOCIATES

The success of the ICTP Training and Research in Italian Laboratories (TRIL) programme has been accompanied by one common concern: How can ICTP devise a strategy for sustaining collaboration among the scientists and scientific institutions once the year-long TRIL fellowship is completed and make the TRIL fellowship not just an important experience in the life of a single researcher but a source of long-standing collaboration between research groups and institutions? The answer has come in the creation of the TRIL Associate programme, which was launched in 1999 but remained largely dormant until this year when an infusion of funds led to the appointment of an additional 10 TRIL Associates beyond the 5 previous appointments. These associates—hailing, for example, from Argentina, Bulgaria, China, Morocco and Nigeria—will be able to collaborate with Italian institutions for an additional six-year period ensuring that the partnerships forged under the TRIL Fellowship programme become lasting ones.

For additional information about the TRIL programme, please contact itlabs@ictp.trieste.it; phone: + 39 040 2240 553 or 556; fax: + 39 040 2240 558, or see www.ictp.trieste.it.

DATELINE

Two

Two French-born Nobel Laureates participated in the Adriatico Research Conference on Interaction and Assembly of Biomolecules that took place from 27-31 August. **Pierre-Gilles de Gennes**, who lectured on "Artificial Muscles," is a professor at the *Collège de France* in Paris. A 1991 recipient of the Nobel Prize in Physics, he is known as the 'prophet of soft matter.' **Jean-Marie Lehn**, who was awarded the 1987 Nobel Prize in Chemistry, lectured on "Supramolecular Engineering through Programmed Self-Organization." Lehn, who teaches at the *Université Louis Pasteur* in Strasbourg, France, received an honorary degree from the University of Trieste last May.

Pierre-Gilles de Gennes

Jean-Marie Lehn

Four

Alain Connes

Four Fields Medallists recently gave lectures at ICTP. **Alain Connes**, *Institut des Hautes Etudes Scientifiques*, Bures-sur-Yvette, France, who received the Fields Medal in 1982 for his contributions to the theory of operator algebras, spoke in March at the Workshop on Quantum Field Theory, Noncommutative Geometry and Quantum Probability. Three other Fields Medallists lectured at the School and Workshop on Dynamical Systems, held between July and August. **John Willard Milnor**, Princeton University, who spoke about the increasingly important role played by mathematics in genetics, won the Fields Medal in 1962 for his proof that a seven-dimensional sphere can have several different structures. **Gregori Aleksandrovic Margulis**, Yale University, who spoke about geometry of numbers and inequalities for integral operators, earned the Fields Medal in 1978 for his pathbreaking insights on subgroups of Lie groups. **Jean-Christophe Yoccoz**, *Collège de France*, who spoke about "Quasi-Periodic Dynamics for p-adic Rational Maps," was awarded the Fields Medal in 1994 for his unique contributions to our understanding of dynamical systems. The Fields Medal, which began in 1936, is considered the world's highest honour in mathematics.

John Milnor, Jean-Christophe Yoccoz and Gregori Margulis

Two

Trieste's scientific community has honoured two of its most celebrated citizens. **Paolo Budinich**, one of the founding fathers of ICTP as well as a host of other scientific institutions in Trieste, including SISSA (International School for Advanced Studies), and a leading advocate of scientific cooperation with central and eastern European countries, was honoured on the occasion of his 85th birthday at the International Conference on Science and Culture held in Losinj, Croatia, on 17-19 September. Meanwhile, a Symposium on Future Challenges in Science, "dedicated to **Daniele Amati** for his next 70 years," took place in ICTP's Main Building on 22 September. Amati succeeded Budinich as director of SISSA in 1986 and then served in that capacity for the next 15 years (he will be stepping down as director this fall). The event also served as an occasion to celebrate Amati's 70th birthday.

2001 Dirac Medal

John J. Hopfield

John J. Hopfield, one of the world's top physicists who has successfully crossed interdisciplinary boundaries (he is a professor in the department of molecular biology at Princeton University), is the recipient of the 2001 Dirac Medal of ICTP. The citation announcing the award states that Hopfield "has made important contributions in an impressively broad spectra of scientific subjects." After applying his research talents to light-emitting diodes early in his career, Hopfield turned to biology, where his 'Hopfield model' of neural processing demonstrated "how qualitatively different computation in a computer and in the brain could be." For additional information about the Dirac Medal, see the Centre's web page at www.ictp.trieste.it. The award ceremony will take place at a later date.

Medal for Modelling

Fedor Mesinger, adjunct staff member in ICTP's Weather and Climate Group, has won the European Geophysical Society's Vilhelm Bjerknes Medal. The medal, established in 1995, is given annually to a distinguished researcher in atmospheric science. Mesinger, who was educated and taught for many years at the University of Belgrade,Yugoslavia, is currently a scientist at the National Center for Environmental Prediction's Environmental Modeling Center (USA). He is an internationally recognised expert in the field of numerical modelling of the atmosphere and, more generally, the science of weather prediction. The Eta Model, which he designed, is now used for weather prediction at the US National Center for Environmental Modeling in the United States and an increasing number of weather forecast centres around the world. Mesinger returned to ICTP this summer for a six-week stay.

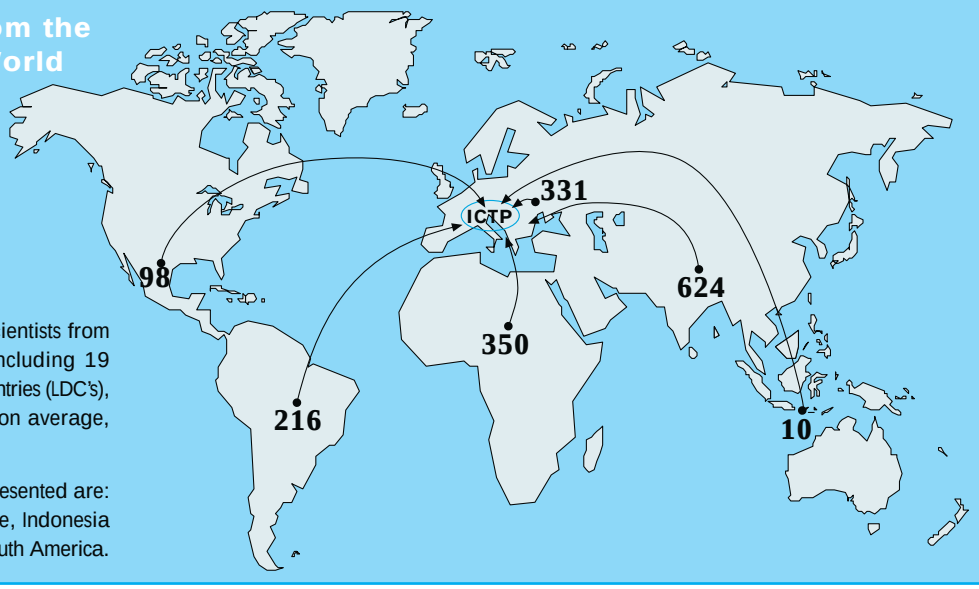
Calendar 2002

More than 40 schools, colleges, workshops and conferences are listed in ICTP's preliminary 2002 Scientific Calendar. The first activity, beginning 4 February, will be the Joint ICTP-INFM (Italian Institute for the Physics of Matter) School in "High Performance Computing on Linux Clusters." Next year's calendar covers a wide spectrum of topics: from the physics of weather and climate to superstrings, from synchrotron radiation to astroparticle physics, and from seismic waves to quantum dynamics. Three activities will take place outside Trieste: the Regional Course on System Simulation and Hardware Synthesis Using VHDL (Lima, Peru); the Workshop on Frontiers of Materials Science (Santiago, Chile); and the ICTP Microprocessor Laboratory First Middle East Course on Advanced VLSI Design Techniques Using a Hardware Description Language (venue to be determined). The 2002 Calendar is available on the web at www.ictp.trieste.it.

IAEA General Conference

The 45th Regular Session of the General Conference of the International Atomic Energy Agency (IAEA), which was held at the organisation's headquarters in Vienna from 17 to 21 September, included a two-hour special presentation by ICTP director Miguel Virasoro. The special presentation focussed on the role of science in economic development and outlined new ICTP/IAEA activities.

ICTP Visitors from the Developing World 2000



In 2000, more than 1600 scientists from 92 developing countries, including 19 from the Least Developed Countries (LDC's), visited ICTP. These visitors, on average, stayed for about 50 days.

The geographical areas represented are: Africa, Asia, Eeastern Europe, Indonesia and Oceania, Central and South America.

REPORT ON REPORTS

THE SECOND STIG LUNDQVIST RESEARCH CONFERENCE ON THE ADVANCING FRONTIERS OF CONDENSED MATTER PHYSICS: NON-CONVENTIONAL SYSTEMS AND NEW DIRECTIONS

2 - 6 July

Co-sponsors: Office of Naval Research (ONR, Arlington, VA, USA), National Science Foundation (NSF, Washington, D.C., USA), *Conselho Nacional de Desenvolvimento Científico e Tecnológico* (CNPq, Brazil), and International School for Advanced Studies (SISSA, Trieste. Italy).

Directors: D. Awschalom (University of California, Santa Barbara, USA), E. Burstein (University of Pennsylvania, Philadelphia, USA) and G. Scoles (Princeton University, USA).

Local Organisers: E. Tosatti (SISSA and ICTP) and Yu Lu (ICTP and Academia Sinica, Beijing, China).

Giacinto Scoles

The Conference focussed on major developments in 'soft' and 'hard' condensed matter science and the overlap of condensed matter science with biology. Scientists playing key roles in these areas were brought together to discuss ongoing research and to assess progress in their fields. Participants examined new research opportunities ranging from manipulating matter at the atomic scale to bridging the interface between inorganic and organic systems.

Roberto Car and Michele Parrinello

SIXTH SCHOOL ON NON-ACCELERATOR ASTROPARTICLE PHYSICS

9 - 20 July

Co-sponsor: Italian National Institute of Nuclear Physics (INFN).

Directors: R. Carrigan (Fermi National Accelerator Laboratory, Batavia, IL, USA), G. Giacomelli (University of Bologna, Italy).

Local Organisers: A. Masiero (International School for Advanced Studies, SISSA, Trieste, Italy) and N. Paver (University of Trieste and INFN, Italy).

Non-accelerator particle astrophysics encompasses traditional cosmic ray physics, solar neutrino physics, dark matter, supernovae, gamma ray and neutrino astronomy, as well as astrophysics, cosmology, and particle physics. The School consisted of lectures on theory, experimental methodologies, status of current experiments, and future theoretical and experimental directions. Topics discussed included connections among particles, fields and astrophysics; experimental results from high energy accelerators; the early universe; neutrino physics; astrophysics; galactic dark matter; origin and composition of cosmic rays; cosmic sources of high energy gamma rays and neutrinos; gravitational waves; and use of space for fundamental physics. Emphasis was placed on neutrinos, gravitational waves and gamma ray bursts.

Fabio Sauli

Gianrossano Giannini

Cesare Barbieri

Richard Carrigan and Giorgio Giacomelli

Guido Barbiellini

SUMMER SCHOOL ON LOW-DIMENSIONAL QUANTUM SYSTEMS: THEORY AND EXPERIMENT

16 - 27 July

Co-sponsor: International School for Advanced Studies (SISSA, Trieste, Italy).

Directors: H. Saleur (University of Southern California, Los Angeles, USA) and A. Tsvelik (Brookhaven National Laboratory, Upton, NY, USA, and Oxford University, UK).

Local Organisers: M. Fabrizio (SISSA and ICTP), A.A. Nersesyan (ICTP and Institute of Physics, Tbilisi, Georgia) and Yu Lu (ICTP and Academia Sinica, Beijing, China).

The School brought together experimentalists, condensed matter theorists and mathematical physicists specialising in one-dimensional quantum physics. The goal was to create a broad international forum to discuss recent advances in theory and experimentation and to help young participants learn about the most challenging problems in low-dimensional quantum physics. Topics included Abelian and non-Abelian bosonisation; Ising model and integrability and formfactor method (with applications); quasi-one-dimensional magnetism; physics of nanotubes and quantum dots; and theory of two-dimensional noninteracting disordered systems.

SCHOOL AND WORKSHOP ON DYNAMICAL SYSTEMS

30 July - 17 August

Co-sponsor: *Conselho Nacional de Desenvolvimento Científico e Tecnológico* (CNPq, Brazil).

Directors: J. Palis (*Instituto de Matemática Pura e Aplicada*, IMPA, Rio de Janeiro, Brazil), Ya. Sinai (Princeton University, USA, and Landau Institute for Theoretical Physics, Moscow, Russian Federation), M. Viana (IMPA), and J.-C. Yoccoz (*Collège de France*, Paris, France).

Local Organiser: B. Fantechi (University of Udine, Italy).

The School, held in honour of Michel Herman, focussed on the following topics: homogeneous dynamics with applications to number theory; one dimensional dynamics; and conservative and chaotic dynamics. Specific themes included: chaotic dynamics (density

of finitude of attractors, existence of Sinai-Ruelle-Bowen measures, stochastics stability, homoclinic bifurcations, robust singular attractors and Lorenz attractors); conservative dynamics (KAM and Mather theories, billiards, Lyapunov exponents and standard families); one-dimensional real and complex dynamics (density of hyperbolicity, parameterised families and total probability of SRB-measures, classification); ergodic theory and applications of dynamics to number theory; and dynamical systems methods applied to partial differential equations.

Yakov Sinai

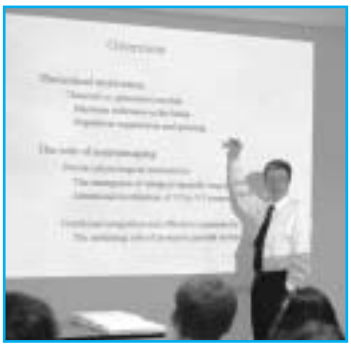
EU ADVANCED COURSE IN COMPUTATIONAL NEUROSCIENCE—An IBRO Neuroscience School

30 July - 24 August

and ESF SYMPOSIUM

25 - 26 August

Co-sponsors: European Commission (Brussels, Belgium), Boehringer Ingelheim Foundation (Stuttgart, Germany), International Brain Research Organization (IBRO, Paris, France), and Brain Science Foundation (Tokyo, Japan).
Directors: A. Destexhe (*Centre National de la Recherche Scientifique*, CNRS, Gif-sur-Yvette, France), K. Obermayer (*Technische Universität Berlin*, Germany), A. Treves (International School for Advanced Studies, SISSA, Trieste, Italy) and E. Vaadia (Hebrew University, Jerusalem, Israel).



Karl Friston

The Course, designed for advanced graduate students and postdoctoral fellows in a variety of disciplines that included neuroscience, physics, electrical engineering, computer science and psychology, addressed issues related to neural organisation ranging from subcellular processes to operations of the entire brain. The first week introduced students to essential neurobiological concepts and techniques in modelling single cells, networks and neural systems. Lectures during the following three weeks examined specific brain functions dealing with sensory systems and vision, memory and attention, and motor planning and control.

RESEARCH WORKSHOP ON CHALLENGES IN GRANULAR PHYSICS

7 - 11 August

Co-sponsors: European Commission (Brussels, Belgium) and *Conselho Nacional de Desenvolvimento Científico e Tecnológico* (CNPq, Brazil).
Directors: S. Franz (ICTP), T.C. Halsey (Exxonmobil Research and Engineering Company, Annandale, NJ, USA) and A. Mehta (Satyendra Nath Bose National Centre for Basic Sciences, Kolkata, India).

Sir Samuel Edwards

This Workshop focused on recent experimental and theoretical developments in the dynamics of wet and dry granular media, compaction in vibrated granular beds, glassy approaches, kinetic theories, and computational methods.

ADRIATICO RESEARCH CONFERENCE ON INTERACTION AND ASSEMBLY OF BIOMOLECULES

27 - 31 August

Co-sponsors: International School for Advanced Studies (SISSA, Trieste, Italy), *Forschungszentrum Jülich* (Jülich, Germany), and National Institute of Child Health and Human Development (NICHD, USA).
Directors: P. Carloni (SISSA); A.A. Kornyshev (*Forschungszentrum Jülich*); S. Leikin (National Institute of Health, Bethesda, Maryland, USA).

Mauro Giacca

This interdisciplinary meeting brought together physicists, chemists and biologists to discuss interaction, recognition and assembly of biological macromolecules of importance to cell biology, molecular genetics and biomolecular engineering. Topics included fundamental interactions in biological systems; supramolecular ordering in biological systems; polyelectrolytes and polyampholytes; interactions and self-assembly of nucleic acids; protein-DNA interactions and molecular genetics; lipid-DNA interactions and gene therapy organisation of lipid membranes; interactions and self-assembly of proteins; supramolecular engineering; and biomolecular devices. Practical research issues focused on molecular diseases; genetics and gene therapy; pharmacology and drug design; food supply; long-term food storage in hot climates; and environmentally friendly and degradable biomaterials. Tutorials examined theoretical tools in modern pharmacology (for example, computer graphics, sequence alignment and construction of 3D structural models).

WORKSHOP ON HYBRID NUCLEAR SYSTEMS FOR ENERGY PRODUCTION, UTILISATION OF ACTINIDES AND TRANSMUTATION OF LONG-LIVED RADIOACTIVE WASTE

3 - 7 September

and WORKSHOP ON NUCLEAR DATA FOR SCIENCE AND TECHNOLOGY: ACCELERATOR DRIVEN WASTE INCINERATION

10 - 21 September

Co-sponsor: International Atomic Energy Agency (IAEA, Vienna, Austria).
Directors: M. Herman (IAEA), A. Mengoni (Commission for New Technologies, Energy and the Environment, ENEA, Bologna, Italy) and A. Stanculescu (IAEA).
Local Organiser: N. Paver (Italian National Institute of Nuclear Physics, INFN, and ICTP).

The Workshops familiarised students with research and development activities related to accelerator driven systems (ADS) and increased their understanding of the development and use of relevant nuclear data through lectures, computer demonstrations and hands-on exercises with computer codes and online retrieval of nuclear data.
WORKSHOP ON HYBRID NUCLEAR SYSTEMS: Many countries are pursuing research and development (R&D) programmes to substantiate claims made with regard to the advantages of ADS (intrinsic low waste production, high transmutation capability, enhanced safety characteristics and better long-term resources utilisation of, for example, thorium fuels) to advance basic knowledge in this innovative area of nuclear energy development. Participants studied the theoretical foundation of ADS design work; identified the most problematic areas; and examined the limitations of present simulation methods.
WORKSHOP ON NUCLEAR DATA FOR SCIENCE AND TECHNOLOGY: Participants explored modern theoretical models used to predict nuclear reaction cross sections and examined the principles behind evaluation methodology, existing data libraries and data processing techniques. The programme covered the following topics: nuclear data

in ADS design; impact of data uncertainties on core performance, structure damage and shielding; experimental activities related to nuclear data development; theory of nuclear reactions below and above 200 MeV; and nuclear data libraries.

Michal Herman

SECOND EUROPEAN SUMMER SCHOOL ON MICROSCOPIC QUANTUM MANY-BODY THEORIES AND THEIR APPLICATIONS

3 - 14 September

Co-sponsors: European Commission (Brussels, Belgium), and International School for Advanced Studies (SISSA, Trieste, Italy).
Directors: A. Fabrocini (University of Pisa, Italy), S. Fantoni (SISSA) and E. Krotscheck (J. Kepler University, Linz, Austria).
Local Organiser: S. Fantoni (SISSA and ICTP).
The School, a sequel to one held in Valencia, Spain, in September 1997, examined advances in standard many-body techniques and recent innovative developments. Among the topics discussed were correlated basis function (CBF) theory; coupled cluster method (CCM); Green's functions theory; stochastic simulation methods; hyperspherical expansions; and density functional theory. In addition to the experimental aspects of the field, lectures addressed such subjects as applications to molecules, clusters, nuclei, confined geometries, and Bose-Einstein condensation. Participants were trained in the basic workings of the most powerful many-body techniques and selected new developments in the field.

Stefano Fantoni

Adelchi Fabrocini

SUMMER SCHOOL ON MATHEMATICAL CONTROL THEORY

3 - 28 September

Co-sponsor: *Conselho Nacional de Desenvolvimento Científico e Tecnológico* (CNPq, Brazil).
Directors: A. Agrachev (SISSA, Trieste, Italy, and Steklov Institute, Moscow, Russian Federation), B. Jakubczyk (Polish Academy of Sciences, Warsaw, Poland) and C. Lobry (*Institut National de Recherche Agronomique*, Montpellier, France).
This School is intended to be the first in a series devoted to mathematical control theory—a rapidly growing field that provides theoretical and computational tools for dealing with problems arising in electrical and aerospace engineering, automatics, robotics, applied chemistry, and biology. Automatic control is useful for the regulation of many industrial processes, especially in such high-tech industries as aeronautics and robotics. Control methods can also be applied to functions that are important to development in developing countries, including wastewater treatment, epidemiology, and the control of industrial and natural bio-reactors. The School featured introductory courses on linear and nonlinear control theory and optimal control. Topics included controllability and motion planning; observability and observers; stabilisation and feedback equivalence; and control of hydrodynamical systems.

CONFERENCE ON ANDERSON LOCALIZATION, QUANTUM CHAOS AND RANDOM MATRICES: RIGOROUS METHODS VS. PHYSICAL INTUITION

24 - 28 September

Co-sponsor: *Deutsche Forschungsgemeinschaft* (Germany).
Directors: F. Haake (*Universität Essen*, Essen, Germany) and W. Kirsch (*Ruhr Universität*, Bochum, Germany).
Local Organiser: V.E. Kravtsov (ICTP).
In the past decade, mathematicians and mathematical physicists have developed proofs and understanding of various aspects of Anderson localisation, both in one-dimensional and multi-dimensional cases. Yet, there remain fundamental questions not at all understood at a mathematical level of rigour. Research areas in quantum chaos and mesoscopic systems have developed a mutually fruitful overlap. Random-matrix theory has been boosted by work on mesoscopic systems and, in particular, by the superanalytic approach. Semiclassical methods based on Gutzwiller's work and the supersymmetry method have begun an interesting competition. Despite such progress, many questions remain. Conference topics included Anderson localisation; quantum chaos; random matrices (new symmetry classes); multi-scale analysis; spectral averaging; disordered mesoscopic systems; semiclassical approximation; mixed phase space; and Riemann zeta function.

SCHOOL ON PHYSICS OF THE EQUATORIAL ATMOSPHERE

24 September - 5 October

Co-sponsors: Scientific Committee on Solar Terrestrial Physics (SCOSTEP), World Climate Research Programme, International Association of Meteorology and Atmospheric Science (IAMAS), and *Conselho Nacional de Desenvolvimento Científico e Tecnológico* (CNPq, Brazil).
Directors: J. Forbes (University of Colorado at Boulder, USA) and K. Hamilton (University of Hawaii, Honolulu, USA).
Local Organiser: S.M. Radicella (ICTP).
The School introduced students to research on the low-latitude dynamics of both the neutral atmosphere and ionosphere. Topics included observational techniques; theory of internal gravity waves and equatorial waves; wave-mean flow interaction and the theory of the quasi-biennial oscillation; semiannual oscillation; organisation of tropospheric moist convection and excitation of equatorial and gravity waves; thermospheric thermal structure, composition and dynamics; solar-terrestrial coupling; basic ionospheric production; effects of upward-propagating tides and planetary waves; ionospheric morphology; small-scale structures and instabilities; scintillations; F-region emissions; ground-based optical diagnostics; low-latitude electrodynamics and ion-neutral coupling; thermosphere-ionosphere coupling; and magnetic storm effects.

PROFILE

Habtu Hailu Zegeye, a former ICTP Diploma Student and now Junior Associate, is returning to Trieste as a Fellow of ICTP's Training and Research in Italian Laboratories (TRIL) programme.

Challenging Ethiopia's Math Deficit

When Habtu Hailu Zegeye arrived in Trieste this July from his home country Ethiopia, he certainly didn't need a map to get around. After all, this marked the third time in the past six years that he would be spending a good deal of time in the Italian port city that hosts ICTP's secretariat.

His first visit, a one-year stay, took place in 1995-1996 when he was a student in the Centre's Diploma Course programme. He returned to ICTP in the summer of 1999 for a three-month stay and came back again in the summer of 2000, both times as an ICTP Junior Associate. His visits enabled him to take advantage of the Centre's facilities and busy summer-time curriculum to advance his own research agenda in mathematics, which focusses on nonlinear functional analysis and applications.

For the next 12 months, he will be living and working in Trieste as a Fellow of ICTP's Training and Research in Italian Laboratories (TRIL) programme, working under a cooperative arrangement between ICTP and the International School for Advanced Studies (SISSA), an Italian institution of higher education located next door to the Centre. Zegeye notes that he will be "spending much of his time doing research in his areas of expertise," which he anticipates "will lead to a series of publications in international journals." He also plans to attend courses at ICTP, SISSA and perhaps other research institutions in Italy.

Zegeye's periodic journeys to Trieste have proven instrumental in helping him achieve his most cherished career objective: To live and work in Ethiopia as a university teacher and researcher without being isolated from the global mathematics community.

He earned his undergraduate degree from Addis Ababa University in central Ethiopia in 1985. He concentrated primarily on mathematics and physics but also set aside time for education courses helping him acquire valuable pedagogical skills that would later serve him well as an instructor.

With his bachelor's degree in hand, Zegeye decided to continue his education at Addis Ababa University, taking courses from 1989 to 1991 after teaching mathematics at Arba Minch high school. "The teaching methods at the university," he notes, "were largely based on lectures and the rote retention of information. Teachers," he adds, "did a commendable job under a difficult situation." Poor facilities and a lack of course books or journals posed the most serious obstacles to learning. "Computer facilities were not available and recent books and journals were hard to come by," he notes. "As a result, lectures were usually the sole source of information."

Zegeye admits that he never really stopped seeking ways to continue his university training. "I realised that my need for financial aid and having earned both my bachelor's and master's degrees in Ethiopia would likely hinder my progress." Nevertheless, he enrolled in Addis Ababa University for a second master's degree, this time focusing exclusively on numerical analysis and algorithms. After completing this degree, Zegeye was appointed a lecturer at Bahir Dar University in Bahir Dar, Ethiopia.

Habtu Hailu Zegeye

Zegeye earnestly began his search for a Ph.D. programme in 1999, the same year that ICTP's Mathematics Group and Office of External Activities joined forces to launch a Ph.D. initiative targeted for students in sub-Saharan Africa. The ultimate goal of the initiative, designed in partnership with universities in sub-Saharan Africa, was to allow students to remain within the region while earning their degrees.

"The programme was an ideal fit for my circumstances," Zegeye notes. "I applied and was soon accepted for entrance into the mathematics doctorate programme at the University of Nigeria in Nsukka. With help from ICTP I could once again pursue my career ambitions."

This June, Zegeye's ongoing journey passed another milestone when he was awarded a doctorate in mathematics. Today he is back in Trieste advancing his knowledge and honing his skills even further.

Zegeye would like nothing better than to have his extraordinary trips between Ethiopia and Italy to lead to nothing more than an ordinary existence at home where his professional responsibilities would be defined by the three pillars of university life worldwide: teaching, research and community service.□

TRIBUTE

Sir Fred Hoyle, 1915-2001

Sir Fred Hoyle, one of the most distinguished and controversial astrophysicists of the 20th century, died on 20 August at his home in Bournemouth, UK. Sir Fred was born in Bingley, Yorkshire, and educated in mathematics and theoretical physics at the University of Cambridge, where he served as a full professor from 1945 to 1973. His name is associated with the steady-state cosmological model of the universe, developed in 1948 but eclipsed during the mid-1960s by the scientific community's growing emphasis on the Big Bang theory, a term ironically coined by Sir Fred to ridicule the idea. Sir Fred made fundamental contributions to our knowledge of stellar evolution with his work on the synthesis of the elements beyond helium in stars. In 1972 he founded Cambridge's Institute of Theoretical Astronomy and served as its first director. A prolific writer, he published some 40 books both for professional scientists and the public. He also successfully tried his hand at science fiction. Sir Fred, who taught astronomy to ICTP's founding director Abdus Salam when Salam was a student in Cambridge, visited the Centre in 1970, 1985, and 1991.

ICTP Prize 2000

The 2000 ICTP Prize ceremony was held on 7 August in the Centre's Main Lecture Hall. The two recipients of the prize were **Tyakal Nanjundiah Venkataramana**, School of Mathematics at the Tata Institute of Fundamental Research, Mumbai, India, and **Sheng-Li Tan**, Department of Mathematics, East China Normal University, Shanghai, People's Republic of China. Friedrich Hirzebruch, Max Planck Institute of Mathematics, Bonn, Germany, in whose honour the prize was given, was also present at the ceremony.

Telit-ICTP MOU

Telit Mobile Terminals S.p.A. and ICTP have signed a memorandum of understanding for future collaboration focussing on training activities in the field of radio research and applications. Telit, which is located in Trieste, is a telecommunications company with a long-standing interest in research and development activities related to radio technologies. Participants in ICTP's School on Digital and Multimedia Communications Using Terrestrial and Satellite Radio Links, held in early spring, enjoyed access to Telit's laboratories for hands-on exercises and demonstrations.

Canadian Visitor

Reza Moridi, vice-president for Science and Technology of the Radiation Safety Institute of Canada in Toronto, visited ICTP on 23 July. He met with ICTP director Miguel Virasoro and toured the ICTP library and computer facilities.

Galvani-Volta Exhibition

An exhibition, "The Legacy of Galvani and Volta in Contemporary Science," featuring the unique work of the famed Italian scientists Luigi Galvani and Alessandro Volta, was on display on Lower Level 1 of the Adriatico Guesthouse from 11 July to 10 September. Consisting of 28 panels explaining the contributions of two of Italy's most original thinkers, the exhibition was held in connection with the Sixth School on Non-Accelerator Astroparticle Physics. Both the school and exhibition were organised in cooperation with the Italian Institute for Nuclear Physics (INFN).

Juan José Giambiagi Lecture Hall

On 24 September, ICTP held a ceremony to dedicate the Juan José Giambiagi Lecture Hall on Lower Level 1 of the Adriatico Guesthouse. Argentinean-born Giambiagi, who died in 1996, was one of the developing world's most honoured physicists and a leading figure for the promotion of scientific cooperation in Latin America. He was one of the Centre's first Associates and a frequent visitor to Trieste during the 1960s and early 1970s. He then served on the ICTP Scientific Council in the 1980s.

1 - 12 October
College on Biophysics: From Molecular Genetics to Structural Biology

1 - 12 October
Course on Inverse Methods in Atmospheric Science

8 October - 2 November
Autumn College on Plasma Physics

15 - 27 October
Sixth Workshop on Non-Linear Dynamics and Earthquake Prediction

29 October - 9 November
Workshop on Advanced Nuclear Power Plant Simulation

29 October - 23 November
Microprocessor Laboratory Seventh Course on Basic VLSI Design Techniques

12 - 16 November
Advanced Course: Climate Change in the Mediterranean Region - Part II: Socio-Economic Aspects and Impacts

26 November - 21 December
Workshop on Distributed Laboratory Instrumentation Systems

Throughout the year, the most up-to-date information on ICTP activities may be found on the World Wide Web and via e-mail. Here's how to find out what's going on.

ON THE WORLD WIDE WEB (WWW)
Our address is `http://www.ictp.trieste.it/`
The site includes detailed information on our research groups and activities, and a listing of our preprints, awards and job opportunities.

ON E-MAIL
(1) For Yearly Calendar of Scientific Activities
Create a new e-mail message and type
To: `smr@ictp.trieste.it`
Subject: `get calendar 2002`
Leave the body of the message blank. Send it.
Your e-mail will generate an automatic reply from the ICTP server containing the most updated version of the yearly Calendar.

(2) For Information on a Specific ICTP Activity
Each activity in the Calendar has its own 'smr' code number, which is located on the last line of each activity description. The 'smr' number will enable you to obtain more information—if available—on those activities you are interested in. To receive this more detailed information, create a new e-mail message and type the smr code number that you found on the calendar:
To: `smr####@ictp.trieste.it`
Under the e-mail's subject, type
Subject: `get index`
Leave the body of the message blank and send it.
You will receive an automatic reply listing all documentation available on that particular activity—the `announcement` or `bulletin` and, in most cases, a separate `application_form`.
To receive the full text of the announcement and/or application form, you will need to send another e-mail message to the same smr code:
To: `smr####@ictp.trieste.it`
Subject: `get announcement application_form`
Again, leave the body of the message blank, and send it.

(3) For Information on All ICTP Activities
A free online service for the dissemination of information on all ICTP activities, programmes and related announcements is available via e-mail. To subscribe, create a new e-mail message and type:
To: `courier-request@ictp.trieste.it`
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and your e-mail address. Send the message.
Any comments or suggestions on this service are most welcome. Please address them to `pub_off@ictp.trieste.it`.

NEWS from ICTP

The Abdus Salam International Centre for Theoretical Physics (ICTP) is administered by two United Nations Agencies—the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the International Atomic Energy Agency (IAEA)—under an agreement with the Government of Italy. Miguel Virasoro serves as the Centre's director.

News from ICTP is a quarterly publication designed to keep scientists and staff informed on past and future activities at ICTP and initiatives in their home countries. The text may be reproduced freely with due credit to the source.

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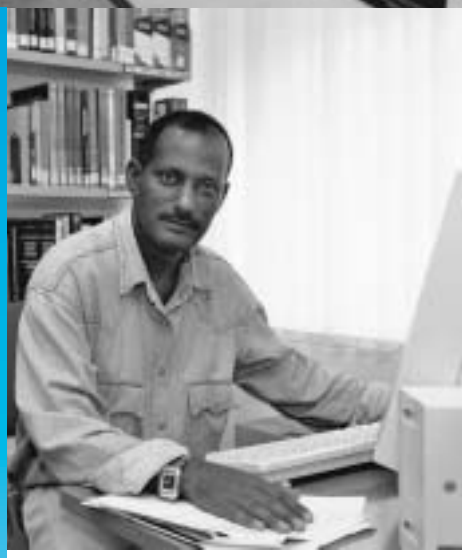

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